

APPENDIX 3: APPRAISAL MATRICES

SCHEME SM1: CAPACITY IMPROVEMENTS M25 J20 & HUNTON BRIDGE ROUNDABOUT

SEATopic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, Fauna & Flora	To protect and enhance biodiversity	P-	M25 J19/Hunton Bridge Rbt is adjacent to Whippendell Woods a SSSI and key biodiversity area (protected for rare fungi and invertebrates). Increasing capacity at this junction could attract more traffic to the area and so worsen air quality which could negatively impact on the flora and fauna of this woodland.	That traffic modelling be undertaken on this scheme to determine the level of traffic growth that this scheme could enable. That this scheme be subject to a full Environmental Impact Assessment.
Population & Human Health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and	X	This will facilitate car use.	

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	reduce health inequalities			
	To reduce crime and create safe environments	P+	Capacity improvements and enhanced access could provide road safety improvements, but it depends on the scheme design.	
Water & Soil	To improve the sustainable use of resources	P-	Capacity and access enhancements will probably mean new infrastructure is required which will require raw resource.	Check the County Council's use of recycled aggregate for new infrastructure.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Potential for construction waste.	What is the County Council's policy for construction waste disposal?
	To ensure the efficient use of water, and safeguard water resources	P-	M25 J19 and 20 are near to the River Gade and the Grand Union Canal. Additional capacity will mean more road surface and so increased surface run-off, which would result in heavy metals and particulates entering these water courses.	Any new infrastructure will need to adhere to SuDS.
	To reduce contamination, and safeguard soil quality and quantity	P-	An increase in capacity at these junctions would require some amount of land take which would mean some element of soil capping and loss of soil quantity. Any additional run-off if not implemented with SUDS would result in soil contamination.	Any new infrastructure will need to adhere to SuDS. Advise that an EIA is undertaken to determine impacts on the local soil environment.

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Air	To protect and enhance air quality and minimise noise pollution	X	Additional capacity and access improvements will enable more vehicle traffic which would add to poor air quality, and noise levels.	Recommend that an EIA is carried out to look at what mitigation could be done to deal with air pollution and noise issues.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	X	This scheme will facilitate car use.	
Climatic Factors	To adapt to the impacts of climate change such as flooding	U	Any new infrastructure design will need to consider flooding and surface run-off.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	X	This scheme will facilitate vehicle use and so in the short to medium term contribute to carbon emissions.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	This scheme will be adding a small amount of infrastructure to already existing significant motorway junctions, so will not have a significant adverse impact to the local landscape.	

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	To conserve and enhance the historic environment, heritage assets and their settings	P-	The Grove Hotel is just to the south of M25 J19 and is Grade II listed. Any additional air pollution could have a very small negative impact on the exterior of this building.	
Social Inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	O	Motorway junction improvements will not improve access to services.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic Development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	This scheme aims to improve congestion which will benefit local business.	
	To spread economic growth more evenly to benefit deprived areas	O		

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	To maintain the vitality and viability of existing centres	P+	Improving congestion levels at these 2 junctions may improve access into Watford, Kings Langley and Abbots Langley, for employment, retail and leisure.	
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Significant Positive Effects: This scheme is primarily for dealing with congestion issues at these junctions and access into the neighbouring towns, and so any improvements to congestion and journey times as a result of increased capacity would have benefits to local businesses and the local economy.

Significant Negative Effects: Adding capacity to already busy motorway junctions will have negative impacts on some aspects of the environment, in particular air quality and noise, as there is likely to be an increase in road traffic. An increase in emissions will not reduce greenhouse gases, it could also impact adversely on local biodiversity as there is a SSSI woodland nearby. Additional emissions could negatively impact on the outside of the Grade II listed Grove Hotel nearby. Adding capacity will also not benefit the promotion of more sustainable modes, it will just facilitate the use of the car.

Timescale: Short to medium term (5-10 years)

Temporary or Permanent: Permanent negative impacts as car use would be facilitated.

Likelihood of effects or impacts identified occurring: Medium, as there is a medium likelihood of funding as this would be classed as a major project.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Need to check Highways policy for the use of recycled aggregate and construction waste disposal.
- This would be classed as a major project so would be subject to a full Environmental Impact Assessment, which would be imperative due to the significant negative environmental impacts that this scheme could result in, and so if it was to be taken forward significant mitigation would be required.
- It is suggested that traffic modelling is undertaken to see what additional traffic that this scheme could generate.

Data Issues: Current and predicted traffic flow data.

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SCHEME SM2A: RELOCATION HEMEL STATION

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	<p>Dependent on the exact location for the proposed new station there could be a negative impact on the biodiversity on what is currently undeveloped land.</p> <p>The current station site would be developed for housing and employment so there would be no benefit on that site from the loss of the station.</p>	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and	O	As this scheme only concerns the moving of the station not improvements and enhancements of the station and the rail services there is no relationship link.	

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	reduce health inequalities			
	To reduce crime and create safe environments	P+	In the design of the new station building it would be possible to improve safety through lighting, CCTV, forecourt layout, and flow through the station building. Crime can be reduced through provision of secure cycle storage, modern AVM machines which are cash free, fencing to prevent trespass on the railway etc.	
Water and soil	To improve the sustainable use of resources	P-	New infrastructure would be required which would result in the need for raw materials.	Check the policy for use of recycled aggregates (HIAMP)
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Potential for construction waste.	Check the policy for recycling aggregates (HIAMP)
	To ensure the efficient use of water, and safeguard water resources	P-	The site of the proposed new station is close to the Grand Union Canal. Construction of a station building and forecourt and a link road would create more hard surfaces resulting in run off which could impact the water quality in the canal.	Advise that an EIA is taken for station relocations.

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	To reduce contamination, and safeguard soil quality and quantity	P-	An increase in capacity at these junctions would require some amount of land take which would mean some element of soil capping and loss of soil quantity. Any additional run-off if not implemented with SUDS would result in soil contamination.	Any new infrastructure will need to adhere to SuDS. Advise that an EIA is undertaken to determine impacts on the local soil environment.
Air	To protect and enhance air quality and minimise noise pollution	P-	The creation of the necessary access to the new station could have a negative impact on air quality and noise pollution unless the site is designed as a sustainable transport hub with bus interchange and walking and cycling being given priority.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	U	Rail is a sustainable transport mode and a new station in a more accessible location could encourage more rail travel. However, if the preferred mode of travel to the station remains the car there could be an increase in car journeys over short distances.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new design will need to consider the potential for flooding and surface water run-off.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	U	Although increased rail travel could have a positive impact on greenhouse gases if the station is inaccessible via sustainable modes the increase in car journeys would have a negative impact.	

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	To ensure the sustainable supply and use of energy	U	Through innovative design of any new station infrastructure it should be possible to ensure sustainable supply and use of energy.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	As the exact location of the development and the design is unknown at the time of the assessment it is not possible to make a determination.	
	To conserve and enhance the historic environment, heritage assets and their settings	O		Consult the HCC map of historic assets when deciding the site of the new station.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	O		
	To empower all sections of the community to participate in decision making and local action	O		

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The development of a new station with greater capacity and facilities for passengers could help to create a more vibrant economy. The freeing up for development of the old station site would also create opportunities for new homes and jobs.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O	The location of the new station is still a significant distance from the town centre and business park so would have no effect on the vitality of existing centres.	

Significant Positive Effects:

The provision of new station facilities has the potential to encourage more travel by rail and by sustainable modes to and from the station thereby reducing congestion on a heavily trafficked part of the network with the corresponding positive impacts on greenhouse gases and air quality.

Significant Negative Effects:

If the development is not designed as a sustainable transport hub the proposed new link road could generate more traffic and have a negative impact on air quality, greenhouse gases and noise pollution.

Timescale:

This project will almost certainly not be taken forward.

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Temporary or Permanent:

Impacts from the relocation of the station are permanent, it is uncertain at this stage what the impacts will be with people accessing this new station, and whether sustainable modes are used or if it facilitates further car use.

Likelihood of effects or impacts identified occurring:

Virtually none.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If this project were to go ahead it would have to be designed as a sustainable transport hub with facilities for walking, cycling and bus interchange integral and car use discouraged through demand management.
- Check the policy for use of recycled aggregates (HIAMP)
- Advise that an EIA is taken for station relocations.
- Any new infrastructure will need to adhere to SuDS.
- Consult the HCC map of historic assets when deciding the site of the new station.

Data Issues:

None.

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SCHEME SM2B: MODERATE ENHANCEMENT TO HEMEL STATION

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O		
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	O		
	To reduce crime and create safe environments	P+	By redesigning the station forecourt and access it would be possible to create a safer environment particularly for cyclists and pedestrians.	Give priority to pedestrians and cyclists when designing the layout of the forecourt and the access.

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			Improved cycle storage could reduce the potential for bike theft and vandalism.	Provide secure cycle storage which is well lit and covered by CCTV.
Water and soil	To improve the sustainable use of resources	U	New infrastructure would be required which would result in the need for raw materials.	Does the HIAMP include the use of recycled materials and recycling construction waste?
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Potential for construction waste.	Does the HIAMP include the use of recycled materials and recycling construction waste?
	To ensure the efficient use of water, and safeguard water resources	U	Not enough information on the project was available at the time of the assessment. There is potential to design the scheme to ensure that run off can be minimised and water can be collected or absorbed.	
	To reduce contamination, and safeguard soil quality and quantity	U	Insufficient information at the time of the assessment, however as this is a redevelopment of existing infrastructure rather than a new development impact should be minimal.	
Air	To protect and enhance air quality and minimise noise pollution	U	Dependent on the scope of the design. If priority is given to walking and cycling and improving public transport interchange there is limited potential to reduce car journeys to the station thereby having a positive impact on air quality and noise pollution.	Any redevelopment should prioritise sustainable transport modes over car journeys.

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	By improving access to the station for sustainable travel modes and encouraging more travel by train this scheme has the potential to reduce the need to travel by car.	Any redevelopment should prioritise sustainable transport modes over car journeys
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new design will need to consider the potential for flooding and surface water run-off.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	By improving access for sustainable travel modes and increasing the number of journeys by rail the scheme has the potential to reduce emissions from vehicular transport.	Any redevelopment should prioritise sustainable transport modes over car journeys
	To ensure the sustainable supply and use of energy	U	Details of the scheme were not available at the time of the assessment.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	No details of the design were available at the time of the assessment. The development has the potential to enhance the landscape as the current station forecourt is inefficient.	
	To conserve and enhance the historic environment, heritage assets and their settings	O		

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	O		
	To empower all sections of the community to participate in decision making and local action	U	Depends on the enhancements, provision of cycle parking and improvements to access by walking may empower people to make better travel choices.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	U	This is not an extensive scheme so is unlikely to have any impact on employment.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects:

This is a small scheme which has the potential to improve access for sustainable transport modes to the station.

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Significant Negative Effects:

None.

Timescale: Unlikely to go ahead.

Temporary or Permanent: Depends on the scheme details, but impacts could be permanent.

Likelihood of effects or impacts identified occurring:

Virtually none.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If the scheme were to go ahead it is important that priority be given to improving access for sustainable transport modes over the car.
- Give priority to pedestrians and cyclists when designing the layout of the forecourt and the access.
- Provide secure cycle storage which is well lit and covered by CCTV.

Data Issues: None

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SCHEME SM2C: SUBSTANTIAL ENHANCEMENT OF HEMEL STATION

SEATopic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	The proposed increase in car parking provision may increase congestion on the already congested A4251 which is adjacent to an area of common ground owned by the Boxmoor Trust.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The improved railway station should provide better access for walking and cycling so encourage more active travel to the station.	

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	To reduce crime and create safe environments	P+	The enhancements to the station should include better lighting, CCTV, cycle and footway improvements all of which will improve safety around the station and potentially reduce the risk of crime.	Personal safety and risk of crime must be properly considered when designing the new station and forecourt.
Water and soil	To improve the sustainable use of resources	U	Depending on the design of the station building and the materials used for the building and the forecourt it may be possible to increase the use of recyclable materials and clean energy sources.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	As above	
	To ensure the efficient use of water, and safeguard water resources	P+	There is potential to design a building and use materials in the construction of the forecourt which will allow efficient run off and drainage and reduce wastage.	Ensure materials used allow for effective run off When improving facilities for passengers consider efficient use of water e.g. in toilets, catering outlets etc.
	To reduce contamination, and safeguard soil quality and quantity	U	Depends on whether landtake is required for the car park expansion and footway.	

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Air	To protect and enhance air quality and minimise noise pollution	P-	Although the station enhancement should encourage more sustainable travel and should not impact on air quality or noise pollution the plan to significantly increase the car park capacity would lead to more queuing vehicles and therefore have an adverse effect on both air quality and noise pollution.	Access very carefully the need for an increase in car parking capacity over and above the revenue stream for Network Rail.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	The enhancements to the station should encourage more travel by rail and, if linked to improvements to walking and cycling routes and bus interchange to the station, reduce the need to travel by car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	As long as SuDS are followed.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P-	Although the station improvements and the improved walking and cycling links should have the effect of reducing greenhouse gases the location of the station in relation to residential and employment areas of the town means there is a need for car use to the station. The proposed increase in car parking capacity has the potential to increase the amount of greenhouse gases emitted.	Give careful consideration to the need for increased car park capacity and look instead at improving links for cyclist and passenger transport to the station, and electric vehicle charging points.

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	To ensure the sustainable supply and use of energy	P+	The railway line is electrified so an increase in the numbers using the trains will not result in an increase in use of energy. The provision of an increased number of electric charging points in the station car park will encourage the use of sustainable energy.	Ensure that electric charging points are a priority when redesigning the station facilities.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	The current station building is unattractive and does not blend in well with the surrounding area. There is an opportunity to design a building which is fit for purpose but is also aesthetically more attractive and in keeping with the location.	
	To conserve and enhance the historic environment, heritage assets and their settings	O		
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	By improving walking and cycling links and passenger transport services to and from the station from residential and employments area in the town there is the potential to improve access to work and education.	Rail travel costs are outside the control of HCC and can be a barrier to people on low incomes using rail as a means of accessing employment. It is important for HCC to lobby DfT and TOCs to ensure prices do not rise out of the reach of the majority of potential users.

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	To empower all sections of the community to participate in decision making and local action	P+	There should be the potential for the local community to be involved in the development of the station through stakeholder engagement from the district council and NR and the TOCs.	Develop a station travel plan.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	The redevelopment of the station will form part of a wider development of the site and the surrounding area for housing and employment under proposals set out in the Station Master Plan and Dacorum Local Plan. The station should form a Gateway to the town and enable sustainable growth.	
	To spread economic growth more evenly to benefit deprived areas	P+	The improved station and related development has the potential to spread economic growth to all areas of Hemel Hempstead including the more deprived areas.	
	To maintain the vitality and viability of existing centres	P+	The improved links from the station to the town centre should make access easier and therefore maintain or enhance the vitality and viability of the existing centre.	

Significant Positive Effects:

Rail travel has the potential to facilitate active travel and improvements to walking and cycling routes and interchanges should assist in achieving this. Rail travel is a sustainable mode and so does not contribute to air pollution or greenhouse gases. The improved station facilities should address capacity issues and allow for future growth of rail travel both into London for employment and also into Hemel Hempstead's employment areas.

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Significant Negative Effects:

The decision not to relocate the station does mean that it will remain on the edge of the town and therefore the need to travel by car will remain an issue. The proposal to significantly increase the car parking capacity could result in an increase in the number of car journeys to and from the station on an already very congested network.

Timescale:

Medium to long term for station and interchange improvements.

Temporary or Permanent:

Impacts could be temporary, it is dependent on any modal shift when accessing the station, or if car use is facilitated and this can vary day to day.

Likelihood of effects or impacts identified occurring:

This is dependent on scheme design.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Carefully consider the need for the increased car parking capacity at the station over and above as a revenue stream for Network Rail.
- Develop a station travel plan.
- Personal safety and risk of crime must be properly considered when designing the new station and forecourt.
- Ensure materials used allow for effective run off (SuDS).
- When improving facilities for passengers consider efficient use of water e.g. in toilets, catering outlets etc.
- Ensure that electric charging points are a priority when redesigning the station facilities.
- Rail travel costs are outside the control of HCC and can be a barrier to people on low incomes using rail as a means of accessing employment. It is important for HCC to lobby DfT and TOCs to ensure prices do not rise out of the reach of the majority of potential users.

Data Issues:

None.

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SCHEME SM4A: MAGIC ROUNDABOUT, BUS FOCUS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	If sufficient modal shift can be achieved this will reduce the numbers of cars on the road and therefore reduce emissions and improve air quality which will be of benefit to local flora and fauna.	Use of recycled materials and sustainable construction practices where possible.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Prioritisation of buses could encourage active travel, as a bus journey will also involve walking as part of the journey. Better bus priority can improve access to services including access to leisure opportunities.	Promote and market bus services which benefit from improved bus priority to increase its use.

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	To reduce crime and create safe environments	O	Bus priority lanes will are unlikely to have any impact on reducing crime and creating a safer environment.	Consideration could be given to CCTV, lighting and other initiatives generally to improve safety and perception of safety.
Water and soil	To improve the sustainable use of resources	P+	This scheme should decrease the need for resources to maintain the roads, as fewer cars should be on this roundabout and surrounding roads, but any new significant bus priority infrastructure would require some construction material.	Use of recycled materials and sustainable construction practices where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Construction required for implementing bus priority may produce waste.	Promote sustainable construction practices, use recycled construction materials and minimise waste.
	To ensure the efficient use of water, and safeguard water resources	P+	Any new bus priority infrastructure will need to adhere to SUDs, which could improve the current drainage/surface runoff of this roundabout.	
	To reduce contamination, and safeguard soil quality and quantity	U	As above – by adhering to SUDS, soil contamination from road runoff will be avoided/ minimised.	

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Air	To protect and enhance air quality and minimise noise pollution	P+	Bus priority may encourage a modal shift to buses which could reduce traffic growth and improve air quality. A bus network using fully clean and quiet technology will also improve air quality and noise pollution.	Assist bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Bus use is a sustainable mode, this scheme aims to increase the usage of buses and reduce traffic growth and the need to travel by car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Any new infrastructure for bus priority measures will need to adhere to SUDs to ensure that the road can deal with the surface runoff, and minimise flooding incidents.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	A reduction in car use and vehicles on the road though modal shift to buses will reduce vehicular emissions.	This can be improved by assisting bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
	To ensure the sustainable supply and use of energy	U	This is dependent on the speed that bus fleets are renewed to cleaner technology.	This can be improved by assisting bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	Bus priority infrastructure could provide some public realm improvements such as to bus stops and more attractive road surfacing, but will need to be mindful of not producing additional street clutter.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Modal shift to bus use, will provide air quality, noise, vibration, congestion benefits all of which would be a positive impact on any local historic assets in the vicinity of this roundabout.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	This scheme highlights the need to improve bus journeys by making journey times more attractive. The scheme aims to improve access to Maylands Business Park aiding people in getting to work.	
	To empower all sections of the community to participate in decision making and local action	P+	By facilitating certain groups of society in having access to better travel opportunities, this may empower them to make better travel choices.	The protected equalities groups should always be considered.

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The scheme focusses on improving access to Maylands Business park and the town centre.	
	To spread economic growth more evenly to benefit deprived areas	P+	Improved bus priority could benefit deprived areas in gaining access to employment. Improved journey times and better access can particularly benefit those without access to a car.	
	To maintain the vitality and viability of existing centres	P+	The scheme will improve access to the town centre for people who may have had difficulties before e.g. no access to a private vehicle. Sufficient modal shift may reduce congestion in town centres.	

Significant Positive Effects:

Improving bus priority at this key roundabout in Hemel Hempstead could provide an opportunity to achieve modal shift, and change people's journeys to work and school, by reducing the need to travel by car. This in turn would have additional benefits to local biodiversity, emissions, air quality, health, landscape & townscape, by encouraging active travel and by using cleaner technology. By improving the bus network, this can significantly improve accessibility and so work towards tackling social exclusion, and spread economic growth to the more deprived areas of the county.

Significant Negative Effects:

No significant negative effects, however, any construction should be sustainable and reduce the impact to the environment.

Timescale: Medium Term (2-5 Years)

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Temporary or Permanent:

Temporary, as this scheme is dependent on behavioural change and people's personal travel choices day to day.

Likelihood of effects or impacts identified occurring:

Medium likelihood of funding.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Use of recycled materials and sustainable construction practices where possible.
- Promote and market bus services which benefit from improved bus priority to increase its use.
- Consideration could be given to CCTV, lighting and other initiatives generally to improve safety and perception of safety.
- Promote sustainable construction practices, use recycled construction materials and minimise waste.
- Assist bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
- This can be improved by assisting bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
- The protected equalities groups should always be considered.

Data Issues:

- Monitoring use of low emission bus vehicles
- People's perception of bus transport and bus priority improvements
- Improvements to bus service journey time improvements

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SCHEME SM4B: MAGIC ROUNDABOUT, MINOR CYCLE IMPROVEMENTS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	If sufficient modal shift can be achieved this will reduce the numbers of cars on the road and therefore reduce emissions and improve air quality which will be of benefit to local flora and fauna.	Recycled materials and sustainable construction practices should be used for any new cycle infrastructure where possible.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Improvements can encourage more people to cycle, increasing active travel and peoples' health.	Promote and market new cycling infrastructure and the benefits of cycling as a mode of travel.

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	To reduce crime and create safe environments	P+	Improved cycling infrastructure could provide better quality facilities for cyclists and improve their road safety.	Consideration could be given to CCTV, lighting and other initiatives generally to improve safety and perception of safety.
Water and soil	To improve the sustainable use of resources	P+	This scheme should decrease the need for resources to maintain the roads, as fewer cars should be on the roads if more people choose to cycle. New cycle infrastructure might require some construction material.	Use of recycled materials and sustainable construction practices where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Construction required for implementing new cycle infrastructure might produce waste.	Promote sustainable construction practices, use recycled construction materials and minimise waste.
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		As above – by adhering to SUDS, soil contamination from road runoff will be mitigated.
Air	To protect and enhance air quality and minimise noise pollution	P+	Encourage a modal shift to cycling could reduce traffic growth and improve air quality and reduce noise from vehicular traffic.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Cycling is a sustainable transport mode, this scheme aims to increase the use of bicycles and reduce traffic growth and the need to travel by car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	O	Only applicable if new cycle lanes are implemented in which case, new lane infrastructure will need to adhere to SUDs however, this scheme relates only to minor improvements so is unlikely.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	A reduction in car use and vehicles on the road though modal shift to buses will reduce vehicular emissions.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	O		
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Any modal shift to sustainable modes should improve the local environment with regards to air quality, noise, vibrations which is of benefit to any local historic assets.	

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Better infrastructure may provide better cycling access and aiding people without access to a car in getting to work.	Any new infrastructure should be publicised widely in Hemel Hempstead, so that residents are aware of their travel options i.e. not just a press release.
	To empower all sections of the community to participate in decision making and local action	P+	By facilitating certain groups of society in having access to better travel opportunities, this may empower them to make better travel choices.	Impacts on the protected equalities groups should always be considered in any scheme.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The scheme focusses on improving access to Maylands Business park and the town centre.	
	To spread economic growth more evenly to benefit deprived areas	P+	Improved cycling could benefit deprived areas in gaining access to employment. Improved journey times and better access can particularly benefit those without access to a car.	
	To maintain the vitality and viability of existing centres	P+	The scheme will improve access to the town centre for people who may have had difficulties before e.g. no access to a private vehicle. Sufficient modal shift	

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			may reduce congestion in town centres.	
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Significant Positive Effects:

Improving cycle infrastructure could provide an opportunity to achieve modal shift, and change people's journeys to work and school, by reducing the need to travel by car. This in turn would have additional benefits to local biodiversity, emissions, air quality, health, landscape & townscape, by encouraging active travel.

Significant Negative Effects:

No significant negative affects however, any construction should be sustainable and reduce the impact to the environment.

Timescale: Medium Term (2-5 Years)

Temporary or Permanent:

The physical impacts of any new cycle infrastructure would be permanent i.e. habitat loss, soil capping, but impacts from increased cycle use could be temporary as this is dependent on travel behaviour, and use could be seasonal or weather dependent.

Likelihood of effects or impacts identified occurring: Low likelihood for funding.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Recycled materials and sustainable construction practices should be used for any new cycle infrastructure where possible.
- Promote and market new cycling infrastructure and the benefits of cycling as a mode of travel.
- Consideration could be given to CCTV, lighting and other initiatives generally to improve safety and perception of safety.
- Use of recycled materials and sustainable construction practices where possible.
- Promote sustainable construction practices, use recycled construction materials and minimise waste.
- Only applicable if new cycle lanes are implemented in which case, new lane infrastructure will need to adhere to SUDs however, this scheme relates only to minor improvements so is unlikely.
- The protected equalities groups should always be considered.

Data Issues: Monitoring uptake of cycling due to minor improvements.

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SCHEME SM5A: A414 MULTI-PURPOSE STREET

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	<p>The direct locality is not a key biodiversity area.</p> <p>Proposal scheme is for speed reduction, crossings, bus priority and public realm improvements on an existing A-road located within an urban area.</p> <p>There is a SSSI located at Roughdown Common (West of the railway line at Two Waters) but it is not anticipated this scheme itself located sufficiently close to impact upon the site.</p>	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for	✓	Scheme intends to change the A414 from a vehicle-dominated expressway to a multi-modal 'street' providing greater equality for all transport users	Publicity will be needed to encourage use of the cycle/ pedestrian infrastructure.

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	all, and to improve the physical and mental health of the population, and reduce health inequalities		including pedestrians and cyclists thereby encouraging active travel.	
	To reduce crime and create safe environments	U	Creating more of a 'street' with reduced speed limit, some capacity reduction, more at-grade crossings, public realm enhancements will create a safer environment. People will feel safer as people travel more slowly by a range of modes, this can be a deterrent for crime because they are more likely to be observed/ witnessed, depending on the lighting scheme.	Consideration needs to be given to the lighting of any new pedestrian / cycle infrastructure.
Water and soil	To improve the sustainable use of resources	P+	Encouraging travel by cycling and walking would potentially reduce car (therefore fuel) use. Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of materials/ sustainable construction practices to be applied unknown at time of assessment.	Consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.

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	To ensure the efficient use of water, and safeguard water resources	U	Depends on the projects implemented as part of this scheme, exact details unknown at time of assessment. Water run-off and contamination during any construction may be an issue.	Consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.
	To reduce contamination, and safeguard soil quality and quantity	U	Depends on extent of new construction and the projects implemented as part of this scheme, exact details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of Contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	Improvements to air quality and traffic noise pollution would be achieved if sufficient modal shift occurs through improvements to pedestrian and cycle infrastructure.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Scheme intends to change the A414 from a vehicle-dominated expressway to a multi-modal 'street' providing greater equality for all transport users including pedestrians and cyclists.	

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Climatic factors	To adapt to the impacts of climate change such as flooding	U	Details of projects and extent of any new works unknown at time of assessment.	Consideration should be given to opportunities and requirements to reduce surface water run-off, SUDs when any contracts for works are drafted.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Scheme intends to change the A414 from a vehicle-dominated expressway to a multi-modal 'street' providing greater equality for all transport users including pedestrians and cyclists thereby encouraging non-car modes. Bus priority lanes are proposed, providing more attractive journey times for buses running between Hemel Hempstead station, town centre and Maylands. Reduction of greenhouse gases emitted by vehicular transport would be achieved if sufficient modal shift occurs.	
	To ensure the sustainable supply and use of energy.	U	Details of the projects are unknown at time of assessment.	Efficient new lighting as well as infrastructure (including signals) required.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Scheme intends to change the A414 from a vehicle-dominated expressway to a multi-modal 'street' providing greater equality for all transport users including pedestrians and cyclists. Improvements to the public realm and creation of a multi-modal street could help to enhance the townscape.	

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	To conserve and enhance the historic environment, heritage assets and their settings	U	The scheme intends to change the A414 from a vehicle-dominated expressway to a multi-modal 'street' providing greater equality for all transport users including pedestrians and cyclists. These changes would potentially enhance the any heritage/ potential heritage sites along this section of the A414 .	Consideration needs to be given to any heritage assets and historic environment along this section of the A414. Consult with the archaeologists' in the environment department before decisions are made.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all.	P+	Creating opportunities to travel by a greater variety of modes may help to improve access to services and facilities for all.	
	To empower all sections of the community to participate in decision making and local action	P+	Public consultation on the schemes within the GTP should empower people to participate in decision making. Creating opportunities to travel by a greater variety of modes may help to improve access to services and facilities for all and assist in ability to participate.	Publicity will be needed to encourage participation in the consultation as well as the use of the cycle/ pedestrian infrastructure.

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Bus priority lanes on the A414 providing more attractive journey times for buses running between Hemel Hempstead station, town centre and Maylands, as well as creating opportunities to travel by a greater variety of modes, may help to improve access to labour markets and employment.	Improvements to bus services need to be advertised.
	To spread economic growth more evenly to benefit deprived areas	P+	Creating opportunities to travel by a greater variety of modes may help to improve access to services and facilities for all.	
	To maintain the vitality and viability of existing centres	✓	<p>Bus priority lanes on the A414 providing more attractive journey times for buses running between Hemel Hempstead station, town centre and Maylands should help to maintain the vitality and viability of Hemel town centre.</p> <p>Creating opportunities to travel by a greater variety of modes along the route of the A414 to the Plough roundabout should also help make improve access to the town centre.</p>	Improvements to bus services need to be advertised.

Significant Positive Effects: This scheme could help the vitality and viability of the existing town centre by providing more attractive bus journey times between the station, town centre and Maylands. More attractive travel times to Maylands Business Park may help with access to labour markets. It will improve travel choice and encourage more active travel.

Significant Negative Effects: None

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Timescale: If delivered in isolation 5-10 years

Temporary or Permanent Impact: Permanent

Likelihood of effects or impacts identified occurring: Likely but ultimately depends upon the detail and how well it is implemented.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Publicity will be needed to encourage use of the cycle/ pedestrian infrastructure as well as to participate in the consultation on the GTP document.
- Improvements to bus services need to be advertised.
- Consideration needs to be given to the following and whether or not any of the matters need to be included in any works contracts:
 - Large grade separated junctions to increase capacity and journey times for motorists
 - energy efficient lighting schemes
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and the need to guard against contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - reducing surface water run off
 - impact on any heritage assets or the historic environment along this section of the A414.

Data Issues:

- Current and predicted traffic flow and modal split data.

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SCHEME SM5B: A414 MINIMAL CHANGE AND NORTHERN LINK ROAD

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U/P-	The proposed route of any link road is not available at the time of the assessment. There is a key area of biodiversity around Piccotts End and Leighton Buzzard Road.	Consideration will need to be given to the location of any new works/links in relation to the key biodiversity area to the north of the town?
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P-	A new link between the M1 and A41 either as a strategic link or series of local links is unlikely to assist with opportunities for a healthy lifestyle or improve health.	

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	To reduce crime and create safe environments	U/O	A new link between the M1 and A41 would not appear to directly relate to deterring crime or creating safe environments.	
Water and soil	To improve the sustainable use of resources	U	Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	U	Details unknown at time of assessment. Water run-off and contamination during any construction may be an issue.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.

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	To reduce contamination, and safeguard soil quality and quantity	U	Depends on extent of new construction forming part of this scheme, exact details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of Contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P-	Any new road link whether a strategic one of series of local links is likely to encourage car trips potentially increasing pollution and noise. Facilities for alternative modes are not mentioned.	Consideration should be given to air quality and noise likely to be generated as part of this scheme. Attention should be paid to the policies in the draft LTP4: policy 1 transport user hierarchy; policies 7&8 active travel; policy 19 emissions reduction; policy 20 air quality; policy 21 environment.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P-	Scheme details available to not include mention of any facilities for sustainable modes or reducing the need to travel by car. New link may encourage car trips.	Attention should be paid to the policies in the draft LTP4: policy 1 transport user hierarchy; policies 7&8 active travel; policy 9 buses; policy 12 network management ; policy 13 new roads and junctions.

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Climatic factors	To adapt to the impacts of climate change such as flooding	U	Details of projects and extent of any new works unknown at time of assessment.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P-	.New link may encourage car trips	Consideration needs to be given to the policies in the draft LTP4
	To ensure the sustainable supply and use of energy	U	Details of the scheme are unknown at time of assessment.	Consideration should be given to the efficiency of any new lighting and infrastructure (including signals).
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-/U	A new road link is unlikely to enhance the townscape.	Consideration needs to be given to the policies in the draft LTP4
	To conserve and enhance the historic environment, heritage assets and their settings	U/P-	Although details are unknown at the time of the assessment, a new road link is unlikely to enhance any heritage assets in the location. (Scheduled ancient monument: Roman Villa in Home, Gadebridge Park)	Consideration needs to be given to any heritage assets and historic environment in the location of any new link.

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	U	A new link may create access to some community facilities however the location and connections which may be created are unknown at the time of the assessment. New road links may not help address issues for those without access to a car. No details regarding infrastructure for alternative modes along the link are available.	Infrastructure for alternative modes should be considered.
	To empower all sections of the community to participate in decision making and local action	P+/U	Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as the use of the cycle/ pedestrian infrastructure. Infrastructure for alternative modes should be considered along the proposed link route to enable use by those without access to a car.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	A new link road may increase accessibility to employment and labour markets.	

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	To spread economic growth more evenly to benefit deprived areas	P+	Details of the scheme are not known at the time of the assessment. A new link road may increase accessibility to employment.	
	To maintain the vitality and viability of existing centres	U	Location of the new link is unknown at the time of the assessment.	

Significant Positive Effects:

A new link may increase access to employment and labour markets.

Significant Negative Effects:

- The proposed route of any link road is not available at the time of the assessment. There is a key area of biodiversity around Piccotts End and Leighton Buzzard Road. Consideration will need to be given to the location of any new works/links in relation to the key biodiversity area to the north of the town.
- Although details are unknown at the time of the assessment, a new road link is unlikely to enhance any heritage assets in the location. (Scheduled ancient monument: Roman Villa in Home, Gadebridge Park)

A new road link may not assist with :

- healthy lifestyles
- reducing health inequalities
- protecting or enhancing air quality
- minimising noise pollution
- improving choice and use of sustainable modes
- reducing car travel
- reducing greenhouse gases from vehicular transport
- protecting or enhancing the townscape or any green spaces

Timescale: 5-10 years, assuming this scheme would be delivered at the time of SM5a (in place of 5a)

Temporary or Permanent Impact: permanent impact from new infrastructure.

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Likelihood of effects or impacts identified occurring: Likely if the scheme is purely comprised of additional road link/s

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

Consideration should be given to the following and included where necessary when any contracts for works are drafted.

- sustainable use of resources
- minimising construction waste and recycling construction materials
- SUDS and contamination of ground water and/or water courses
- reduction of contamination and safeguarding of soil quality and quantity
- air quality and noise pollution likely to be generated as part of this scheme
- reduction of surface water run off
- efficiently of any new lighting as well as infrastructure (including signals) .
- any heritage assets and historic environment in the location of any new link
- inclusion of infrastructure for alternative modes
- Publicity to encourage participation in the consultation

Attention should be paid to the policies in the draft LTP4.

Data Issues: None.

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SCHEME SM5C: A414 CAR THROUGHFARE ENHANCEMENT INCLUDING GRADE SEPARATION

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O/P-	<p>The direct locality does not appear to be identified as a key biodiversity area. Large grade separated junctions to increase capacity and journey times for motorists may act as a barrier for urban wildlife or result in damage. There is a SSSI located at Roughdown Common (West of the railway line at Two Waters) however it is not anticipated this scheme itself located sufficiently close to impact upon the site.</p>	<p>Consideration of existing flora/fauna and any habitat disruption would be needed. Consult with biodiversity team.</p>
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and	O/P-	<p>Increased road capacity is unlikely to assist with opportunities for a healthy lifestyle or improve health.</p>	

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	mental health of the population, and reduce health inequalities.			
	To reduce crime and create safe environments	O/U	Large grade separated junctions to increase capacity and journey times for motorists would not directly relate to deterring crime or creating safe environments.	
Water and soil	To improve the sustainable use of resources	P-	Increasing capacity and for motorists is likely to encourage car use and require materials for construction.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	U	Details unknown at time of assessment. Water run-off and contamination during any construction may be an issue.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against

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				contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.
	To reduce contamination, and safeguard soil quality and quantity	U	Details of construction required to convert existing junctions unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P-	Increasing capacity for car journeys is likely to encourage car trips potentially increasing pollution and noise. Facilities for alternative modes are not mentioned as being part of the scheme.	Consideration should be given to air quality and noise likely to be generated as part of this scheme. Attention should be paid to the policies in the draft LTP4: policy 1 transport user hierarchy; policies 7&8 active travel; policy 19 emissions reduction; policy 20 air quality; policy 21 environment.
	To improve the choice of sustainable transport modes, encourage their use,	P-	Scheme details available to not include mention of any facilities for sustainable modes or reducing the need to travel by car. A scheme to increase road capacity is likely to encourage car trips.	Attention should be paid to the policies in the draft LTP4: policy 1 transport user hierarchy; policies 7&8 active travel; policy 9 buses;

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	and reduce the need to travel by car			policy 12 network management ; policy 13 new roads and junctions.
Climatic factors	To adapt to the impacts of climate change such as flooding	U/P-	A scheme to increase road capacity is unlikely to help with climate change issues and may result in increased water run-off and flooding.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P-	Increasing road capacity may encourage car trips	Consideration needs to be given to the policies in the draft LTP4
	To ensure the sustainable supply and use of energy	U	Details of the scheme are unknown at time of assessment.	Consideration should be given to the efficiency of any new lighting and infrastructure (including signals).
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	Large grade separated junctions are likely to be detrimental to the existing townscape.	Townscape needs to be considered when designing any new junctions
	To conserve and enhance the historic environment, heritage assets and their settings	U/P-	Large grade separated junctions are likely to be detrimental to any heritage assets in the vicinity.	Consideration needs to be given to any heritage assets and historic environment in the location of any works.

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	U	<p>Changing existing junctions to large grade separated junctions is unlikely to improve access to services and facilities for all. Although it may help journey times for those who can already access such services by car.</p> <p>No details regarding infrastructure for alternative modes along the link are available</p>	Infrastructure for alternative modes should be considered.
	To empower all sections of the community to participate in decision making and local action	U/P+	Public consultation on the schemes within the GTP should empower people to participate in decision making.	<p>Publicity will be needed to encourage participation in the consultation.</p> <p>Infrastructure for alternative modes should be considered.</p>
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Large grade separated junctions and increased road capacity may improve journey times and increase accessibility to employment and labour markets.	

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	To spread economic growth more evenly to benefit deprived areas	U	Details of the scheme are not known at the time of the assessment. Large grade separated junctions and increased road capacity may increase accessibility to employment however as this scheme is proposed at existing junctions it is unlikely to create any new links.	
	To maintain the vitality and viability of existing centres	P+	Increased road capacity between Green Lane and the Plough roundabout would potentially help maintain the viability of the town centre.	

Significant Positive Effects:

Large grade separated junctions and increased road capacity may increase accessibility to employment and labour markets and help maintain the viability of the town centre

Significant Negative Effects:

There is a SSSI located at Roughdown Common (West of the railway line at Two Waters) however it is not anticipated this scheme itself located sufficiently close to impact upon the site.

Large grade separated junctions and increased road capacity may not assist with:

- Protecting/enhancing biodiversity
- healthy lifestyles
- reducing health inequalities
- sustainable use of resources
- protecting or enhancing air quality
- minimising noise pollution
- improving choice and use of sustainable modes
- reducing car travel
- reducing greenhouse gases from vehicular transport

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- protecting or enhancing the townscape or any green spaces

Timescale:

5-10 years, assuming this scheme would be delivered at the time of SM5a (in place of 5a)

Temporary or Permanent Impact:

Permanent.

Likelihood of effects or impacts identified occurring:

Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

Consideration should be given to the following and included where necessary when any contracts for works are drafted.

- Existing flora/fauna and any habit disruption
- sustainable use of resources
- minimising construction waste and recycling construction materials
- SUDS and contamination of ground water and/or water courses
- reduction of contamination and safeguarding of soil quality and quantity
- air quality and noise pollution likely to be generated as part of this scheme
- reduction of surface water run off
- efficiency of any new lighting and infrastructure (including signals).
- Impact on townscape
- any heritage assets and historic environment in the location of any works
- inclusion of infrastructure for alternative modes
- Publicity to encourage participation in the consultation

Attention should be paid to the policies in LTP4.

Data Issues: None.

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SCHEME SM6A: NEW HEMEL EASTERN SPINE ROAD (CAR BASED)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	X	Any road scheme has the potential to negatively impact on biodiversity.	Follow all the recommendations in the new HIAMP and the new Roads in Herts Design Guide.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	X	This does <i>not</i> have the potential to encourage people to walk and cycle to and from Maylands to employment, because it is car based.	

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	To reduce crime and create safe environments	P-	Being car based, this has the potential to create unsafe environments	.
Water and soil	To improve the sustainable use of resources	X	A new spine road will require construction material.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	There will be construction waste, it depends on how this is disposed of.	
	To ensure the efficient use of water, and safeguard water resources	U	Depends if SUDs principles are adhered to. The flood risk management map should be referred to when designing the road. In this case there doesn't appear to be previous flooding incidents on this site.	
	To reduce contamination, and safeguard soil quality and quantity	U	Depends if SUDs principles are adhered to.	The new HIAMP should offer guidance on the construction methods to use to safeguard water resources.
Air	To protect and enhance air quality and minimise noise pollution	U/P+	With a new spine road being built there could be fewer vehicles on the nearby existing road to Maylands, but soon it could also encourage more car movement because people will find the roads a little emptier at first, leading to more congestion and more pollution.	The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	X		
Climatic factors	To adapt to the impacts of climate change such as flooding	U	This will depend on scheme design and any SuDS implemented.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	X	With a new spine road being built there could be fewer vehicles on the nearby existing road to Maylands, but soon it could also encourage more car movement because people will find the roads a little emptier at first, leading to more congestion and more carbon dioxide emissions.	The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists.
	To ensure the sustainable supply and use of energy	U		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	O	It is not likely to add extra negative or positive impact on the historic environment because the new spine road will lie between an already congested road area.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	It is not likely to add extra negative or positive impact on the historic environment because the new spine road will lie between an already congested road area.	

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	X		The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists.
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	U		
	To spread economic growth more evenly to benefit deprived areas	P-	This scheme mainly provides improvements for car users.	
	To maintain the vitality and viability of existing centres	O		

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Significant Positive Effects:

None.

Significant Negative Effects:

Building another road for car use is going to increase all the negative effects associated with road building – for example air pollution, noise, no encouragement for sustainable transport and therefore no associated benefit for social inclusion and active travel.

Timescale:

This scheme has been adapted for multi-modal transport use, this assessment is for car based use only.

Likelihood of effects or impacts identified occurring:

Scheme amended to be multi-modal transport use, this assessment is for car based use only.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

Follow all the recommendations in the new HIAMP and the new Roads in Herts Design Guide,
The new HIAMP should offer guidance on the construction methods to use to safeguard water resources,
The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists.

Data Issues:

Will the COMET model confirm that this spine road will not become a future rat run if it is not a multi-modal scheme?

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SCHEME SM6: NEW HEMEL EASTERN SPINE ROAD MULTIMODAL (DESIGNED NOT TO BE A BYPASS TO MAYLANDS).

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	Any road scheme has the potential to negatively impact on biodiversity. The spine road is going to be multi-modal so not as bad as it could be if it was purely car based.	Follow all the recommendations in the new HIAMP and the new Roads in Herts Design Guide.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Being a multi-modal road, this has the potential to encourage people to walk and cycle to and from Maylands to employment.	The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists.

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	To reduce crime and create safe environments	P+	Being a multi-modal road, this has the potential to improve safety for pedestrians and cyclists to walk and cycle to and from Maylands to employment, provided that the road is designed with the transport hierarchy in mind so that pedestrians and cyclists are given priority over cars.	The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists.
Water and soil	To improve the sustainable use of resources	O		
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U		
	To ensure the efficient use of water, and safeguard water resources	U	Depends if SUDs principles are adhered to. The flood risk management map should be referred to when designing the road. In this case there doesn't appear to be previous flooding incidents on this site.	The flooding team will be able to advice on water use and the new HIAMP should offer guidance on the construction methods to use to safeguard water resources.
	To reduce contamination, and safeguard soil quality and quantity	U	Depends if SUDs principles are adhered to.	The new HIAMP should offer guidance on the construction methods to use to safeguard water resources.

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Air	To protect and enhance air quality and minimise noise pollution	U/P+	With a new spine road being built there will be fewer vehicles on the nearby existing road to Maylands. Provided the new multi-modal road is built with cyclists and pedestrians in mind and the transport hierarch policy is implemented, it will be quieter and there will be less harmful air pollution from road emissions.	The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	With a new spine road being built for employees to get to their workplace in Maylands, there will be fewer vehicles on the nearby existing road. Provided the new multi-modal road is built with cyclists and pedestrians in mind and the transport hierarch policy is implemented, it will be quieter and there will be less harmful air pollution from road emissions.	The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists
Climatic factors	To adapt to the impacts of climate change such as flooding	U		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	With a new spine road being built for employees to get to their workplace in Maylands, there will be fewer vehicles on the nearby existing road. Provided the new multi-modal road is built with cyclists and pedestrians in mind and the	The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists.

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			transport hierarch policy is implemented, there will be a reduction in carbon dioxide emissions.	
	To ensure the sustainable supply and use of energy	U		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	It is not likely to add extra negative or positive impact on the historic environment because the new spine road will lie between an already congested road area.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	It is not likely to add extra negative or positive impact on the historic environment because the new spine road will lie between an already congested road area.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Maylands is an area which offers work opportunities to nearby residents. By building a new multi-modal spine road people who cannot afford cars or who would rather walk or cycle to work can safety access paid work in Maylands. This includes those working non-peak hours and shift workers.	The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists.
	To empower all sections of the community to participate in	P+		

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	decision making and local action			
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Maylands is an area which offers work opportunities to nearby residents. By building a new multi-modal spine road people who cannot afford cars or who would rather walk or cycle to work can safety access paid work in Maylands. This includes those working non-peak hours and shift workers.	
	To spread economic growth more evenly to benefit deprived areas	P+	Maylands is an area which offers work opportunities to nearby residents. By building a new multi-modal spine road people who cannot afford cars or who would rather walk or cycle to work can safety access paid work in Maylands. This includes those working non-peak hours and shift workers.	
	To maintain the vitality and viability of existing centres	P+	Maylands is an area which offers work opportunities to nearby residents. By building a new multi-modal spine road people who cannot afford cars or who would rather walk or cycle to work can safety access paid work in Maylands. This includes those working non-peak hours and shift workers.	

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Significant Positive Effects: Being a multi-modal road, this has the potential to improve safety for pedestrians and cyclists to walk and cycle to and from Maylands to employment, provided that the road is designed with the transport hierarchy in mind so that pedestrians and cyclists are given priority over cars. The scheme will also have benefits for social inclusion in that there is low costs associated with active travel so people without cars can access work opportunities, which will increase empowerment and vitality of towns. Emissions from vehicles will also be reduced which will have a beneficial impact on human health and the environment.

Significant Negative Effects: None

Timescale: 5-10 years

Temporary or Permanent:

Temporary as impacts would be dependent on the numbers of people using sustainable modes and this can vary and be seasonal.

Likelihood of effects or impacts identified occurring: dependant on funding

Recommendation for mitigation for adverse effects and/or enhancement or positive effects: Follow all the recommendations in the new HIAMP and the new Roads in Herts Design Guide. The new spine road must be designed in line with LTP4 policy on the transport hierarchy and allow priority to pedestrians and cyclists. The flooding team will be able to advice on water use and the new HIAMP should offer guidance on the construction methods to use to safeguard water resources.

Data Issues: None.

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SCHEME SM7A: M1 J9 RELOCATION (SCHEME NOT SELECTED)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	X	Moving a motorway junction to another site would have significant impacts on local biodiversity both flora and fauna, with the loss of habitats, and increases in pollution and noise.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	X	Moving a motorway junction would enable car use, but would severely impact on the local residents near the new location for air and noise pollution.	

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	To reduce crime and create safe environments	U	Question mark on whether or not moving a major motorway junction would improve or worsen road safety.	
Water and soil	To improve the sustainable use of resources	X	Moving a major motorway junction to another site would require significant amounts of construction materials.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	X	Moving a major motorway junction would produce a significant amount of construction waste.	
	To ensure the efficient use of water, and safeguard water resources	P+	Any new road infrastructure would need to adhere to SUDS to ensure that any surface run-off is captured.	
	To reduce contamination, and safeguard soil quality and quantity	X	Creating a new motorway junction would result in a significant amount of soil capping.	
Air	To protect and enhance air quality and minimise noise pollution	X	Moving a major motorway junction will just transfer the air quality and noise issues to another location.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	X	The scheme will facilitate car use.	

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Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new road infrastructure would need to adhere to SUDS.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	X	The scheme would facilitate vehicle use.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	X	Moving a motorway junction to a new location would significantly impact on the landscape and green space.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	A new junction could improve access to any local historic assets, but the noise and pollution would have a negative impact.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	O		

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	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	A new motorway junction at this site would benefit local employment centres i.e. Maylands.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	P+	Easier access into Hemel Hempstead could provide benefits to the town centre.	

Significant Positive Effects: The only positive effect would be for the local economy, with easier access to employment and town centre.

Significant Negative Effects: The relocation of a major motorway junction would just transfer current environmental issues to another location, and would impact significantly on air quality, biodiversity, emissions, resources, soil, and landscape.

Timescale: Medium to long term.

Likelihood of effects or impacts identified occurring: Dependant on funding levels.

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Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

This scheme has not been identified as a preferred scheme.

Data Issues: None.

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SCHEME SM7B: (M1 JNC 8A, ADDITIONAL JUNCTION)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	X	Creating a new motorway junction would have significant impacts on local biodiversity both flora and fauna, with the loss of habitats, and increases in pollution and noise.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	X	A new motorway junction would enable car use, but would severely impact on the local residents near the new location for air and noise pollution.	

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	To reduce crime and create safe environments	P-	Introducing new slip roads onto an existing motorway could increase the risk of incidents/accidents at these locations.	
Water and soil	To improve the sustainable use of resources	X	Creating a new major motorway junction would require significant amounts of construction materials.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	X	Creating a new major motorway junction would produce a significant amount of construction waste.	
	To ensure the efficient use of water, and safeguard water resources	P+	Any new road infrastructure would need to adhere to SUDS to ensure that any surface run-off is captured.	
	To reduce contamination, and safeguard soil quality and quantity	X	Creating a new motorway junction would result in a significant amount of soil capping.	
Air	To protect and enhance air quality and minimise noise pollution	X	Creating a new major motorway junction would increase air and noise pollution in that location.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	X	The scheme will facilitate car use.	

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Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new road infrastructure would need to adhere to SUDS.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	X	The scheme would facilitate vehicle use.	
	To ensure the sustainable supply and use of energy	X	Lighting requirements and it will facilitate car use and fuel consumption.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	X	Creating a new motorway junction would significantly impact on the landscape and green space.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	A new junction could improve access to any local historic assets, but additional noise and pollution could have a negative impact.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	O		

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	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	A new motorway junction at this site would benefit local employment centres i.e. Maylands.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	P+	Easier access into Hemel Hempstead could provide benefits to the town centre.	

Significant Positive Effects:

The only positive effect would be for the local economy, with easier access to employment and town centre.

Significant Negative Effects:

The creation of a new major motorway junction would create a number of environmental issues for that location, and would impact significantly on air quality, biodiversity, emissions, resources, soil, and landscape.

Timescale:

Medium to long term.

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Temporary or Permanent: Permanent impacts from new road capacity as it would facilitate car use

Likelihood of effects or impacts identified occurring:

Medium, dependant on funding levels.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Any major scheme such as this would require a detailed Environmental Impact Assessment, which would consider all of the issues raised above and would put in place mitigation measure where required to minimise the environmental impacts.

Data Issues:

None.

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SCHEME SM7C: (M1 JNC 8 ENHANCEMENTS)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	Creating additional capacity on an already busy existing motorway junction would create additional air and noise pollution, with the increase in traffic. This could impact on local flora and fauna, especially on the adjacent Gorhambury Estate which has water gardens, crops, farm animals and green spaces.	An EIA would be required for this size scheme, which should consider implementing green barriers to protect Gorhambury Estate.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and	P-	Creating additional capacity at this motorway junction could have negative impacts for local residents near this junction for air and noise pollution.	

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	reduce health inequalities			
	To reduce crime and create safe environments	P-	Introducing additional capacity i.e. new road lanes could increase the risk of incidents/ accidents at this location.	
Water and soil	To improve the sustainable use of resources	P-	Creating new capacity at this major motorway junction would require construction materials.	Ensure that as much recycled aggregate is used as possible. Check HCC Highways Policy/Guidance.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Creating new capacity at this major motorway junction would produce construction waste.	Ensure that as much aggregate as possible is recycled. Check HCC Highways Policy/Guidance.
	To ensure the efficient use of water, and safeguard water resources	P+	Any new road infrastructure would need to adhere to SUDS to ensure that any surface run-off is captured.	This is especially important as there are historic water gardens nearby.
	To reduce contamination, and safeguard soil quality and quantity	P-	Creating additional capacity at this motorway junction would result in some soil capping.	
Air	To protect and enhance air quality and minimise noise pollution	P-	Increasing capacity could facilitate car use and so it would result in an increase air and noise pollution in that already busy location.	
	To improve the choice of sustainable transport modes, encourage their use,	P+	The scheme would increase road capacity for buses and coaches.	

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	and reduce the need to travel by car			
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new road infrastructure would need to adhere to SUDS.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P-	The scheme could facilitate vehicle use.	
	To ensure the sustainable supply and use of energy	P-	It will facilitate car use and fuel consumption.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	Creating additional capacity at this motorway junction would impact on the landscape and green space, through loss to accommodate new road infrastructure.	Mitigation should consider the planting of trees and other vegetation.
	To conserve and enhance the historic environment, heritage assets and their settings	P-	Gorhambury Estate (Grade II listed) is just to the east of this motorway junction, and could experience negative impacts from additional air and noise pollution to its gardens, wildlife and buildings..	Consider through mitigation the use of green barriers.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and	P+	If additional capacity for buses/coaches allows more travel choices for local residents to the town centre.	

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	community facilities for all			
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	Additional capacity at this motorway junction would benefit local employment centres i.e. Maylands.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	P+	Easier access into Hemel Hempstead could provide benefits to the town centre.	

Significant Positive Effects:

The only significant positive effect would be for the local economy, with easier access to employment and town centre.

Significant Negative Effects:

There are no significant negative impacts but additional capacity at this major motorway junction could have a number of minor negative issues such as the impacts on the local historic Gorhambury Estate, an increased risk of incidents/accidents, pressure on

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construction resources and waste disposal, and even though the aim of the scheme is to reduce congestion it could facilitate vehicle use.

Timescale:

Short term (2-5 years).

Temporary or Permanent:

Permanent, as it would facilitate car use.

Likelihood of effects or impacts identified occurring:

This will depend on the mitigation put in place as a result of an Environmental Impact assessment.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Any major scheme such as this would require a detailed Environmental Impact Assessment, which would consider all of the issues raised above and would put in place mitigation measure where required to minimise the environmental impacts i.e. the use of green barriers.
- Check HCC Highways Policy/Guidance on the use of recycled construction materials and recycling construction waste.

Data Issues: None.

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SCHEME PR8: SEGREGATED FISHERY ROAD CYCLE LINK

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Few details available at time of assessment however there is a SSSI (Roughdown Common) close to the proposed locality.	Consideration will be needed to check for any likely impacts on the nearby SSSI
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	New and improved cycle links may encourage modal shift to more active travel over other modes.	Publicity will be needed to encourage the use of cycle infrastructure.
	To reduce crime and create safe environments	U	New and improved cycle links may shorten journey times and dependant on the design and lighting scheme design, may help people feel safe using the link.	Consideration should be given to how the design and lighting of any new link may help deter crime and the fear of crime.

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			If sufficient people regularly use the link it may also help people feel safe as there will be others around. However its ability to deter crime or create a safe environment is uncertain.	
Water and soil	To improve the sustainable use of resources	U	Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	U	Details unknown at time of assessment. Water run off and contamination during any construction may be an issue.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.

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	To reduce contamination, and safeguard soil quality and quantity	U	Details of construction unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	A new cycle link may encourage modal shift thereby preventing the noise and air pollution which would have occurred if those trips had been made by car. This project has the added advantage of linking to the railway station.	Any new cycle routes and facilities should be advertised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	The creation of a new cycle link may encourage a modal shift, provide a choice of modes and reduce use of the private car. This project has the added advantage of linking to the railway station.	Any routes and facilities for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
Climatic factors	To adapt to the impacts of climate change such as flooding	P-	Details of project and extent of any new works unknown at time of assessment. However given the proximity to the River Bourne there is a chance of flooding in the area.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works

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				are drafted. In addition, whether or not the new/enhanced links can still be used in the event of the river flooding.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	A new cycle link may encourage modal shift thereby reducing/preventing the pollution which would have occurred if those trips had been made by vehicular transport. This project has the added advantage of linking to the railway station.	Any new links for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To ensure the sustainable supply and use of energy	U	Details of the scheme are unknown at time of assessment.	Consideration should be given to the efficiency of any new lighting and infrastructure.
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	Details of the design of any new infrastructure or enhancements are not known at the time of assessment.	Consideration needs to be given to the design of any new infrastructure or enhancements to prevent a negative impact on local character and green spaces.
	To conserve and enhance the historic environment, heritage assets and their settings	U	Details of the design of any new infrastructure or enhancements are not known at the time of assessment.	Consideration needs to be given to the design of any new infrastructure or enhancements to prevent a negative impact on local heritage assets and historic environment. County archaeologists' should be

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				consulted to ensure heritage assets are not destroyed.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	New/ enhanced cycle infrastructure should improve access to services and community facilities, particularly for those without access to a private car. New/enhanced links to the train station should also improve access to rail services.	Publicity will be needed to raise awareness and encourage use of the enhanced links.
	To empower all sections of the community to participate in decision making and local action	P+	New/ enhanced cycle infrastructure should improve accessibility allowing people to participate in more events. Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as the use of new/enhanced cycle routes and infrastructure.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	A new/ enhanced cycle infrastructure should increase accessibility to employment and labour markets, particularly where they also link to railway stations.	Publicity will be needed to raise awareness and encourage use of the enhanced links.
	To spread economic growth more evenly to benefit deprived areas	U	The proposed link may increase accessibility to employment and labour markets. It should also improve links to Hemel station. A cycle link should improve accessibility for those without access to the private car. However whether this	

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			single link would spread economic growth more evenly is uncertain.	
	To maintain the vitality and viability of existing centres	P+	Although this scheme does not directly mention accessibility to the town centre, new/enhanced links may help link into existing cycle networks connecting with the town centre. As the proposed links connect to the station this should also help link the station and the town centre as well as local communities.	

Significant Positive Effects:

New and enhanced cycle links should encourage modal shift to more active, sustainable travel and improve access to services and community facilities, particularly for those without access to a private car. This scheme has the added advantage of linking to the railway station. It should therefore also help accessibility to labour markets and employment.

Significant Negative Effects:

Details of project and extent of any new works unknown at time of assessment. However given the proximity to the River Bourne there is a chance of flooding in the area.

Timescale: 2-5 years.

Temporary or Permanent:

Infrastructure permanent, but cycling as a mode of transport could be temporary if not reinforced by publicity.

Likelihood of effects or impacts identified occurring:

Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.

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- Any likely impacts on the nearby SSSI
 - the design and lighting of any new link to help deter crime and the fear of crime.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - reduction of surface water run-off in addition, whether or not the new/enhanced links can still be used in the event of the river flooding
 - efficiency of any new lighting as well as infrastructure.
 - the design of any enhancements to prevent a negative impact on local character and green spaces
 - The setting of any heritage assets and historic environment in the locality
 - Publicity to encourage participation in the consultation
 - Publicity of any new/ enhanced non-car infrastructure links
 - Inclusion of any new non-car infrastructure links in travel plans for local businesses and new residential development.
- Attention should be paid to the policies in the draft LTP4.

Data Issues:

Data on usage on new/ enhanced cycle links, evidence that a new cycle link is encouraging a modal shift, particularly to Hemel Station.

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SCHEME PR9: A4251 LONDON ROAD PEDESTRIAN/CYCLE ENHANCEMENT

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Few details available at time of assessment however there is a SSSI (Roughdown Common) close to the proposed locality.	Consideration will be needed to check for any likely impacts on the nearby SSSI
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Pedestrian and cycle enhancements along the London Road (A4251) should encourage modal shift to more active travel over other modes. The project description states the intention is to promote healthier methods of travel through the Two Waters area.	Publicity will be needed to encourage the use of cycle infrastructure.

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	To reduce crime and create safe environments	P+/U	<p>The scheme intends to enhance safety and attractiveness of non-car travel with cycle lanes and wider footpaths. However, whether the safety aspect is only in relation to accident prevention or whether it is also intended to deter crime is not stated and therefore unknown.</p> <p>Dependant on the design and lighting scheme the project may help people feel safe. If sufficient people regularly use them, the project may help people feel safe as there will be others around.</p>	Consideration should be given to how the design and lighting of any pedestrian and cycle infrastructure may help deter crime and the fear of crime.
Water and soil	To improve the sustainable use of resources	U	Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.

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	To ensure the efficient use of water, and safeguard water resources	U	Details unknown at time of assessment. Water run off and contamination during any construction may be an issue.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.
	To reduce contamination, and safeguard soil quality and quantity	U	Details of construction unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	Pedestrian and cycle enhancements should encourage modal shift thereby preventing the noise and air pollution which would have occurred if those trips had been made by car. This project has the added advantage of linking to the railway station.	Any new, non-car routes and facilities should be advertised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Pedestrian and cycle enhancements should encourage a modal shift, provide a choice of modes and reduce use of the private car. This project has the	Any routes and facilities for non-car modes of transport should be publicised to encourage their use.

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			added advantage of linking to the railway station.	They can also be included in the Travel Plans of any local businesses or new residential developments.
Climatic factors	To adapt to the impacts of climate change such as flooding	P-	Details of project and extent of any new works unknown at time of assessment. However given the proximity to the River Bourne there is a chance of flooding in the area.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted. In addition, whether or not the new/enhanced facilities can be used in the event of the river flooding.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Pedestrian and cycle enhancements should encourage modal shift thereby reducing/ preventing the pollution which would have occurred if those trips had been made by vehicular transport. This project has the added advantage of linking to the railway station.	Any enhancement of facilities non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To ensure the sustainable supply and use of energy.	U	Details of the scheme are unknown at time of assessment.	Consideration should be given to the efficiency of any new lighting and infrastructure.
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	Details of the design of the enhanced infrastructure are not known at the time of assessment.	Consideration needs to be given to the design of any enhancements to prevent a negative impact on local character and green spaces.

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	To conserve and enhance the historic environment, heritage assets and their settings	U	Details of the design of the enhancements are not known at the time of assessment.	Consideration needs to be given to the design of any new enhancements to prevent a negative impact on local heritage assets and historic environment.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Enhanced infrastructure for non-car modes should improve access to services and community facilities, particularly for those without access to a private car. Enhanced links to the train station should also improve access to rail services.	Publicity will be needed to raise awareness and encourage use of the enhanced links.
	To empower all sections of the community to participate in decision making and local action	P+	Enhanced infrastructure should improve accessibility allowing people to participate in more events. Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as the use of any new/enhanced non-car infrastructure.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Pedestrian and cycle enhancements along the London Road should increase accessibility to employment and labour markets, particularly where they also link to railway stations.	Publicity will be needed to raise awareness and encourage use of the enhanced links.

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	To spread economic growth more evenly to benefit deprived areas	U	The proposed pedestrian and cycle enhancements along the London Road should increase accessibility to employment and labour markets as well as improving links to Hemel station. Non-car links should improve accessibility for those without access to the private car. However whether this project would spread economic growth more evenly is uncertain.	Publicity will be needed to raise awareness and encourage use of the enhanced links.
	To maintain the vitality and viability of existing centres	P+	<p>Although this scheme does not directly mention accessibility to the town centre, cycling and pedestrian enhancements may help link into existing cycle networks connecting with the town centre.</p> <p>As the proposed links connect to the station this should also help link the station and the town centre as well as local communities.</p>	

Significant Positive Effects: Pedestrian and cycle enhancements along the London Road (A4251) should encourage modal shift to more active, sustainable travel and improve access to services and community facilities, particularly for those without access to a private car. The project description states the intention is to promote healthier methods of travel through the Two Waters area and intends to enhance the safety and attractiveness of non-car travel. This project has the added advantage of linking to the railway station. It should therefore also help accessibility to labour markets and employment.

Significant Negative Effects: Details of project and extent of any new works unknown at time of assessment however, given the proximity to the River Bourne there is a chance of flooding in the area.

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Timescale: 0-2 years

Temporary or Permanent: Infrastructure permanent but walking and cycling behaviour could be temporary, needs continual reinforcement, and nudge techniques.

Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.
 - Any likely impacts on the nearby SSSI
 - the design and lighting of any new link to help deter crime and the fear of crime.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - reduction of surface water run-off in addition, whether or not the enhanced links can still be used in the event of the river flooding
 - efficiency of any new lighting as well as infrastructure.
 - the design of any enhancements to prevent a negative impact on local character and green spaces
 - The setting of any heritage assets and historic environment in the locality
 - Publicity to encourage participation in the consultation
 - Publicity of any new/ enhanced non-car infrastructure links
 - Inclusion of any new non-car infrastructure links in travel plans for local businesses and new residential development.
- Attention should be paid to the policies in the LTP4.

Data Issues: data on usage on enhanced non-car links, evidence that the enhancements are encouraging a modal shift.

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SCHEME SM9: Converting the Nickey Line to Public Transport

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	X	Construction of public transport infrastructure would cause damage to local biodiversity. Public transport will not immediately have fully clean technology therefore harmful emissions to local flora and fauna will continue. Removal of cycle and walking infrastructure may reduce the use of active travel which has no impact on biodiversity.	Use recycled materials where possible in construction. Assist public transport operators in seeking funding opportunities to purchase cleaner or electric forms of transport.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and		Facilitating public transport use should encourage active travel, as a bus journey will also involve walking as part of the journey. The scheme will also improve access to services at a number of locations in Hemel Hempstead, Redbourn and Harpenden. However the scheme will	Promote active travel for everyone.

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	reduce health inequalities	P-	remove a key cycle route. Cycling and walking have greater health benefits and are more accessible due to low cost.	
	To reduce crime and create safe environments	P-	The scheme does not mention issues surrounding security or hate crime that are possible with increased public transport use.	Scheme needs to consider personal security (i.e. provision of lighting, CCTV) and Hate Crime.
Water and soil	To improve the sustainable use of resources	P-	Overall the scheme should reduce the need for resources to maintain roads as car dependency will decrease. The construction of any new infrastructure should use recycled materials where possible	Use recycled materials where possible in any construction.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Sustainable construction practices and recycled materials should be used where possible.	Use recycled materials where possible in any construction.
	To ensure the efficient use of water, and safeguard water resources	P+/U	Increased use of public transport should reduce car use and roadway runoff which includes chemicals from tyres and road salt reaching water courses. New infrastructure will need to consider the use of SUDS. Potential for increased chemical runoff entering water sources due to new surfaces and a reduction in active travel.	Consult the section in the TIAMP about SUDS when creating new infrastructure.

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	To reduce contamination, and safeguard soil quality and quantity	U	As above – potential to reduce chemical runoff into soil. SUDS will need to be considered in construction of infrastructure. Possibility of soil removal in construction of new infrastructure.	Consult the section in the TIAMP about SUDS when creating new infrastructure. Prevent soil removal where possible.
Air	To protect and enhance air quality and minimise noise pollution	U	Modal shift to public transport will reduce traffic and improve air quality. Public transport will not immediately have fully clean or quiet technology. Removal of cycle lane will increase emissions and noise pollution compared to before the scheme as public transport is not currently fully sustainable like active travel.	Assist public transport operators in seeking funding opportunities to purchase cleaner or electric forms of transport.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	Public Transport is a sustainable mode and the scheme encourages a reduction in the need to travel by car. However the scheme removes the ability to utilise more sustainable forms of transport in walking and cycling.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new infrastructure will need to adhere to SUDs to ensure that there is minimal additional surface runoff.	Consult the section in the TIAMP about SUDS when creating new infrastructure.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P-/U	Scheme will increase the number of motor vehicles and remove cycle lanes which may increase greenhouse gas emissions in the short term as public transport is not yet fully clean. However modal shift to public transport	Assist public transport operators in seeking funding opportunities to purchase cleaner or electric forms of transport.

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			may reduce car dependency and associated emissions.	
	To ensure the sustainable supply and use of energy	P-/U	Scheme will increase the number of vehicles and remove cycle lanes which may increase greenhouse gas emissions in the short term as public transport is not yet fully clean. However modal shift to public transport may reduce car dependency and associated emissions.	Assist public transport operators in seeking funding opportunities to purchase cleaner or electric forms of transport.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-/U	Increased public transport use will minimise disruption from road congestion ultimately improving air quality and tranquillity. However the creation of new infrastructure will impact negatively on the surrounding natural environment, increase noise pollution and reduce access to the natural environment.	Ensure that any infrastructure delivered contributes and protects the local character of the landscape.
	To conserve and enhance the historic environment, heritage assets and their settings	U	New infrastructure must be mindful of any local historic assets, particularly the historic environment surrounding the proposed scheme.	Scheme designers should consult HCC maps of local historic assests.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	U	The scheme will help facilitate improved public transport access between key services and community facilities. Public transport is also more accessible than cars for those on low incomes or with reduced mobility. However active travel is open to everyone and generally available at a	Promote the public transport links to people in Hemel Hempstead and the linking areas.

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			low cost. By removing the cycle lane these benefits are lost potentially reducing access to services for some in society.	
	To empower all sections of the community to participate in decision making and local action	U	The scheme will help facilitate improved public transport access thus allowing more people to participate in decision making. Public transport is also more accessible than cars for those on low incomes or with reduced mobility. However active travel is open to everyone and generally available at a low cost. By removing the cycle lane these benefits are lost potentially reducing some people ability to participate in local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	U	The scheme will improve public transport accessibility to key employment sites in Hemel Hempstead and potentially Maylands. However removing the cycle lane may create a barrier to some in society as active travel is open to all and at a relatively low cost.	Consider working with operators to keep public transport accessible.
	To spread economic growth more evenly to benefit deprived areas	U	The scheme will improve public transport accessibility to key employment sites in Hemel Hempstead and potentially Maylands. However removing the cycle lane may create a barrier to some in society as	Consider working with operators to keep public transport accessible.

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			active travel is open to all and at a relatively low cost.	
	To maintain the vitality and viability of existing centres	U	The scheme will improve public transport accessibility to existing centres in Hemel Hempstead, Harpenden and Redbourn. However removing the cycle lane may create a barrier to some in society as active travel is open to all and at a relatively low cost.	Consider working with operators to keep public transport accessible.

Significant Positive Effects:

- Overall the scheme should reduce the need for resources to maintain roads as car dependency will decrease.
- Increased use of public transport should reduce car use and roadway runoff which includes chemicals from tyres and road salt reaching water courses.
- Modal shift to public transport will reduce traffic and improve air quality
- Public Transport is a sustainable mode and the scheme encourages a reduction in the need to travel by car.
- The scheme will improve access to services at a number of locations in Hemel Hempstead, Redbourn and Harpenden

Significant Negative Effects:

- Construction of public transport infrastructure would cause damage to local biodiversity and the surrounding natural environment.
- Public Transport will not immediately have fully clean technology therefore harmful emissions will continue.
- Removal of cycle and walking infrastructure may reduce the use of active travel which has no impact on biodiversity, health benefits and is more accessible due to relatively low cost.
- The scheme does not mention issues surrounding security or hate crime that are possible with increased public transport use.
- Scheme will increase the number of vehicles and remove cycle lanes which will increase greenhouse gas emissions in the short term.
- The scheme will reduce access to the natural environment.

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Timescale:

10-20 years.

Likelihood of effects or impacts identified occurring:

Low likelihood

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Use recycled materials where possible in construction.
- Assist public transport operators in seeking funding opportunities to purchase cleaner or electric forms of transport.
- Promote active travel for everyone.
- Scheme needs to consider personal security (i.e. provision of lighting, CCTV) and Hate Crime.
- Consult the section in the TIAMP about SUDS when creating new infrastructure.
- Prevent soil removal where possible.
- Ensure that any infrastructure delivered contributes and protects the local character of the landscape
- Scheme designers should consult HCC maps of local historic assests.
- Promote the public transport links to people in Hemel Hempstead and the linking areas.
- Consider working with operators to keep public transport accessible.

Data Issues:

- Monitoring air and soil quality
- Numbers of alternative fuel (ULEV) buses in Hertfordshire
- Crime data on public transport or at stops/stations.
- Monitoring modal shift

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SCHEME PR10: TWO WATERS-A4251/A414 JUNCTION REORGANISATION

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	Few details available at time of assessment however, as this project is to reduce the junction footprint it is not believed there will be a significant negative impact on biodiversity.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	The proposed Two Waters-A4251/A414 junction reorganisation will improve crossing facilities for pedestrians and cyclists and therefore should encourage modal shift to more active travel over other modes.	Publicity will be needed to encourage the use of new non-car routes and links created by this project.

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	To reduce crime and create safe environments	U	The scheme should improve crossing facilities for pedestrians and cyclists. Increased options and flexibility of routes may help users feel safer but this is also likely to depend on how visible users feel they are, whether sufficient people use the new crossings, design and lighting.	Consideration should be given to how the design and lighting of any pedestrian and cycle infrastructure may help deter crime and the fear of crime.
Water and soil	To improve the sustainable use of resources	U	Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	U	Details unknown at time of assessment. Water run off and contamination during any construction maybe an issue.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible

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				when any contracts for works are drafted.
	To reduce contamination, and safeguard soil quality and quantity	U	Details of construction unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	Pedestrian and cycle improvements should encourage modal shift thereby preventing the noise and air pollution which would have occurred if those trips had been made by car.	Any new, non-car routes and facilities should be advertised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Pedestrian and cycle enhancements should encourage a modal shift, provide a choice of modes and reduce use of the private car.	Any improved routes and facilities for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.

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Climatic factors	To adapt to the impacts of climate change such as flooding	P-	Details of project and extent of any new works unknown at time of assessment. However given the proximity to the River Bourne there is a chance of flooding in the area.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted. In addition, whether or not the improved facilities can be used in the event of the river flooding.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Pedestrian and cycle enhancements should encourage modal shift thereby reducing/ preventing the pollution which would have occurred if those trips had been made by vehicular transport.	Any enhancement of facilities for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To ensure the sustainable supply and use of energy	U	Details of the scheme are unknown at time of assessment.	Consideration should be given to the efficiency of any new lighting and infrastructure.
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	U/O	Details of the design of the improved infrastructure are not known at the time of assessment. However, as the project is to reduce the junction footprint a significant negative impact is not anticipated.	Consideration needs to be given to the design of any new works to prevent a negative impact on local character and green spaces.

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	To conserve and enhance the historic environment, heritage assets and their settings	U/O	Details of the design of the enhancements are not known at the time of assessment. However, as the project is to reduce the junction footprint a significant negative impact is not anticipated.	Consideration needs to be given to the design of any new works to prevent a negative impact on local heritage assets and historic environment. Discuss with the archaeologists if there is any doubt about existing assets.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Enhanced infrastructure for non-car modes should improve access to services and community facilities, particularly for those without access to a private car.	Publicity will be needed to raise awareness and encourage use of the enhanced links.
	To empower all sections of the community to participate in decision making and local action	P+	Enhanced infrastructure for non-car modes should improve accessibility allowing people to participate in more events. Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as the use of any new/improved non-car infrastructure.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental	P+	Pedestrian and cycle improvements should increase accessibility to employment and labour markets, particularly where they also link to railway stations (in this case via the A4251)	Publicity will be needed to raise awareness and encourage use of the improved links.

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	constraints) and create a vibrant economy			
	To spread economic growth more evenly to benefit deprived areas	U/P+	The proposed pedestrian and cycle improvements should increase accessibility to employment and labour markets as well as improving links to Hemel station. Non-car links should improve accessibility for those without access to the private car.	Publicity will be needed to raise awareness and encourage use of the enhanced links.
	To maintain the vitality and viability of existing centres	P+	<p>Although this scheme does not directly mention accessibility to the town centre, cycling and pedestrian improvements at this location will link into and improve existing cycle and pedestrian networks connecting with the town centre.</p> <p>As the proposed improvement also link to the station (via A4251) this should help link the station and the town centre as well as local communities.</p>	

Significant Positive Effects:

The proposed Two Waters-A4251/A414 junction reorganisation will improve crossing facilities for pedestrians and cyclists and therefore should encourage modal shift to more active travel, sustainable travel and improve access to services and community facilities, particularly for those without access to a private car. This project would also link to the railway station via A4251. It should therefore also help accessibility to labour markets and employment.

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Significant Negative Effects:

Details of project and extent of any new works unknown at time of assessment however, given the proximity to the River Bourne there is a chance of flooding in the area.

Timescale: 2-5 years

Temporary or Permanent Impacts: Permanent

Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.
 - the design and lighting of any new link to help deter crime and the fear of crime.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - reduction of surface water run-off in addition, whether or not the enhanced links can still be used in the event of the river flooding
 - 1Efficiency of any new lighting as well as infrastructure.
 - the design of any enhancements to prevent a negative impact on local character and green spaces
 - The setting of any heritage assets and historic environment in the locality
 - Publicity to encourage participation in the consultation
 - Publicity of any new/ improved non-car infrastructure links
 - Inclusion of any new non-car infrastructure links in travel plans for local businesses and new residential development.
- Attention should be paid to the policies in the LTP4.

Data Issues: data on usage on improved non-car links, evidence that the enhancements are encouraging a modal shift.are encouraging a modal shift.

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SCHEME SM10: (M1 DEDICATED COACH SERVICE)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	If there is sufficient modal shift this will mean fewer cars on the motorway, which means less congestion and so less air pollution and noise pollution, which will benefit flora, fauna and habitats adjacent to the motorway.	If the coaches used are ULEV then this will provide further benefits to local biodiversity.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce	O		

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	health inequalities			
	To reduce crime and create safe environments	P-	With more people using public transport (especially vulnerable sectors of society) there is the potential for personal security issues (i.e. Hate Crime, antisocial behaviour, theft etc)	That the coaches have CCTV both on the buses and at interchanges.
Water and soil	To improve the sustainable use of resources	O	The coach service will use existing road infrastructure.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O	The coach service will use existing road infrastructure.	
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	✓	The coach service will take a percentage of cars off the motorway.	For maximum benefit, the coaches will need to be ULEV.

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓		
Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	If sufficient modal shift to the coach service.	For maximum benefit the coaches will need to be ULEV.
	To ensure the sustainable supply and use of energy	P+	If the coaches used are ULEV, and the infrastructure is provided to support ULEV vehicles.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Through the removal of cars in the townscape.	
	To conserve and enhance the historic	P+	Gorhambury house (Grade II listed) is to the East of Hemel Hempstead, fewer cars using the M1 and	

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	environment, heritage assets and their settings		accessing Hemel will provide air quality and tranquillity benefits to this historic building and gardens.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	This coach service could provide access to services inbetween the towns of Luton and Hemel Hempstead for those without access to a car.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	This coach service will allow easier access to key employment sites between the towns of Luton and Hemel Hempstead.	
	To spread economic growth more evenly to benefit deprived areas	P+	By providing a coach service this will allow people with no access to a car to access employment opportunities further afield.	

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	To maintain the vitality and viability of existing centres	P+	This will depend on the timings of the coach services and whether or not they will operate into the evenings.	That the service operates a full service operating early morning and evenings to allow social and leisure trips and for those who work shift patterns.
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Significant Positive Effects:

By providing a coach service this should encourage modal shift out of cars to a more sustainable mode, which will provide benefits to local air quality, noise pollution and carbon emissions. It would provide significant economic benefits for the key employment centres allowing the local population to access employment opportunities easier and open up the labour market for those who do not have access to a car and cannot travel distances for work.

Significant Negative Effects:

There are no significant negative effects of implementing a new M1 coach service, but personal security issues (Hate Crime) would need to be considered on the coaches and at the interchanges.

Timescale: Short to medium term (5-10 years).

Temporary or Permanent: Temporary, this scheme relies on modal shift which can vary over time.

Likelihood of effects or impacts identified occurring:

If the coaches used are not ULEV, then there will be not such a positive impact on the local environment.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- The coaches used for this new service should use alternative fuels or ULEV to provide maximum benefits to the local environment, and for the health of people.
- That CCTV be implemented within the coaches and at the interchanges, for personal security reasons.
- That the new service implement a full timetable including early mornings and evenings for those who work on shift patterns and to allow trips for leisure.
- Ensure scheme is consistent with Hertfordshire Hate Crime Strategy.

Data Issues: None.

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SCHEME SM11: PUBLIC TRANSPORT LINKS SOUTH OF WATFORD

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	If sufficient modal shift can be achieved this will reduce the numbers of cars on the road and therefore reduce emissions and improve air quality which will be of benefit to local flora and fauna.	Encourage and embrace new bus vehicle technologies.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Improving bus services could encourage active travel, as a bus journey will also involve walking as part of the journey. Better bus services can improve access to services including access to leisure opportunities.	Promote and market bus services.

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	To reduce crime and create safe environments	P-	With more people in the public realm using bus services there could be more incidents of hate crime. People's perception of personal safety may also affect the use of the services, as people perceive public transport to be less safe at certain times of the day.	Consideration could be given to CCTV, lighting and other initiatives generally to improve safety and perception of safety. Any scheme will need to show that it is delivering the LTP4 Transport Safety and Security policy, and takes into account the County Hate Crime Strategy.
Water and soil	To improve the sustainable use of resources	P+/P-	Improving the bus services on this route should decrease the need for resources to maintain the roads, as fewer cars should be on the roads, but any new significant bus infrastructure would require some construction material.	Use of recycled materials and sustainable construction practices where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Construction required for improving bus stops etc. may produce waste.	Promote sustainable construction practices, use recycled construction materials and minimise waste.
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		

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Air	To protect and enhance air quality and minimise noise pollution	P+	Encouraging a modal shift to buses could reduce traffic growth and improve air quality. A bus network using fully clean and quiet technology will also improve air quality and noise pollution.	Assist bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Bus use is a sustainable mode, this scheme aims to increase the usage of buses and reduce traffic growth and the need to travel by car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	A reduction in car use and vehicles on the road though modal shift to buses will reduce vehicular emissions.	This can be improved by assisting bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
	To ensure the sustainable supply and use of energy	P+	Encourage the use of vehicles which use less or no fossil fuels and embrace new vehicle technologies.	This can be improved by assisting bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Bus priority infrastructure could provide some public realm improvements such as to bus stops.	
	To conserve and enhance the historic environment, heritage assets and their settings	O		
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	This scheme highlights the need to improve bus journeys. The scheme aims to improve access to London Underground services and improving access to work opportunities.	
	To empower all sections of the community to participate in decision making and local action	P+	By facilitating certain groups of society in having access to better travel opportunities, this may empower them to make better travel choices.	Any scheme design should consider the protected equalities groups.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and	P+	The scheme looks to improve access and potentially provides improved access for travelling to London for work opportunities.	

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	create a vibrant economy			
	To spread economic growth more evenly to benefit deprived areas	P+	Improved bus services could benefit deprived areas in gaining access to employment. Improved journey times and better access can particularly benefit those without access to a car.	
	To maintain the vitality and viability of existing centres	P+	The scheme will improve access from Bushey and Bushey Heath, potentially providing better access to the High Street. This may benefit people who may have had difficulties before e.g. no access to a private vehicle. Sufficient modal shift may reduce congestion between Bushey and Bushey Heath.	

Significant Positive Effects:

Improving bus services between Bushey and Bushey Heath could provide opportunity to achieve modal shift, and change people's journeys to work and school, by reducing the need to travel by car. This in turn would have additional benefits to local biodiversity, emissions, air quality, health, landscape & townscape, by encouraging active travel and by using cleaner technology. By improving the bus network, this can significantly improve accessibility and so work towards tackling social exclusion, and spread economic growth to the more deprived areas. It also improves access to job opportunities in London.

Significant Negative Effects:

No significant negative effects, but the public's perception of safety could impact on the uptake of any improved bus facilities, and with more people using the public realm, there could be increased incidents of hate crime.

Timescale:

Medium Term (5-10 Years)

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Temporary or Permanent:

Temporary, as bus use is down to personal choice for daily travel, and could vary day to day and season to season.

Likelihood of effects or impacts identified occurring:

Medium likelihood of funding

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Encourage and embrace new vehicle technologies.
- Promote and market bus services.
- Consideration could be given to CCTV, lighting and other initiatives generally to improve safety and perception of safety.
- Any scheme will need to show that it is delivering the LTP4 Transport Safety and Security policy, and takes into account the County Hate Crime Strategy.
- Promote sustainable construction practices, use recycled construction materials and minimise waste.
- Assist bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
- Any scheme design should consider the protected equalities groups.

Data Issues:

- Monitoring use of low emission bus vehicles
- People's perception of bus transport and bus priority improvements
- Improvements to bus service journey time improvements

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SCHEME SM12A: (HOLLYWELL TO SOUTH OXHEY CROSS – COLNE SUSTAINABLE LINK, CYCLE ONLY) (SCHEME NOT SELECTED)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	New cycling infrastructure would need to be constructed through an area that is currently grassland, and is adjacent to a key biodiversity area (Mid Colne Valley Wetlands), a SSSI site (Croxley Common Moor), and Brightwells Spring.	An extensive environmental assessment would be required to determine the best route from Hampermill Lane to Tolpits Lane, to ensure that no habitats or species are disturbed.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	A new cycle route would provide access to the local wetlands and Croxley Common Moor, and link to the current Ebury way Greenway.	Extensive promotion of the new route to local residents.

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	To reduce crime and create safe environments	P-	This new cycle route would be built through an area that is open grassland and is currently unlit.	Suitable lighting would need to be considered, that would not impede on the local habitats and environment.
Water and soil	To improve the sustainable use of resources	P-	The construction of a new cycle route would require construction materials.	The use of recycled aggregate where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	There would be soil that would need to be removed or redistributed onsite	Investigation of the most suitable use of the soil that would be removed to create the cycleway.
	To ensure the efficient use of water, and safeguard water resources	U	There are important wetlands and a spring adjacent to the proposed cycle route, however, a new cycleway would have minimal surface runoff issues, as only cycles and pedestrians would be using the route.	Drainage for the cycleway would need careful consideration.
	To reduce contamination, and safeguard soil quality and quantity	P-	There would be soil that would need to be removed or redistributed onsite, and a small amount of soil capping as a result of the new infrastructure.	Investigation of the most suitable use of the soil that would be removed to create the cycleway.
Air	To protect and enhance air quality and minimise noise pollution	P+/P-	There would be positives and negatives for a new cycle route through a current greenfield site. If modal shift from car to cycle occurs then this would improve air quality in this area of Watford, but with people using a new route through this grassland it would bring some	That a full environmental impact assessment is carried out to determine what species of fauna and flora would be affected, and what mitigation could be implemented.

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			amount of noise pollution to the immediate habitat.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	This scheme would offer a brand new cycle route accessing green space and business parks.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P-	The location of the actual route would need careful design considerations as this part of the River Colne is subject to flooding.	That the flood risks are determined beforehand.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	If there is sufficient modal shift.	
	To ensure the sustainable supply and use of energy	P-	Some electricity would be required for lighting along the route.	Investigate the use of solar lighting.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	The new infrastructure required for the cycle route would have an impact on the visual look of the landscape and green spaces.	Design of the route would need careful consideration to minimise its impact on the local environment.

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	To conserve and enhance the historic environment, heritage assets and their settings	P+	There are a number of listed buildings and monuments in this part of Watford, which would benefit from less pollution and improved access.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	This would provide a non-car link to a significant employment area of Watford, and would increase access to green space.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	The aim of the scheme is to improve access to the West Gateway Business Parks, as the site is only served by the A412 to the north, this would provide a new access to the south.	
	To spread economic growth more evenly to benefit deprived areas	P+	A new cycleway could provide opportunities for those without access to a car to access employment opportunities at the business parks.	

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	To maintain the vitality and viability of existing centres	P+	This scheme aims to improve pedestrian and cycle facilities to connect South Oxhey and the Western Gateway and into Central Watford.	
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Significant Positive Effects:

The main significant positive impacts of building a new cycle route to link south Oxhey and the West Gateway Business Parks, is the additional choice of sustainable transport mode to this area, which would bring health benefits to the local population and open up another green space for leisure.

Significant Negative Effects: There are no significant negative impacts, but implementing a new cycle route would have some environmental impacts on the current existing grassland, and could be subject to flooding.

Timescale: This scheme alternative has not been selected for inclusion in the South West Herts Growth & Transport Plan.

Likelihood of effects or impacts identified occurring: N/A.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

This scheme has not been selected for inclusion in the final report, but the following would be recommended if this was to change:

- That a full Environmental Impact Assessment is undertaken to determine the best route for the cycleway to minimise disturbance to the current habitats and species.
- This area is subject to flooding due to its vicinity to the River Colne, flooding and drainage would require careful consideration at the design stage.
- A small amount of soil waste would be produced in construction, investigation of how this could be moved or reused is advised.
- If lighting is to be included as part of this scheme along the new route, it should be low energy and minimise any local light pollution.
- To ensure that the new route is well used extensive promotion is advised to both the business parks and local residents.

Data Issues: The proportion of the local population that would be likely to use this new route, would this be sufficient to make a difference to modal shift, congestion and air pollution levels.

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SCHEME SM12B: (HOLLYWELL TO SOUTH OXHEY CROSS – COLNE SUSTAINABLE LINK, CYCLE AND BUS ONLY)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	This would involve converting the existing Ebury Way Greenway to infrastructure suitable for buses and cycles, and would need to be constructed through an area that is currently grassland, and is adjacent to a key biodiversity area (Mid Colne Valley Wetlands), a SSSI site (Croxley Common Moor), and Brightwells Spring.	An extensive environmental assessment would be required to determine the impacts from upgrading the current Ebury Way and creating a new section to Hampermill Lane, to ensure that no habitats or species are disturbed.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and	✓	A new/upgraded bus/cycle route using the current Ebury Way would provide additional access to the local wetlands and Croxley Common Moor, and allow more sustainable and healthy choices of travel mode.	Extensive promotion of the new route to local residents.

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	reduce health inequalities			
	To reduce crime and create safe environments	P-	Ebury Way and the new section through open grassland are currently unlit, this may deter new users especially during the winter months when travelling to work is often undertaken in the dark.	If lighting needs to be considered, it should not impede on the local habitats and environment.
Water and soil	To improve the sustainable use of resources	P-	The widening of Ebury Way to accommodate buses, and the new section to Hampermill Lane would require construction materials.	The use of recycled aggregate where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	There would be soil/ vegetation that would need to be removed or redistributed onsite.	Investigation of the most suitable use of the soil that would need to be removed.
	To ensure the efficient use of water, and safeguard water resources	P-	There are important wetlands and a spring adjacent to the proposed route, however, any new infrastructure to accommodate buses would need to adhere to SuDS to deal with the additional surface runoff.	
	To reduce contamination, and safeguard soil quality and quantity	P-	There would be soil that would need to be removed or redistributed onsite, and a small amount of soil capping as a result of the new infrastructure.	Investigation of the most suitable use of the soil that would be removed to widen the current route and for the small new stretch of infrastructure.

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Air	To protect and enhance air quality and minimise noise pollution	P+/P-	There would be positives and negatives for a new bus/cycle route through a current greenfield site. If enough modal shift from car to bus/cycle occurs then this would improve air quality in this area of Watford, but with buses and people using a new route through this grassland it would bring some amount of noise pollution to the immediate habitat. If buses are not ULEV then this would increase air pollution.	That a full environmental impact assessment is carried out to determine what species of fauna and flora would be affected, and what mitigation could be implemented.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	This scheme would offer an improved cycle route, and new bus route accessing green space and local business parks.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P-	The location of the actual route would need careful design considerations as this part of the River Colne is subject to flooding.	That the flood risks are determined beforehand.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	If there is sufficient modal shift, and if the buses used along the route are ULEV.	

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	To ensure the sustainable supply and use of energy	P-	Some electricity would be required for lighting along the route.	Investigate the use of solar lighting.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	The new infrastructure required for the bus/cycle route would have an impact on the visual look of the landscape and green spaces	Design of the route would need careful consideration to minimise its impact on the local environment.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	There are a number of listed buildings and monuments in this part of Watford, which would benefit from less pollution and improved access.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	This would provide an additional bus and cycle link to a significant employment area of Watford, and would increase access to green space.	
	To empower all sections of the community to participate in decision making and local action	O		

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	The aim of the scheme is to improve access to the West Gateway Business Parks, as the site is only served by the A412 to the north, this would provide a new access to the south.	
	To spread economic growth more evenly to benefit deprived areas	P+	A new bus/cycleway could provide opportunities for those without access to a car to access employment opportunities at the business parks.	
	To maintain the vitality and viability of existing centres	P+	This scheme aims to improve bus and cycle facilities to connect South Oxhey and the Western Gateway and into Central Watford.	

Significant Positive Effects:

The main significant positive impacts of building a new bus/cycle route to link south Oxhey and the West Gateway Business Parks, is the additional choice of sustainable transport modes to this area, which would bring health benefits to the local population and open up another green space for leisure.

Significant Negative Effects:

There are no significant negative impacts, but implementing a new bus/cycle route would have some environmental impacts on the current existing Ebury Way/surrounding grassland, and could be subject to flooding.

Timescale:

5-10 years.

Temporary or Permanent: Impacts could be temporary as bus use and cycling can vary, and be seasonal.

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Likelihood of effects or impacts identified occurring:

This will depend on the scheme design, and mitigation identified as part of any Environmental Impact Assessment.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- That a full Environmental Impact Assessment is undertaken to determine the best route for the bus/cycleway to minimise disturbance to the current habitats and species.
- This area is subject to flooding due to its vicinity to the River Colne, flooding and drainage would require careful consideration at the design stage.
- Some soil waste would be produced in construction, investigation of how this could be moved or reused is advised.
- If lighting is to be included as part of this scheme along the new route, it should be low energy and minimise any local light pollution.
- To ensure that the new route is well used extensive promotion is advised to both the business parks and local residents.
- Any buses using the new route should be ULEV to minimise air and noise pollution.

Data Issues:

- The proportion of the local population that would be likely to use this new route, would this be sufficient to make a different to modal shift, congestion and air pollution levels.

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SCHEME SM13A: ABBEY LINE PARK AND RIDE HUB EXTENSION OF PARK STREET PLATFORM

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	X	The platform extension, and park and rail hub will result in a loss of some land which is currently left wild and therefore potentially habitat for insects and birds etc.	This size scheme should be subject to an EIA.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The project should deliver more transport opportunities for local people to be able to access leisure facilities via sustainable transport modes	

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	To reduce crime and create safe environments	U	Park street station at present has issues with low level crime and anti - social behaviour. Improvements to the station resulting in greater footfall could have a positive impact on these issues. Better lighting, CCTV would also be beneficial.	Make sure any works at the station include improvements to CCTV and lighting etc.
Water and soil	To improve the sustainable use of resources	X	A platform extension and a park and rail hub would require the use of raw resources.	Consider using as much recycled materials as possible, check Highways processes (HIAMP).
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	There will be some construction waste.	
	To ensure the efficient use of water, and safeguard water resources	P-	The platform extension and park and rail hub should adhere to SuDS.	
	To reduce contamination, and safeguard soil quality and quantity	P-	The infrastructure suggested will require landtake, and will result in some soil capping.	
Air	To protect and enhance air quality and minimise noise pollution	P+	This project should increase the use of public transport and therefore decrease car use which should have a positive impact on both air quality and noise pollution.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	This project should increase the options for sustainable transport modes and reduce the need to travel by car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	By reducing the need for travelling by car and increasing the use of sustainable low emission transport this project should reduce greenhouse gas emissions.	If the transport hub/park and ride project goes forward it should include the use of the lowest emission vehicles available at the time of implementation.
	To ensure the sustainable supply and use of energy	U		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	X	An extended platform and new park and rail hub will have a negative visual impact on the landscape.	Recommend that this size project should have an EIA.
	To conserve and enhance the historic environment, heritage assets and their settings	U		Recommend that the HCC map of historic assets is considered when deciding the exact locations of the new infrastructure.

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	This project aims to improve connectivity and increase usage on what is a Community Rail Partnership railway line.	
	To empower all sections of the community to participate in decision making and local action	P+	Any work at Park Street Station would need the involvement of the community rail partnership through the steering group which represents local organisations and councils.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	By increases the usage of the railway and reducing car use on a very congested corridor should help economic competitiveness.	
	To spread economic growth more evenly to benefit deprived areas	U		
	To maintain the vitality and viability of existing centres	U		

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Significant Positive Effects:

The scheme would result in a reduction of car use on a congested corridor and increase sustainable public transport modes, which would provide benefits to local air quality, and accessibility.

Significant Negative Effects:

Any new infrastructure required would have significant impacts on local biodiversity and soil, and would require significant amounts of construction materials.

Timescale:

This project is unlikely to be taken forward.

Temporary or Permanent:

Permanent.

Likelihood of effects or impacts identified occurring: Low, as scheme is unlikely to go ahead.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- This size scheme should be subject to an EIA.
- Make sure any works at the station include improvements to CCTV and lighting etc.
- Consider using as much recycled materials as possible, check Highways processes (HIAMP).
- Recommend that the HCC map of historic assets is considered when deciding the exact locations of the new infrastructure.

Data Issues: None.

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SCHEME SM13B: ABBEY LINE PARK & RAIL HUB: ADDITIONAL STATION AND FACILITY

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Insufficient information on the extent of the project and precise location available at the time of assessment, but a new station and park and rail hub would require landtake.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Potential to improve health if pedestrian/cycle links are also improved as part of the scheme into southern St Albans.	

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	To reduce crime and create safe environments	U	There is insufficient information about the scheme at the time of assessment. The existing stations on the line have had problems with crime and antisocial behaviour so this is something that needs to be considered in the design of the scheme.	The design of the station and transport hub should ensure that there are sufficient deterrents in place to discourage crime and anti social behaviour, e.g. lighting, CCTV, secure cycle parking etc.
Water and soil	To improve the sustainable use of resources	X	This is a significant scheme that will involve the use of raw materials in construction.	Check the County Council's use of recycled aggregate for new infrastructure.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Potential for construction waste	Check the County Council's use of recycled aggregate for new infrastructure.
	To ensure the efficient use of water, and safeguard water resources	P-	Dependent on the precise location there is the potential for run off resulting from additional road surface and station infrastructure into the river Ver.	Any new infrastructure will need to adhere to SuDS.
	To reduce contamination, and safeguard soil quality and quantity	P-	The construction of a new station and access would require some amount of land take which would mean some element of soil capping and loss of soil quantity. Any additional run-off if not implemented with SUDS would result in soil contamination.	Any new infrastructure will need to adhere to SuDS. Advise that an EIA is undertaken to determine impacts on the local soil environment.

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Air	To protect and enhance air quality and minimise noise pollution	U	The potential increase in travel via sustainable modes would have a positive impact on the air quality and noise pollution. However the construction of a new station and hub on what is currently undeveloped land and the new access road could in the short term have a negative impact.	Recommend that an EIA is carried out to look at what mitigation could be done to deal with air pollution and noise issues.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	The scheme is intended to increase usage of the railway as a transport mode and to encourage active travel to and from the station.	The design should ensure priority is given to access for pedestrians and cyclists and links to local bus services and demand management used to limit car journeys to the station.
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new infrastructure design will need to consider flooding and surface run-off.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	The scheme has the potential to reduce greenhouse gases through increased usage of the railway and active travel modes and subsequent reduction of car use.	
	To ensure the sustainable supply and use of energy	U		

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	This would be dependent on the design of the station and transport hub and the exact location of the site.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	This would be dependent on the design of the station and transport hub and the exact location of the site.	Recommend that the HCC map of historic assets is consulted before any scheme design is agreed.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+		
	To empower all sections of the community to participate in decision making and local action	P+	Providing additional sustainable travel choices.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and	P+	The railway line provides an important alternative to car travel on a very congested part of the network. By encouraging more people to use the railway and reduce congestion the scheme has the potential to improve economic	

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	create a vibrant economy		competitiveness help create a vibrant economy.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects: Increase in the use of sustainable and active travel modes thereby reducing car journeys on congested network.

Significant Negative Effects: A new station and park and rail hub would require significant amounts of resources and would require landtake which would reduce soil quality and quantity.

Timescale: Unlikely to be taken forward.

Likelihood of effects or impacts identified occurring: Low

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- The design should ensure that the transport hub is accessible by sustainable travel modes.
- The design of the station and transport hub should ensure that there are sufficient deterrents in place to discourage crime and anti-social behaviour, e.g. lighting, CCTV, secure cycle parking etc.
- Check the County Council's use of recycled aggregate for new infrastructure.
- Any new infrastructure will need to adhere to SuDS.
- Advise that an EIA is undertaken to determine impacts on the local environment.
- The design should ensure priority is given to access for pedestrians and cyclists and links to local bus services and demand management used to limit car journeys to the station.
- Recommend that the HCC map of historic assets is consulted before any scheme design is agreed.

Data Issues: None.

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SCHEME SM13C: ABBEY LINE PARK & RIDE HUB: ADDITIONAL STATION AND BUS ONLY LINK TO COTTONMILL LANE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Insufficient information on the extent of the project and precise location available at the time of assessment, but a new station and park and ride hub would require landtake.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Potential to improve health if pedestrian/cycle links are also improved as part of the scheme into southern St Albans. A new bus link will encourage walking as part of the journey.	

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	To reduce crime and create safe environments	U	There is insufficient information about the scheme at the time of assessment. The existing stations on the line have had problems with crime and antisocial behaviour so this is something that needs to be considered in the design of the scheme. There are also potential personal security issues associated with bus travel.	The design of the station and transport hub should ensure that there are sufficient deterrents in place to discourage crime and anti-social behaviour, and Hate Crime e.g. lighting, CCTV, secure cycle parking etc.
Water and soil	To improve the sustainable use of resources	X	This is a significant scheme that will involve the use of raw materials in construction.	Check the County Council's use of recycled aggregate for new infrastructure.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Potential for construction waste	Check the County Council's use of recycled aggregate for new infrastructure.
	To ensure the efficient use of water, and safeguard water resources	P-	Dependent on the precise location there is the potential for run off resulting from additional road surface and station infrastructure into the river Ver. The impacts of a new bus service on runoff are currently unknown.	Any new infrastructure will need to adhere to SuDS.

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	To reduce contamination, and safeguard soil quality and quantity	P-	The construction of a new station and access would require some amount of land take which would mean some element of soil capping and loss of soil quantity. Any additional run-off if not implemented with SUDS would result in soil contamination. The impacts of a new bus service on soil quality are currently unknown.	Any new infrastructure will need to adhere to SuDS. Advise that an EIA is undertaken to determine impacts on the local soil environment.
Air	To protect and enhance air quality and minimise noise pollution	U	The potential increase in travel via sustainable modes would have a positive impact on the air quality and noise pollution. However, the construction of a new station and hub on what is currently undeveloped land and the new access road could in the short term have a negative impact. New bus services may reduce long term air pollution however in the short term there may be a local rise in emissions. The impacts of this will be dependent on the technology utilised by bus operators.	Recommend that an EIA is carried out to look at what mitigation could be done to deal with air pollution and noise issues. Encourage bus operators to utilise new cleaner technology.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	The scheme is intended to increase usage of the railway as a transport mode and to encourage active travel to and from the station. The scheme may also increase bus use and multimodal journeys.	The design should ensure priority is given to access for pedestrians and cyclists and links to local bus services and demand management used to limit car journeys to the station.

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Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new infrastructure design will need to consider flooding and surface run-off.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	The scheme has the potential to reduce greenhouse gases through increased usage of the railway and active travel modes and subsequent reduction of car use. New bus services will also help to reduce long term greenhouse gas emissions. In the short-term new bus services may produce some greenhouse gases. This is dependent on the engines used by bus operators.	
	To ensure the sustainable supply and use of energy	U		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	This would be dependent on the design of the station and transport hub and the exact location of the site. New bus services may encourage sustainable transport in South St Albans enhancing the townscape.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	This would be dependent on the design of the station and transport hub and the exact location of the site.	Recommend that the HCC map of historic assets is consulted before any scheme design is agreed.

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	The scheme will enhance sustainable access to a range of services and community facilities for all residents.	
	To empower all sections of the community to participate in decision making and local action	P+	Providing additional sustainable travel choices assists local residents to participate in local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The railway line provides an important alternative to car travel on a very congested part of the network. A new bus service provides a further sustainable alternative. By encouraging more people to use the railway and bus the scheme has potential to improve economic competitiveness by reducing congestion.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

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Significant Positive Effects:

Increase in the use of sustainable and active travel modes thereby reducing car journeys on congested network.

Significant Negative Effects:

A new station and park and rail hub would require significant amounts of resources and would require landtake which would reduce soil quality and quantity.

Timescale: 5-10 Years

Temporary or Permanent:

New infrastructure and associated impacts due to waste generation and land take are permanent. Impacts as a result of this new infrastructure such as modal shift are temporary as they may require ongoing promotion and support.

Likelihood of effects or impacts identified occurring: Medium

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- The design should ensure that the transport hub is accessible by all sustainable travel modes.
- The design of the station and transport hub should ensure that there are sufficient deterrents in place to discourage crime and anti-social behaviour, Hate Crime, e.g. lighting, CCTV, secure cycle parking etc.
- Check the County Council's use of recycled aggregate for new infrastructure.
- Any new infrastructure will need to adhere to SuDS.
- Advise that an EIA is undertaken to determine impacts on the local environment.
- The design should ensure priority is given to access for pedestrians and cyclists and links to local bus services and demand management used to limit car journeys to the station.
- Encourage bus operators to utilise new cleaner technology.
- Recommend that the HCC map of historic assets is consulted before any scheme design is agreed.

Data Issues: None.

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SCHEME SM13d: ABBEY LINE PARK & RAIL HUB: PARK STREET RELOCATED

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Insufficient information on the extent of the project and precise location available at the time of assessment, but any relocation would have significant impacts on biodiversity if using green field sites.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	This scheme also promotes active travel with the pedestrian and cycle routes and a new bus link into southern St Albans.	

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	To reduce crime and create safe environments	U	There is insufficient information about the scheme at the time of assessment. The existing stations on the line have had problems with crime and antisocial behaviour so this is something that needs to be considered in the design of the scheme.	The design of the station and transport hub should ensure that there are sufficient deterrents in place to discourage crime and anti-social behaviour, e.g. lighting, CCTV, secure cycle parking etc.
Water and soil	To improve the sustainable use of resources	X	This is a significant scheme which will involve the use of raw materials in construction.	Check the County Council's use of recycled aggregate for new infrastructure.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Potential for construction waste	Check the County Council's use of recycled aggregate for new infrastructure.
	To ensure the efficient use of water, and safeguard water resources	P-	Dependent on the precise location there is the potential for run off resulting from additional road surface and station infrastructure into the river Ver.	Any new infrastructure will need to adhere to SuDS.
	To reduce contamination, and safeguard soil quality and quantity	X	The construction of a new carpark and bridge over the A414 would require some amount of land take which would mean some element of soil capping and loss of soil quantity. Any additional run-off if not implemented with SUDS would result in soil contamination.	Any new infrastructure will need to adhere to SuDS. Advise that an EIA is undertaken to determine impacts on the local soil environment.

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Air	To protect and enhance air quality and minimise noise pollution	U	The potential increase in travel via sustainable modes would have a positive impact on the air quality and noise pollution. However, the construction of a new hub which includes a carpark where one currently does not exist and a new access could have a negative impact.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	The scheme is intended to increase usage of the railway as a transport mode and to encourage active travel to and from the station.	The design should ensure priority is given to access for pedestrians and cyclists and links to local bus services and demand management used to limit car journeys to the station.
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new infrastructure design will need to consider flooding and surface run-off.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	The scheme has the potential to reduce greenhouse gases through increased usage of the railway and active travel modes and subsequent reduction of car use.	
	To ensure the sustainable supply and use of energy	U		

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	A new park and rail hub and bridge would have a negative visual impact but it is dependent on scheme design.	
	To conserve and enhance the historic environment, heritage assets and their settings	U		Before any scheme design or location is agreed consult the HCC map of historic assets.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	The pedestrian/cycle and new bus links should improve access to the southern part of St Albans.	
	To empower all sections of the community to participate in decision making and local action	P+	The scheme should allow local people to make better travel choices.	
Economic development	To maintain employment, improve economic competitiveness (consistent with	P+	The railway line provides an important alternative to car travel on a very congested part of the network. By encouraging more people to use the railway and reduce congestion the scheme has the potential to	

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	environmental constraints) and create a vibrant economy		improve economic competitiveness help create a vibrant economy.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects: Increased usage of the Abbey Line and the promotion of sustainable transport modes to the station resulting in a reduction in car journeys on congested corridor.

Significant Negative Effects:

The construction phase could result in contamination of water courses and will require the use of significant amounts of raw materials.

Timescale: 5-10 years.

Temporary or Permanent: Impacts from infrastructure would be permanent, but impacts as a result of people changing their travel choices would be temporary as this can vary day to day.

Likelihood of effects or impacts identified occurring: Very Small as this is not the preferred option.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Adherence to SUDs.
- Design should maximise opportunities for sustainable travel to the station and minimise car journeys.
- The station should benefit from improved safety and security measures.

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- The design of the station and transport hub should ensure that there are sufficient deterrents in place to discourage crime and anti social behaviour, e.g. lighting, CCTV, secure cycle parking etc.
- Check the County Council's use of recycled aggregate for new infrastructure.
- Any new infrastructure will need to adhere to SuDS.
- Advise that an EIA is undertaken to determine impacts on the local environment.
- Before any scheme design or location is agreed consult the HCC map of historic assets.

Data Issues: None.

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SCHEME SM14: WATFORD M1 J5 PARK AND RIDE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	The site of the park and ride is nowhere near an SSSI, but there are green spaces and trees surrounding the roads, not very hospitable to flora and fauna.	An environmental impact assessment needs to be done on the proposed park and ride if it meets the criteria.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The implementation of this project should result in better connectivity for residents traveling from South Hemel to Watford including access to leisure and health facilities in Watford.	Presumably there will be a bus link to the large hospital in Watford.

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	To reduce crime and create safe environments	U		The design of the new park and ride facility should be mindful of safety and should include elements such as lighting, CCTV and enclosed area and benches for people to rest in.
Water and soil	To improve the sustainable use of resources	U	Depends on the design of the station building and the materials used for the building and the forecourt it may be possible to increase the use of recyclable materials and clean energy sources	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of materials/ sustainable construction practices to be applied unknown at time of assessment.	Consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	U	In designing the park and ride facility and the link road effective run off and drainage can be considered to ensure the safeguarding of water resources and ensuring no contamination of the ground water results from the construction. The site for the Park and Ride would be in close proximity to the River Colne.	Consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted. The planning application will be assessed by the HCC flood team.

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	To reduce contamination, and safeguard soil quality and quantity	U	Depends on extent of new construction and the projects implemented as part of this scheme, exact details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	Air quality and noise pollution should be mitigated by this project as modal shift away from sole use of the car results.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	This scheme is intended to improve access to sustainable transport modes and reduce the need to travel by car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	The details of the implementation of the scheme are unknown at the time of the assessment. The location of the park and ride facility would be close to the River Colne	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted. The planning application will need to go to the flooding team who can advise on the proximity to the River Colne.

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	The aim of this project is to reduce car use and increase use of sustainable transport modes so it should lead to a reduction of the emissions of greenhouse gases.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	The proposed park and ride is close to very busy roads. However, there may be a negative impact on the green space and trees near the River Colne, depending on the exact location of the park and ride.	An environmental impact assessment needs to be done on the proposed park and ride if it meets the criteria.
	To conserve and enhance the historic environment, heritage assets and their settings	U	Unsure – depends on the findings of heritage assets near the site.	The proposed site should be assessed by the archaeologists in HCC's environment department to ensure there are no sites nearby that must be protection under EU law.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	In theory more people will be able to access services using the park and ride, providing there is more than one bus route from the Park and Ride.	Here is an opportunity if carefully thought, out for a bus network to be introduced for passengers. Fares need to be as low as feasible, bearing in mind the difficulties encountered when Cambridge City Council increased the costs of using its Park and Ride.

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	To empower all sections of the community to participate in decision making and local action	U	This would allow more people to travel further.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The reduction in car use on a very congested part of the network may have a positive impact on economic competitiveness in the area.	
	To spread economic growth more evenly to benefit deprived areas	U	Provided the park and ride fees are affordable for people living in deprived areas.	Consider using S106 or CIL to pay for the park and ride bus services for a given period of time. This will be a 'carrot' to entice people away from using cars to drive into Watford.
	To maintain the vitality and viability of existing centres	P+	The scheme could improve vitality and viability of areas of Watford.	Ensure the park and ride services stop at existing centres that need investment and also at the important train nodes.

Significant Positive Effects:

Reduction in car journeys through increased public transport services to the station should lead to improved air quality, reduction in greenhouse gas emissions and reduction in road congestion in the surrounding area.

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Significant Negative Effects:

There are no significant negative impacts, but the location of the park and ride should be carefully considered as there is green space, trees and the River Colne nearby.

Timescale:

5-10 years.

Temporary or Permanent:

Permanent impacts from any new park and ride site, temporary impacts from any modal shift as numbers using the park and ride could vary over time.

Likelihood of effects or impacts identified occurring:

Unknown

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- An environmental impact assessment needs to be done on the proposed park and ride if it meets the criteria.
- Presumably there will be a bus link to the large hospital in Watford
- The design of the new park and ride facility should be mindful of safety and should include elements such as lighting, CCTV and enclosed area and benches for people to rest in.
- Consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
- Consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted. The planning application will be assessed by the HCC flood team.
- Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality when any contracts for works are drafted.
- Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted. The planning application will need to go to the flooding team who can advise on the proximity to the River Colne.
- The proposed site should be assessed by the archaeologists in HCC's environment department to ensure there are no sites nearby that must be protection under EU law.

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- Here is an opportunity if carefully thought, out for a bus network to be introduced for passengers. Fares need to be as low as feasible, bearing in mind the difficulties encountered when Cambridge City Council increased the costs of using its Park and Ride.
- Consider using S106 or CIL to pay for the park and ride bus services for a given period of time. This will be a 'carrot' to entice people away from using cars to drive into Watford.
- Ensure the park and ride services stop at existing centres that need investment and also at the important train nodes.

Data Issues:

Details of size of P&R not yet known.

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SCHEME PR14: FILTERED PERMEABILITY MEASURES AT LAWN LANE ARM OF PLOUGH ROUNDABOUT

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	Few details available at time of assessment however, as this project is in an urban area and using existing routes (but introducing filtered permeability) it is not believed there will be a significant negative impact on biodiversity.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Introducing filtered Permeability measures at Lawn Lane arm of Plough Roundabout with priority for bus and cycle movements should encourage modal shift to more active travel (bus travel involving an element of walking) over other modes.	Publicity will be needed to encourage the use of new non-car routes and links created by this project.

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	To reduce crime and create safe environments	U	The scheme should improve facilities for those traveling by cycle however, safety and crime are not mentioned as considerations and the project is to introduce filtered Permeability measures on existing infrastructure.	Consideration should be given to how the design and lighting of the scheme may help deter crime and the fear of crime.
Water and soil	To improve the sustainable use of resources	O/U	Details of use of materials (if any are needed) unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O/U	Details of use of any materials/ sustainable construction practices to be applied (if applicable to this scheme) unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	O/U	Details unknown at time of assessment. The scheme does not appear to require any additional construction.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.

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	To reduce contamination, and safeguard soil quality and quantity	O/U	Details of construction unknown at time of assessment. The scheme does not appear to require any additional construction.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	Introducing filtered permeability measures at Lawn Lane arm of Plough Roundabout could encourage modal shift thereby reducing air pollution (although the amount of reduction may depend on the type of buses in use). As this is only on one arm of the roundabout and car traffic is simply being diverted it is unlikely that any reduction in noise pollution will be achieved.	Any new, non-car routes and facilities should be advertised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Introducing filtered permeability measures at Lawn Lane arm of Plough Roundabout could encourage a modal shift, provide a choice of modes and reduce the need to travel by private car.	Any improved routes and facilities for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.

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Climatic factors	To adapt to the impacts of climate change such as flooding	O/U	Details of project and extent of any new works unknown at time of assessment. The scheme does not appear to require any additional construction.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Introducing filtered permeability measures at Lawn Lane arm of Plough Roundabout could encourage modal shift thereby reducing the pollution which would have occurred if those trips had been made by vehicular transport.	Any enhancement of facilities for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To ensure the sustainable supply and use of energy	O/U	Details of the scheme are unknown at time of assessment. The scheme does not appear to require any additional construction.	Consideration should be given to the efficiency of any new lighting and infrastructure.
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	U/O	Details of the design of the improved infrastructure are not known at the time of assessment. The scheme does not appear to require any additional construction but utilises existing networks.	Consideration should be given to whether or not the scheme could enhance the local townscape and avoid any negative impacts on local character.

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	To conserve and enhance the historic environment, heritage assets and their settings	U/O	Details of the design of the enhancements are not known at the time of assessment. The scheme does not appear to require any additional construction therefore a significant negative impact is not anticipated.	Consideration needs to be given to whether or not the scheme can enhance the local environment and avoid any negative impacts on local heritage assets and historic environment.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Enhanced infrastructure for non-car modes should improve access to services and community facilities, particularly for those without access to a private car.	Publicity will be needed to raise awareness and encourage use of the enhanced links.
	To empower all sections of the community to participate in decision making and local action	P+	Enhanced infrastructure for non-car modes should improve accessibility allowing people to participate in more events particularly those without access to a private car. Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as the use of any new/improved non-car infrastructure.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and	P+	Introducing filtered permeability measures at Lawn Lane arm of Plough Roundabout could increase accessibility to employment and labour markets, particularly where they also link to the railway station and town centre.	Publicity will be needed to raise awareness and encourage use of the improved links. They can also be included in the Travel Plans of any local

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	create a vibrant economy			businesses or new residential developments.
	To spread economic growth more evenly to benefit deprived areas	U	Introducing filtered permeability measures should increase accessibility to employment and labour markets as well as improving links to Hemel station for those without access to the private car. However, whether this project would spread economic growth more evenly is uncertain.	Publicity will be needed to raise awareness and encourage use of the enhanced links.
	To maintain the vitality and viability of existing centres	P+	Although this scheme does not directly mention accessibility to the town centre, bus and cycle improvements at this location will link into existing networks and connections with the town centre and railway station.	

Significant Positive Effects:

Introducing filtered permeability measures at Lawn Lane arm of Plough Roundabout with priority for bus and cycle movements should encourage modal shift to more active travel (bus travel involving an element of walking) over other modes, increasing sustainable travel and improving access to services and community facilities, particularly for those without access to a private car. This roundabout also connects with the town centre and links to the station therefore also helping with accessibility to labour markets and employment in addition to helping maintain the viability of the centre.

Significant Negative Effects: None

Timescale: 2-5 years

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Likelihood of effects or impacts identified occurring: Likely

Temporary or Permanent: Permanent

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.
 - the design and lighting of any new link to help deter crime and the fear of crime.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - reduction of surface water run-off in addition, whether or not the enhanced links can still be used in the event of the river flooding
 - efficiency of any new lighting as well as infrastructure.
 - the design of any enhancements to prevent a negative impact on local character
 - The setting of any heritage assets and historic environment in the locality
 - Publicity to encourage participation in the consultation
 - Publicity of any new/ improved non-car infrastructure links
 - Inclusion of any new non-car infrastructure links in travel plans for local businesses and new residential development.
- Attention should be paid to the policies in the LTP4.

Data Issues: data on usage on improved non-car links, evidence that the enhancements are encouraging a modal shift.

APPENDIX 3: APPRAISAL MATRICES

SCHEME SM15: WATFORD JUNCTION – TOWN CENTRE (CLARENDON RD) PUBLIC REALM ENHANCEMENTS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	If sufficient modal shift can be achieved this will reduce the numbers of cars on the road and therefore reduce emissions and improve air quality which will be of benefit to local flora and fauna.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Greater priority for pedestrians and cyclists and improved bus interchanges will encourage active travel. Improvements in quality of life and public health, through encouraging and enabling active travel	

APPENDIX 3: APPRAISAL MATRICES

	To reduce crime and create safe environments	✓	An objective of this scheme is to improve safety and perception of safety and security risks by providing high quality and safe facilities for walking, cycling and public transport users	Consideration could be given to CCTV, lighting and other initiatives generally to improve safety and perception of safety.
Water and soil	To improve the sustainable use of resources	P+	Any new infrastructure in improving the public realm should incorporate a sustainable use of resources.	Use of recycled materials and sustainable construction practices where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Construction required for improving infrastructure for pedestrian and cycling priority and bus interchanges may produce waste.	Promote sustainable construction practices, use recycled construction materials and minimise waste.
	To ensure the efficient use of water, and safeguard water resources	U	Any new pedestrian, cycle or busways should ensure the correct drainage and SUDs are in place.	
	To reduce contamination, and safeguard soil quality and quantity	U	Any new pedestrian, cycle or busways should ensure the correct drainage and SUDs are in place.	
Air	To protect and enhance air quality and minimise noise pollution	P+	Encouraging a modal shift to non-vehicular modes will improve air quality and reduce transport generated air and noise pollution.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Improves accessibility and network resilience, and potentially achieves a shift to more efficient modes of travel by providing a greater choice of attractive, integrated alternatives to the private car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new infrastructure will need to be mindful of future flooding events and ensure SuDS are delivered.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	A reduction in car use and vehicles on the road though modal shift will reduce vehicular emissions.	
	To ensure the sustainable supply and use of energy	P+	Non-motorised priority will reduce the use of energy used by motorised vehicles.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Enhances the public realm between Watford Junction station and the town centre along Clarendon Road.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Negative impacts on historic assets such as air quality, noise, vibrations should be improved with sustainable modes being promoted.	

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Provides better access for non-car owners to Watford Junction Station and encourages vibrant communities by integrating streets.	
	To empower all sections of the community to participate in decision making and local action	P+	By facilitating certain groups of society in having access to better travel opportunities, this may empower them to make better travel choices.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The scheme looks to improve access and potentially provides improved access for travelling from Watford Junction Station for work opportunities.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	P+	The scheme will improve access to Watford Junction Station and the town centre.	

APPENDIX 3: APPRAISAL MATRICES

Significant Positive Effects:

Enhances the public realm and improves pedestrian facilities and cycling having a potentially positive effect to air quality, the environment and public health. It also improves access to rail commuting and job opportunities.

Significant Negative Effects:

No significant negative effects.

Timescale:

Medium Term (2-5 Years).

Temporary or Permanent:

Temporary, due to walking and cycling being dependent on personal travel choices day to day.

Likelihood of effects or impacts identified occurring:

Medium likelihood of funding.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote sustainable construction practices, use recycled construction materials and minimise waste.
- Consideration could be given to CCTV, lighting and other initiatives generally to improve safety and perception of safety.

Data Issues:

- Monitoring uptake pedestrian and cycling
- Monitor air quality
- Monitor access improvements

APPENDIX 3: APPRAISAL MATRICES

SCHEME SM16A: (M1 J6 RECONFIGURATION, BRICKET WOOD) (SCHEME NOT SELECTED)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	The current road layout will be reconfigured to reduce congestion on the motorway slip roads. If the slip road layout is moved slightly this will impact on the grassland adjacent to the existing slip roads and any flora and fauna in these habitats. This major motorway junction is also close to Bricket Wood Common (a SSSI). Reduction in congestion in this area could improve local air quality and noise pollution.	Recommended that a full Environmental Impact Assessment is undertaken to establish what habitats are adjacent to the existing slip roads.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and	P+	This scheme aims to enhance local connections and reduce severance into Bricket Wood, which may allow local residents to access leisure and green spaces more easily.	

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	mental health of the population, and reduce health inequalities			
	To reduce crime and create safe environments	U	The scheme design for the reconfiguration will need to ensure that it considers road safety issues.	Consider road safety issues in scheme design.
Water and soil	To improve the sustainable use of resources	P-	A reconfiguration of the current slip roads will require an amount of construction aggregate.	Recycled aggregate should be used where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Reconfiguring current slip roads will require the use of some construction aggregate.	Recycled aggregate should be used where possible.
	To ensure the efficient use of water, and safeguard water resources	P-	Reduced congestion may encourage car use in the area thus increasing chemical runoff from tyres and road salt.	
	To reduce contamination, and safeguard soil quality and quantity	P-	Junction reconfiguration may result in soil loss in the surrounding grassland. The junction borders an area of key biodiversity to the east thus any soil removal or increased chemical runoff would have negative impacts on soil quality.	Recommended that a full Environmental Impact Assessment is undertaken to establish what habitats are adjacent to the existing slip roads.
Air	To protect and enhance air quality and minimise noise pollution	P-	The scheme may ease congestion thus benefitting local air quality. However, the scheme is likely to perpetuate car use which has negative impacts on air quality.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	X	The scheme makes no provision for sustainable transport and is likely to encourage car use.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	At this stage it is unknown whether any new infrastructure will include SuDS.	Consider the use of SuDS in any new infrastructure.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	X	The scheme does not include any provision for sustainable transport and is likely to encourage car use. Therefore, having no reduction on greenhouse gas emissions from vehicular transport.	Seek to incorporate provision for sustainable transport where possible.
	To ensure the sustainable supply and use of energy	X	The scheme does not include any provision for sustainable transport and is likely to encourage car use. Therefore, fossil fuel consumption and greenhouse gas emissions are likely to continue.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	The scheme may reduce severance and improve local resident's access to green spaces such as Bricket Wood Common SSSI. However, the scheme may degrade the surrounding green spaces and Bricket Wood's tranquillity through continued or increased car use.	Consult the list of protected sites in the design of any scheme.

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	To conserve and enhance the historic environment, heritage assets and their settings	P-	The scheme may encourage car use and require construction which will erode the local landscape.	Consult the list of protected sites in the design of any scheme.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	U	The scheme will enhance local connections into Bricket Wood thus improving resident's access to services and facilities. However, the scheme only benefits residents with cars rather than improving access for all in society.	
	To empower all sections of the community to participate in decision making and local action	U	Reduced severance may enable some residents to better participate in local action. However, the scheme will not benefit all residents due to the focus on car travel.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Reduced congestion will help to maintain employment and economic output. Enhanced connections into Bricket Wood may also improve access to employment opportunities.	
	To spread economic growth more evenly to benefit deprived areas	O		

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	To maintain the vitality and viability of existing centres	O		
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Significant Positive Effects:

None

Significant Negative Effects:

The scheme makes no provision for sustainable transport and is likely to encourage car use. Therefore there will be no reduction in greenhouse gas emissions from vehicular transport and potential negative impacts on local air quality.

Timescale:

Unlikely to be taken forward

Temporary or Permanent:

New infrastructure and associated impacts due to waste generation and land take are permanent. Impacts as a result of this new infrastructure such as reduced congestion are temporary as they may encourage car use leading to future congestion.

Likelihood of effects or impacts identified occurring:

Low

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Recommended that a full Environmental Impact Assessment is undertaken to establish what habitats are adjacent to the existing slip roads.
- Consider road safety issues in scheme design.
- Recycled aggregate should be used where possible.
- Consider the use of SuDS in any new infrastructure.
- Seek to incorporate provision for sustainable transport where possible.
- Consult the list of protected sites in the design of any scheme.

Data Issues:

None.

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SCHEME SM16B: M1 J6A/M25 ADDITIONAL SLIPS, A405 DOWNGRADE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Additional slip roads will be created to reduce congestion on the A405, these could impact on the grassland adjacent to the existing slip roads and any flora and fauna in these habitats. This major motorway junction is also close to Bricket Wood Common (a SSSI). Reduction in congestion in this area could improve local air quality and noise pollution.	Recommended that a full Environmental Impact Assessment is undertaken to establish what habitats are adjacent to the existing motorway junctions and A405.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of	P+	This scheme aims to reduce traffic on the A405 allowing more capacity for bus priority and other sustainable modes between St Albans and Watford. Increasing the choice of sustainable modes could potentially	

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	the population, and reduce health inequalities		have a positive impact on health if there is modal shift.	
	To reduce crime and create safe environments	U	The scheme design for the slip roads and A405 downgrade will need to ensure that it considers road safety issues.	
Water and soil	To improve the sustainable use of resources	P-	The construction of slip roads will require an amount of construction aggregate.	Recycled aggregate should be used where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	The construction of new slip roads will require an amount of earth/soil to be removed.	
	To ensure the efficient use of water, and safeguard water resources	P+	Any new road infrastructure now needs to adhere to SuDS, which ensures that all surface run-off has sufficient drainage. There are no waterways in the immediate vicinity.	
	To reduce contamination, and safeguard soil quality and quantity	P-	New slip roads will mean that some soil is capped, and possibly some removed during construction.	
Air	To protect and enhance air quality and minimise noise pollution	P+	The aim of the scheme is to remove traffic on the A405, and new slip roads should reduce congestion on the motorway junctions, this should provide improvements to air quality if there is modal shift on the A405	

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			and if traffic is kept moving on the motorway junctions.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	This is one of the main aims of the scheme to downgrade the A405 to allow bus priority and capacity for sustainable modes.	
Climatic factors	To adapt to the impacts of climate change such as flooding	O	This area is not in a known area of flooding, and any new infrastructure would need to adhere to SuDS regulations.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	If there is sufficient modal shift on the A405 to more sustainable modes.	
	To ensure the sustainable supply and use of energy	P+	Potential to reduce fuel consumption with modal shift.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+/P-	The construction of slip roads will have a negative impact on the landscape visually, but the downgrading of the A405 should have a positive impact on the townscape and landscape but this will be dependent on scheme design.	

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	To conserve and enhance the historic environment, heritage assets and their settings	P+	There are a couple of listed buildings in the vicinity of this scheme, by reducing traffic in this area, this will provide benefits to these buildings with regards to air pollution and vibrations.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	The scheme will provide improvements to buses and sustainable modes between the towns of St Albans and Watford.	
	To empower all sections of the community to participate in decision making and local action	P+	Potentially positive impact on allowing local people to make better travel choices.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	This scheme is not to improve access to any specific employment area, but improved connections between the M1 and M25 and less congestion will benefit local business.	

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	To spread economic growth more evenly to benefit deprived areas	P+	By downgrading the A405 and providing local people access to more sustainable modes this may allow more people to access employment between the towns of Watford and St Albans.	
	To maintain the vitality and viability of existing centres	P+	The downgrading of the A405 this should provide benefits to the local town of Bricket Wood, with regards to air quality, accessibility etc.	

Significant Positive Effects:

This scheme will allow better access for sustainable modes in particular for buses as the improvements will allow bus priority measures to be implemented. Other positives from this scheme would be that by keeping the traffic moving it should improve congestion. A reduction in congestion then has other knock on benefits such as improvements to air quality, less impacts on local listed buildings, and benefits to local businesses for both access to employment and increased productivity.

Significant Negative Effects:

There are no significant negative impacts identified, but careful consideration will need to be given to any construction practices with the new slip roads with regard to use of materials and waste disposal. The new slip roads would also result in current greenfield land/soil being capped.

Timescale:

Medium to long term (10-20 years)

Temporary or Permanent:

The impacts from constructing new slip roads would have permanent impacts on the local environment, the down grading of the A405 and the shift to more sustainable modes could have temporary impacts as this is reliant on numbers of people changing their current travel behaviours and this can vary over time.

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Likelihood of effects or impacts identified occurring:

This scheme would require a large-scale change to the current road network and would take a long time to design and implement, and would be subject to levels of funding available, so low to medium likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Recommended that a full Environmental Impact Assessment is undertaken to establish what habitats are adjacent to the existing motorway junctions and A405.
- Recycled aggregate should be used where possible and any waste materials should be recycled as well.

Data Issues:

None.

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SCHEME SM16C: (M1 J6A/M25 J21 PARTIAL ADDITIONAL SLIPS PLUS A405 PARTIAL DOWNGRADE)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Additional slip roads will be created to reduce congestion on the A405; these could impact on the grassland adjacent to the existing slip roads and any flora and fauna in these habitats. A reduction in congestion in this area could improve local air quality and noise pollution. This would benefit the nearby Bricket Wood Common SSSI.	Recommended that a full Environmental Impact Assessment is undertaken to establish what habitats are adjacent to the existing motorway junctions and A405.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and	U	This scheme aims to reduce traffic on the A405 allowing more capacity for bus priority. Increasing the choice of sustainable modes could potentially have a positive impact on health if there is modal shift. However, the scheme only includes some additional bus priority. This may limit	

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	reduce health inequalities		the schemes effectiveness and thus modal shift.	
	To reduce crime and create safe environments	U	The scheme design for the slip roads and A405 downgrade will need to ensure that it considers road safety issues. Issues associated with crime due to increased bus patronage are also not considered.	Consider road safety in the design of schemes. Consider personal security issues associated with increased bus patronage.
Water and soil	To improve the sustainable use of resources	P-	The construction of slip roads will require an amount of construction aggregate.	Recycled aggregate should be used where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	The construction of new slip roads will require an amount of earth/soil to be removed.	
	To ensure the efficient use of water, and safeguard water resources	P+	Any new road infrastructure now needs to adhere to SuDS, which ensures that all surface run-off has sufficient drainage. There are no waterways in the immediate vicinity.	Utilise SuDS where possible.
	To reduce contamination, and safeguard soil quality and quantity	P-	New slip roads will mean that some soil is removed, possibly during construction.	
Air	To protect and enhance air quality and minimise noise pollution		New slip roads should help reduce congestion on motorway junctions. This may provide improvements to air quality if there is modal shift on the A405 and traffic flow improvement.	

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		P+	However, the scheme only involves partial additional slips and a partial A405 downgrade. This may prevent the scheme from achieving significant air quality benefits.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	The scheme aims to improve conditions for sustainable transport on the A405 and encourage bus use. However, the scheme only includes a partial downgrade and some additional bus priority which may limit the schemes success.	
Climatic factors	To adapt to the impacts of climate change such as flooding	O	This area is not in a known area of flooding, and any new infrastructure would need to adhere to SuDS regulations.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	If there is sufficient modal shift on the A405 to more sustainable modes or increased bus patronage there may be a reduction in greenhouse gas emissions.	
	To ensure the sustainable supply and use of energy	P+	Potential to reduce fuel consumption with modal shift.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	The construction of slip roads will have a negative impact on the landscape visually. Partial downgrading of the A405 should have some positive impact on the townscape and landscape however this will depend on scheme design	

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			and will be limited due to it being a partial downgrade.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	There are two listed buildings in the vicinity of this scheme, by reducing traffic in this area; this will provide benefits to these buildings with regards to air pollution and vibrations.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	The scheme will provide some improvements to bus services and sustainable modes between the towns of St Albans and Watford. This will help improve access to services for residents.	
	To empower all sections of the community to participate in decision making and local action	P+	Potentially positive impact on allowing local people to make better travel choices.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	This scheme may reduce congestion thus having economic benefits and improving access to employment opportunities.	

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	To spread economic growth more evenly to benefit deprived areas	P+	A partial downgrade of the A405 and providing local people access to more sustainable modes may allow more people to access employment opportunities. However, a partial downgrade may prevent wider economic benefits.	
	To maintain the vitality and viability of existing centres	P+	Partial downgrading of the A405 should provide benefits to the local town of Bricket Wood, with regards to air quality, accessibility etc. However, a partial downgrade may limit potential benefits.	

Significant Positive Effects: None.

Significant Negative Effects: None.

Timescale: Scheme unlikely to be taken forward

Permanent or Temporary: New infrastructure and associated impacts due to waste generation and land take are permanent. Impacts as a result of this new infrastructure such as modal shift are temporary as they may require ongoing work.

Likelihood of effects or impacts identified occurring: Low

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Recommended that a full Environmental Impact Assessment is undertaken to establish what habitats are adjacent to the existing motorway junctions and A405.
- Consider road safety in the design of schemes.
- Consider personal security issues associated with increased bus patronage.
- Recycled aggregate should be used where possible.
- Utilise SuDS where possible.

Data Issues: None

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SCHEME SM17: A411 HEMPSTEAD ROAD AND GRAND UNION CANAL CORRIDOR CYCLEWAY IMPROVEMENTS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	✓	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels.	Promote cycling as often as possible. Target some promotion to students using West Herts College which will see enhanced cycle ways in front of the college.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits. It is also accessible to everyone in society at little cost.	Promote cycling as a form of exercise for everyone.

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	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help this. Secure storage for bicycles is essential to encourage use.	Consider the interactions between pedestrians, vehicles and cyclists to prevent any conflicts. For example, use signage so it is clear who has the priority right of way to avoid accidents. Safety also applies on the road, bikeability training can help cyclists ride safely, drivers also need tuition to be aware of cyclists. Cycle storage needs to include the ability to lock them securely.
Water and soil	To improve the sustainable use of resources	P+	Off road cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible

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	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Improving cycle ways addresses the objective completely.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle way enhancements should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and improved cycle ways may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	✓	Cycling does not use any energy other than that produced by individuals. Even electric bikes generate power from human energy.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	✓	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Improvements to towpath connectivity will help improve access to the natural environment.	Any new cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts.
	To conserve and enhance the historic environment, heritage assets and their settings	✓	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	Recommend that the HCC map of historic assets is consulted.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Improving cycling infrastructure will improve access to services including West Herts College	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access

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	To empower all sections of the community to participate in decision making and local action	P+	Improved cycle infrastructure will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action	As above
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities	
	To spread economic growth more evenly to benefit deprived areas	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities	
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality and viability. The proposed improvements are within 1 mile of Watford High Street so the existing centre may see more footfall if active travel is promoted.	Encourage cycling to existing shopping centres in Watford.

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Significant Positive Effects:

- The improvement of cycle infrastructure and the resultant cycling has less negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- The improved towpath connectivity will increase opportunity to access the natural environment further contributing to health benefits.
- Economically, the close proximity of the cycle way improvements may encourage more footfall in Watford High Street. Improved cycle infrastructure may also enable those on low incomes to access employment opportunities.
- There are also potential educational benefits as West Herts College will be more accessible via cycling, providing opportunity for students that live further away or come from low income families to access further education.

Significant Negative Effects:

None.

Timescale:

2-5 years.

Temporary or Permanent:

Permanent impacts from any cycling infrastructure, but temporary impacts as a result of any modal shift, as cycling can vary day to day and can be seasonal.

Likelihood of effects or impacts identified occurring:

Medium – will be dependent on success of modal shift to cycling.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the cycleway improvements such as West Herts College students and users of Watford Town Centre.
- Consider the interactions between pedestrians, vehicles and cyclists to prevent any conflicts. For example, use signage so it is clear who has the priority right of way to avoid accidents.

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- Safety also applies on the road, bikeability training can help cyclists ride safely, and drivers also need tuition to be aware of cyclists.
- Cycle storage at destinations needs to include the ability to lock them securely.
- The cycle way improvements should consider SUDS where possible and need to consult the section in TIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.
- Recommend that the HCC map of historic assets is consulted.

Data Issues:

Monitoring modal shift to cycling in the area.

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SCHEME SM18: (Parking Strategy Action Plan (includes cycle parking provision and regulation of freight deliveries))

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	It is currently unknown what approach the strategy will take and what measures will be recommended.	It is recommended that future environmental assessment is conducted once a formal action is developed.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	U	It is currently unknown what approach the strategy will take and what measures will be recommended. Therefore, impacts on health are unknown.	

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	To reduce crime and create safe environments	P+	The strategy should help to address issues associated with illegal or dangerous parking and the need for secure cycle parking.	
Water and soil	To improve the sustainable use of resources	O		
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources.	O		
	To reduce contamination, and safeguard soil quality and quantity.	O		
Air	To protect and enhance air quality and minimise noise pollution	U	It is currently unknown what approach the strategy will take and what measures will be recommended. Therefore, impacts on air quality are unknown.	
	To improve the choice of sustainable transport modes,	U	It is currently unknown what approach the strategy will take and what measures will be recommended. Therefore, impacts	

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	encourage their use, and reduce the need to travel by car		on sustainable transport are unknown.	
Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	U	It is currently unknown what approach the strategy will take and what measures will be recommended. Therefore, impacts on greenhouse gas emissions are unknown.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	It is currently unknown what approach the strategy will take and what measures will be recommended. Therefore, impacts on the townscape and green spaces are unknown.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	It is currently unknown what approach the strategy will take and what measures will be recommended. Therefore, impacts on the historic environment are unknown.	

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	U	It is currently unknown what approach the strategy will take and what measures will be recommended. Therefore, impacts on access to community facilities are unknown.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	U	It is currently unknown what approach the strategy will take and what measures will be recommended. Therefore, impacts on employment are unknown.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

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Significant Positive Effects:

None.

Significant Negative Effects:

None.

Timescale:

0-2 Years.

Temporary or Permanent:

At this stage the impacts of the scheme are unknown.

Likelihood of effects or impacts identified occurring:

Medium Likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- It is recommended that this strategy is formally assessed again once an action is developed.

Data Issues:

None.

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SCHEME SM19A: KINGS LANGLEY STATION PARK AND RIDE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Exact location details are unknown at this stage, but any landtake from greenfield sites would have a negative impact on local biodiversity.	Recommend that an EIA is undertaken.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The implementation of this project should result in better connectivity for residents in South Hemel and Watford included access to leisure and health facilities.	

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	To reduce crime and create safe environments	U		The design of the new park and ride facility should be mindful of safety and should include elements such as lighting, CCTV.
Water and soil	To improve the sustainable use of resources	U	Depending on the design of the station building and the materials used for the building and the forecourt it may be possible to increase the use of recyclable materials and clean energy sources.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of materials/ sustainable construction practices to be applied unknown at time of assessment.	Consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	U	In designing the park and ride facility and the link road effective run off and drainage can be considered to ensure the safeguarding of water resources and ensuring no contamination of the ground water results from the construction. The site for the Park and Ride would be in close proximity to the river Gade.	Consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.

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	To reduce contamination, and safeguard soil quality and quantity	U	Depends on extent of new construction and the projects implemented as part of this scheme, exact details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of Contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+/P-	Air quality and noise pollution could increase at the site of the park and ride and the new road link, but with improved bus and pedestrian links to Watford and Hemel any modal shift will should improve air quality in those towns.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	This scheme is intended to improve access to sustainable transport modes and reduce the need to travel by car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	The details of the implementation of the scheme are unknown at the time of the assessment. The location of the park and ride facility would be close to the river Gade.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	The aim of this project is to reduce car use and increase use of sustainable transport modes so it should lead to a reduction of the emissions of greenhouse gases.	
	To ensure the sustainable supply and use of energy	U	Depends on Implementation, and whether any charging infrastructure is provided in the park and ride.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	The station is located on the southern edge of the village so any development would have limited impact on the character of the village. However, there may be a small negative impact on the green space adjacent to the river Gade, depending on the exact location of the transport hub and the link road.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	This will depend on the location of the park and ride and new link road.	Before any location and scheme design is finalised consult the HCC map of historic assets.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P-	This scheme does not improve the situation for those without access to a car.	

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	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The reduction in car use on a very congested part of the network may have a positive impact on economic competitiveness in the area.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	P+	By improving access to the railway station from South Hemel Hempstead and North Watford the viability of the station will be maintained and enhanced for the community of Kings Langley.	It will be important to ensure that Kings Langley station benefits from any increase in capacity for services into Kings Cross resulting from HS2.

Significant Positive Effects:

Reduction in car journeys through increased public transport services to the station should lead to improved air quality, reduction in greenhouse gas emissions and reduction in road congestion in the surrounding area.

Significant Negative Effects: None.

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Timescale: Medium, 5-10 years.

Temporary or Permanent: permanent impacts from the new infrastructure on the local environment, but temporary impacts from any modal shift as this can vary.

Likelihood of effects or impacts identified occurring: Unknown.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Recommend that an EIA is undertaken as this size park and ride would have impacts on the local environment.
- The design of the new park and ride facility should be mindful of safety and should include elements such as lighting, CCTV.
- Consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
- Consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.
- Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
- Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.
- It will be important to ensure that Kings Langley station benefits from any increase in capacity for services into Kings Cross resulting from HS2.

Data Issues: None.

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SCHEME SM19B: A41 HEMEL WEST PARK & RIDE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	X	A construction on this scale on what is currently undeveloped land may have a negative impact on biodiversity.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The provision of a link over the WCML for pedestrians and cyclists creates an opportunity to increase active travel to the station and improves connectivity to the station from the town centre.	

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	To reduce crime and create safe environments	U	Not enough is known about the design of the scheme at the time of the assessment.	Thought should be given in the design to ensure the hub is well lit, covered by CCTV, pedestrians and cyclists are segregated from motor vehicles and secure cycle storage is provided.
Water and soil	To improve the sustainable use of resources	X	This scheme would require significant amounts of construction materials.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	X	This scheme could result in a significant amount of construction waste.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	P-	The proposed site of the transport hub is very close to the Grand Union Canal so there is potential for run off from the construction and the completed hard surfaces on what is currently undeveloped land getting into the water course.	The scheme would need to adhere to SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Depends on extent of new construction and the projects implemented as part of this scheme, exact details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of Contamination and safeguarding of soil quality and quantity and included where possible when any

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				contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	U	In the longer term the scheme has the potential to protect air quality and minimise noise pollution through the enabling of more sustainable journeys and the reduction of car use.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	This scheme is intended to increase the opportunities for travel by sustainable modes and a resultant reduction in car journeys.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new infrastructure would need to adhere to SUDS.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	When completed this scheme has the potential to reduce greenhouse gases through the reduction in the need for car journeys.	
	To ensure the sustainable supply and use of energy	U	This will depend on whether any electric vehicle charging infrastructure is included in the park and ride.	

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	Not enough information about the scheme available at the time of assessment to take a view.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	Not enough information about the scheme available at the time of assessment to take a view.	Ensure that the HCC map of historic assets is consulted before any scheme is finalised.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P-	Park and Ride's do not improve the situation for those without access to a car.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with	P+	By improving transport infrastructure to encourage alternatives to travel by car this scheme has the potential to maintain employment and improve economic competitiveness in Hemel and boast the attractiveness of the	

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	environmental constraints) and create a vibrant economy		Maylands Business park as an employment centre.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	P+	Part of the scheme is to provide a bus shuttle link to Hemel town centre.	

Significant Positive Effects: The increase of sustainable journeys to and from the station and town centre and corresponding reduction of car journeys on a congested part of the network.

Significant Negative Effects: this park and ride option would have significant impacts on local biodiversity with significant infrastructure being built, this would require large amounts of resources and would produce construction waste. If SuDS are not adhered to local water courses would see a reduction in water quality with particulates and heavy metals in surface run-off. This scheme would also exacerbate social exclusion as those without access to a car would not benefit from this scheme.

Timescale: scheme not likely to happen.

Temporary or Permanent: permanent impacts from the park and ride infrastructure, temporary impacts from any modal shift as a result of this new infrastructure as use of sustainable modes can vary over time.

Likelihood of effects or impacts identified occurring: Low because scheme not likely to happen.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Design to incorporate safety and security to reduce crime and anti-social behaviour.

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- Thought should be given in the design to ensure the hub is well lit, covered by CCTV, pedestrians and cyclists are segregated from motor vehicles and secure cycle storage is provided.
- Ensure use of recycled materials where possible.
- The scheme would need to adhere to SUDS.
- Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
- Ensure that the HCC map of historic assets is consulted before any scheme is finalised.

Data Issues: None.

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SCHEME SM19C: A41 BOURNE END PARK & RIDE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	X	A scheme of this nature on what is currently farmland near the Grand Union Canal would have a negative impact on biodiversity.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Improved access to town centre and railway station, scheme may help promote active travel.	
	To reduce crime and create safe environments	U	When designing the Park and Ride facility thought should be given to crime reduction measures such as lighting, CCTV etc.	

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Water and soil	To improve the sustainable use of resources	X	This scheme would require significant amounts of construction materials.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	X	This scheme could result in a significant amount of construction waste.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	P-	The proposed site for this scheme is adjacent to the Grand Union Canal so there is significant potential for damaging water runoff into the canal.	The scheme would need to adhere to SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Depends on extent of new construction and the projects implemented as part of this scheme, exact details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	In the longer term the scheme has the potential to protect air quality and minimise noise pollution through the enabling of more sustainable journeys and the reduction of car use	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	This scheme is intended to increase the opportunities for travel by sustainable modes and a resultant reduction in car journeys.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any scheme would need to adhere to SUDS	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	When completed this scheme has the potential to reduce greenhouse gases through the reduction in the need for car journeys.	
	To ensure the sustainable supply and use of energy	U	This will be dependent on how many charging points are included in the park and ride.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	X	The creation of a park and ride hub on what is currently farmland would have a detrimental impact on the landscape and green space.	
	To conserve and enhance the historic environment, heritage assets and their settings	U		Recommend that the HCC map of historic assets is consulted before any scheme is finalised.

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P-	This scheme will not provide any benefits to those without access to a car.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	By improving transport infrastructure to encourage alternatives to travel by car this scheme has the potential to maintain employment and improve economic competitiveness in Hemel and boast the attractiveness of the Maylands Business park as an employment centre.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	P+	This scheme will improve access from the station to the town centre.	

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Significant Positive Effects:

The promotion of sustainable travel modes should have a positive impact on air quality and reduce congestion on the road network.

Significant Negative Effects:

Significant risk of runoff into adjacent water course. Detrimental impact on biodiversity and landscape.

Timescale: unlikely to happen

Temporary or Permanent: permanent impacts from the park and ride infrastructure.

Likelihood of effects or impacts identified occurring:

Low because unlikely to happen

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Adherence to SUDS
- Ensure use of recycled materials where possible.
- Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
- Recommend that the HCC map of historic assets is consulted before any scheme is finalised.

Data Issues: None.

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SCHEME SM19D: A41 TRING PARK & RIDE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	X	The construction of a park and ride facility on what is currently farmland adjacent to the Grand Union Canal would have a negative impact on biodiversity.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	O		

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	To reduce crime and create safe environments	U	The details of the scheme were not available at the time of assessment. It is unlikely that the scheme would reduce crime, but every effort should be made when designing the scheme to create a safe environment both in terms of road safety and in crime and anti-social behaviour reduction.	
Water and soil	To improve the sustainable use of resources	X	The scheme would require the use of construction materials.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	X	This scheme could result in a significant amount of construction waste.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	P-	The proposed site for this scheme is adjacent to the Grand Union Canal so there is significant potential for damaging water runoff into the canal.	The scheme would need to adhere to SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Depends on extent of new construction and the projects implemented as part of this scheme, exact details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.

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Air	To protect and enhance air quality and minimise noise pollution	X	The construction of a park and ride facility in what is currently a rural area would have a negative impact on air quality and noise pollution.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P-	There is potential for the scheme to increase the use of sustainable transport i.e. train and bus use. However, there is also the possibility the scheme could encourage more people to drive to the facility.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any scheme would have to adhere to SUDS.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	U	It is not clear that a park and ride in this location would reduce car journeys and could in fact increase them in the area around the station thereby having a negative impact on emissions from vehicular transport.	
	To ensure the sustainable supply and use of energy	U	This depends on how many electric vehicle charge points are installed.	

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	X	Building a park and ride in this location would have a negative impact on the landscape and green space around the station.	
	To conserve and enhance the historic environment, heritage assets and their settings	U		Recommend that the HCC map of historic assets is consulted before any scheme is finalised.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P-	This scheme will not benefit those without access to a car.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with	P+	There is potential for this scheme to improve transport links from the station to Tring town centre which could help maintain employment and improved economic competitiveness.	

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	environmental constraints) and create a vibrant economy			
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	U	The park and ride hub may attract more visitors into the town centre to help maintain its vitality, but it is likely that the main benefit will be for those wishing to commute into London thereby having the opposite effect.	

Significant Positive Effects:

There are no significant positive impacts, but a park and ride could improve access to employment.

Significant Negative Effects:

There would be significant negative impacts on biodiversity, resources, waste disposal, air quality and landscape, the scheme could also potentially have a negative impact on local water courses, and would not provide any access to sustainable modes, and would not improve social exclusion.

Timescale: Unknown – unlikely to happen

Temporary or Permanent: Permanent impacts from the park and ride infrastructure.

Likelihood of effects or impacts identified occurring: Low- unlikely to happen

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Adherence to SUDS.
- Use of recycled materials where possible.

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- Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.

Data Issues:

None.

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SCHEME PR19: M1 J8 COACHWAY

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	If sufficient modal shift can be achieved this will reduce the numbers of cars on the road and therefore reduce emissions and improve air quality which will be of benefit to local flora and fauna.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	If associated cycle and pedestrian improvements are implemented, this may increase active travel.	

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	To reduce crime and create safe environments	P-	With more people in the public realm and using passenger transport, this could increase incidents of Hate Crime.	Ensure that the G&TP is consistent with the County Hate Crime Strategy.
Water and soil	To improve the sustainable use of resources	P-	Any new infrastructure to build a bus/coach interchange should incorporate a sustainable use of resources.	Use of recycled materials and sustainable construction practices where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Construction required for the interchange may produce waste.	Promote sustainable construction practices, use recycled construction materials and minimise waste.
	To ensure the efficient use of water, and safeguard water resources	U	Any new interchange should ensure the correct drainage and SUDs are in place.	
	To reduce contamination, and safeguard soil quality and quantity	U	Any new interchange should ensure the correct drainage and SUDs are in place.	
Air	To protect and enhance air quality and minimise noise pollution	P+	Encouraging a higher use of bus and coaches could reduce car use and the number of vehicles on the road, enhancing air quality and minimising noise for strategic roads and for local journeys to neighbouring towns. Encouragement of active travel will also improve air quality and reduce noise pollution.	Encouragement for cleaner, more efficient and quieter buses and coaches.

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Improves accessibility and network resilience, and potentially achieves a shift to more efficient modes of travel by providing a greater choice of attractive, integrated alternatives to the private car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	A reduction in car use and vehicles on the road though modal shift will reduce vehicular emissions.	Encourage use of cleaner buses and coaches.
	To ensure the sustainable supply and use of energy	P+	Priority for non-motorised modes and a subsequent greater uptake will reduce the use of fossil fuels used by motorised vehicles.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	Possible negative impact on green space depending on location of paved surfaces for bus/coach interchange.	
	To conserve and enhance the historic environment,	U	Depends on where any new infrastructure is delivered.	

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	heritage assets and their settings			
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Provides better access to the A414, M1 and local access to towns.	
	To empower all sections of the community to participate in decision making and local action	P+	By facilitating certain groups of society in having access to better travel opportunities, this may empower them to make better travel choices.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The scheme looks to improve access to the A414, M1 and local towns and subsequently to employment.	
	To spread economic growth more evenly to benefit deprived areas	P+	Improved access by bus, coach and other pedestrian and cycling improvements may benefit deprived areas who have limited access to private cars.	

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	To maintain the vitality and viability of existing centres	P+	The scheme will improve access to neighbouring towns from the Maylands M1 junction.	
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Significant Positive Effects:

Provides improved accessibility and network resilience, improving access for commuting and job opportunities to improve the economy. Higher usage of bus and coach transport will reduce the use of private car and vehicles on the road improving air quality. Cycle and pedestrian improvements may encourage active travel and benefit public health.

Significant Negative Effects:

There are no significant negative effects, but this scheme is promoting the use of passenger transport (buses and coaches) and needs to be mindful of Hate Crime. Any new infrastructure would require construction materials and would require construction waste disposal.

Timescale:

Medium Term (5-10 Years)

Temporary or Permanent: any impacts as a result of new infrastructure would be permanent, but impacts from the use of any new bus/coach service would be temporary, as this is dependent on travel choices/behaviour.

Likelihood of effects or impacts identified occurring:

Medium likelihood of funding

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote sustainable construction practices, use recycled construction materials and minimise waste.
- Ensure that the G&TP is consistent with the County Hate Crime Strategy.
- Encouragement for better, more efficient, cleaner and quieter buses and coaches.

Data Issues:

- Monitoring usage of bus and coaches
- Air quality sensors A414 and M1

APPENDIX 3: APPRAISAL MATRICES

SCHEME SM20: A405 CYCLEWAY

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels. The creation of off-road cycle way will have some potential damage to local biodiversity.	Ensure use of recycled materials where possible
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits. It is also accessible to everyone in society at little cost.	Promote cycling as a form of exercise for everyone. Particular promotion to employees at Leavesden business park could be beneficial.

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	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help this. Potential for off-road cycle ways to increase fear of crime due to secluded nature.	Consider lighting and location of off-road cycle ways particularly in rural or isolated areas. Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists. Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Off road cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work	Ensure use of recycled materials where possible
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS

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	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating an off-road cycleway addresses the objective completely.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle way enhancements should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new off-road cycleway may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	P+	Cycling does not use any energy other than that produced by individuals. Electric bikes do require a battery to be charged.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of off-road cycleway may result in damage to green spaces.	The new cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	Recommend that the HCC map of historic assets is considered before any scheme is finalised.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycling infrastructure will improve access to services.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.

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	To empower all sections of the community to participate in decision making and local action	P+	Improved cycle infrastructure will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as at Leavesden Business Park	Promote the cycle way to employees at Leavesden Business Park
	To spread economic growth more evenly to benefit deprived areas	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as at Leavesden Business Park	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The off-road cycleway will avoid congestion hotspots thus potentially facilitating more movement into St Albans and Watford.	

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Significant Positive Effects:

- The creation of cycle infrastructure and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle way will also avoid congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle way may enable those on low incomes to access employment opportunities particularly due to the connectivity with Leavesden Business Park.

Significant Negative Effects:

None.

Timescale:

0-2 years.

Temporary or Permanent:

Creation of an off-road cycleway will have permanent impacts on the local environment, but positives from modal shift will be temporary due to cycle use varying day to day and cycle use can be seasonal.

Likelihood of effects or impacts identified occurring:

Medium – will be dependent on success of modal shift to cycling

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees of Leavesden Business Park.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Lighting and the safety of off-road cycle ways should also be considered in order to prevent crime or fear of crime.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the cycle way.
- Recycled materials should also be used where possible to reduce potential environmental impacts.

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- The cycle way construction should consider SUDS where possible and need to consult the section in TIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.
- Recommend that the HCC map of historic assets is considered before any scheme is finalised.

Data Issues: Monitoring modal shift to cycling in the area.

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SCHEME PR20: NICKEY LINE NORTH/SOUTH EXTENSION

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+/P-	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels. The creation of an off-road cycle route, however, may have some potential negative impact to local biodiversity if it results in the loss of habitat or green space.	Ensure use of recycled materials where possible.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce	✓	Cycling has proven physical and mental health benefits.	Promote cycling as a form of exercise for everyone. Promotion to employees at Maylands business park could be beneficial.

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	health inequalities			
	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help this. Potential for off-road cycle ways to increase fear of crime due to secluded nature.	Consider lighting and location of off-road cycle ways particularly in rural or isolated areas. Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists. Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Off road cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work	Ensure use of recycled materials where possible
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including particulates from tyres/brakes and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS.

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	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including particulates from tyres/brakes and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution. Air quality may improve and noise be reduced if a modal shift is achieved away from motorised vehicles.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating an off-road cycleway addresses the objective by encouraging a move away from car use.	Promote the new cycle path and educate and encourage people on cycling.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle way enhancements should not increase runoff.	Consider SUDS and consult the section in the TIAMP about SUDS
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new off-road cycleway may encourage a modal shift away from forms of transport dependent on fossil fuels.	

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	To ensure the sustainable supply and use of energy	✓	Cycling does not use any energy other than that produced by individuals. Any promotion of electric bikes would mean an increase in demand on the national grid.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of off-road cycleway may result in damage to green spaces.	The new cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycling infrastructure will improve access to services. It is also accessible to everyone in society at little cost.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access

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	To empower all sections of the community to participate in decision making and local action	P+	Improved cycle infrastructure will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as at Maylands Business Park.	Promote the cycle way to employees at Maylands Business Park and promote the new cycle path to help recruit potential local employees.
	To spread economic growth more evenly to benefit deprived areas	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as at Maylands Business Park	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The off-road cycleway will avoid congestion hotspots thus potentially facilitating more movement into Hemel Hempstead town centre via the Nickey Line.	

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Significant Positive Effects:

- The creation of cycle infrastructure and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle way will also avoid congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle way may enable those on low incomes to access employment opportunities particularly due to the connectivity with Maylands Business Park.

Significant Negative Effects: None.

Timescale: 2-5 years

Temporary or Permanent: Any new off-road cycle infrastructure would have permanent impacts, but temporary impacts on any impacts from the use of this route, as cycle use is not consistent day to day.

Likelihood of effects or impacts identified occurring: Medium – will be dependent on success of modal shift to cycling.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees of Maylands Business Park.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Lighting and the safety of off-road cycle ways should also be considered in order to prevent crime or fear of crime.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the cycle way.
- Recycled materials should also be used where possible to reduce potential environmental impacts.
- The cycle way construction should consider SUDS where possible and need to consult the section in TIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.

Data Issues: Monitoring modal shift to cycling in the area.

APPENDIX 3: APPRAISAL MATRICES

SCHEME SM21: WATFORD NORTHERN ORBITAL CYCLEWAY LINK

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Cassiobury Park is a key biodiversity area. The link a route through Cassiobury Park stated as being via the existing route but the description does not detail whether or not any works will take place within or near the park.	Consideration will need to be given to the impact of any works within or near Cassiobury Park on biodiversity.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Scheme is for enhanced cycle links between Watford Junction and Cassiobury Park thereby encouraging active travel.	Publicity will be needed to encourage use of the cycle infrastructure.

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	To reduce crime and create safe environments	U	Enhancing cycle links should encourage greater use by people opting to travel by bike. People may feel safer as people travelling more slowly (as opposed to being contained in cars) may act as a deterrent for crime in the area because they are more likely to be observed/ witnessed; this may also depend on the lighting scheme.	Consideration needs to be given to the lighting of any new cycle infrastructure including how the design and lighting may help deter crime and the fear of crime.
Water and soil	To improve the sustainable use of resources	P+	Encouraging travel by cycling would potentially reduce car (therefore fuel) use. Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery.	U	Details of use of materials/ sustainable construction practices to be applied unknown at time of assessment.	Consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources.	U	Exact details unknown at time of assessment. Water run-off and contamination during any construction may be an issue.	Consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible

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				when any contracts for works are drafted.
	To reduce contamination, and safeguard soil quality and quantity	U/O	Depends on extent of any new construction and the projects implemented as part of this scheme, exact details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution.	P+	Improvements to air quality and traffic noise pollution would be achieved if sufficient modal shift to cycling occurs.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car.	✓	Scheme is for enhanced cycle links between Watford Junction and Cassiobury Park thereby improving choice and encouraging use of sustainable modes of travel.	Publicity will be needed to encourage use of the cycle infrastructure.
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Details of projects and extent of any new works unknown at time of assessment.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport.	P+	Scheme is for enhanced cycle links between Watford Junction and Cassiobury Park thereby improving choice and encouraging use of non-vehicle modes of travel. Reduction of greenhouse gases emitted by vehicular transport would be achieved if sufficient modal shift occurs.	Publicity will be needed to encourage use of the cycle infrastructure.
	To ensure the sustainable supply and use of energy.	U	Details of the projects comprising the scheme are unknown at time of assessment.	Consideration should be given to the efficiency of any new lighting and infrastructure (including signals).
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U/P+	Enhancing cycleway links should potentially encourage a modal shift from car to cycle thereby reducing pollution and preserving/ enhancing the character of the townscape and green spaces.	Consideration needs to be given to the policies in LTP4
	To conserve and enhance the historic environment, heritage assets and their settings	U/P+	Enhancing cycleway links should potentially encourage a modal shift from car to cycle thereby reducing pollution and preserving/ enhancing the environment and any heritage assets. However, the extent of any new build is unknown	Consideration needs to be given to any heritage assets and historic environment along the proposed route. Contact the archaeologists for clarification about heritage assets close to the scheme.

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Creating and enhancing opportunities to travel by a greater variety of modes may help to improve access to services and facilities for all, including those who may not have access to a private car.	
	To empower all sections of the community to participate in decision making and local action	P+	Public consultation on the schemes within the GTP should empower people to participate in decision making. Creating opportunities to travel by a greater variety of modes may help to improve access to services and facilities for all and assist in ability to participate.	Publicity will be needed to encourage participation in the consultation as well as the use of the cycle infrastructure.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Creating and enhancing opportunities to travel by a greater variety of modes, will help improve access to labour markets and employment. The proposed links should also enhance connectivity between the business parks, town centre, Watford Junction and Cassiobury Park.	Improvements to cycleway links need to be advertised and potentially included within any Travel Plans run by the businesses in the locality.
	To spread economic growth more evenly to benefit deprived areas	P+	Creating opportunities to travel by a greater variety of modes may help to improve access to services and facilities for all. The proposed links should also enhance connectivity between the business parks and	

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			Watford Junction as well as Cassiobury Park.	
	To maintain the vitality and viability of existing centres	✓	<p>The cycle links of SM21 combined with those proposed as part of SM17 will help create a better cycling corridor between Watford and Hemel Hempstead town centres.</p> <p>The cycle links will also enhance cycle connectivity between the town centre and business parks.</p>	

Significant Positive Effects:

Enhancing cycle links encourage active travel, and therefore reduce pollution from vehicles. It should also enhance the connectivity of the business parks with the town centre and Watford Junction by cycle.

Significant Negative Effects:

Cassiobury Park is a key biodiversity area. The link route through Cassiobury Park stated as being via the existing route but the description does not detail whether or not any works will take place within or near the park. Care will be needed if any new works in this area are to be considered.

Timescale:

If delivered in isolation 0-2 years

Temporary or Permanent Impact:

Cycle infrastructure is permanent, but travel behaviour is temporary unless it is continually promoted by events such as year of physical activity. (YOPA)

Likelihood of effects or impacts identified occurring: Likely but depends upon the detail and usage of the enhance cycle links.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Publicity will be needed to encourage use of the cycle infrastructure as well as to participate in the consultation on the GTP document.

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- Consideration needs to be given to the following and whether or not any of the matters need to be included in any works contracts:
 - impact of any works within or near Cassiobury Park on biodiversity.
 - lighting of any new cycle infrastructure so users feel safe.
 - energy efficiency of any lighting scheme/s
 - opportunities and requirements for the sustainable use of resources
 - opportunities and requirements to minimise construction waste and recycle construction materials
 - requirements for SUDS and the need to guard against contamination of ground water and/or water courses
 - opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity
 - opportunities and requirements to reduce surface water run off
 - impact on any heritage assets or the historic environment.
 - Inclusion of enhanced cycle links in local business travel plans.

Data Issues: Current and predicted traffic flow and modal split data.

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SCHEME PR21: A4147 CYCLEWAY

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels. The creation of an off-road cycle route, however, may have some potential impact to local biodiversity.	Ensure use of recycled materials where possible
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits.	Promote cycling as a form of exercise for everyone. Promotion to employees at Maylands business park could be beneficial.

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	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help this. Potential for off-road cycle ways to increase fear of crime due to secluded nature.	Consider lighting and location of off-road cycle ways particularly in rural or isolated areas. Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists. Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Off road cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work	Ensure use of recycled materials where possible
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.

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			soil in construction will reduce quantity.	
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution. Air quality may improve and noise be reduced if a modal shift is achieved away from motorised vehicles.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating an off-road cycleway addresses the objective by encouraging a move away from car use.	Promote the new cycle path and educate and encourage people on cycling.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle way enhancements should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new off-road cycleway may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	P+	Cycling does not use any energy other than that produced by individuals. Promotion of electric bikes would have a negative impact as these require recharging a battery.	

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of off-road cycleway may result in damage to green spaces.	The new cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycling infrastructure will improve access to services. It is also accessible to everyone in society at little cost.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access
	To empower all sections of the community to participate in decision making and local action	P+	Improved cycle infrastructure will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as to Maylands Business Park from St Albans.	Promote the cycle way to employees at Maylands Business Park and from St Albans and promote the new cycle path to help recruit potential local employees.
	To spread economic growth more evenly to benefit deprived areas	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as at Maylands Business Park and Hemel Hempstead to St Albans.	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The off-road cycleway will avoid congestion hotspots thus potentially facilitating more movement from Hemel Hempstead and St Alban town centres.	

Significant Positive Effects:

- The creation of cycle infrastructure and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle way will also avoid congestion hotspots thus tackling noise and air pollution issues.

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- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle way may enable those on low incomes to access employment opportunities particularly due to the connectivity with Maylands Business Park.

Significant Negative Effects:

None.

Timescale:

2-5 years.

Temporary or Permanent:

Positive impacts could be temporary as this is dependent on the numbers of people who are cycling.

Likelihood of effects or impacts identified occurring:

Medium – will be dependent on success of modal shift to cycling

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees of Maylands Business Park/Hemel Hempstead from St Albans.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Lighting and the safety of off-road cycle ways should also be considered in order to prevent crime or fear of crime.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the cycle way.
- Recycled materials should also be used where possible to reduce potential environmental impacts.
- The cycle way construction should consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.

Data Issues: Monitoring modal shift to cycling in the area.

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SCHEME PR22: A414 CYCLEWAY: HEMEL TO PARK STREET

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+/P-	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels. The creation of an off-road cycle route, however, may have some potential impact to local biodiversity.	Ensure use of recycled materials where possible
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits and this scheme should encourage active travel.	Promote cycling as a form of exercise for everyone. Promotion to employees at Maylands business park could be beneficial.

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	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help this. Potential for off-road cycle ways to increase fear of crime due to secluded nature.	Consider lighting and location of off-road cycle ways particularly in rural or isolated areas. Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists. Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Off road cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS

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	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution. Air quality may improve and noise be reduced if a modal shift is achieved away from motorised vehicles.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating an off-road cycleway addresses the objective by encouraging a move away from car use.	Promote the new cycle path and educate and encourage people on cycling.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle way enhancements should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new off-road cycleway may encourage a modal shift away from forms of transport dependent on fossil fuels.	

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	To ensure the sustainable supply and use of energy	P+	Cycling does not use any energy other than that produced by individuals. If electric bikes are promoted these require a battery to be charged.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of off-road cycleway may result in damage to green spaces.	The new cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycling infrastructure will improve access to services. It is also accessible to everyone in society at little cost.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access

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	To empower all sections of the community to participate in decision making and local action	P+	Improved cycle infrastructure will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as to Maylands Business Park from Park Street.	Promote the cycle way to employees at Maylands Business Park and promote the new cycle path to help recruit potential local employees.
	To spread economic growth more evenly to benefit deprived areas	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities at Maylands Business Park.	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The off-road cycleway will avoid congestion hotspots thus potentially facilitating more movement to Maylands Business Park.	

Significant Positive Effects:

- The creation of cycleway infrastructure and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.

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- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle way will also avoid congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle way may enable those on low incomes to access employment opportunities particularly due to the connectivity with Maylands Business Park.

Significant Negative Effects: None.

Timescale: 2-5 years.

Temporary or Permanent: positive impacts could only be temporary as cycling levels are dependent on people's travel choices each day.

Likelihood of effects or impacts identified occurring: Medium – will be dependent on success of modal shift to cycling

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees of Maylands Business Park.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Lighting and the safety of off-road cycle ways should also be considered in order to prevent crime or fear of crime.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the cycle way.
- Recycled materials should also be used where possible to reduce potential environmental impacts.
- The cycle way construction should consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.

Data Issues: Monitoring modal shift to cycling in the area.

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SCHEME SM23A: COLONIAL WAY LINK ROAD ALL TRAFFIC

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	The proposed traffic link comprises a bridge over the Abbey Line near Watford town centre. The direct locality does not appear to be identified as a key biodiversity area. (The nearest being Cassiobury Park.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	U/P-	A new all traffic link may encourage some modal shift to active travel however it may equally encourage car use. There is not a strong likelihood it would improve health inequalities. However, the improvements for the non-vehicle element may facilitate travel for those already looking to travel by non-car modes or who may not have access to a private car.	

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	To reduce crime and create safe environments	U	A new traffic link may shorten journey times. Dependant on the design and lighting scheme design may help people feel safe using the link. However, its ability to deter crime or create a safe environment is uncertain.	Consideration should be given to how the design and lighting of any new link may help deter crime and the fear of crime. The Hate Crime Strategy may help; see if any of the recommendations can help.
Water and soil	To improve the sustainable use of resources	U	Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	U/O	Details unknown at time of assessment. Water run-off and contamination during any construction may be an issue.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground

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				water and/or water courses and included where possible when any contracts for works are drafted.
	To reduce contamination, and safeguard soil quality and quantity	U/O	Details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P-	A new traffic link may encourage car trips potentially increasing pollution and noise.	<p>Consideration should be given to air quality and noise likely to be generated as part of this scheme.</p> <p>Attention should be paid to the policies in the draft LTP4: policy 1 transport user hierarchy; policies 7&8 active travel; policy 19 emissions reduction; policy 20 air quality; policy 21 environment.</p>
	To improve the choice of sustainable transport modes, encourage their	P-	The proposed scheme comprises an all traffic link, the details of the infrastructure for non-car modes is unknown. Depending on the non-car infrastructure creation of the link may	Any new links for non-car modes of transport should be publicised to encourage their use.

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	use, and reduce the need to travel by car		be unlikely to encourage a modal shift or reduce overall travel by car. It is possible the scheme may encourage more car use. However, inclusion of infrastructure for non-car modes may provide facilities for those looking to use alternative modes.	Attention should be paid to the policies in the draft Consideration should be given to the policies in the draft LTP4: policy 1 transport user hierarchy; policies 7&8 active travel; policy 9 buses; policy 12 network management ; policy 13 new roads and junctions.
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Details of project and extent of any new works unknown at time of assessment.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P-	New link may encourage car trips.	Consideration needs to be given to the policies in LTP4
	To ensure the sustainable supply and use of energy.	U	Details of the scheme are unknown at time of assessment.	Consideration should be given to the efficiency of any new lighting as well as infrastructure (including signals).

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U/P-	A new all traffic link is unlikely to enhance the townscape.	Consideration needs to be given to the policies in the draft LTP4.
	To conserve and enhance the historic environment, heritage assets and their settings	U	Although details are unknown at the time of the assessment, a new road link is unlikely to enhance any heritage assets in the location.	Consideration needs to be given to any heritage assets and historic environment in the location of any new link.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	A new link may improve access to the town centre and therefore community facilities. As it would be for all modes it may also improve accessibility for all.	
	To empower all sections of the community to participate in decision making and local action	P+	Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as the use of the cycle/ pedestrian infrastructure. As the new link is for all modes it may improve accessibility, particularly to the town centre allowing more people to participate in events (including council offices and town hall)

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	A new all traffic link may increase accessibility to employment and labour markets. It would also link to Watford Junction.	
	To spread economic growth more evenly to benefit deprived areas	U	The proposed link may increase accessibility to employment and labour markets. However, whether this single link would spread economic growth more evenly is uncertain.	
	To maintain the vitality and viability of existing centres.	✓	The scheme would create a new all traffic link to the town centre. It will also link to Watford Junction.	

Significant Positive Effects: The scheme would create a new link to the town centre Watford Junction. It may also therefore increase access to employment, labour markets and community facilities and services for all modes of transport.

Significant Negative Effects: A new road link may not assist with:

- healthy lifestyles
- protecting or enhancing air quality
- minimising noise pollution
- reducing greenhouse gases from vehicular transport
- protecting or enhancing the townscape or any green spaces

Timescale: 5-10 years

Temporary or Permanent: Permanent.

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Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.
 - the design and lighting of any new link to help deter crime and the fear of crime, read the Hate Crime Strategy.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - air quality and noise pollution likely to be generated as part of this scheme (also during construction)
 - reduction of surface water run off
 - energy efficient new lighting as well as infrastructure.
 - any heritage assets and historic environment in the location of any new link
 - Publicity to encourage participation in the consultation
 - Publicity of any new non-car infrastructure links.
- Attention should be paid to the policies in LTP4.

Data Issues: modal split data

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SCHEME SM23B: COLONIAL WAY LINK ROAD ALL TRAFFIC - BUS AND CYCLE ONLY

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	The proposed new bus and cycle link comprises a bridge over the Abbey Line near Watford town centre. The direct locality does not appear to be identified as a key biodiversity area. (The nearest being Cassiobury Park).	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities.	P+	A new bus / cycle link may encourage modal shift to active travel.	

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	To reduce crime and create safe environments	U	A new link may shorten journey times and dependant on the design and lighting scheme design, may help people feel safe using the link. If sufficient people regularly use the link it may help people feel safe as there will be others around. However, its ability to deter crime or create a safe environment is uncertain.	Consideration should be given to how the design and lighting of any new link may help deter crime and the fear of crime.
Water and soil	To improve the sustainable use of resources	U	Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	U/O	Details unknown at time of assessment. Water run-off and contamination during any construction may be an issue.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.

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	To reduce contamination, and safeguard soil quality and quantity	U/O	Details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	A new bus and cycle link may encourage modal shift away from the private car thereby preventing the noise and air pollution which would have occurred if those trips had been made by car. (However, there may be issues with noise depending on the types of bus using the link and during construction of the new link)	Any new cycle routes or bus services should be advertised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	The creation of the bus and cycle link may encourage a modal shift, provide a choice of sustainable modes and reduce use of the private car.	Any new links for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Details of project and extent of any new works unknown at time of assessment.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	A new bus and cycle link may encourage a modal shift reducing car trips.	Any new links for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To ensure the sustainable supply and use of energy.	U	Details of the scheme are unknown at time of assessment.	Consideration should be given to energy efficiency of any new lighting as well as infrastructure (including signals).
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U/P-	A new link is unlikely to enhance the townscape.	Consideration needs to be given to the design of any new link and local character of the townscape.
	To conserve and enhance the historic environment, heritage assets and their settings	U	Details are unknown at the time of the assessment, however, a new link is unlikely to enhance any heritage assets in the location.	Consideration needs to be given to any heritage assets and historic environment in the location of any new link.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and	P+	A new link may improve access to the town centre and therefore community facilities. A bus and cycle link may improve accessibility for those without access to a private car.	

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	community facilities for all			
	To empower all sections of the community to participate in decision making and local action	P+	Public consultation on the schemes within the GTP should empower people to participate in decision making.	<p>Publicity will be needed to encourage participation in the consultation as well as the use of the cycle infrastructure.</p> <p>A new bus/cycle link may improve accessibility, particularly to the town centre, allowing more people including those without access to a private car to participate in events (including council offices and town hall)</p>
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	A new link may increase accessibility to employment and labour markets. It would also link to Watford Junction.	
	To spread economic growth more evenly to benefit deprived areas	U	The proposed link may increase accessibility to employment and labour markets. A bus/cycle link should improve accessibility for those without access to the private car. However, whether this single link would spread economic growth more evenly is uncertain.	

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	To maintain the vitality and viability of existing centres.	✓	The scheme would create a new bus/cycle link to the town centre. It will also link to Watford Junction.	
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Significant Positive Effects: The scheme would create a new link to the town centre and Watford Junction. It may also therefore increase access to employment, labour markets and community facilities and services via bus and cycle. There may also be health benefits if the new link encourages a modal shift to active travel.

Significant Negative Effects: A new road link may not assist with protecting or enhancing the townscape or any green spaces, due to a new bridge being built over the Abbey Line.

Timescale: 5-10 years

Temporary or Permanent: Permanent.

Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.
 - the design and lighting of any new link to help deter crime and the fear of crime.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - reduction of surface water run off
 - Efficiency of any new lighting as well as infrastructure.
 - any heritage assets and historic environment in the location of any new link
 - Publicity to encourage participation in the consultation
 - Publicity of any new non-car infrastructure links.
 - Inclusion of any new non-car infrastructure links in travel plans for local businesses and new residential development.
- Attention should be paid to the policies in the draft LTP4.

Data Issues: data on usage on new link, evidence that bus/cycle link is encouraging a modal shift

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SCHEME SM23C: COLONIAL WAY LINK ROAD ALL TRAFFIC - CYCLE ONLY

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	The proposed new bus and cycle link comprises a bridge over the Abbey Line near Watford town centre. The direct locality does not appear to be identified as a key biodiversity area. (The nearest being Cassiobury Park).	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities.	P+	A new cycle link may encourage modal shift to more active travel over other modes.	

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	To reduce crime and create safe environments	U	A new link may shorten journey times and dependant on the design and lighting scheme design, may help people feel safe using the link. If sufficient numbers of people regularly use the link it may also help people feel safe as there will be others around.	Consideration should be given to how the design and lighting of any new link may help deter crime and the fear of crime.
Water and soil	To improve the sustainable use of resources	U	Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	U/O	Details unknown at time of assessment. Water run-off and contamination during any construction may be an issue.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible

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				when any contracts for works are drafted.
	To reduce contamination, and safeguard soil quality and quantity	U/O	Details unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	A new cycle link may encourage modal shift thereby preventing the noise and air pollution which would have occurred if those trips had been made by car.	Any new cycle routes should be advertised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	The creation of a new cycle link may encourage a modal shift, provide a choice of modes and reduce use of the private car.	Any new links for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.

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Climatic factors	To adapt to the impacts of climate change such as flooding	U	Details of project and extent of any new works unknown at time of assessment.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	A new cycle link may encourage a modal shift reducing car trips.	Any new links for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To ensure the sustainable supply and use of energy	U	Details of the scheme are unknown at time of assessment.	Consideration should be given to energy efficient new lighting as well as infrastructure (including signals).
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U/P-	A new link is unlikely to enhance the townscape.	Consideration needs to be given to the design of any new link and local character of the townscape.
	To conserve and enhance the historic environment,	U	Details are unknown at the time of the assessment, however, a new link is unlikely to enhance any heritage assets in the location.	Consideration needs to be given to any heritage assets and historic environment in the location of any new link. Ask the county

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	heritage assets and their settings			archaeologists if unclear as to whether heritage assets are on the proposed site.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	A new link may improve access to the town centre and therefore community facilities. A cycle link may improve accessibility for those without access to a private car.	
	To empower all sections of the community to participate in decision making and local action	P+	Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as the use of cycle infrastructure. A new cycle link may improve accessibility, particularly to the town centre, allowing more people including those without access to a private car to participate in events (including council offices and town hall)
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and	P+	A new link may increase accessibility to employment and labour markets. It would also link to Watford Junction.	

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	create a vibrant economy			
	To spread economic growth more evenly to benefit deprived areas	U	The proposed link may increase accessibility to employment and labour markets. A cycle link should improve accessibility for those without access to the private car. However, whether this single link would spread economic growth more evenly is uncertain.	
	To maintain the vitality and viability of existing centres	✓	The scheme would create a new cycle link to the town centre. It will also link to Watford Junction.	

Significant Positive Effects: The scheme would create a new link to the town centre and Watford Junction. It may also therefore increase access to employment, labour markets and community facilities and services via cycle. In addition, there may also be environmental and health benefits.

Significant Negative Effects: A new road link may not assist with protecting or enhancing the townscape or any green spaces. There is a SSSI located at Roughdown Common (West of the railway line at Two Waters) however it is not anticipated the scheme itself located sufficiently close to impact upon the site.

Timescale: 5-10 years

Temporary or Permanent Impact: Permanent from the impacts of any new infrastructure, temporary impacts as a result of any modal shift to cycling as this can vary over time and be seasonal.

Likelihood of effects or impacts identified occurring: Likely

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Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.
 - the design and lighting of any new link to help deter crime and the fear of crime.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - reduction of surface water run off
 - efficiency of any new lighting as well as infrastructure.
 - any heritage assets and historic environment in the location of any new link
 - Publicity to encourage participation in the consultation
 - Publicity of any new non-car infrastructure links.
 - Inclusion of any new non-car infrastructure links in travel plans for local businesses and new residential development.
- Attention should be paid to the policies in the LTP4.

Data Issues: data on usage on new link, evidence that a new cycle link is encouraging a modal shift

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SCHEME SM24: WATFORD JUNCTION ONE-WAY SYSTEM RECONFIGURATION

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Improvements to the walking and cycling environment and the discouragement of car use in the area may reduce emissions which will have a positive impact on the local flora and fauna.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The scheme encourages walking and cycling by improving safety. This may increase active travel having health benefits. Bus priority measures may help reduce car use which will also have positive effects on health due to reduced emissions.	Promote active travel for everyone.

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	To reduce crime and create safe environments	P+	The scheme will improve safety for pedestrians and cyclists. Increased levels of cycling and walking in public spaces leads to safer environments and a feeling of personal security. Interactions between cyclists, pedestrians and drivers needed to ensure safety of all road users	Consider infrastructure and signage to ensure all road users understand rights of way. Training for cyclists such as bikeability to increase knowledge and safety. Training for drivers should also be considered to improve safety.
Water and soil	To improve the sustainable use of resources	P+	Overall, the scheme should reduce the need for resources to maintain roads as improvements to walking, cycling and bus measures will encourage modal shift away from car use. Any physical improvements should use recycled material.	Use recycled materials where possible in any construction.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	P+	The scheme may encourage active travel and public transport use which will reduce roadway runoff including chemicals from tyres and road salt reaching water courses.	

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	To reduce contamination, and safeguard soil quality and quantity	P+	As above – the scheme may reduce car use in the area reducing runoff of chemicals into soil.	
Air	To protect and enhance air quality and minimise noise pollution	P+/U	The scheme will encourage cycling and walking which have no negative impacts on air or noise pollution. Cars and buses will still be used in the area and will not be quiet or clean until technology becomes more widespread.	Installation of electric charging points. Assist the bus operators in seeking funding opportunities to purchase cleaner buses or electric buses. Encourage uptake of ULEV's.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+/U	The scheme aims to encourage cycling and walking thus improving the choice of sustainable travel. Bus use may also increase due to bus priority measures. Car use may be reduced but will persist in the area.	Promote sustainable travel options to all. Creation of segregated cycle lanes.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Active travel options have no negative impacts on the causes of climate change. Any physical improvements will need to adhere to SUDs to ensure that there is minimal additional surface runoff.	Consult the section in the HIAMP about SUDS.

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+/U	The scheme will encourage cycling, walking and bus use which will reduce greenhouse gas emissions. Cars will still be used in the area and will not be clean until technology becomes more widespread.	Installation of electric charging points. Promotion of active travel to all. Encourage uptake of ULEV vehicles.
	To ensure the sustainable supply and use of energy	P+/U	Active travel does not use any energy other than that produced by individuals. For cars and buses this will depend on the speed at which ULEV's are taken up.	Installation of electric charging points. Promotion of active travel to all. Encourage uptake of ULEV vehicles. Assist the bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	The walking and cycling improvements will increase walking and cycling in the public domain which will enhance the townscape of Watford.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	Any infrastructure delivered should be mindful of any local historic assets.	Scheme designers should consult HCC maps of local historic assets and the historic environment.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and	P+	Active travel is open to everyone and is generally affordable for most people in society. By improving active travel and bus infrastructure all members of society have increased access to services.	For people who cannot cycle, promote bikeability or other training to give people confidence to cycle. For those who cannot afford bikes, consider opening

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	community facilities for all			places where unwanted bicycles can be recycled
	To empower all sections of the community to participate in decision making and local action	P+	Active travel is open to everyone and is generally affordable for most people in society. Bus use is also more accessible for low income or disabled members of society. By encouraging these all members of society have increased ability to participate in local decision making.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Active travel is open to everyone and is generally affordable for most people in society. Bus use is also more accessible for low income or disabled members of society. By encouraging these all members of society have increased access to employment. Car use in the area will persist possibly creating a barrier to some.	
	To spread economic growth more evenly to benefit deprived areas	P+	Active travel is open to everyone and is generally affordable for most people in society. Bus use is also more accessible for low income or disabled members of society. By encouraging these all members of society have increased access to employment. Car use in the area will persist possibly creating a barrier to some.	

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	To maintain the vitality and viability of existing centres	P+	By encouraging more active travel and bus use all members of society have increased access to employment, increasing income and spending power in the area. Car use in the area will persist possibly causing congestion and barriers to Watford Town Centre.	
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Significant Positive Effects:

- The scheme may facilitate modal shift to forms of sustainable transport. This will benefit local biodiversity, air quality and local health.
- Increased use of sustainable transport measures may also help reduce runoff of chemicals into local water courses and soil.
- The scheme may reduce the need for resources to maintain roads as car dependency will decrease.
- The scheme will facilitate active travel which will enable more people to access employment, possibly leading to increased income and local spending power. .
- Walking and cycling in the public domain will enhance the townscape of Watford.
- The scheme will encourage cycling and walking which will reduce greenhouse gas emissions.
- Improved safety for pedestrians and cyclists.

Significant Negative Effects:

None.

Timescale:

5-10 Years.

Temporary or Permanent:

Any infrastructure changes will bring permanent impacts, but modal shift aspects of the scheme would have temporary impacts as sustainable modes can vary over time.

Likelihood of effects or impacts identified occurring:

Medium Likelihood.

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Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- For people who cannot cycle, promote bikeability or other training to give people confidence to cycle.
- For those who cannot afford bikes, consider opening places where unwanted bicycles can be recycled
- Scheme designers should consult HCC maps of local historic assets and the historic environment.
- Installation of electric charging points.
- Promotion of active travel to all.
- Encourage uptake of ULEV vehicles.
- Consult the section in the HIAMP about SUDS.
- Use recycled materials where possible in any construction.
- Consider infrastructure and signage to ensure all road users understand rights of way
- Assist the bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
- Creation of segregated cycle lanes.

Data Issues:

- Numbers of alternative fuel (ULEV) cars in Hertfordshire
- Numbers of alternative fuel (ULEV) buses in Hertfordshire
- Monitoring modal shift in the area

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SCHEME SM25A: WATFORD STRATEGIC GATEWAY – M1 J5 FOCUS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	The proposed enhancements at this junction this would impact on local farmland, grassland and woodland, as land would be required. The junction is within an area of key biodiversity therefore construction will have a negative impact on local flora and fauna.	It is recommended that a full Environmental Impact Assessment is carried out on this scheme, to identify the environmental issues that new infrastructure would have on the surrounding environment.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	O		

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	To reduce crime and create safe environments	U	The scheme design will need to consider road safety implications.	
Water and soil	To improve the sustainable use of resources	X	Significant enhancements will require large amounts of construction material.	Ensure that construction materials are recycled where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	X	Significant enhancements will result in large quantities of waste soil and aggregate.	Recycle as much waste as possible.
	To ensure the efficient use of water, and safeguard water resources	U	The junction lies within a flood zone so any new infrastructure should utilise SuDS where possible to reduce runoff.	Utilise SuDS where possible in new infrastructure.
	To reduce contamination, and safeguard soil quality and quantity	X	Significant new enhancements will require soil removal in an area of key biodiversity.	
Air	To protect and enhance air quality and minimise noise pollution	P+	This scheme aims to improve air quality within Watford by reducing congestion. This may have short term benefits for local air quality. However long term the scheme may perpetuate car use.	Recommend close working with Watford Borough Council Environmental Health Officers on the development of this scheme to ensure maximum air quality benefits for the local area and specifically any AQMAs in the vicinity.

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	X	This scheme does not consider sustainable transport and seeks to reduce congestion thus encouraging car use.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	The junction is within a flood zone. Therefore, any new infrastructure needs to utilise SuDS.	Utilise SuDS where possible in new infrastructure.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P-	This scheme will not reduce vehicle numbers; however, it may improve traffic flow.	
	To ensure the sustainable supply and use of energy	P-	This scheme will not reduce fuel consumption.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	Significant enhancements to the junction will impact negatively on the local landscape. However reduced congestion will have a positive impact on Watford's townscape.	

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	To conserve and enhance the historic environment, heritage assets and their settings	U	There are few listed buildings or heritage assets in close proximity. Increased traffic flow on the M1 may have negative impacts on the nearby Wall Hall registered park. Reduced congestion may benefit heritage assets in Watford.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P-	The scheme will only improve access for residents with cars.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	This scheme will reduce congestion which will have economic benefits for local businesses.	

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	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	P+	Reduced traffic in Watford would provide a range of benefits such as less pollution and an improved public realm etc.	

Significant Positive Effects:

None.

Significant Negative Effects:

The scheme involves significant enhancements which will require large amounts of construction material and soil removal. This soil removal will occur in an area of key biodiversity.

This scheme does not consider sustainable transport and seeks to reduce congestion thus encouraging car use.

Timescale:

Scheme unlikely to be taken forward.

Permanent or Temporary:

New infrastructure and associated impacts due to waste generation and land take are permanent. Impacts as a result of this new infrastructure such as reduced congestion are temporary as car use maybe encouraged as a result of the scheme.

Likelihood of effects or impacts identified occurring:

Low.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- It is recommended that a full Environmental Impact Assessment is carried out on this scheme, to identify the environmental issues that new infrastructure would have on the surrounding environment.
- Ensure that construction materials are recycled where possible.
- Recycle as much waste as possible.

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- Utilise SuDS where possible in new infrastructure.
- Recommend close working with Watford Borough Council Environmental Health Officers on the development of this scheme to ensure maximum air quality benefits for the local area and specifically any AQMAs in the vicinity.

Data Issues: None.

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SCHEME SM25B: WATFORD STRATEGIC GATEWAY – M1 J4 FOCUS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	To construct new slip roads at this junction this would impact on local farmland, grassland and woodland, as land would be required.	It is advised that a full Environmental Impact Assessment is carried out on this scheme, to identify the environmental issues that new slip roads would impact on, so as to provide mitigation where required for impacts on habitats, flora and fauna.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and	O		

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	reduce health inequalities			
	To reduce crime and create safe environments	U	The scheme design will need to consider road safety implications.	
Water and soil	To improve the sustainable use of resources	P-	New slip roads will require construction material.	Ensure that as much recycled material is used as possible, and local materials.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	The creation of new slip roads will result in waste soil and aggregate.	Any waste to be recycled as much as possible.
	To ensure the efficient use of water, and safeguard water resources	O	Edgwarebury Brook is the closest water course, but with new SuDS regulations, any new infrastructure should not have any negative impact on local rivers and streams, as a result of additional surface run-off.	
	To reduce contamination, and safeguard soil quality and quantity	P-	New slip roads will result in an amount of soil being removed and capped.	
Air	To protect and enhance air quality and minimise noise pollution	P+	This scheme aims to improve air quality within Watford through the reduction of London-bound traffic going through the town, particularly at Bushey Arches which is an AQMA.	Recommend close working with Watford Borough Council Environmental Health Officers on the development of this scheme to ensure maximum air quality benefits for the local area and specifically any AQMAs in the vicinity.

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	X	This scheme is about improving access to the M1 south to London for road vehicles.	
Climatic factors	To adapt to the impacts of climate change such as flooding	O	This is not a known area for flooding, and any new infrastructure would need to adhere to SuDS regulations.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P-	This scheme will not reduce vehicle numbers, but will allow traffic to flow smoother.	
	To ensure the sustainable supply and use of energy	P-	This scheme will not reduce fuel consumption.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+/P-	New slip roads will impact on the local landscape, but a reduction of traffic in Watford could have a positive impact on the townscape with fewer cars on local roads.	
	To conserve and enhance the historic environment, heritage assets and their settings	P-	There are 3 Grade II listed buildings in fairly close vicinity to Junction 4, these would see slight negative impacts from additional traffic being directed to use this junction, from increased air pollution, noise and vibrations.	Environmental barriers such as trees etc should be considered when building the new slip roads to protect local communities and historic buildings closeby.

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P-	This will only improve access for those with access to a car.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	This scheme will provide benefits to business by enabling better access to London and onto the Strategic Road Network.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	P+	If traffic is reduced in Watford, this would provide benefits to Watford Town Centre, with regards to pollution, access, public realm etc.	

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Significant Positive Effects:

no significant positive effects. But this scheme aims to reduce London-bound traffic using Watford town centre which should improve air quality, emissions, congestion on local roads, particularly at Bushey Arches (which is an AQMA). A reduction in congestion should also improve the townscape and vitality of the town centre, and provide benefits to local businesses allowing better productivity.

Significant Negative Effects:

This scheme is about improving access to the M1 south to London for road vehicles, therefore it doesn't score highly in terms of sustainable transport. New slip roads would require landtake and so would impact on local habitats and would change the landscape. Considerable amounts of construction materials would be required and waste soil would need disposal, existing soil would be capped. 3 Grade II listed building are in the vicinity of J4 which could experience negative impacts. This scheme does not provide any benefits to those without access to a car.

Timescale: long term

Temporary or Permanent: Permanent and this scheme could move existing problems to another area.

Likelihood of effects or impacts identified occurring: unsure depends on scheme happening

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- It is advised that a full Environmental Impact Assessment is carried out on this scheme, to identify the environmental issues that new slip roads would impact on, so as to provide mitigation where required for impacts on habitats, flora and fauna.
- Ensure that as much recycled material is used as possible, and local materials. Any waste to be recycled as much as possible.
- Recommend close working with Watford Borough Council Environmental Health Officers on the development of this scheme to ensure maximum air quality benefits for the local area and specifically any AQMAs in the vicinity.
- Environmental barriers such as trees etc should be considered when building the new slip roads to protect local communities and historic buildings closeby

Data Issues:

- Traffic reduction in town centre
- Air quality modelling

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SCHEME SM26: TWO-WAY RING ROAD AND TRUNCATION

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	This area of Watford is urban with no areas of significant green space.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The scheme aims to open up additional pedestrian space and improve the public realm, which may increase numbers of people walking and cycling.	

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	To reduce crime and create safe environments	U	Improvements to the public realm will need to consider road and personal safety issues with more people on the street and out of cars.	Consider undertaking a road safety audit for this scheme.
Water and soil	To improve the sustainable use of resources	O	This scheme does not require any significant road building. The need for raw resources will be minimal.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	U	Unsure, The River Colne runs to the southern part of the scheme area. Any improvements shouldn't create any additional run-off and if any of the roads are altered, they will need to adhere to SuDS regulations.	
	To reduce contamination, and safeguard soil quality and quantity	O	This is an existing built up urban area.	
Air	To protect and enhance air quality and minimise noise pollution	P+	There is one AQMA in the immediate vicinity of this scheme (Vicarage Road), the scheme should result in traffic reduction with more people using sustainable modes	Recommend that this scheme is developed in partnership with Environmental Health Officers from Watford Borough Council to ensure that no negative air quality

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				impacts will add to the existing AQMA.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	This scheme will cater for motor vehicles and sustainable modes such as buses, walking and cycling.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Unsure, the River Colne runs at the southern end of this scheme near the train stations, and there are records of it having flooded. Any new infrastructure should ensure that the drainage can deal with any additional surface run-off.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	If there is modal shift to the sustainable modes proposed.	
	To ensure the sustainable supply and use of energy	P+	A reduction in fuel consumption if there is modal shift to the sustainable modes proposed.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	This scheme aims to improve public realm within the area of the ring road.	

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	To conserve and enhance the historic environment, heritage assets and their settings	P+	There are numerous listed buildings within the ring road and some to the outside. Improvements to public realm and access to sustainable modes should provide benefits to these buildings for both environmentally and to allow better access to them.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	This may improve access to the town centre by allowing those without access to a car to navigate around this area of the town.	
	To empower all sections of the community to participate in decision making and local action	U	Unsure, can the local residents be involved in the development of this scheme, to determine what best facilities would be required?	Recommend public consultation to determine the requirements of local people with regards to sustainable modes and public realm.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	This should allow better access to the town centre for retail and local businesses.	

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	To spread economic growth more evenly to benefit deprived areas	P+		
	To maintain the vitality and viability of existing centres	P+		

Significant Positive Effects:

no significant positive effects

Significant Negative Effects:

no significant negative effects

Timescale: 5-10 years

Temporary or Permanent: Temporary, as levels of walking and cycling vary over time and seasonally.

Likelihood of effects or impacts identified occurring: medium likelihood

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consider undertaking a road safety audit for this scheme.
- Recommend that this scheme is developed in partnership with Environmental Health Officers from Watford Borough Council to ensure that no negative air quality impacts will add to the existing AQMA.
- Recommend public consultation to determine the requirements of local people with regards to sustainable modes and public realm.

Data Issues: None.

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SCHEME SM27: MAGIC ROUNDABOUT CYCLE FLYOVER

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	The proposed new cycle bridge would be over an existing roundabout in an urban centre.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	A new cycle link will encourage modal shift to active travel over other modes.	

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	To reduce crime and create safe environments	U	A new link may shorten journey times and dependant on the design and lighting scheme, may help people feel safe using the link. If sufficient people regularly use the link it will help people feel safe as there will be others around. However, its ability to deter crime or create a safe environment is uncertain.	Consideration should be given to how the design and lighting of any new link may help deter crime and the fear of crime.
Water and soil	To improve the sustainable use of resources	U	Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment.	Consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials.
	To ensure the efficient use of water, and safeguard water resources	U/O	Details unknown at time of assessment. Water run-off and contamination during any construction may be an issue.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.

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	To reduce contamination, and safeguard soil quality and quantity	U/O	Details unknown at time of assessment.	Consideration should be given to opportunities and requirements for reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	A new cycle link may encourage modal shift thereby preventing the noise and air pollution which would have occurred if those trips had been made by car.	Any new cycle routes should be advertised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	The creation of a new cycle link may encourage a modal shift, provide a choice of modes and reduce use of the private car.	Any new links for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Details of project and extent of any new works unknown at time of assessment.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	A new cycle link may encourage a modal shift reducing use of the car.	Any new links for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To ensure the sustainable supply and use of energy	U	Details of the scheme are unknown at time of assessment.	Consideration should be given to the efficiency of any new lighting as well as infrastructure (including signals).
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	The proposal is described as “iconic” there may therefore be scope for its design to enhance the townscape but details are unknown at time of assessment.	Consideration needs to be given to the design of any new bridge local character of the townscape.
	To conserve and enhance the historic environment, heritage assets and their settings	U	Details are unknown at the time of the assessment however, the proposal is described as “iconic” there may therefore be scope for its design to enhance the settings of any heritage assets but details are unknown at time of assessment.	Consideration needs to be given to any heritage assets and historic environment.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and	P+	A new link should improve access to the town centre and therefore community facilities. A cycle link may improve accessibility for those without access to a private car.	

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	community facilities for all			
	To empower all sections of the community to participate in decision making and local action	P+	Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as the use of cycle infrastructure. A new cycle link may improve accessibility, particularly to the town centre, allowing more people including those without access to a private car to participate in events (including council offices)
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	A new link may increase accessibility to employment and labour markets. It should also improve links to Hemel station and A414.	
	To spread economic growth more evenly to benefit deprived areas	U	The proposed link may increase accessibility to employment and labour markets. It should also improve links to Hemel station and A414. A cycle link should improve accessibility for those without access to the private car. However, whether this single link would spread	

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			economic growth more evenly is uncertain.	
	To maintain the vitality and viability of existing centres	✓	The scheme would create a new cycle link to the town centre. It would also link to the rail station.	

Significant Positive Effects: The scheme would create a new cycle link to the town centre, railway station and A414. It may also therefore increase access to employment, labour markets and community facilities and services via cycle. In addition there may be environmental and health benefits. If the bridge has an “iconic” design it may enhance to local townscape.

Significant Negative Effects: None. (There is a SSSI located at Roughdown Common (West of the railway line at Two Waters) however it is not anticipated this scheme is located sufficiently close to impact upon the site)

Timescale: 5-10 years

Temporary or Permanent: Permanent.

Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.
 - the design and lighting of any new link to help deter crime and the fear of crime.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - noise pollution likely to be generated as part of this scheme (linked to construction)
 - reduction of surface water run off
 - Efficiency of any new lighting as well as infrastructure.
 - The setting of any heritage assets and historic environment in the locality

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- Publicity to encourage participation in the consultation
- Publicity of any new non-car infrastructure links.
- Inclusion of any new non-car infrastructure links in travel plans for local businesses and new residential development.
- Attention should be paid to the policies in the LTP4.

Data Issues: data on usage on new link, evidence that a new cycle link is encouraging a modal shift

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR 27: NEW ALL VEHICLE LINK ROAD BETWEEN WOOD LANE END AND BOUNDARY WAY.

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	Biodiversity is likely to be poor there anyway, but any new infrastructure will impact on the local flora and fauna.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	X		

APPENDIX 3: APPRAISAL MATRICES

	To reduce crime and create safe environments	P-	New roads will result in additional accidents/ incidents.	
Water and soil	To improve the sustainable use of resources	X		
	To move away from waste disposal to minimisation, reuse, recycling and recovery	X		
	To ensure the efficient use of water, and safeguard water resources	O	Any new infrastructure should adhere to SuDS regulations for drainage.	
	To reduce contamination, and safeguard soil quality and quantity	X	Soil removal and capping.	
Air	To protect and enhance air quality and minimise noise pollution	X	This road could become very busy with traffic and lead to a further bottleneck.	Unless highway mitigation measures are put in, it is highly likely that this new road will become congested at peak times with Maylands employees commuting to and from work.

APPENDIX 3: APPRAISAL MATRICES

	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P-	This will facilitate car use.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Scheme design will need to consider drainage and flooding issues.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	X	This scheme will facilitate vehicle use.	
	To ensure the sustainable supply and use of energy	X	This scheme will facilitate vehicle use and fuel consumption.	
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	X	Any new road will impact on the local landscape.	
	To conserve and enhance the historic	O		

APPENDIX 3: APPRAISAL MATRICES

	environment, heritage assets and their settings			
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P-	This road will provide access to car users.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	U	Provided the road does not get so congested so as to cause further traffic jams, it could improve economic competitiveness.	
	To spread economic growth more evenly to benefit deprived areas	U		

APPENDIX 3: APPRAISAL MATRICES

	To maintain the vitality and viability of existing centres	O		
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Significant Positive Effects: none.

Significant Negative Effects:

Any new road infrastructure will have significant negative impacts on the local environment, as well as having a visual impact, raw resources will be required for construction, waste material will need to be disposed of, it will impact on the soil environment and result in capping. It will facilitate car use and so is unlikely to improve the health of local people and could increase fuel consumption. Local air quality and vehicle emissions could worsen.

Timescale: 2-5 years.

Temporary or Permanent:

Permanent, as it will facilitate car use.

Likelihood of effects or impacts identified occurring: high likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

Unless highway mitigation measures are put in, it is highly likely that this new road will become congested at peak times with Maylands employees commuting to and from work. It is unknown by the SEA assessor what the modelling tools have predicted.

Data Issues:

Presume COMET model has been used to model traffic flow in Maylands post scheme delivery.

APPENDIX 3: APPRAISAL MATRICES

SCHEME SM28A: WESTERN GATEWAY SA: BUS, WALKING AND CYCLE ONLY

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+/U	If modal shift can be achieved more journeys will be completed using sustainable transport therefore reducing emissions in the area which will be of benefit to local flora and fauna. The proposed route passes close to Croxley Common Moore SSSI site and green spaces so consideration will need to be made during any construction.	Use recycled materials where possible. Consideration of Croxley Common Moore SSSI site and green spaces required in construction.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and	✓	Increases in active travel will have health benefits for the local population. Cycling and walking are also open to everyone in society at little to no cost.	Promote active travel for everyone.

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	reduce health inequalities			
	To reduce crime and create safe environments	U	Increased levels of cycling and walking in public spaces leads to safer environments and a feeling of personal security. Secure storage for bicycles is essential for uptake. Cyclists also need to be safe on the road, infrastructure can help this. There is no mention of issues surrounding security or hate crime that are possible with increased bus usage.	Think about the interactions between pedestrians, vehicles and cyclists to prevent any conflicts, infrastructure may help. Safety training for cyclists such as bikeability and bus drivers to improve safety. Secure cycle storage is needed at destinations. Scheme needs to consider personal security (i.e. provision of lighting, CCTV) and Hate Crime associated with bus usage.
Water and soil	To improve the sustainable use of resources	P+	Overall, the scheme should reduce the need for resources to maintain roads as car dependency will decrease. The construction of any new infrastructure should use recycled material where possible.	Use recycled materials where possible in any construction.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Sustainable construction practices and recycled materials should be used where possible	Use recycled materials where possible in any construction.

APPENDIX 3: APPRAISAL MATRICES

	To ensure the efficient use of water, and safeguard water resources	P+	Increased use of active travel and buses will reduce roadway runoff which includes chemicals from tyres and road salt reaching water courses. Consideration will need to be made for River Colne and SUDS.	Consult the section in the HIAMP about SUDS when creating new access.
	To reduce contamination, and safeguard soil quality and quantity	P+	As above – potential to reduce chemical runoff into soil. SUDS will need to be considered and soil removal kept to a minimum in any construction.	Consult the section in the HIAMP about SUDS when creating new access. Prevent soil removal where possible.
Air	To protect and enhance air quality and minimise noise pollution	P+	Modal shift to active travel and buses will reduce traffic and improve air quality. Shifts to cycling and walking will also reduce noise pollution. Buses will not immediately have fully clean or quiet technology.	Assist the bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Bus, walking and cycling are all sustainable transport modes.	

APPENDIX 3: APPRAISAL MATRICES

Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Active travel options have no negative impacts on the causes of climate change. Any infrastructure for buses will need to adhere to SUDs to ensure that there is minimal additional surface runoff.	Promotion of active travel as beneficial for the environment needs to be the message for all.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Active travel does not produce the greenhouse gases that are causing climate change. Benefits from buses will depend on the speed that bus fleets are renewed to cleaner technology.	Assist bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
	To ensure the sustainable supply and use of energy	P+	Active travel does not use any energy other than that produced by individuals. For buses this will depend on the speed that bus fleets are renewed to cleaner technology.	Assist bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Walking and cycling in the public domain will enhance the landscape of Hertfordshire's towns. Increased bus use will minimise disruption from road congestion ultimately improving air quality and tranquillity. Construction of new infrastructure will need to prevent damage to the surrounding green spaces and Croxley Common Moore SSSI.	Ensure that any infrastructure delivered contributes and protects the local character of the landscape.
	To conserve and enhance the historic environment,	U	Any infrastructure delivered should be mindful of any local historic assets, particularly the historic environment surrounding the proposed scheme.	Scheme designers should consult HCC maps of local historic assets and the historic environment.

APPENDIX 3: APPRAISAL MATRICES

	heritage assets and their settings			
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Active travel is open to everyone and is generally affordable for most people in society. The combination of active travel and bus priority measures will improve access to the Western Gateway site and other services for all.	For people who cannot cycle, promote bikeability or other training to give people confidence to cycle. For those who cannot afford bikes, consider opening places where unwanted bicycles can be recycled.
	To empower all sections of the community to participate in decision making and local action	P+	The creation of the new access route will allow a range of people, including those on low income, to better access places thus people are better able to participate in decision making and local action.	The protected equalities groups should always be considered when providing any new bus services
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	The access route will allow potential employees on low incomes to better access employment opportunities in the Western Gateway Site.	
	To spread economic growth more evenly to benefit deprived areas	✓	The access route will allow potential employees on low incomes to better access employment opportunities in the Western Gateway Site.	

APPENDIX 3: APPRAISAL MATRICES

	To maintain the vitality and viability of existing centres	P+	The access route may create more employees thus enabling more spending power in existing centres. The scheme will also provide better access to Rickmansworth town centre through affordable means such as cycling.	
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Significant Positive Effects:

- The scheme may facilitate modal shift to forms of sustainable transport. This will benefit local biodiversity, air quality and local health.
- Increased use of sustainable transport measures may also help reduce runoff of chemicals into local water courses and soil.
- The scheme should also reduce the need for resources to maintain roads as car dependency will decrease.
- The forms of transport the scheme facilitates will reduce emissions that contribute to climate change.
- Economically, the scheme offers improved access to existing centres and the Western Gateway. Through active travel these locations will be more accessible for those on low incomes therefore improving potential access to employment and associated economic benefits.

Significant Negative Effects:

None.

Timescale

2-5 Years.

Temporary or Permanent:

Temporary, as many of the positive impacts will be reliant on people choosing sustainable modes to access the business parks.

Likelihood of effects or impacts identified occurring:

Medium – Dependent on modal shift to sustainable forms of transport.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Recycled materials should be used where possible in the construction process.

APPENDIX 3: APPRAISAL MATRICES

- Consideration also needs to be made for Croxley Common Moore SSSI and green spaces in order to prevent damage.
- The scheme needs to think about the interactions between pedestrians, vehicles and cyclists to prevent any conflicts, infrastructure may help.
- Safety training for cyclists such as bikeability and bus drivers to improve safety should also be considered.
- Secure cycle storage is needed at destinations.
- The scheme needs to consider personal security (i.e. provision of lighting, CCTV) and Hate Crime associated with bus usage.
- Consult the section in the HIAMP about SUDS when creating new access and prevent soil removal where possible.
- HCC should assist bus operators in seeking funding opportunities to purchase cleaner buses or electric buses in order to accelerate the positive impacts.
- The protected equalities groups should always be considered when providing any new bus services.

Data Issues:

- Numbers of alternative fuel (ULEV) buses in Hertfordshire.
- Crime data on buses or at bus stops.
- Monitoring modal shift.

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SCHEME SM28B: WESTERN GATEWAY SA: ALL TRAFFIC ACCESS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	X	The scheme would likely increase car dependency in the area. This would have negative effects on the local flora and fauna due to emissions produced by vehicles dependent of fossil fuels.	Encourage modal shift to sustainable forms of transport and ULEV vehicles.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	X	The scheme would likely increase car dependency in the area. This would have negative effects on health in the local area due to reduced active travel and the effects of poor air quality resulting from vehicle emissions.	

APPENDIX 3: APPRAISAL MATRICES

	To reduce crime and create safe environments	U	Increased car dependency will reduce levels of cycling and walking in public spaces this increasing fear of crime. Illegal parking and traffic related crime may also increase. Personal safety may be enhanced by the security of personal vehicles.	Consider infrastructure to control parking and traffic related offences. Provide relevant driver training and information. Bikeability or other cycle training to encourage modal shift to cycling.
Water and soil	To improve the sustainable use of resources	P-	Car dependency will likely result in the increased need for road maintenance. The construction or maintenance of infrastructure should use recycled material where possible.	Use recycled materials where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Sustainable construction practices and recycled materials should be used where possible	Use recycled materials where possible in any construction.
	To ensure the efficient use of water, and safeguard water resources	P-	Increase in roadway runoff which includes chemicals from tyres and road salt reaching water courses. Consideration will need to be made for River Colne and SUDS.	Consult the section in the HIAMP about SUDS when creating new access.
	To reduce contamination, and safeguard soil quality and quantity	P-	As above – potential to increase chemical runoff into soil. SUDS will need to be considered and soil removal kept to a minimum in any construction.	Consult the section in the HIAMP about SUDS when creating new access. Prevent soil removal where possible.

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Air	To protect and enhance air quality and minimise noise pollution	X	Increased car dependency will lead to an increase in air and noise pollution. There will be an increase in greenhouse gas production due to the fossil fuel consumption of cars.	Encourage modal shift to sustainable forms of transport and ULEV vehicles. Provide infrastructure for electric vehicle charging.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	X	Scheme will likely encourage car dependency thereby reducing the use of sustainable transport modes.	Encourage the use of car share and alternative fuels. Encourage modal shift to sustainable forms of transport
Climatic factors	To adapt to the impacts of climate change such as flooding	P-	Car dependency will contribute to climate change due to emissions produced. Any new infrastructure will need to adhere to SUDs to ensure that there is minimal additional surface runoff.	Consult the section in the HIAMP about SUDS when creating new access. Encourage modal shift to sustainable forms of transport and ULEV's.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	X	Car dependency will contribute to increased greenhouse gas emissions.	Encourage modal shift to sustainable forms of transport and ULEV's.
	To ensure the sustainable supply and use of energy	P-	Car dependency will contribute to increased greenhouse gas emissions. Benefits from ULEV's will depend on the speed at which the technology is taken up and becomes affordable.	Encourage modal shift to sustainable forms of transport and ULEV's. Install electric vehicle charging points and encourage their uptake.

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	Car dependency will reduce the tranquillity and air quality of nearby green spaces, of particular note the SSSI at Croxley Common Moore.	Consideration of SSSI site required in any further plans. Encourage modal shift to sustainable forms of transport and ULEV's. Install electric vehicle charging points and encourage their uptake.
	To conserve and enhance the historic environment, heritage assets and their settings	U	Any infrastructure delivered should be mindful of any local historic assets, particularly the historic environment surrounding the proposed scheme.	Scheme designers should consult HCC maps of local historic assets and the historic environment.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P-	Cars are not affordable to all in society therefore access to services will not be improved for all of the community. Human health will not be protected or enhanced due to the lack of active travel and negative health effects of pollution. Car use provides opportunity for greater flexibility in terms of reaching final destination.	Consider promotion of community transport schemes and active travel.
	To empower all sections of the community to participate in decision making and local action	U	Cars are not affordable to all in society therefore not all in society will be able to participate in decision making. Car use may encourage some participation as it provides the opportunity for greater flexibility in terms of reaching final destination.	Differential access to cars and the protected equalities groups should be considered.

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	U	The new access may provide opportunity for more citizens to access employment in the Western Gateway Site. Those on low income may not be able to access a car therefore are prevented from employment. Congestion due to high volumes of cars may result in economic loss.	Encourage car sharing and active travel to ease congestion.
	To spread economic growth more evenly to benefit deprived areas	U	The new access may provide opportunity for more citizens to access employment in the Western Gateway Site. Those on low income may not be able to access a car therefore are prevented from employment. Congestion due to high volumes of cars may result in economic loss.	
	To maintain the vitality and viability of existing centres	U	The access route may create more employees thus enabling more spending power in existing centres. The scheme will also provide better access to Rickmansworth town centre. Cars are not accessible to all in society, particularly those on low income. Centres may see less footfall due to congestion and traffic issues associated with more vehicles.	

Significant Positive Effects:

None.

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Significant Negative Effects:

- The scheme would likely increase car dependency in the area. This would have negative effects on the local biodiversity, air quality, noise pollution and health due to emissions produced by vehicles dependent of fossil fuels.
- Car dependency will likely result in the increased need for road maintenance.
- Increase in roadway runoff which includes chemicals from tyres and road salt reaching water courses
- Scheme will likely encourage car dependency thereby reducing the use of sustainable transport modes.
- Car dependency will contribute to increased greenhouse gas emissions.
- Cars are not affordable to all in society therefore access to services will not be improved for all of the community.
- Human health will not be protected or enhanced due to the lack of active travel and negative health effects of pollution.

Timescale: 2-5 Years.

Temporary or Permanent: Negative impacts are likely to be permanent, due to this scheme facilitating car use and not providing any alternative sustainable modes.

Likelihood of effects or impacts identified occurring: High – Likely that allowing all vehicles to utilise the south access will lead to continued car dependency and thus negative environmental and economic impacts

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Encourage modal shift to sustainable forms of transport and ULEV vehicles.
- Consider infrastructure to control parking and traffic related offences.
- Provide relevant driver training and information.
- Bikeability or other cycle training to encourage modal shift to cycling.
- Use recycled materials where possible in any construction.
- Consult the section in the HIAMP about SUDS for any construction.
- Encourage car sharing and active travel to ease congestion.
- Consider promotion of community transport schemes and active travel.

Data Issues:

- Numbers of alternative fuel (ULEV) cars in Hertfordshire.
- Monitoring air quality.

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR28: QUIETWAY BUNCEFIELD LANE – SOUTHERN SECTION

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	Flora and fauna could be negatively impacted upon by heavier use from existing country lanes.	If lighting is installed ensure it has as little impact on biodiversity as possible.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	An excellent way for commuters to work and back include extra active travel opportunities into their daily lives.	Ensure the design is as user friendly as possible as does not deter usage by any groups of people. Any new business travel plans for larger businesses would be mindful to include, lockers and suchlike for employees to store change of footwear within and similar, especially if they wish to jog to work. Obviously employers may wish to offer this as part of the employee package.

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	To reduce crime and create safe environments	U	It depends on how the scheme is implemented, safety of the pedestrian from conflicts with cyclists, is important as well as perception of feeling safe whilst walking or cycling it vital.	Consider all designing out crime recommendations – see building futures guidance, manual for streets and roads in Herts for example. Maintenance of vegetation, good surfaces all help towards safer routes.
Water and soil	To improve the sustainable use of resources	U	Depends on implementation.	Recycle as much as possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Depends on implementation.	Reuse and Recycle as much as possible.
	To ensure the efficient use of water, and safeguard water resource	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	This route should take some employee cars off the main roads, and in theory minimise air pollution and noise from vehicles.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Previously there was little choice of sustainable modes into Maylands, but this route will improve the choice.	Ensure it is promoted to employees via the Maylands Business Centre.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Potential for flooding should be designed out, or people will not use the route.	Design out potential for flooded areas, e.g. large potholes full of rainwater.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	This will reduce carbon emissions which impacts on climate change overall because in theory less people will use their cars.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Existing green spaces will not be destroyed.	
	To conserve and enhance the historic environment, heritage assets and their settings	O		

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	More people on low salaries will be able to access jobs on the Maylands site. It is possible that some people are unable to afford pt fares, but can walk for free.	Shift workers may dislike using the quietways when dark or lonely – consider lighting or travel buddying schemes to encourage their use.
	To empower all sections of the community to participate in decision making and local action	P+	Having a job can empower people to join in with communities.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability.	Any new business travel plans for larger businesses would be mindful to include, lockers and bike storage, possibly showers for employees to store change of footwear etc, to encourage their workforce to jog or cycle to work. They do not have to have a travel plan for this to happen.
	To spread economic growth more evenly to benefit deprived areas	P+	LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability from deprived areas.	

APPENDIX 3: APPRAISAL MATRICES

	To maintain the vitality and viability of existing centres	U		
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Significant Positive Effects:

This scheme will maximise the opportunities for leisure and a healthy lifestyle, improve the physical and mental health of the population, and reduce health inequalities. It will also help to protect and enhance air quality and minimise noise pollution. Previously there was little choice of sustainable modes into Maylands, but this route will improve the choice. More people on low salaries will be able to access jobs on the Maylands site. It is possible that some people are unable to afford passenger transport fares, but can walk for free. LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability.

Significant Negative Effects: None.

Timescale: short to medium term.

Temporary or Permanent:

Some impacts will be temporary as walking and cycling levels can vary over time, and be seasonal.

Likelihood of effects or impacts identified occurring: Likely.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If lighting is installed ensure it has as little impact on biodiversity as possible.
- Ensure the design of the route is as user friendly as possible and does not deter usage by any equalities groups.
- Any new business travel plans for larger businesses in Maylands would be mindful to include, lockers and bike storage, and possibly showers for employees to store change of footwear and clothes, to encourage their workforce to walk, jog or cycle to work. They do not have to have a travel plan for this to happen of course, it could be part of the employer's rewards package to encourage employees to work for them and enhance the green credentials of the company.
- Ensure it is promoted to employees via the Maylands Business Centre. Shift workers may dislike using the quietways when dark or lonely – consider travel buddying schemes to encourage their use, this could be part of a healthy journeys initiative. Consider 'designing out crime' recommendations – see Building Futures guidance, Manual for Streets and Roads in Herts

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for examples. Maintenance of vegetation and good surfaces all help towards safer routes. Design out the potential for flooded areas, e.g. avoid introducing large potholes full of rainwater

- Reuse and Recycle as much as possible whilst building the scheme.

Data Issues:

None.

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SCHEME SM29: A414 J8 CYCLE BRIDGE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels. The creation of the bridge may have some potential damage to local biodiversity.	Ensure use of recycled materials and sustainable construction practices where possible.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits. It is also accessible to everyone in society at little cost.	Promote cycling as a form of exercise for everyone.

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	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help this.	Consider bikeability or other cycle training to help cyclists ride safely. Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Off road cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work	Ensure use of recycled materials where possible
	To ensure the efficient use of water, and safeguard water resources	P+	Increased cycle use will reduce roadway runoff including chemicals from tyres and road salt entering water courses	
	To reduce contamination, and safeguard soil quality and quantity	U	Increased cycle use will reduce roadway runoff including chemicals from tyres and road salt entering water courses. Potential removal of soil in construction will reduce quantity.	Where possible efforts should be made to reduce removal of soil from the surrounding fields.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creation of the cycle bridge will help facilitate cycling addressing the objective completely.	
Climatic factors	To adapt to the impacts of climate change such as flooding	✓	Cycling has no negative impact on the causes of climate change.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new cycle bridge may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	✓	Cycling does not use any energy other than that produced by individuals. However, electric bikes require a battery to be charged.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of cycle bridge may result in damage to green spaces.	Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment. The bridge also offers improved access to areas of East Hemel Hempstead.	Recommend that the HCC map of historic assets is consulted before any scheme is finalised.

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. The new bridge will improve access for all to areas of East Hemel Hempstead and Hemel Hempstead Industrial Estate.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access
	To empower all sections of the community to participate in decision making and local action	P+	Improved cycle infrastructure will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The cycle bridge may allow potential employees on low incomes to better access employment opportunities such as at Hemel Hempstead Industrial Estate.	Promote the use of bicycles to employees at the Hemel Hempstead Industrial Estate.
	To spread economic growth more evenly to benefit deprived areas	P+	The cycle bridge may allow potential employees on low incomes to better access employment opportunities such as at Hemel Hempstead Industrial Estate.	

APPENDIX 3: APPRAISAL MATRICES

	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. Avoiding A414 congestion hotspots may also improve access to existing centres in East Hemel Hempstead.	
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Significant Positive Effects:

- The creation of the cycle bridge and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle bridge will lead to improved air quality and less noise pollution
- Mental and physical health benefits of cycling
- More people cycling in public places leads to safer environments and a feeling of personal security.
- Increased cycle use will reduce roadway runoff including chemicals from tyres and road salt entering water courses.
- Economically, the cycle bridge may enable those on low incomes to access employment opportunities particularly due to the connectivity with Hemel Hempstead Industrial Estate.

Significant Negative Effects:

None.

Timescale:

2-5 Years.

Temporary or Permanent:

Temporary, as positive impacts as a result of modal shift to cycling will vary as cycling can be seasonal.

Likelihood of effects or impacts identified occurring:

Medium – dependent on funding for bridge and achieving modal shift to cycling.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Ensure use of recycled materials and sustainable construction practices where possible.

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- Promote cycling as a form of exercise for everyone.
- Consider bikeability or other cycle training to help cyclists ride safely.
- Cycle storage in destinations needs to include the ability to lock bicycles securely.
- Where possible efforts should be made to reduce removal of soil from the surrounding fields.
- Damage to green spaces should be avoided where possible.
- Recommend that the HCC map of historic assets is consulted before any scheme is finalised.

Data Issues:

Monitoring modal shift to cycling.

APPENDIX 3: APPRAISAL MATRICES

SCHEME SM30: A41 BUS PRIORITY MEASURES

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: Likelihood of effect occurring Permanence of effect Geographic scale of effect Cumulative effects Current env. Social & economic trends of affected area Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+/U	If modal shift can be achieved more journeys will be completed using sustainable transport therefore reducing emissions in the area which will be of benefit to local flora and fauna. Construction of additional bus lanes would cause damage to local biodiversity. Buses will not immediately have fully clean technology. Close proximity to Roughdown Common SSSI so consideration of this is needed.	Use recycled materials where possible. Consideration of Roughdown Common SSSI site and green spaces required.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and	P+	Facilitating bus use should encourage active travel, as a bus journey will also involve walking as part of the journey. The bus priority measures will also improve access to services	Promote/focus marketing bus services that particularly service Maylands and Western Gateway Business Parks.

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	mental health of the population, and reduce health inequalities		at a number of locations in Hemel Hempstead and Watford.	
	To reduce crime and create safe environments	X	The scheme does not mention issues surrounding security or hate crime that are possible with increased bus usage.	Scheme needs to consider personal security (i.e. provision of lighting, CCTV) and Hate Crime.
Water and soil	To improve the sustainable use of resources	P+	Overall the scheme should reduce the need for resources to maintain roads as car dependency will decrease. The construction of any new bus lanes should use recycled materials where possible.	Use recycled materials where possible in any construction.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Sustainable construction practices and recycled materials should be used where possible.	Use recycled materials where possible in any construction.
	To ensure the efficient use of water, and safeguard water resources	P+	Increased use of buses should reduce car use and roadway runoff which includes chemicals from tyres and road salt reaching water courses. New bus lanes will need to consider the use of SUDS.	Consult the section in the HIAMP about SUDS when creating new bus lanes.
	To reduce contamination, and safeguard soil quality and quantity	U	As above – potential to reduce chemical runoff into soil. SUDS will need to be considered in construction of bus lanes. Possibility of soil removal in construction of new bus lanes.	Consult the section in the HIAMP about SUDS when creating new bus lanes. Prevent soil removal where possible.

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Air	To protect and enhance air quality and minimise noise pollution	P+	Modal shift to buses will reduce traffic and improve air quality. Buses will not immediately have fully clean or quiet technology. Reduced car use will benefit the 2 AQMA's in close proximity.	Assist the bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Bus use is a sustainable mode and the scheme encourages a reduction in the need to travel by car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Any new bus lanes will need to adhere to SUDs to ensure that there is minimal additional surface runoff.	Consult the section in the HIAMP about SUDS when creating new bus lanes
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	U	This will depend on the speed that bus fleets are renewed to cleaner technology.	Assist bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
	To ensure the sustainable supply and use of energy	U	This will depend on the speed that bus fleets are renewed to cleaner technology.	Assist bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
Historic Environment and Landscape	To protect and enhance the character of landscape,	P+	Increased bus use will minimise disruption from road congestion ultimately improving air quality and tranquillity. Construction of new bus lanes will need to prevent damage to	Ensure that any new infrastructure delivered contributes and protects the local character of the landscape.

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	townscape and green spaces		the surrounding green spaces and Roughdown Common SSSI.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	New bus lanes must be mindful of any local historic assets, particularly the historic environment surrounding the proposed scheme.	Scheme designers should consult HCC maps of local historic assets.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	The scheme will help facilitate improved bus service between key services and community facilities. Buses are also more accessible than cars for those on low incomes or with reduced mobility.	
	To empower all sections of the community to participate in decision making and local action	P+	The scheme will help facilitate improved bus service between key locations thus allowing more people to participate in local action. Buses are also more accessible than cars for those on low incomes or with reduced mobility.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The scheme will improve bus accessibility to key employment sites in Maylands and Western Gateway.	

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	To spread economic growth more evenly to benefit deprived areas	P+	The scheme will improve opportunity for those on low income to access key employment sites in Maylands and Western Gateway.	
	To maintain the vitality and viability of existing centres	P+	The scheme may create more employees thus enabling more spending power in existing centres. The scheme will also provide better access to Hemel Hempstead town centre thus creating more footfall in existing centres.	

Significant Positive Effects:

- The scheme may facilitate modal shift to a form of sustainable transport. This will benefit local biodiversity, air quality and local health.
- The scheme should also reduce the need for resources to maintain roads as car dependency will decrease
- Facilitating bus use should encourage active travel, as a bus journey will also involve walking as part of the journey.
- Reduced car use will benefit the 2 AQMA's in close proximity.
- Bus use is a sustainable mode and the scheme encourages a reduction in the need to travel by car.
- The scheme may create more employees thus enabling more spending power in existing centres.
- The scheme will also provide better access to Hemel Hempstead town centre thus creating more footfall in existing centres.

Significant Negative Effects:

- The scheme does not mention issues surrounding security or hate crime that are possible with increased bus usage.

Timescale:

5-10 years.

Temporary or Permanent:

Temporary, as positive impacts are reliant on modal shift and travel behaviour.

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Likelihood of effects or impacts identified occurring:

Low – low likelihood of funding being secured and impacts dependent on modal shift to bus use.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Use recycled materials where possible.
- Consideration of Roughdown Common SSSI site and green spaces required.
- Promote/focus marketing bus services that particularly service Maylands and Western Gateway Business Parks
- Scheme needs to consider personal security (i.e. provision of lighting, CCTV) and Hate Crime.
- Consult the section in the HIAMP about SUDS when creating new bus lanes.
- Prevent soil removal in construction where possible.
- Assist bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
- Ensure that any new infrastructure delivered contributes and protects the local character of the landscape.
- Scheme designers should consult HCC maps of local historic assets.

Data Issues:

- Monitoring air and soil quality
- Numbers of alternative fuel (ULEV) buses in Hertfordshire
- Crime data on buses or at bus stops.
- Monitoring modal shift

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR30: NEW LIGHTING ON ENTIRE ROUTE WITHIN URBAN AREA

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Improved perception of safety may lead to an increase in the use of sustainable forms of transport such as cycling which have fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels.	Use appropriate levels of LED lighting to reduce impacts on biodiversity.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Improved lighting will increase safety and navigation ability thus enabling more people to use the Nickey Line for active travel.	

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	To reduce crime and create safe environments	P+	Improved lighting may reduce crime and improve perception of safety. More people walking and cycling in public places leads to safer environments and a feeling of personal security.	Bikeability training to help cyclists ride safely. Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	U	Lighting needs to be as efficient as possible in terms of energy consumption and any materials used in construction.	Ensure any new materials are recycled where possible. Utilise LED lighting if possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Any construction should be completed using sustainable practices and using recycled materials.	Ensure any new materials are recycled where possible.
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	U	Reduce and prevent soil removal when implementing new lights and signage.	Reduce and prevent soil removal when implementing new lights and signage.
Air	To protect and enhance air quality and minimise noise pollution	U	Lighting may facilitate cycling and walking which reduces the production of noxious road emissions.	Use LED lights and prevent excessive use of lighting. Promote the improvements and active travel.

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	New lighting and signage allows more people to access sustainable forms of transport along the Nickey Line.	
Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	lighting may facilitate cycling and walking which reduces the production of CO2	
	To ensure the sustainable supply and use of energy	U	Efforts need to be made to minimise energy requirements of new lighting.	Utilise LED lighting.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Enhancing the safety and navigation of the Nickey Line will benefit Hemel Hempstead's character and improves access to the natural environment.	Promote the Nickey Line and associated improvements.

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	To conserve and enhance the historic environment, heritage assets and their settings	P+	Enhancing the safety and navigation of the Nickey Line will provide better opportunity for people to access local heritage and participate in leisure activities.	Recommend that the HCC map of historic assets is consulted.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	More lighting may encourage more people to go out thus addressing one of the causes of social exclusion.	
	To empower all sections of the community to participate in decision making and local action	U		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	O		

APPENDIX 3: APPRAISAL MATRICES

	To spread economic growth more evenly to benefit deprived areas	P+	Improving lighting and signage along the Nickey Line supports efforts to regenerate Hemel Hempstead.	
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects:

- Improved perception of safety may lead to an increase in the use of sustainable forms of transport such as cycling which have fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels.
- Improved lighting will increase safety and navigation ability
- Improved lighting may reduce crime and improve perception of safety
- New lighting and signage allows more people to access sustainable forms of transport along the Nickey Line.
- Enhancing the safety and navigation of the Nickey Line will benefit Hemel Hempstead's character and improves access to the natural environment, local heritage and leisure activities.
- Improving lighting and signage along the Nickey Line supports efforts to regenerate Hemel Hempstead

Significant Negative Effects: None.

Timescale: 0-2 years.

Temporary or Permanent: Permanent impacts from any new street lighting installed.

Likelihood of effects or impacts identified occurring: Medium likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Use appropriate levels of LED lighting to reduce impacts on biodiversity.
- Bikeability training to help cyclists ride safely.
- Cycle storage in destinations needs to include the ability to lock bicycles securely.
- Ensure any new materials are recycled where possible.

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- Utilise LED lighting if possible.
- Reduce and prevent soil removal when implementing new lights and signage.
- Prevent excessive use of lighting.
- Promote the Nickey Line improvements and active travel.
- Recommend that the HCC map of historic assets is consulted.

Data Issues:

Measuring light pollution

APPENDIX 3: APPRAISAL MATRICES

SCHEME SM31: ENHANCED WATFORD – HEMEL BUS SERVICES

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+/U	If modal shift can be achieved more journeys will be completed using sustainable transport therefore reducing emissions in the area which will be of benefit to local flora and fauna. Buses will not immediately have fully clean technology.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Facilitating bus use should encourage active travel, as a bus journey will also involve walking as part of the journey. Enhanced bus services will also improve access to services at a number of locations in Hemel Hempstead and Watford.	

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	To reduce crime and create safe environments	X	The scheme does not mention issues surrounding security or hate crime that are possible with increased bus usage.	Scheme needs to consider personal security (i.e. provision of lighting, CCTV) and Hate Crime.
Water and soil	To improve the sustainable use of resources	P+	The scheme should reduce the need for resources to maintain roads as car dependency will decrease.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	P+	Increased use of buses should reduce car use and roadway runoff which includes chemicals from tyres and road salt reaching water courses.	
	To reduce contamination, and safeguard soil quality and quantity	P+	As above – potential to reduce chemical runoff into soil.	
Air	To protect and enhance air quality and minimise noise pollution	P+	Modal shift to buses will reduce traffic and improve air quality. Buses will not immediately have fully clean or quiet technology. Reduced car use will benefit the AQMA's in the surrounding area.	Assist the bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Bus use is a sustainable mode and the scheme encourages a reduction in the need to travel by car.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Dependent on construction of any new bus lanes and whether these utilise SUDS.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	U	This will depend on the speed that bus fleets are renewed to cleaner technology.	Assist the bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
	To ensure the sustainable supply and use of energy	U	This will depend on the speed that bus fleets are renewed to cleaner technology.	Assist the bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Enhanced bus services will minimise disruption from road congestion ultimately improving air quality and tranquillity.	
	To conserve and enhance the historic environment,	P+	Improved bus services offer more opportunities for people to access local heritage, cultural and leisure activities.	Recommend that the HCC map of historic assets is consulted before any scheme is finalised.

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	heritage assets and their settings			
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	The scheme will help facilitate improved bus service between key services and community facilities. Buses are also more accessible than cars for those on low incomes or with reduced mobility.	
	To empower all sections of the community to participate in decision making and local action	P+	The scheme will help facilitate improved bus service between key locations thus allowing more people to participate in local action. Buses are also more accessible than cars for those on low incomes or with reduced mobility.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The scheme will improve bus accessibility to key employment sites in Maylands and Western Gateway.	
	To spread economic growth more evenly to benefit deprived areas	P+	The scheme will improve bus accessibility to key employment sites in Maylands and Western Gateway.	

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	To maintain the vitality and viability of existing centres	P+	The scheme may create more employees thus enabling more spending power in existing centres. The scheme will also provide better access to Hemel Hempstead town centre thus creating more footfall in existing centres.	
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Significant Positive Effects:

- The scheme may facilitate modal shift to a form of sustainable transport. This will benefit local biodiversity, air quality and local health.
- The scheme should also reduce the need for resources to maintain roads as car dependency will decrease
- Facilitating bus use should encourage active travel, as a bus journey will also involve walking as part of the journey.
- Reduced car use will benefit the 2 AQMA's in close proximity.
- Bus use is a sustainable mode and the scheme encourages a reduction in the need to travel by car.
- The scheme may create more employees thus enabling more spending power in existing centres.
- The scheme will also provide better access to Hemel Hempstead town centre thus creating more footfall in existing centres.

Significant Negative Effects:

- The scheme does not mention issues surrounding security or hate crime that are possible with increased bus usage.

Timescale:

5-10 years.

Temporary or Permanent:

Temporary, as this scheme is reliant on modal shift and travel behaviour day to day.

Likelihood of effects or impacts identified occurring:

Medium – Dependent on funding and successful modal shift

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Assist the bus operators in seeking funding opportunities to purchase cleaner buses or electric buses.

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- Scheme needs to consider personal security (i.e. provision of lighting, CCTV) and Hate Crime.
- Recommend that the HCC map of historic assets is consulted before any scheme is finalised.

Data Issues:

- Numbers of alternative fuel (ULEV) buses in Hertfordshire
- Crime data on buses or at bus stops.
- Monitoring modal shift.

APPENDIX 3: APPRAISAL MATRICES

SCHEME SM32: STREETSCAPE ENHANCEMENTS IN APSLEY/TWO WATERS AREA

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Improvements to the walking and cycling environment and the discouragement of car use in the area may reduce emissions which will have a positive impact on the local flora and fauna.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The scheme encourages walking and cycling by creating a safer environment. This may increase active travel having health benefits. Reductions in congestion and car use will also have positive effects on health due to reduced emissions.	Promote active travel for everyone.

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	To reduce crime and create safe environments	P+	Increased levels of cycling and walking in public spaces leads to safer environments and a feeling of personal security. Reduced rat-running in the area will increase road safety. Interactions between cyclists, pedestrians and drivers needed to ensure safety of all road users.	Consider infrastructure and signage to ensure all road users understand rights of way. Training for cyclists such as bikeability to increase knowledge and safety. Training for drivers should also be considered to improve safety.
Water and soil	To improve the sustainable use of resources	P+	Overall the scheme should reduce the need for resources to maintain roads as it aims to reduce car use in the area. Any streetscape improvements should use recycled material.	Use recycled materials where possible in any construction.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Any streetscape improvements should use recycled material.	Use recycled materials where possible in any construction.
	To ensure the efficient use of water, and safeguard water resources	P+	The scheme may encourage active travel which will reduce roadway runoff including chemicals from tyres and road salt reaching water courses. Consideration will need to be made for any streetscape improvements that will require SUDS.	Consult the section in the HIAMP about SUDS.

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	To reduce contamination, and safeguard soil quality and quantity	P+	As above – the scheme may reduce car use in the area reducing runoff of chemicals into soil.	
Air	To protect and enhance air quality and minimise noise pollution	P+/U	The scheme will encourage cycling and walking which have no negative impacts on air or noise pollution. Cars will still be used in the area and will not be quit or clean until technology becomes more widespread.	Installation of electric charging points. Promotion of active travel to all.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+/U	The scheme aims to encourage cycling and walking thus improving the choice of sustainable travel. Car use faces more challenges but will persist in the area.	Promote sustainable travel options to all. Improve bus provision. Creation of segregated cycle lanes.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Active travel options have no negative impacts on the causes of climate change. Any physical streetscape improvements will need to adhere to SUDs to ensure that there is minimal additional surface runoff.	Consult the section in the HIAMP about SUDS.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+/U	The scheme will encourage cycling and walking which will reduce greenhouse gas emissions. Cars will still be used in the area and will not be clean until technology becomes more widespread.	Installation of electric charging points. Promotion of active travel to all. Encourage uptake of ULEV vehicles.

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	To ensure the sustainable supply and use of energy	P+/U	Active travel does not use any energy other than that produced by individuals. For cars this will depend on the speed at which ULEV's are taken up.	Installation of electric charging points. Promotion of active travel to all. Encourage uptake of ULEV vehicles.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Street beatification will enhance the character of the townscape. Walking and cycling in the public domain will enhance the landscape of Hemel Hempstead. Reduced rat-running will benefit the local area.	
	To conserve and enhance the historic environment, heritage assets and their settings	U	Any infrastructure delivered should be mindful of any local historic assets, particularly the historic environment surrounding the proposed scheme.	Scheme designers should consult HCC maps of local historic assests and the historic environment.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Active travel is open to everyone and is generally affordable for most people in society. By encouraging more active travel all members of society have increased access to services.	For people who cannot cycle, promote bikeability or other training to give people confidence to cycle. For those who cannot afford bikes, consider opening places where unwanted bicycles can be recycled
	To empower all sections of the community to participate in decision making and local action	P+/U	Active travel is open to everyone and is generally affordable for most people in society. By encouraging more active travel all members of society have increased ability to participate in local decision making.	

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Active travel is open to everyone and is generally affordable for most people in society. By encouraging more active travel all members of society have increased access to employment, particularly those on low income. Car use in the area will persist possibly creating a barrier to some.	
	To spread economic growth more evenly to benefit deprived areas	P+	Active travel is open to everyone and is generally affordable for most people in society. By encouraging more active travel all members of society have increased access to employment, particularly those on low income. Car use in the area will persist possibly creating a barrier to some.	
	To maintain the vitality and viability of existing centres	P+	By encouraging more active travel all members of society have increased access to employment, increasing income and spending power in the area. Car use in the area will persist possibly causing congestion and barriers to Hemel Hempstead Town Centre.	

Significant Positive Effects:

- The scheme may facilitate modal shift to forms of sustainable transport. This will benefit local biodiversity, air quality and local health.
- Increased use of sustainable transport measures may also help reduce runoff of chemicals into local water courses and soil.
- The scheme should also reduce the need for resources to maintain roads as car dependency will decrease.

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- The scheme will facilitate active travel which will enable more people to access employment, possibly leading to increased income and local spending power.
- Street beatification will enhance the character of the townscape.
- Walking and cycling in the public domain will enhance the landscape of Hemel Hempstead.
- Reduced rat-running will benefit the local area.
- The scheme will encourage cycling and walking which will reduce greenhouse gas emissions

Significant Negative Effects: None.

Timescale: 2-5 Years.

Temporary or Permanent: Permanent positive impacts to the local environment.

Likelihood of effects or impacts identified occurring:

Medium – Dependent on funding and the extent to which car use in the area changes

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- For people who cannot cycle, promote bikeability or other training to give people confidence to cycle.
- For those who cannot afford bikes, consider opening places where unwanted bicycles can be recycled
- Scheme designers should consult HCC maps of local historic assets and the historic environment.
- Installation of electric charging points.
- Promotion of active travel to all.
- Encourage uptake of ULEV vehicles.
- Consult the section in the HIAMP about SUDS.
- Use recycled materials where possible in any construction.
- Consider infrastructure and signage to ensure all road users understand rights of way

Data Issues:

- Numbers of alternative fuel (ULEV) cars in Hertfordshire
- Monitoring modal shift in the area

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR35: M1 J10 ON SLIP CAPACITY IMPROVEMENT

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	The scheme could perpetuate car dependency in the area. This would have negative effects on the local flora and fauna due to emissions produced by vehicles. Any construction may result in damage to local biodiversity.	Encourage modal shift to sustainable forms of transport and ULEV vehicles.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P-/U	The scheme could perpetuate car dependency in the area. This would have negative effects on health in the local area due to reduced active travel. However, reductions in rat-running through Harpenden may improve local air quality and health.	Encourage modal shift to sustainable forms of transport and ULEV vehicles.

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	To reduce crime and create safe environments	P+	Reduced rat-running on local roads will create safer environments and improve road safety.	
Water and soil	To improve the sustainable use of resources	U	Reduced use of local roads will result in less need for road maintenance. However, the scheme could perpetuate car dependency thus ongoing construction work will be required. Any future repairs or construction for the scheme should use recycled materials where possible.	Use recycled materials where possible. Encourage sustainable modes of transport.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Sustainable construction practices and recycled materials should be used where possible.	Use sustainable construction practices and recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	P-/U	Increased on slip capacity will increase roadway runoff which includes chemicals from tyres and road salt reaching water courses. Consideration will need to be made for SUDS	Consult the section in the HIAMP about SUDS when increasing on slip capacity.
	To reduce contamination, and safeguard soil quality and quantity	P-/U	As above – potential to increase chemical runoff into surrounding soil. SUDS will need to be considered and soil removal kept to a minimum in any construction.	Consult the section in the HIAMP about SUDS when creating any new road. Prevent soil removal where possible.

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Air	To protect and enhance air quality and minimise noise pollution	P+/U	A reduction in rat-running through urban areas will improve local air quality and reduce noise pollution. However additional capacity could be filled or not utilised leading to a repetition of the existing issues.	Consider whether improved capacity will facilitate behaviour/route changes. Encouraging modal shift to alternative forms of transport to ease congestion and air pollution such as public transport and ULEV vehicles.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	X	Scheme will likely encourage car dependency thereby reducing the use of sustainable transport modes.	Encourage the use of car share and alternative fuels
Climatic factors	To adapt to the impacts of climate change such as flooding	P-	Car dependency will contribute to climate change due to emissions produced. Any new infrastructure will need to adhere to SUDs to ensure that there is minimal additional surface runoff.	Consult the section in the HIAMP about SUDS when creating new access. Encourage modal shift to sustainable forms of transport and ULEV's.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	X	Car use will contribute to increased greenhouse gas emissions	Encourage modal shift to sustainable forms of transport and ULEV's.

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	To ensure the sustainable supply and use of energy	P-	Car dependency will contribute to increased greenhouse gas emissions. Benefits from ULEV's will depend on the speed at which the technology is taken up and becomes affordable.	Encourage modal shift to sustainable forms of transport and ULEV's. Install electric vehicle charging points and encourage their uptake.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Reduced rat-running will help to enhance the townscape in urban areas such as Harpenden.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	The scheme could help reduce congestion and urban rat-running thus enhancing the local area.	Recommend that the HCC map of historic assets is consulted before any scheme is finalised.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P-	The scheme could help reduce congestion which would help to improve the time taken to access community facilities. However, cars are not affordable to all in society therefore access to services will not be improved for all of the community. Human health will not be protected or enhanced due to the lack of active travel and negative health effects of pollution.	Consider promotion of community transport schemes and active travel

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	To empower all sections of the community to participate in decision making and local action	U	Cars are not affordable to all in society therefore not all in society will be able to participate in decision making. However reduced congestion and rat-running may encourage some participation as it provides the opportunity for greater flexibility in terms of reaching final destination.	Differential access to cars and the protected equalities groups should be considered.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	U	Reduced congestion may have economic benefits for the region. However, those on low income may not be able to access a car therefore are prevented from employment. If capacity becomes filled future congestion may result in economic loss.	Encourage car sharing and alternative measures to reduce congestion.
	To spread economic growth more evenly to benefit deprived areas	U	Reduced congestion may have economic benefits for the region. However, those on low income may not be able to access a car therefore are prevented from employment. If capacity becomes filled future congestion may result in economic loss.	
	To maintain the vitality and viability of existing centres	U	Reduced congestion may create more employees thus enabling more spending power in existing centres. The scheme will also provide better access within Harpenden due to reduced rat-running. Cars are not	

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			accessible to all in society, particularly those on low income.	
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Significant Positive Effects:

- Reduced rat-running on local roads will create safer environments and improve road safety, improve local air quality, reduce noise pollution and enhance the townscape in urban areas such as Harpenden.
- The scheme could help reduce congestion enhancing the local area, improving access to community facilities and providing economic benefits to the region.
- Reduced use of local roads will result in less need for road maintenance.

Significant Negative Effects:

- The scheme could perpetuate car dependency in the area which would have negative effects on the local biodiversity and health due to emissions produced by vehicles.
- Any construction may result in damage to local biodiversity.
- Increased on slip capacity will increase roadway runoff which includes chemicals from tyres and road salt reaching water courses.
- Scheme will likely encourage car dependency thereby reducing the use of sustainable transport modes.
- Car use will contribute to increased greenhouse gas emissions.
- Cars are not affordable to all in society therefore access to services will not be improved for all of the community.

Timescale:

2-5 Years.

Temporary or Permanent:

This would create permanent capacity increases at this junction.

Likelihood of effects or impacts identified occurring:

Medium Likelihood – Funding dependent and requires cooperation with neighbouring authorities

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Encourage modal shift to sustainable forms of transport and ULEV vehicles.
- Use sustainable construction practices and recycled materials where possible

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- Consult the section in the HIAMP about SUDS when increasing on slip capacity
- Prevent soil removal where possible
- Consider whether improved capacity will facilitate behaviour/route changes.
- Install electric vehicle charging points and encourage their uptake
- Consider promotion of community transport schemes and active travel
- Differential access to cars and the protected equalities groups should be considered.
- Encourage car sharing and alternative measures to reduce congestion.
- Recommend that the HCC map of historic assets is consulted before any scheme is finalised.

Data Issues:

- Measuring reduction in rat-running.

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SCHEME PR36: A1081 HARPENDEN TOWN CENTRE CAPACITY REDUCTION

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Improving the streetscape for cyclists and pedestrians may encourage more journeys within Harpenden via sustainable means. This will reduce emissions from vehicles thus benefitting local biodiversity.	Use recycled materials where possible in construction.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Increases in active travel will have health benefits for the local population. Cycling and walking are also open to everyone in society at little to no cost.	Promote active travel for everyone.

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	To reduce crime and create safe environments	P+	Reduced rat-running on local roads will create safer environments and improve road safety. Secure storage for bicycles is essential for uptake. Cyclists also need to be safe on the road, infrastructure can help this.	Think about the interactions between pedestrians, vehicles and cyclists to prevent any conflicts, infrastructure may help. Safety training for cyclists such as bikeability and car drivers to improve safety. Secure cycle storage is needed at destinations.
Water and soil	To improve the sustainable use of resources	P+	The scheme should reduce the need for resources to maintain roads as car use and rat-running will decrease. The construction of any new infrastructure should use recycled material where possible.	Use recycled materials where possible in any construction.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Sustainable construction practices and recycled materials should be used where possible.	
	To ensure the efficient use of water, and safeguard water resources	P+	Increased use of active travel will reduce roadway runoff which includes chemicals from tyres and road salt reaching water courses.	Consult the section in the HIAMP about SUDS when creating any new measures.

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	To reduce contamination, and safeguard soil quality and quantity	P+	As above – potential to reduce chemical runoff into soil. SUDS will need to be considered and soil removal kept to a minimum in any construction.	Consult the section in the HIAMP about SUDS when creating any new measures. Prevent soil removal where possible.
Air	To protect and enhance air quality and minimise noise pollution	P+	The scheme aims to reduce rat-running and increase active travel therefore improving air quality. Shifts to cycling and walking will also reduce noise pollution.	Encourage modal shift to alternative forms of transport to ease congestion and ULEV vehicles.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	The scheme will improve the streetscape for sustainable forms of transport which will help encourage their use.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Active travel options have no negative impacts on the causes of climate change. Any new infrastructure will need to adhere to SUDs to ensure that there is minimal additional surface runoff	Consult the section in the HIAMP about SUDS when creating any new measures.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Active travel does not produce the greenhouse gases that are causing climate change and less rat-running will reduce greenhouse gases in the local area.	

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	To ensure the sustainable supply and use of energy	P+	Active travel does not use any energy other than that produced by individuals. For cars still using the area this will depend on the speed that new technology is adopted.	Install electric charging points and encourage their uptake.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Increased levels of walking and cycling in the public domain will enhance the landscape of Hertfordshire's towns. Reduced rat-running will help to enhance the townscape in Harpenden.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	The scheme could help reduce congestion and urban rat-running thus enhancing the local area.	Recommend that the HCC map of historic assets is consulted before any scheme is finalised.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Active travel is open to everyone and is generally affordable for most people in society.	
	To empower all sections of the community to participate in decision making and local action	P+	Improving the streetscape will allow a range of people, including those on low income, to better access places thus people are better able to participate in decision making and local action.	Differential access to cars and the protected equalities groups should be considered.

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+/U	Improving the streetscape will allow potential employees on low incomes to better access employment opportunities in Harpenden. However, managing road capacity may cause journeys by cars to take longer having a negative impact on the economy.	
	To spread economic growth more evenly to benefit deprived areas	P+/U	Improving the streetscape will allow potential employees on low incomes to better access employment opportunities in Harpenden. However, managing road capacity may cause journeys by cars to take longer having a negative impact on the economy.	
	To maintain the vitality and viability of existing centres	P+/U	Active travel is accessible to all and may create new employees increasing spending power within Harpenden. The scheme will also provide better access within Harpenden due to reduced rat-running. Making it more difficult to drive through Harpenden may reduce footfall in the town centre.	

Significant Positive Effects:

- Improving the streetscape for cyclists and pedestrians may encourage more journeys within Harpenden via sustainable means. This will reduce emissions from vehicles thus benefitting local biodiversity and health
- Cycling and walking are open to everyone in society at little to no cost.
- Reduced rat-running on local roads will create safer environments and improve road safety.
- The scheme should reduce the need for resources to maintain roads as car use and rat-running will decrease

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- Increased use of active travel will reduce roadway runoff which includes chemicals from tyres and road salt reaching water courses
- Shifts to cycling and walking will also reduce noise pollution.
- Active travel options have no negative impacts on the causes of climate change
- Increased levels of walking and cycling in the public domain will enhance the townscape of Hertfordshire's towns.
- Reduced rat-running will help to enhance the townscape in Harpenden.
- Improving the streetscape will allow a range of people, including those on low income, to better access places thus people are better able to access employment and participate in decision making.

Significant Negative Effects: None.

Timescale: 2-5 Years.

Temporary or Permanent:

Temporary impacts as this is reliant on modal shift to walking and cycling, which can vary.

Likelihood of effects or impacts identified occurring:

Medium Likelihood – Funding dependent and requires cooperation with neighbouring authorities

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Use recycled materials where possible in construction.
- Promote active travel for everyone.
- Think about the interactions between pedestrians, vehicles and cyclists to prevent any conflicts, infrastructure may help.
- Safety training for cyclists such as bikeability and car drivers to improve safety.
- Secure cycle storage is needed at destinations.
- Consult the section in the HIAMP about SUDS when creating any new measures.
- Prevent soil removal where possible.
- Encourage modal shift to alternative forms of transport to ease congestion and ULEV vehicles.
- Install electric charging points and encourage their uptake.
- Differential access to cars and the protected equalities groups should be considered.
- Recommend that the HCC map of historic assets is consulted before any scheme is finalised.

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Data Issues:

- Measuring walking and cycling levels
- Measuring reduction in rat-running

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SCHEME PR37: A1081 CYCLE CORRIDOR

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels. The creation of off-road cycle way will have some potential damage to local biodiversity	Ensure use of recycled materials where possible
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits. It is also accessible to everyone in society at little cost.	Promote cycling as a form of exercise for everyone

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	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help this. Potential for off-road cycle ways to increase fear of crime due to secluded nature	Consider lighting and location of off-road cycle ways particularly in rural or isolated areas. Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists. Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Off road cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of

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			of SUDS. Potential removal of soil in construction will reduce quantity.	soil and construction on greenfield sites.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating and improving off-road cycleway's addresses the objective completely.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle way enhancements should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new or improved off-road cycleway may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	✓	Cycling does not use any energy other than that produced by individuals. However, electric bikes require a battery to be charged.	

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of off-road cycleway may result in damage to green spaces.	The new cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	Recommend that the HCC map of historic assets is consulted.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycling infrastructure will improve access to services in Luton, Harpenden and St Albans.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.
	To empower all sections of the community to participate in decision making and local action	P+	Improved cycle infrastructure will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as in Luton.	Promote the cycle way and improvements to employees commuting into Luton, Harpenden or St Albans.
	To spread economic growth more evenly to benefit deprived areas	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as in Luton.	As above.
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The off-road cycleway will avoid congestion hotspots thus potentially facilitating more movement into St Albans, Harpenden and Luton.	

Significant Positive Effects:

- The creation of cycle infrastructure and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- Cycleway's use less resources than the creation of or ongoing use of roads.
- The cycle way will also avoid congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.

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- Economically, cycling is accessible to everyone in society at a relatively low cost and so the cycle way may enable those on low incomes to access employment opportunities particularly due to the connectivity with Luton and St Albans.

Significant Negative Effects:

None.

Timescale:

2-5 Years.

Temporary or Permanent:

Impacts from the new cycle path infrastructure would be permanent, but any modal shift impacts could be temporary as cycling is dependent on travel behaviour.

Likelihood of effects or impacts identified occurring:

Medium likelihood – Dependent on funding and cooperation with Central Bedfordshire Council and Luton Borough Council.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Ensure use of recycled materials where possible
- Promote cycling as a form of exercise for everyone
- Consider lighting and location of off-road cycle ways particularly in rural or isolated areas.
- Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists.
- Cycle storage in destinations needs to include the ability to lock bicycles securely.
- Consult the section in the HIAMP about SUDS.
- Where possible efforts should be made to reduce removal of soil and construction on Greenfield sites.
- The new cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts.
- There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access
- Promote the cycle way and improvements to employees commuting into Luton, Harpenden or St Albans.
- Recommend that the HCC map of historic assets is consulted.

Data Issues: Monitoring modal shift to cycling in the area.

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SCHEME PR40: IMPROVED WATFORD HEATH LINK

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	The improvements will most likely be on existing road infrastructure so no habitats will be affected. There are small woodlands nearby which would benefit from less air pollution as a result of any modal shift.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	This scheme aims to make improvements to cycle and pedestrian links.	

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	To reduce crime and create safe environments	U	It is unsure at this stage whether or not the cycle and pedestrian routes will be on road or segregated.	
Water and soil	To improve the sustainable use of resources	U	This scheme should require limited resources, but it depends on where the cycling and pedestrian improvements are implemented.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	P+	Any new infrastructure delivered will need to adhere to SuDS, to deal with surface run-off into the drainage system.	
	To reduce contamination, and safeguard soil quality and quantity	U	This depends on whether or not any new infrastructure is required for the cycle and pedestrian routes.	
Air	To protect and enhance air quality and minimise noise pollution	P+	If there is modal shift to cycling and walking this will benefit local air quality and for the nearby Bushey Arches AQMA.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓		Recommend that any new/improved walking and cycling routes are widely publicised to local people, emphasising benefits to health and any journey time savings.

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Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	If there is modal shift to walking and cycling in the local area.	
	To ensure the sustainable supply and use of energy	P+	A small reduction in fuel consumption could be achieved with any modal shift to cycle, walking.	
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	U		Any infrastructure and signage required needs to consider the streetscape and not add to street clutter.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	There are 2 Grade II listed buildings along Oxhey Lane they would experience benefits from less traffic, better air quality etc.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	This scheme will link south Oxhey and Carpenders Park.	

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	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Potential benefits to access to employment for residents.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects:

This scheme will promote active travel modes such as walking and cycling and so should improve the choice of sustainable modes for local people. If sufficient modal shift is achieved this would provide a number of benefits to the local area, such as: improvements to health from active travel, better local air quality (including the Bushey Arches AQMA), fewer greenhouse gas emissions, less impacts on local Grade II listed buildings along Oxhey Lane, and improved access over the railway linking South Oxhey and Carpenders Park (this would benefit the local economy as it will improve access to employment).

Significant Negative Effects:

None identified.

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Timescale:

Short term (0-2 years)

Temporary or Permanent impact:

Temporary, as walking and cycling levels are not static and will fluctuate over time, and can be seasonal.

Likelihood of effects or impacts identified occurring:

This will depend on the level of modal shift to walking and cycling, and how well any changes are publicised.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Recommend that any new/ improved walking and cycling routes are widely publicised to local people, emphasising benefits to health and any journey time savings.
- Any infrastructure and signage required needs to consider the streetscape and not add to street clutter.

Data Issues:

- Before and after walking and cycling levels.

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SCHEME PR45: ASCOT ROAD BUS PRIORITY

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O/U	Few details available at time of assessment however this site is in an urban area and utilises the existing infrastructure therefore no significant negative impacts are anticipated.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	This scheme would convert an existing lane of a dual carriageway to bus only. This may encourage a modal shift and increase active travel (at either end of the bus journey). This scheme is part of two projects on Ascot Road where removing lanes if hoped will make it easier and less intimidating for people to cross the roads therefore facilitating pedestrian movements in the area.	Publicity will be needed to encourage the use of improved non-car facilities and access.

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	To reduce crime and create safe environments	U	The scheme would make an existing lane of a carriageway bus only whether the scheme would deter crime or the fear of crime is unknown and would be dependent on factors such a popularity of the route, frequency of buses, CCTV and lighting.	Consideration should be given to how the design and lighting of the scheme may help deter crime and the fear of crime.
Water and soil	To improve the sustainable use of resources	O/U	Details of use of materials unknown at time of assessment. The scheme does not appear to require any additional construction.	Where relevant consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O/U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment. The scheme does not appear to require any additional construction.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	O/U	Details unknown at time of assessment. The scheme does not appear to require any additional construction.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses

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				and included where possible when any contracts for works are drafted.
	To reduce contamination, and safeguard soil quality and quantity	O/U	Details of construction unknown at time of assessment. The scheme does not appear to require any additional construction.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	Restricting the link to all traffic except buses should encourage modal shift thereby reducing the pollution which would have occurred if those trips had been made by car. (The amount may depend on the type of buses in use)	Any new, non-car routes and facilities should be advertised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Restricting one lane of the carriageway should encourage a modal shift, provide a choice of modes and reduce use of the private car.	Any routes and facilities for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments. Ensure that any recommendations of the hate crime strategy are

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				considered, hate crime at bus stops and on buses is increasing.
Climatic factors	To adapt to the impacts of climate change such as flooding	O/U	Details of project and extent of any new works unknown at time of assessment. The scheme does not appear to require any additional construction.	Where relevant consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Restricting the link to all traffic except buses should encourage modal shift thereby reducing/ preventing the pollution which would have occurred if those trips had been made by private car.	Any enhancement of facilities non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To ensure the sustainable supply and use of energy	O/P+	Details of the scheme are unknown at time of assessment. The scheme does not appear to require any additional construction. However, uses buses instead of private cars may result in more sustainable use of energy for travel.	Consideration should be given to the efficiency of any new lighting and infrastructure.
Historic Environment & Landscape	To protect and enhance the character of landscape,	O/U	Details of the design of the enhanced infrastructure are not known at the time of assessment. The scheme does not appear to require any additional construction.	

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	townscape and green spaces			
	To conserve and enhance the historic environment, heritage assets and their settings	O/U	Details of the design of the enhancements are not known at the time of assessment. The scheme does not appear to require any additional construction.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Improved infrastructure for non-car modes should improve access to services and community facilities, particularly for those without access to a private car.	Publicity will be needed to raise awareness and encourage use of non-car infrastructure. Ensure that any recommendations of the hate crime strategy are considered, hate crime at bus stops and on buses is increasing.
	To empower all sections of the community to participate in decision making and local action	P+	Improved infrastructure for non-car modes should improve accessibility particularly for those without access to the private car allowing people to participate in more events. Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as the use of any new/ enhanced non-car and infrastructure. Ensure that any recommendations of the hate crime strategy are considered, hate crime at bus stops and on buses is increasing.

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Improvements to non-car infrastructure should increase accessibility to employment and labour markets, particularly for those without access to the private car.	Publicity will be needed to raise awareness and encourage use of the enhanced links. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To spread economic growth more evenly to benefit deprived areas	U	Improvements to non-car infrastructure should increase accessibility to employment and labour markets particularly for those without access to the private car. However, whether this project would spread economic growth more evenly is uncertain.	Publicity will be needed to raise awareness and encourage use of improvements to non-car infrastructure.
	To maintain the vitality and viability of existing centres	U/P+	Improvements to non-car infrastructure in this area will link into existing networks improving accessibility.	

Significant Positive Effects:

This scheme would convert an existing lane of the Ascot Road dual carriageway to bus only thereby helping encourage modal shift to more active (either end of bus journeys), sustainable travel and improve access to services and community facilities, particularly for those without access to a private car. It may also assist with accessibility to the business parks.

Significant Negative Effects:

None

Timescale: 2-5 years

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Temporary or Permanent impact:

Could be temporary, depending on whether the scheme is successful at delivering its objectives.

Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.
 - the design and lighting of any new link to help deter crime and the fear of crime.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - reduction of surface water run-off in addition, whether or not the enhanced links can still be used in the event of the river flooding
 - efficiency of any new lighting as well as infrastructure.
 - the design of any enhancements to prevent a negative impact on local character
 - The setting of any heritage assets and historic environment in the locality
 - Publicity to encourage participation in the consultation
 - Publicity of any new/ enhanced non-car infrastructure links
 - Inclusion of any new / enhanced non-car infrastructure links in travel plans for local businesses and new residential development.
- Attention should be paid to the policies in the LTP4.

Data Issues: data on usage on enhanced non-car links, evidence that the enhancements are encouraging a modal shift.

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SCHEME PR66: PUBLIC REALM ENHANCEMENTS AT WATER LANE/HIGH STREET BUS INTERCHANGE.

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	Improvements would be on existing developed land.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities.	✓	This will encourage more people to walk, cycle and use passenger transport.	
	To reduce crime and create safe environments	✓	More people about will reduce crime and make people feel safer in their environment, especially if the public realm enhancements are designed well.	Find out what people would like their public realm to look like, ensure it is a quality development.

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Water and soil	To improve the sustainable use of resources	U		
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Depends on design	
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	More people walking and cycling in the public realm would mitigate poor air quality and noise, as long as cleaner buses used the interchange.	Check that the buses in use at this interchange and in the area generally are Euro VI compliant or even Electric Vehicles.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	This scheme would reduce the need to travel by car and encourage active travel and bus and train usage.	

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Climatic factors	To adapt to the impacts of climate change such as flooding	U		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	This scheme would reduce the need to travel by car and encourage active travel and bus and train usage. Less car usage would reduce the amount of carbon dioxide emissions coming from individual vehicles using the road.	
	To ensure the sustainable supply and use of energy	U		Use LED lighting
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Has the potential to enhance the townscape.	Use guidance documents such as manual for streets (or the updated roads in Herts) to get the most potential from this scheme.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Has the potential to enhance the historic environment.	Use guidance documents such as manual for streets (or the updated roads in Herts) to get the most potential from this scheme.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Depending on the extent of the enhancements, and whether	

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	To empower all sections of the community to participate in decision making and local action	P+		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓		
	To spread economic growth more evenly to benefit deprived areas	P+		
	To maintain the vitality and viability of existing centres	✓		

Significant Positive Effects:

This will encourage more people to walk, cycle and use passenger transport, providing health benefits. More people out and about in the public realm will reduce crime and make people feel safer in their environment, especially if the public realm enhancements are designed well. If sufficient modal shift is achieved air quality and noise pollution should improve, which would also benefit from cleaner buses using the interchange. This scheme would reduce the need to travel by car and encourage active travel and bus and train usage. Less car usage would reduce the amount of carbon dioxide emissions coming from individual vehicles using the road. Significant bus interchange improvements if they generate modal shift would provide benefits to local employers and the economy and would aid in maintaining the vitality and viability of local town centres.

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Significant Negative Effects: None.

Timescale: 2-5 years

Temporary or Permanent: Temporary impacts, as bus use can vary over time.

Likelihood of effects or impacts identified occurring: medium likelihood

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Find out what people would like their public realm to look like, ensure it is a quality development.
- Check that the buses in use at this interchange and in the area generally are Euro VI compliant or even Electric Vehicles.
- Use LED lighting.
- Use guidance documents such as manual for streets (or the updated roads in Herts) to get the most potential from this scheme.

Data Issues: Numbers of buses that use cleaner technology.

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SCHEME PR67: FISHERY RD CYCLE AND BUS ONLY

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U/P+	Few details available at time of assessment however there is a SSSI (Roughdown Common) close to the proposed locality. If the project involves no additional works and simply removes car traffic from the link, the impact could potentially be positive through reduction in pollution (although the amount may depend on the types of buses in use). The name of the scheme includes cycle access however the description states the link will be closed to all traffic except buses with no reference to facilities for other modes.	Consideration will be needed to check for any likely impacts on the nearby SSSI

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Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The name of the scheme includes cycle access however the description only refers to buses therefore new facilities for other modes are unknown. Assuming the road will be closed to cars but available for non-car transport, it should encourage modal shift to more active travel over other modes.	Publicity will be needed to encourage the use of improved non car facilities and access.
	To reduce crime and create safe environments	U	The scheme would close the link to car traffic. This may make the route safer and more attractive to non-car modes of travel however, whether the scheme would deter crime or the fear of crime is unknown. Dependant on the design and lighting scheme the project may help people feel safe using the new facilities. If sufficient people regularly use them, the project may help people feel safe as there will be others around.	Consideration should be given to how the design and lighting of the scheme may help deter crime and the fear of crime.
Water and soil	To improve the sustainable use of resources	O/U	Details of use of materials unknown at time of assessment. The scheme does not appear to require any additional construction.	Where relevant consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.

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	To move away from waste disposal to minimisation, reuse, recycling and recovery	O/U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment. The scheme does not appear to require any additional construction.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	O/U	Details unknown at time of assessment. The scheme does not appear to require any additional construction. Water run-off and contamination during any construction may be an issue.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible when any contracts for works are drafted.
	To reduce contamination, and safeguard soil quality and quantity	O/U	Details of construction unknown at time of assessment. The scheme does not appear to require any additional construction.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.

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Air	To protect and enhance air quality and minimise noise pollution	P+	Restricting the link to all traffic except buses should encourage modal shift thereby reducing the noise and air pollution which would have occurred if those trips had been made by car. (The amount may depend on the type of buses in use) This project has the added advantage of linking to the railway station.	Any new, non-car routes and facilities should be advertised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Restricting the link to all traffic except buses should encourage a modal shift, provide a choice of modes and reduce use of the private car. This project has the added advantage of linking to the railway station.	Any routes and facilities for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
Climatic factors	To adapt to the impacts of climate change such as flooding	O/U	Details of project and extent of any new works unknown at time of assessment. The scheme does not appear to require any additional construction. However, given the proximity to the River Bourne there is a chance of flooding in the area.	Consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted. In addition, whether or not the new/enhanced facilities can be used in the event of the river flooding.

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Restricting the link to all traffic except buses should encourage modal shift thereby reducing/ preventing the pollution which would have occurred if those trips had been made by private car. This project has the added advantage of linking to the railway station.	Any enhancement of facilities non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To ensure the sustainable supply and use of energy	O/U	Details of the scheme are unknown at time of assessment. The scheme does not appear to require any additional construction.	Consideration should be given to the efficiency of any new lighting and infrastructure.
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	O/U	Details of the design of the enhanced infrastructure are not known at the time of assessment. The scheme does not appear to require any additional construction. There may be a slight positive effect if the number of cars in the area is reduced.	Consideration needs to be given to whether the scheme could have a positive effect on local townscape and green spaces and avoid any negative impacts.
	To conserve and enhance the historic environment, heritage assets and their settings	O/U	Details of the design of the enhancements are not known at the time of assessment. The scheme does not appear to require any additional construction. There may be a slight positive effect if the number of cars in the area is reduced.	Consideration needs to be given to whether the scheme could have any positive impacts on local character, heritage assets and historic environment and prevent any negative impacts.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access	P+	Enhanced infrastructure for non-car modes should improve access to services and community facilities, particularly for those without access to a private car. Enhanced links to the	Publicity will be needed to raise awareness and encourage use of the enhanced links.

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	to services and community facilities for all		train station should also improve access to rail services.	
	To empower all sections of the community to participate in decision making and local action	P+	Enhanced infrastructure for non-car modes should improve accessibility allowing people to participate in more events. Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as the use of any new/ enhanced non-car and infrastructure.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Improvements to non-car infrastructure should increase accessibility to employment and labour markets, particularly where they also link to railway stations.	Publicity will be needed to raise awareness and encourage use of the enhanced links. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To spread economic growth more evenly to benefit deprived areas	U	Improvements to non-car infrastructure should increase accessibility to employment and labour markets as well as improving links to Hemel station particularly for those without access to the private car. However, whether this project would spread economic growth more evenly is uncertain.	Publicity will be needed to raise awareness and encourage use of the enhanced links.

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	To maintain the vitality and viability of existing centres	P+	Although this scheme does not directly mention accessibility to the town centre, improvements to non-car infrastructure linking to the train station should improve links into existing networks also connecting with the town centre.	
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Significant Positive Effects:

This scheme would close Fishery Road to all traffic except buses thereby helping to encourage modal shift to more active, sustainable travel and improve access to services including a train station and community facilities, particularly for those without access to a private car. Improving links to train services should also help accessibility to labour markets and employment.

Significant Negative Effects:

Details of project and extent of any new works unknown at time of assessment however, given the proximity to the River Bourne there is a chance of flooding in the area.

Timescale: 2-5 years

Temporary or Permanent:

Likely to be permanent, although could reverse if the situation changes and roads for vehicles become more popular, depends on the country's stance on sustainable transport.

Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.
 - Any likely impacts on the nearby SSSI
 - the design and lighting of any new link to help deter crime and the fear of crime.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials

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- SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - reduction of surface water run-off in addition, whether or not the enhanced links can still be used in the event of the river flooding
 - efficiency of any new lighting as well as infrastructure.
 - the design of any enhancements to prevent a negative impact on local character and green spaces
 - The setting of any heritage assets and historic environment in the locality
 - Publicity to encourage participation in the consultation
 - Publicity of any new/ enhanced non-car infrastructure links
 - Inclusion of any new non-car infrastructure links in travel plans for local businesses and new residential development.
- Attention should be paid to the policies in the LTP4.

Data Issues: data on usage on enhanced non-car links, evidence that the enhancements are encouraging a modal shift.

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SCHEME PR69: A414 ACCESS CYCLE ROUTES WOOD CRESCENT - RUNHAM ROAD - WHEELERS LANE (SKI CENTRE)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels.	Ensure use of recycled materials where possible in any construction.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits. It is also accessible to everyone in society at little cost.	Promote cycling as a form of exercise for everyone. Particular promotion to residents in Adeyfield neighbourhood centre could be beneficial.
	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help	Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists.

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			this. Safe crossings of the A414 are essential.	Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating new cycle routes addresses the objective completely	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle routes should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new cycle routes may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	✓	Cycling does not use any energy other than that produced by individuals. Even electric bikes generate power from human energy.	
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved be modal shift to cycling. Construction of cycle routes may result in damage to some green spaces.	The new cycle routes should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.

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	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycle routes will improve access to services in Hemel Hempstead.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.
	To empower all sections of the community to participate in decision making and local action	P+	New cycle routes will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Hemel Hempstead. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	Promote the cycle routes to employees in Hemel Hempstead Town Centre and the Ski centre.

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	To spread economic growth more evenly to benefit deprived areas	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Hemel Hempstead. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The cycle route will avoid congestion hotspots thus potentially facilitating more movement into Hemel Hempstead.	

Significant Positive Effects:

- The creation of new cycle routes and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle route will also avoid congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle route may enable those on low incomes to access employment opportunities particularly due to the connectivity with Hemel Hempstead and the Ski Centre.

Significant Negative Effects:

None.

Timescale: 0-2 Years.

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Temporary or Permanent: Temporary, as travel by cycle will vary over time, and can be affected by seasonal variations.

Likelihood of effects or impacts identified occurring: High Likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees at the Ski Centre or Hemel Hempstead town centre.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the route.
- Recycled materials should also be used where possible to reduce potential environmental impacts.
- The cycle route construction should consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.

Data Issues:

Monitoring modal shift to cycling in the area.

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SCHEME PR70: EXCHANGE ROAD MISSING CYCLE LINK (VICARAGE RD)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels. The creation of an off-road cycle route however, may have some potential impact to local biodiversity if it is not using the current highway.	Ensure use of recycled materials where possible
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Cycling has proven physical and mental health benefits and this scheme should encourage active travel.	Promote cycling as a form of exercise for all age groups.

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	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help this. Potential for off-road cycle ways to increase fear of crime due to secluded nature.	Consider lighting and location of off-road cycle ways particularly in rural or isolated areas. Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists. Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Off road cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	Check HCC policy in HIAMP for sustainable construction practices.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS

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	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution. Air quality may improve and noise be reduced if a modal shift is achieved away from motorised vehicles.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating an off-road cycleway addresses the objective by encouraging a move away from car use.	Promote the new cycle path and educate and encourage people on cycling.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle way enhancements should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new off-road cycleway may encourage a modal shift away from forms of transport dependent on fossil fuels.	

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	To ensure the sustainable supply and use of energy	P+	Cycling does not use any energy other than that produced by individuals. Any use of electric bicycles would require batteries to be charged.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of off-road cycleway may result in damage to green spaces.	The new cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycling infrastructure will improve access to services. It is also accessible to everyone in society at little cost.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.

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	To empower all sections of the community to participate in decision making and local action	P+	Improved cycle infrastructure will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as in Watford town centre.	Promote the cycle way to employees in Watford town centre and promote the cycle link to help recruit potential local employees.
	To spread economic growth more evenly to benefit deprived areas	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities in Watford town centre.	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The cycle link will avoid congestion hotspots thus potentially facilitating more movement by bicycle to Watford town centre.	

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Significant Positive Effects:

- The creation of cycleway infrastructure and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle way will also avoid congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle way may enable those on low incomes to access employment opportunities particularly due to the connectivity with Watford town centre.

Significant Negative Effects:

None.

Timescale:

2-5 years

Temporary or Permanent:

Any infrastructure changes will be permanent, but impacts as a result of cycle usage would be temporary as cycling levels change and can be seasonal.

Likelihood of effects or impacts identified occurring:

Medium – will be dependent on success of modal shift to cycling

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees of Watford town centre.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Lighting and the safety of off-road cycle ways should also be considered in order to prevent crime or fear of crime.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the cycle way.

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- Recycled materials should also be used where possible to reduce potential environmental impacts. Check HCC policy in HIAMP for sustainable construction practices.
- The cycle way construction should consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.
- The new cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.

Data Issues:

Monitoring modal shift to cycling in the area.

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SCHEME PR71: LOWER HIGH STREET SHARED USE CYCLE PATH

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels. The creation of an off-road cycle route however, may have some potential impact to local biodiversity.	Ensure use of recycled materials where possible.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Cycling has proven physical and mental health benefits and this scheme should encourage active travel.	Promote cycling as a form of exercise for all age groups.

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	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists and pedestrians need to ensure they are safe. Training and infrastructure can help this. New shared use cycle path is an open area and so reduces fear of crime due to secluded nature.	Consider lighting and location of off-road shared pathways. Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists. Ensure shared path is correctly signed and obvious for pedestrian and cycle lanes so to reduce chances of collision. If the road width is reduced, ensure correct speed and signage is implemented to reduce risk of collisions with cars.
Water and soil	To improve the sustainable use of resources	P+/P-	Shared cycle surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for pedestrians and cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Shared cycle ways use fewer resources than road surfaces, but any new infrastructure will require waste disposal.	Ensure use of recycled materials where possible

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	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling and walking has no negative impacts on air quality or noise pollution. Air quality may improve and noise be reduced if a modal shift is achieved away from motorised vehicles.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating a shared cycleway addresses the objective by encouraging a move away from car use.	Promote the new shared path and educate and encourage people on cycling.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Walking and cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the pathway enhancements should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Walking and cycling does not emit greenhouse gases and a new off-road cycleway may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	P+	Walking and cycling does not use any energy other than that produced by individuals. The use of electric bikes would require the charging of batteries.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Walking and cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of the shared cycle path is planned to utilise existing road space and so reduces damage to green spaces.	The new pedestrian/cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of walking and cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Walking and cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new shared infrastructure will improve access to services. It is also accessible to everyone in society at little cost.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that

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				cannot afford bicycles may still have access
	To empower all sections of the community to participate in decision making and local action	P+	Improved walking and cycle infrastructure will enable those who are more able to walk and ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities such as in Watford town centre.	Promote the cycle way to employees in Watford town centre and promote the cycle link to help recruit potential local employees.
	To spread economic growth more evenly to benefit deprived areas	P+	The improved walking and cycle infrastructure improvements may allow potential employees on low incomes to better access employment opportunities in Watford town centre from Bushey.	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The pedestrian/cycle link will avoid congestion hotspots thus potentially facilitating more movement by foot and bicycle to Watford town centre	

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			from Watford to Bushey and to railway Bushey station.	
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Significant Positive Effects:

- The creation of the shared cycleway infrastructure and the resultant walking and cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the walking and cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The shared cycle way will also avoid congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the shared cycle way may enable those on low incomes to better access to services particularly due to improved connectivity with Watford and Bushey.

Significant Negative Effects:

There are no significant negative impacts, but any new cycling infrastructure would require construction material and waste disposal.

Timescale: 2-5 years

Temporary or Permanent:

any impacts from new cycle infrastructure would be permanent, but impacts from cycle usage would be temporary as cycling levels will vary and often can be seasonal.

Likelihood of effects or impacts identified occurring: Medium.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote walking and cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as users of Bushey station.
- Lighting and the safety of the shared path should also be considered in order to prevent crime or fear of crime.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the shared cycle way.
- Recycled materials should also be used where possible to reduce potential environmental impacts.

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- The shared cycle way construction should consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Ensure correct speed limits and signage is installed to limit collisions between pedestrians, cyclists and motorised vehicle users. Ensure if existing road is used and the road width is reduced that measures are in place to ensure all users have sufficient space for safety.
- Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists.

Data Issues:

Monitoring modal shift to cycling in the area.

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SCHEME PR72: WATFORD RING-ROAD GATEWAY JUNCTION ENHANCEMENTS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	<p>Walking and cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels.</p> <p>A lower speed limit in areas may reduce the vehicle emissions and improve air quality with a positive effect to local biodiversity.</p> <p>The creation of walking and cycling infrastructure however, may have some potential impact to local biodiversity.</p>	Ensure use of recycled materials where possible.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for	P+	Walking and cycling has proven physical and mental health benefits and this scheme should encourage active travel.	Promote cycling as a form of exercise for all age groups.

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	all, and to improve the physical and mental health of the population, and reduce health inequalities			
	To reduce crime and create safe environments	P+	<p>More people walking and cycling in public places leads to safer environments and a feeling of personal security.</p> <p>A lower vehicle speed limit will create a safer environment for people walking and cycling particularly if cyclists share the road space with motorised vehicles.</p> <p>Training and new infrastructure can increase safety.</p> <p>Improves safety and perception of safety and security risks if high quality and safe facilities for walking and cycling users are provided.</p>	<p>Consider lighting on pathways. Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists.</p> <p>Ensure pedestrian and cycling paths are correctly signed and obvious for pedestrian, cycling and vehicle lanes so to reduce chances of collision.</p> <p>Ensure correct speed and signage is implemented to reduce risk of collisions with cars. Be aware of the risk that lower 20mph speed limits can cause pedestrians and cyclists to become complacent and not be as vigilant as they normally would when motorised vehicles travel at higher speeds.</p>

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Water and soil	To improve the sustainable use of resources	P+	Walking and cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for pedestrians and cyclists will see less spent on resurfacing rds.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Walking and cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work of any new infrastructure.	Ensure use of recycled materials where possible
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling and walking has no negative impacts on air quality or noise pollution. Air quality may improve and noise be reduced if a modal shift is achieved away from motorised vehicles.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating a shared cycleway addresses the objective by encouraging a move away from car use.	Promote the new shared path and educate and encourage people on cycling.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Walking and cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so pathway enhancements should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Walking and cycling does not emit greenhouse gases and improvements to walking and cycle ways may encourage a modal shift away from forms of transport dependent on fossil fuels.	A lower speed limit may have the potential to reduce greenhouse gas emissions however; this should be studied and monitored. (E.g. 20mph to 30mph may cause vehicles to accelerate and decelerate more frequently than current 30mph only zones).
	To ensure the sustainable supply and use of energy	P+	Walking and cycling does not use any energy other than that produced by individuals. The use of electric bikes would require batteries to be charged.	

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Walking and cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to walking and cycling. Construction of new infrastructure planned to utilise existing road space will reduce damage to green spaces.	The new pedestrian/cycling infrastructure should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of walking and cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Walking and cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new walking and cycling infrastructure will improve access to services. It is also accessible to everyone in society at little cost.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.
	To empower all sections of the community to participate in decision making and local action	P+	Improved walking and cycle infrastructure will enable those who are more able to walk and ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The walking and cycle improvements may allow potential employees on low incomes to better access employment opportunities such as in Watford town centre.	Promote the new cycle improvements to employees in Watford town centre and promote the cycle link to help recruit potential local employees.
	To spread economic growth more evenly to benefit deprived areas	P+	The improved walking and cycle may allow potential employees on low incomes to better access employment opportunities in Watford town centre from areas outside of the Watford ring road.	As above
	To maintain the vitality and viability of existing centres	P+	<p>With any potential increases in employment there will be more spending power in existing centres leading to improved vitality e.g. increased shopping at the Watford shopping centre and High Street.</p> <p>The pedestrian/cycle improvements might reduce congestion hotspots thus potentially facilitating more movement by foot and bicycle to Watford town centre from beyond the ring road.</p>	

Significant Positive Effects:

- Enhancing walking and cycling facilities will result in more walking and cycling and have fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.

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- The possibility of achieving modal shift due to the walking and cycle improvements will lead to improved air quality and less noise pollution.
- Modal shift might ease congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of walking and cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Safer environments might be achieved by slower moving motorised vehicles.
- Economically, the better accessibility to walking and cycling may enable those on low incomes to better access to services particularly due to improved connectivity with Watford town centre.

Significant Negative Effects: None

Timescale: 2-5 years.

Temporary or Permanent: any infrastructure improvements would produce permanent impacts, but any cycling, walking and speed limit changes would have temporary impacts as these are dependent on behavioural change.

Likelihood of effects or impacts identified occurring: Medium.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote walking and cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that could benefit from the walking and cycling improvements.
- Lighting and the safety should also be considered in order to prevent crime or fear of crime.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the shared cycle way.
- Recycled materials should also be used where possible to reduce potential environmental impacts.
- Consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Ensure correct speed limits and signage is installed to limit collisions between pedestrians, cyclists and motorised vehicle users. Ensure if existing road is used and the road width is reduced that measures are in place to ensure all users have sufficient space for safety.
- Ensure 20mph are studied and monitored, to determine impacts on air quality and greenhouse gases.
- Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists.

Data Issues: Monitoring modal shift to cycling in the area.

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SCHEME PR80: EBURY WAY WAYFINDING & ACCESS ENHANCEMENTS (RICKMANSWORTH)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Walking and cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels so the improvement of way finding signage and junction improvements may encourage modal shift.	Ensure use of recycled materials where possible when improving signage and junctions.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Walking and cycling has proven physical and mental health benefits and this scheme should encourage active travel.	Promote walking and cycling as a form of exercise for all ages.

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	To reduce crime and create safe environments	P+	More people walking and cycling in public places leads to safer environments and a feeling of personal security. Improved signage and junction improvements might improve safety and perception by offering better direction and safer junctions.	Consider lighting on path ways. Bikeability training can help cyclists ride safely. Ensure pedestrian and cycling paths are correctly signed and obvious for pedestrian and cycling so to reduce chances of collision.
Water and soil	To improve the sustainable use of resources	P+	Walking and cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for pedestrians and cyclists will see less spent on resurfacing roads.	Ensure use of recycled materials where possible for new signage.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Walking and cycle ways use fewer resources than road surfaces.	
	To ensure the efficient use of water, and safeguard water resources	O		

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	To reduce contamination, and safeguard soil quality and quantity	P+	Modal shift to cycling and walking will reduce heavy metal deposits from vehicles.	
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling and walking has no negative impacts on air quality or noise pollution. Air quality may improve and noise be reduced if a modal shift is achieved away from motorised vehicles.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	The scheme offers a better link between Rickmansworth and Watford and could offer a viable alternative to the car encouraging a move away from car use.	Promote the new signage and improvements.
Climatic factors	To adapt to the impacts of climate change such as flooding	O	Walking and cycling has no negative impact on the causes of climate change.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Walking and cycling does not emit greenhouse gases and improvements to walking and cycle ways may encourage a modal shift away from forms of transport dependent on fossil fuels.	

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	To ensure the sustainable supply and use of energy	P+	Walking and cycling does not use any energy other than that produced by individuals. The use of electric bikes would require batteries to be charged though.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Walking and cycling in will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to walking and cycling.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of walking and cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	<p>Walking and cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Improving way finding and junctions for walking and cycling will improve access to services particularly to and from Watford and Rickmansworth.</p> <p>It is also accessible to everyone in society at little cost.</p>	<p>Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.</p>

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	To empower all sections of the community to participate in decision making and local action	P+	Improved walking and cycle will enable those who are more able to walk and ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The walking and cycle improvements may allow potential employees on low incomes to better access employment opportunities such as by travelling between Watford and Rickmansworth.	Promote the new cycle improvements to workers who travel between Rickmansworth and Watford for work.
	To spread economic growth more evenly to benefit deprived areas	P+	Improved walking and cycle may allow potential employees on low incomes to better access employment opportunities in Watford and Rickmansworth.	

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	To maintain the vitality and viability of existing centres	P+	<p>With any potential increases in employment there will be more spending power in existing centres leading to improved vitality e.g. increased shopping at the Watford shopping centre via increased travellers from Rickmansworth..</p> <p>The pedestrian/cycle improvements might reduce congestion hotspots thus potentially facilitating more movement by foot and bicycle to Watford and Rickmansworth.</p>	
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Significant Positive Effects:

- Enhancing walking and cycling way finding and junctions will result in more walking and cycling and have less negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the walking and cycle improvements will lead to improved air quality and less noise pollution.
- Modal shift might ease congestion hotspots between Rickmansworth and Watford thus tackling noise and air pollution issues.
- Additional health benefits of walking and cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the better accessibility to walking and cycling may enable those on low incomes to better access to services particularly due to improved connectivity with Watford and Rickmansworth.

Significant Negative Effects: None.

Timescale: 0-2 years.

Temporary or Permanent: Temporary impacts as sustainable modes are reliant on behavioural change and could vary day to day.

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Likelihood of effects or impacts identified occurring: Medium.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote walking and cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that could benefit from the walking and cycling improvements particularly those who currently travel between Rickmansworth and Watford.
- Lighting and the safety should also be considered in order to prevent crime or fear of crime.
- Recycled materials should also be used for new signage where possible to reduce potential environmental impacts.
- Ensure correct signage is installed to limit collisions between pedestrians and cyclists.
- Bikeability or other cycle training should be promoted for those that cannot cycle.

Data Issues: Monitoring modal shift to cycling in the area.

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SCHEME PR81: CHURCH STREET 20MPH ZONE (RICKMANSWORTH)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Walking has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels so the improvement pedestrian safety may encourage modal shift.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Walking has proven physical and mental health benefits and this scheme should encourage active travel.	Promote walking as a form of exercise for everyone which is safer due to the 20mph zone.

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	To reduce crime and create safe environments	✓	<p>More people walking in public places leads to safer environments and a feeling of personal security.</p> <p>Slower vehicle speeds might improve perception of safety.</p>	<p>Consider lighting on path ways.</p> <p>Be cautious that 20mph zones might lead to pedestrians becoming complacent and not pay due attention when crossing roads etc.</p>
Water and soil	To improve the sustainable use of resources	P+	Walking surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for pedestrians will see less spent on resurfacing roads.	Ensure use of recycled materials where possible for new signage.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		

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Air	To protect and enhance air quality and minimise noise pollution	P+	Walking has no negative impacts on air quality or noise pollution. Air quality may improve and noise be reduced if a modal shift is achieved away from motorised vehicles.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	The scheme offers a better link between Rickmansworth High Street and the A404 and could offer a viable alternative to the car encouraging a move away from car use.	
Climatic factors	To adapt to the impacts of climate change such as flooding	O	Walking has no negative impact on the causes of climate change.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Walking does not emit greenhouse gases and improvements to the safety of walking might encourage a modal shift away from forms of transport dependent on fossil fuels.	Potential reduction in carbon emissions of motorised vehicles travelling at lower speeds however, this should be monitored.
	To ensure the sustainable supply and use of energy	P+	Walking does not use any energy other than that produced by individuals.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Walking will enhance the landscape of Rickmansworth. Tranquillity and air quality may be improved by modal shift to walking.	

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	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of walking and cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Walking is available to everyone at no cost. Improving walking safety will improve access to services particularly at Rickmansworth High Street.	Ensure available seating is available on Church Street to encourage walking with resting points.
	To empower all sections of the community to participate in decision making and local action	P+	Improved walking will enable those who are more able to walk rather than run cars to better access key locations and so are better able to participate in decision making and local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The walking safety improvements may allow potential employees on low incomes to better access employment opportunities such as by travelling to Rickmansworth High Street and between Watford and Rickmansworth.	Promote the safer walking environment to workers who travel to Rickmansworth High Street and for Watford using Ebury Way.
	To spread economic growth more evenly to benefit deprived areas	P+	Improved walking may allow potential employees on low incomes to better access employment opportunities at Rickmansworth	

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			High Street and Watford using Ebury Way.	
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality e.g. increased shopping at Rickmansworth High Street. The pedestrian safety improvements might reduce congestion hotspots by potentially facilitating more movement by foot.	

Significant Positive Effects:

- Enhancing walking safety will result in more walking and have fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the walking safety improvements will lead to improved air quality and less noise pollution.
- Modal shift might ease congestion hotspots between the A404 and Rickmansworth High Street thus tackling noise and air pollution issues.
- Additional health benefits of walking will increase if more people choose to walk and it also creates a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the better accessibility to walking may enable those on low incomes to better access to services particularly due to improved connectivity with Watford and Rickmansworth.

Significant Negative Effects: None.

Timescale: 0-2 years.

Temporary or Permanent: Permanent impacts from reducing the speed limit, but temporary impacts for any modal shift to walking or cycling as these are dependent on behavioural change and can vary day to day, and seasonally.

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Likelihood of effects or impacts identified occurring:

Medium.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote walking as often as possible as a form of active travel. This promotion could be specifically tailored to groups that could benefit from the walking safety improvements particularly those who currently travel between Rickmansworth and Watford, in particular, those that travel to Rickmansworth High Street.
- Lighting and the safety should also be considered in order to prevent crime or fear of crime.
- Be cautious that 20mph zones might lead to pedestrians becoming complacent and not pay due attention when crossing roads etc. Potential reduction in carbon emissions of motorised vehicles travelling at lower speeds however, this should be monitored.
- Ensure available seating is available on Church Street to encourage walking with resting points.
- Promote the safer walking environment to workers who travel to Rickmansworth High Street and for Watford using Ebury Way.

Data Issues:

Monitoring modal shift to cycling in the area.

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SCHEME PR82: HOMESTEAD ROAD RICKMANSWORTH STATION BUS STOP LINKAGE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	The scheme may help to encourage multi-modal sustainable transport journeys. This would have a positive impact on local flora and fauna.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The scheme will improve conditions for pedestrians and improve bus and train interchange. This will create new opportunities for leisure and a healthy lifestyle.	Encourage the use of walking, cycling and public transport.
	To reduce crime and create safe environments	P+	The scheme will improve road safety for pedestrians trying to access the station. However, the scheme does	Consider personal security issues associated with public transport use.

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			not consider crime issues related to public transport.	
Water and soil	To improve the sustainable use of resources	O		
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	The scheme may help to encourage public transport use which will have air quality benefits.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce	P+	The scheme will help to encourage the use of public transport by providing improved pedestrian interchange between bus stop C and the train station.	

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	the need to travel by car			
Climatic factors	To adapt to the impacts of climate change such as flooding.	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Any modal shift encouraged by the scheme will help to reduce greenhouse gas emissions. The benefits of increased bus use will be enhanced as buses are renewed to cleaner technology.	Encourage bus operators to utilise new cleaner technology.
	To ensure the sustainable supply and use of energy	P+	The scheme may encourage modal shift which will help to mitigate greenhouse gas emissions.	
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	O		
	To conserve and enhance the historic environment, heritage assets and their settings	O		
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access	P+	The scheme will help improve access to the train station for residents utilising the bus service.	

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	to services and community facilities for all			
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy.	O		
	To spread economic growth more evenly to benefit deprived areas.	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects:

None.

Significant Negative Effects:

None.

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Timescale: 0-2 Years

Permanent or temporary:

The improved pedestrian linkages will be permanent impacts. The associated benefits such as modal shift will be temporary due to the possible need for ongoing work.

Likelihood of effects or impacts identified occurring:

Medium Likelihood

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Encourage the use of walking, cycling and public transport.
- Consider personal security issues associated with public transport use.
- Encourage bus operators to utilise new cleaner technology.

Data Issues: None

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SCHEME PR83: ENHANCED LINKAGE BETWEEN HOMESTEAD RD (RICKMANSWORTH STATION) AND VICTORIA CLOSE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Depends on the approach adopted- it is in a built up area and the proposed development is not on green land.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The enhanced linkages may encourage increased physical activity.	Promote active travel for all
	To reduce crime and create safe environments	P+	The scheme would improve safety for pedestrians and reduce the perception of crime.	

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Water and soil	To improve the sustainable use of resources	P-	Small amount of resources required for new crossing.	Check policy in HIAMP for recycled/recycling construction materials.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Depends on whether the existing subway is removed or just closed to use.	
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O	A crossing will be implemented on the existing highway.	
Air	To protect and enhance air quality and minimise noise pollution	U	If the scheme results in idling traffic while pedestrians cross local air quality may be negatively affected.	Avoid crossings that result in frequent stopping of traffic.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+/U	Provides users with an option to conveniently walk to the train station.	

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Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	O	Unlikely sufficient modal shift would be achieved.	
	To ensure the sustainable supply and use of energy	O	Unlikely sufficient modal shift would be achieved.	
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	O		
	To conserve and enhance the historic environment, heritage assets and their settings	O		
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	U	Depends on how it will be implemented, the infrastructure may improve accessibility and enable users to commute to the station with ease.	

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	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	O		
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects:

- The enhanced linkages may encourage increased physical activity.
- The scheme would improve safety for pedestrians and reduce the perception of crime

Significant Negative Effects:

There are no significant negative impacts but some resources would be required for a new crossing.

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Timescale:

0-2 years.

Permanent or temporary:

Temporary, as the numbers of pedestrians that use this crossing may vary over time.

Likelihood of effects or impacts identified occurring:

Medium Likelihood

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote active travel for all.
- Avoid crossings that result in frequent stopping of traffic.

Data Issues:

None

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SCHEME PR85: ASCOT ROAD ACCESS JUNCTIONS ROAD SPACE CONSOLIDATION

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O/U	Few details available at time of assessment however this site is in an urban area and utilises the existing infrastructure therefore no significant negative impacts are anticipated.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	This scheme will enhance provision for pedestrians accessing Cassiobury station, facilitating pedestrian movements in the area. This should encourage a modal shift and increase active travel.	Publicity will be needed to encourage the use of improved non-car facilities and access.

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	To reduce crime and create safe environments	U	Facilitating pedestrian movements in the area should assist safety of travel however whether the scheme would deter crime or reduce the fear of crime is unknown and would be dependent on factors such a usage of the routes, CCTV and lighting.	Consideration should be given to how the design and lighting of the scheme may help deter crime and the fear of crime.
Water and soil	To improve the sustainable use of resources	U	Details of use of materials unknown at time of assessment.	Where relevant consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of any materials/ sustainable construction practices to be applied unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for works are drafted.
	To ensure the efficient use of water, and safeguard water resources	U	Details unknown at time of assessment.	Where relevant, consideration should be given to opportunities and requirements for SUDS and to guard against contamination of ground water and/or water courses and included where possible

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				when any contracts for works are drafted.
	To reduce contamination, and safeguard soil quality and quantity	U	Details of construction unknown at time of assessment.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity and included where possible when any contracts for works are drafted.
Air	To protect and enhance air quality and minimise noise pollution	P+	Removing lanes and facilitating pedestrian movements should encourage modal shift thereby reducing the pollution which would have occurred if those trips had been made by car.	Any new, non-car routes and facilities should be advertised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Removing lanes and facilitating pedestrian movements should encourage a modal shift, provide a choice of modes and reduce use of the private car. This scheme should also link with Cassiobury station.	Any routes and facilities for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.

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Climatic factors	To adapt to the impacts of climate change such as flooding	U	Details of project and extent of any new works unknown at time of assessment.	Where relevant consideration should be given to opportunities and requirements to reduce surface water run-off and included where possible when any contracts for works are drafted.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Removing lanes and facilitating pedestrian movements and linking to Cassiobury station, should encourage a modal shift, provide a choice of modes and reduce use of the private car.	Any enhancement of facilities for non-car modes of transport should be publicised to encourage their use. They can also be included in the Travel Plans of any local businesses or new residential developments.
	To ensure the sustainable supply and use of energy	O/P+	Details of the scheme are unknown at time of assessment. However, encouraging non-car modes should result in more sustainable use of energy for travel.	Consideration should be given to the efficiency of any new lighting and infrastructure.
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	O/U	Details of the design of the enhanced infrastructure are not known at the time of assessment.	Consideration needs to be given to the design of any new works to prevent a negative impact on local character.

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	To conserve and enhance the historic environment, heritage assets and their settings	O/U	Details of the design of the enhancements are not known at the time of assessment. The scheme does not appear to require any additional construction.	Consideration needs to be given to the design of any new works to prevent a negative impact on local heritage assets and historic environment.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Improved infrastructure for non-car modes should improve access to services and community facilities, particularly for those without access to a private car.	Publicity will be needed to raise awareness and encourage use of non-car infrastructure.
	To empower all sections of the community to participate in decision making and local action	P+	Improved infrastructure for non-car modes should improve accessibility particularly for those without access to the private car allowing people to participate in more events. Public consultation on the schemes within the GTP should empower people to participate in decision making.	Publicity will be needed to encourage participation in the consultation as well as to use any new/ enhanced non-car and infrastructure.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Improvements to non-car infrastructure should increase accessibility to employment and labour markets, particularly for those without access to the private car and for routes linking to stations.	Publicity will be needed to raise awareness and encourage use of the enhanced links. They can also be included in the Travel Plans of any local businesses or new residential developments.

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	To spread economic growth more evenly to benefit deprived areas	U	Improvements to non-car infrastructure should increase accessibility to employment and labour markets particularly for those without access to the private car. However, whether this project would spread economic growth more evenly is uncertain.	Publicity will be needed to raise awareness and encourage use of improvements to non-car infrastructure.
	To maintain the vitality and viability of existing centres	P+	Improvements to non-car infrastructure in this area will link into existing networks improving accessibility. This scheme, with links to Cassiobury station, should also links centres and business parks	

Significant Positive Effects:

This scheme will enhance provision for pedestrians accessing Cassiobury station, facilitating pedestrian movements in the area, thereby helping encourage modal shift to more active, sustainable travel and improve access to services, particularly for those without access to a private car. It should also assist accessibility to business parks in the area.

Significant Negative Effects:

None

Timescale:

2-5 years

Temporary or Permanent impact:

Temporary as most of the changes impact on pedestrian movements which can vary over time.

Likelihood of effects or impacts identified occurring: Likely

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Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consideration should be given to the following and included where necessary when any contracts for works are drafted.
 - the design and lighting of any new link to help deter crime and the fear of crime.
 - sustainable use of resources
 - minimising construction waste and recycling construction materials
 - SUDS and contamination of ground water and/or water courses
 - reduction of contamination and safeguarding of soil quality and quantity
 - reduction of surface water run-off in addition, whether or not the enhanced links can still be used in the event of the river flooding
 - efficiency of any new lighting as well as infrastructure.
 - the design of any enhancements to prevent a negative impact on local character
 - The setting of any heritage assets and historic environment in the locality
 - Publicity to encourage participation in the consultation
 - Publicity of any new/ enhanced non-car infrastructure links
 - Inclusion of any new/ enhanced non-car infrastructure links in travel plans for local businesses and new residential development.
- Attention should be paid to the policies in the draft LTP4.

Data Issues: data on usage on enhanced non-car links, evidence that the enhancements are encouraging a modal shift.

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SCHEME PR86: A404 RIVERSIDE DRIVE/CHURCH ST RBT MINOR ENHANCEMENTS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	This area is a key biodiversity area (Mid Colne Valley) for wetlands and grassland, the improvements will encourage sustainable modes which will provide benefits to local flora and fauna.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	This scheme will improve access by sustainable modes into the town centre from residential areas, and will improve access to the River Chess and local wetlands.	

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	To reduce crime and create safe environments	P+	Partial signalisation of the roundabout and improvements to cycle crossing facilities should provide safety benefits to users.	
Water and soil	To improve the sustainable use of resources	O	Minimal resources required for enhancements.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	P+	This scheme is adjacent to the River Colne, and Chess and the Grand Union Canal. Any modal shift to cycling or walking will mean fewer heavy metals from motor vehicles in surface run-off, which in flooding events could enter the river habitat.	
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	If the enhancements facilitate modal shift to walking or cycling this would have air quality benefits.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	Potential to increase numbers of people walking and cycling when accessing the town centre and local wetlands/Rivers.	
Climatic factors	To adapt to the impacts of climate change such as flooding	U	Scheme design will need to consider the impacts of local flooding events as a result of the close vicinity of the River Colne and Chess.	Consider flooding issues/risks within scheme design.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	If the enhancements facilitate modal shift to walking or cycling this would vehicle emissions.	
	To ensure the sustainable supply and use of energy	P-	Partial signalisation would require an energy source.	
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	This scheme will improve access to the natural environment. It aims to remove vehicle traffic improving local air quality and tranquillity.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	There is a Grade II listed former public house in close vicinity to the roundabout which would benefit from improved air quality, tranquillity as a result of modal shift.	

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	This scheme aims to improve access to the town centre by walking and cycling,	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	This could improve access to employment in the town centre for local residents.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	P+		

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Significant Positive Effects:

This scheme aims to allow local residents to access the town centre of Rickmansworth easier by improving walking and cycling access on a significant roundabout on the A404. Benefits will include, improvements to air quality, greenhouse gas emissions, health benefits, and local biodiversity (Rivers and wetlands) will also experience benefits.

Significant Negative Effects:

The only minor negative is that any partial signalisation will require accessing an electricity source.

Timescale:

Short-term (0-2 years)

Temporary or Permanent:

Permanent impacts from the infrastructure delivered, any impacts from any change in travel behaviour could be temporary.

Likelihood of effects or impacts identified occurring:

This will depend on the level of modal shift to walking and cycling from local residents accessing the town centre.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Consider flooding issues/risks within scheme design, as this area has recorded flooding incidents.
- That the scheme is promoted locally to maximise modal shift.

Data Issues:

None.

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SCHEME PR87: A412-A404 RIVERSIDE DR/UXBRIDGE RD, RICKMANSWORTH ROUNDABOUT CYCLE CROSSINGS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	If the improvements encourage modal shift to walking or cycling then this will benefit local flora and fauna in a key area of biodiversity due to reductions in emissions and noise.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	The scheme will help to encourage walking and cycling by improving safety and crossing conditions.	Encourage walking and cycling as a form of exercise for all residents.

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	To reduce crime and create safe environments	P+	The scheme will improve road safety for pedestrians and cyclists.	
Water and soil	To improve the sustainable use of resources	O		
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	The scheme may help to encourage walking and cycling which will have air quality benefits.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce	P+	The scheme will help to encourage the use of sustainable transport by providing safer road crossings.	

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	the need to travel by car			
Climatic factors	To adapt to the impacts of climate change such as flooding.	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Any modal shift encouraged by the scheme will help to reduce greenhouse gas emissions.	
	To ensure the sustainable supply and use of energy	U	The new crossings will require an energy source. This should be renewable where possible.	Utilise renewable energy sources where possible.
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	O		
	To conserve and enhance the historic environment, heritage assets and their settings	O		
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and	P+	The scheme may improve access to community facilities in Rickmansworth town centre for all residents.	

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	community facilities for all			
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy.	O		
	To spread economic growth more evenly to benefit deprived areas.	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects:

There are no significant positive impacts of replacing the existing zebra crossings with toucan crossings but this could improve the perception of safety for users and enable modal shift, and if modal shift is significant the area could experience improvements to air quality, noise, emissions. The scheme promotes active travel and would improve access to Rickmansworth town centre.

Significant Negative Effects: None.

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Timescale:

0-2 Years

Permanent or temporary:

The crossings created will be permanent. The associated benefits such as modal shift will be temporary due to the possible need for ongoing work.

Likelihood of effects or impacts identified occurring:

Medium Likelihood

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Encourage walking and cycling as a form of exercise for all residents.
- Utilise renewable energy sources where possible.

Data Issues:

None.

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SCHEME PR95: MAYLANDS CENTRAL CAR PARK

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	<p>Little modal shift away from car use will be achieved through this scheme and so air quality and pollution affecting biodiversity will remain the same or have a slightly greater impact if car use is encouraged.</p> <p>Any new paved areas built for the centralisation of the car parks may cause further disruption to biodiversity.</p>	Electric charging points to be installed in car parks to encourage the use of cleaner vehicles.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and	P-	Centralisation of car parking may encourage car use and minimise active travel.	

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	mental health of the population, and reduce health inequalities			
	To reduce crime and create safe environments	O		
Water and soil	To improve the sustainable use of resources	U	If new car parks are to be built then surfaces and infrastructure should incorporate a sustainable use of resources.	Use of recycled materials and sustainable construction practices where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Potential construction required for new car parks may produce waste.	Promote sustainable construction practices, use recycled construction materials and minimise waste.
	To ensure the efficient use of water, and safeguard water resources	U	Any new car parks should ensure the correct drainage and SUDs are in place.	
	To reduce contamination, and safeguard soil quality and quantity	U	Any new car parks should ensure the correct drainage and SUDs are in place.	

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Air	To protect and enhance air quality and minimise noise pollution	P-	Scheme does not reduce car travel and might encourage it which might have a negative effect to air quality and noise pollution.	Encouragement cleaner and quieter cars.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P-	Does not improve choice by sustainable modes and possibly encourages car use however, could encourage car sharing through travel plans.	Centralised car park should also provide cycle parking.
Climatic factors	To adapt to the impacts of climate change such as flooding	P-	If any greenfield sites are used for the new centralised car parks SuDS will need to be followed to ensure no additional runoff.	
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P-	Does not reduce the number of vehicles on the road and possibly encourages car use.	Encourage use of cleaner vehicles.
	To ensure the sustainable supply and use of energy	P+	Providing adequate charging points may encourage the use of electric cars and minimise the use of petrol and diesel cars.	

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	U	Possible negative impact on green space depending on location of paved surfaces for any new car parks.	
	To conserve and enhance the historic environment, heritage assets and their settings	O		Check any maps of historic assets.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P-	Does not provide any improved accessibility for those who are disadvantaged and do not have access to a car.	
	To empower all sections of the community to participate in decision making and local action	P-	Possibly excludes groups such as people on low income.	
Economic development	To maintain employment, improve economic competitiveness (consistent with	P+	The scheme looks to improve car parking access to Maylands which might make it easier for employees to park and travel to their work. It may also draw further businesses and	

APPENDIX 3: APPRAISAL MATRICES

	environmental constraints) and create a vibrant economy		employees to the area, improving the economy.	
	To spread economic growth more evenly to benefit deprived areas	P-	Does not benefit deprived areas who have limited access to private cars.	
	To maintain the vitality and viability of existing centres	P+	Intention is to improve parking and access at Maylands which could have benefits to Hemel Hempstead by removing cars parked in undesignated areas or remove traffic congestion in the local area if car users can access their car parking spaces more easily.	

Significant Positive Effects:

This scheme has obvious positive effects to the economy and positive effects to resolving an existing car parking issue which might benefit the local business, economy and the employees with the possibility of attracting new employees if car parking access is improved. There is potential for charging points to encourage cleaner vehicles and also to adopt a travel plan across the whole Maylands site making it easier to implement and enforce.

Significant Negative Effects:

The scheme does not reduce the number of cars used and has the potential to increase the number of car users if parking becomes easier and more accessible. This will have an effect on air quality and minimises active travel. If centralising the car park involves building new car parking, this could have adverse effects on the biodiversity in the area and drainage.

Timescale:

Medium Term (5-10 Years).

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Temporary or Permanent: Impacts from the new car park infrastructure would be permanent, impacts from the use of the car park would be temporary. Extras delivered such as electric vehicle charging points and cycle parking would rely on people choosing to upgrade their vehicles and cycling can be seasonal.

Likelihood of effects or impacts identified occurring:

Medium likelihood of funding.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote the use of cleaner vehicles.
- Promote travel plans and car sharing.
- Centralised car park should also provide cycle parking.
- Electric charging points to be installed in car parks to encourage the use of cleaner vehicles.
- Check any maps of historic assets.
- Promote sustainable construction practices, use recycled construction materials and minimise waste.

Data Issues:

- Monitoring car parking
- Enforcing travel plans

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR96: MAYLANDS SHUTTLE BUS & ML1 ENHANCEMENTS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Modal shift away from car use could be achieved through this scheme improving air quality and pollution positively affecting biodiversity.	Encourage the use of modern, cleaner buses.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	An enhanced bus service and shuttle service could promote sustainable travel use and encourage active travel with people walking or cycling to bus stops.	Encourage active travel for journeys to and from car park.

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	To reduce crime and create safe environments	P-	More people in the public realm using buses/coaches could result in more incidents of Hate Crime.	The scheme needs to take into account the County Hate Crime Strategy.
Water and soil	To improve the sustainable use of resources	P-	Any new infrastructure should incorporate a sustainable use of resources.	Use of recycled materials and sustainable construction practices where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P-	Any new infrastructure could produce construction waste.	Promote sustainable construction practices, use recycled construction materials and minimise waste.
	To ensure the efficient use of water, and safeguard water resources	U	Any new bus stops, bus lanes or car parks etc. should ensure the correct drainage and SUDs are in place.	
	To reduce contamination, and safeguard soil quality and quantity	U	Any new bus stops, bus lanes or car parks etc. should ensure the correct drainage and SUDs are in place.	
Air	To protect and enhance air quality and minimise noise pollution	P+	Shuttle buses and an enhanced bus service could encourage the use of bus travel and reduce car travel with a positive effect to air quality and noise pollution.	Encouragement the use cleaner and quieter buses.

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Improves choice of sustainable modes and may possibly reduce car use by providing an adequate alternative.	
Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Has the potential to reduce car use and lower the number of vehicles on the road.	Encourage use of clean buses.
	To ensure the sustainable supply and use of energy	U	If cleaner and greener buses are utilised for the bus service enhancements, this could prove a more sustainable use of energy.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Positives from the removal of cars from the highway.	
	To conserve and enhance the historic environment,	O		

APPENDIX 3: APPRAISAL MATRICES

	heritage assets and their settings			
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all/	P+	Might provide improved accessibility for those who are disadvantaged and do not have access to a car. Improves accessibility to Maylands Business Park.	Promote and make people aware of the enhanced bus services. Encourage businesses to promote enhanced bus services when recruiting.
	To empower all sections of the community to participate in decision making and local action	P+	Work with the community and under-represented groups to ensure the bus enhancements serves all to improve the quality of life and offer opportunities to all.	The protected equalities groups should always be considered.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The scheme looks to improve access and potentially provides improved access for travelling from Hemel Hempstead to Maylands Business Park. It may also draw further businesses and employees to the area, improving the economy.	
	To spread economic growth more evenly to benefit deprived areas	P+	Enhancements to routes could serve deprived areas improving access to jobs and increase peoples' opportunities for work and a better QoL.	

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	To maintain the vitality and viability of existing centres	P+	Intention is to improve parking and access at Maylands which could have benefits to Hemel Hempstead by removing cars parked in undesignated areas or remove traffic congestion in the local area if car users can access their car parking spaces more easily.	
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Significant Positive Effects:

This scheme has positive effects to air quality by emissions reductions by encouraging modal shift to more sustainable forms transport in coach and buses. It also provides positive effects to the economy by helping with existing car parking issues which might benefit the local business and the employees with the possibility of attracting new employees. The enhancement of the bus services also improves accessibility overall.

Significant Negative Effects:

No significant negative effects however, any enhancements to bus services and implementation of a shuttle bus should consider clean vehicles and also, sustainable implementation of any new infrastructure required. Incidents of hate crime could increase with more people in the public realm using buses.

Timescale: Medium Term (5-10 Years)

Temporary or Permanent: all impacts would be temporary as bus companies can change what buses they use on their routes, and bus patronage can change for various reasons.

Likelihood of effects or impacts identified occurring: Medium likelihood of funding

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote the use of cleaner buses.
- Encourage active travel for journeys to and from car park.
- The scheme needs to take into account the County Hate Crime Strategy.
- Use of recycled materials and sustainable construction practices where possible.

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- The protected equalities groups should always be considered.

Data Issues:

- Monitoring car parking
- Enforcing travel plans
- Monitor bus and coach usage

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR97: QUITWAY BUNCEFIELD CENTRAL

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	Flora and fauna could be negatively impacted upon by heavier use from existing country lanes.	If lighting is installed ensure it has as little impact on biodiversity as possible.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	An excellent way for commuters to work and back include extra active travel opportunities into their daily lives.	Ensure the design is as user friendly as possible as does not deter usage by any groups of people. Any new business travel plans for larger businesses would be mindful to include, lockers and suchlike for employees to store change of footwear within and similar, especially if they wish to jog to work. Obviously employers may wish to offer this as part of the employee package.

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	To reduce crime and create safe environments	U	It depends on how the scheme is implemented, safety of the pedestrian from conflicts with cyclists, is important as well as perception of feeling safe whilst walking or cycling it vital.	Consider all designing out crime recommendations – see building futures guidance, manual for streets and roads in Herts for example. Maintenance of vegetation, good surfaces all help towards safer routes.
Water and soil	To improve the sustainable use of resources	U	Depends on implementation.	Use recycled as much as possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Depends on implementation.	Reuse and Recycle as much as possible.
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	This route should take some employee cars off the main roads, and in theory minimise air pollution and noise from vehicles.	

APPENDIX 3: APPRAISAL MATRICES

	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Previously there was little choice of sustainable modes into Maylands, but this route will improve the choice.	Ensure it is promoted to employees via the Maylands Business Centre.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Potential for flooding should be designed out, or people will not use the route.	Design out potential for flooded areas, e.g. large potholes full of rainwater.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	This will reduce carbon emissions which impacts on climate change overall because in theory less people will use their cars.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Existing green spaces will be preserved and will not be destroyed.	
	To conserve and enhance the historic environment, heritage assets and their settings	O		

APPENDIX 3: APPRAISAL MATRICES

Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	More people on low salaries will be able to access jobs on the Maylands site. It is possible that some people are unable to afford pt fares, but can walk for free.	Shift workers may dislike using the quietways when dark or lonely – consider lighting or travel buddying schemes to encourage their use.
	To empower all sections of the community to participate in decision making and local action	P+	Having a job can empower people to join in with communities.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability.	Any new business travel plans for larger businesses would be mindful to include, lockers and bike storage, possibly showers for employees to store change of footwear etc, to encourage their workforce to jog or cycle to work. They do not have to have a travel plan for this to happen.
	To spread economic growth more evenly to benefit deprived areas	P+	LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability from deprived areas.	

APPENDIX 3: APPRAISAL MATRICES

	To maintain the vitality and viability of existing centres	U		
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Significant Positive Effects: This scheme will maximise the opportunities for leisure and a healthy lifestyle, improve the physical and mental health of the population, and reduce health inequalities, It will also help to protect and enhance air quality and minimise noise pollution. Previously there was little choice of sustainable modes into Maylands, but this route will improve the choice. More people on low salaries will be able to access jobs on the Maylands site. It is possible that some people are unable to afford pt fares, but can walk for free. LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability.

Significant Negative Effects:

None.

Timescale:

short to medium term.

Temporary or Permanent:

Some impacts will be temporary, as walking and cycling levels can vary and be seasonal.

Likelihood of effects or impacts identified occurring:

Likely.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If lighting is installed ensure it has as little impact on biodiversity as possible.
- Ensure the design of the route is as user friendly as possible and does not deter usage by any equalities groups.
- Any new business travel plans for larger businesses in Maylands would be mindful to include, lockers and bike storage, and possibly showers for employees to store change of footwear and clothes, to encourage their workforce to walk, jog or cycle to work. They do not have to have a travel plan for this to happen of course, it could be part of the employer's rewards package to encourage employees to work for them and enhance the green credentials of the company.
- Ensure it is promoted to employees via the Maylands Business Centre. Shift workers may dislike using the quietways when dark or lonely – consider travel buddying schemes to encourage their use, this could be part of a healthy journeys initiative.

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Consider 'designing out crime' recommendations – see Building Futures guidance, Manual for Streets and Roads in Herts for examples. Maintenance of vegetation and good surfaces all help towards safer routes. Design out the potential for flooded areas, e.g. avoid introducing large potholes full of rainwater

- Reuse and Recycle as much as possible whilst building the scheme.

Data Issues:

None.

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR98: QUITWAY BUNCEFIELD NORTH

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	Flora and fauna could be negatively impacted upon by heavier use from existing country lanes.	If lighting is installed ensure it has as little impact on biodiversity as possible.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	An excellent way for commuters to work and back include extra active travel opportunities into their daily lives.	Ensure the design is as user friendly as possible as does not deter usage by any groups of people. Any new business travel plans for larger businesses would be mindful to include, lockers and suchlike for employees to store change of footwear within and similar, especially if they wish to jog to work. Obviously employers may wish to offer this as part of the employee package.

APPENDIX 3: APPRAISAL MATRICES

	To reduce crime and create safe environments	U	It depends on how the scheme is implemented, safety of the pedestrian from conflicts with cyclists, is important as well as perception of feeling safe whilst walking or cycling it vital.	Consider all designing out crime recommendations – see building futures guidance, manual for streets and roads in Herts for example. Maintenance of vegetation, good surfaces all help towards safer routes.
Water and soil	To improve the sustainable use of resources	U	Depends on implementation.	Recycle as much as possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Depends on implementation.	Reuse and Recycle as much as possible.
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	This route should take some employee cars off the main roads, and in theory minimise air pollution and noise from vehicles.	

APPENDIX 3: APPRAISAL MATRICES

	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Previously there was little choice of sustainable modes into Maylands, but this route will improve the choice.	Ensure it is promoted to employees via the Maylands Business Centre.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Potential for flooding should be designed out, or people will not use the route.	Design out potential for flooded areas, e.g. large potholes full of rainwater.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	This will reduce carbon emissions which impacts on climate change overall because in theory less people will use their cars.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Existing green spaces will not be destroyed.	
	To conserve and enhance the historic environment, heritage assets and their settings	O		

APPENDIX 3: APPRAISAL MATRICES

Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	More people on low salaries will be able to access jobs on the Maylands site. It is possible that some people are unable to afford pt fares, but can walk for free.	Shift workers may dislike using the quietways when dark or lonely – consider lighting or travel buddying schemes to encourage their use.
	To empower all sections of the community to participate in decision making and local action	P+	Having a job can empower people to join in with communities.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability.	Any new business travel plans for larger businesses would be mindful to include, lockers and bike storage, possibly showers for employees to store change of footwear etc, to encourage their workforce to jog or cycle to work. They do not have to have a travel plan for this to happen.
	To spread economic growth more evenly to benefit deprived areas	P+	LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability from deprived areas.	

APPENDIX 3: APPRAISAL MATRICES

	To maintain the vitality and viability of existing centres	U		
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Significant Positive Effects:

This scheme will maximise the opportunities for leisure and a healthy lifestyle, improve the physical and mental health of the population, and reduce health inequalities. It will also help to protect and enhance air quality and minimise noise pollution. Previously there was little choice of sustainable modes into Maylands, but this route will improve the choice. More people on low salaries will be able to access jobs on the Maylands site. It is possible that some people are unable to afford passenger transport fares, but can walk for free. LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability.

Significant Negative Effects:

None.

Timescale:

short to medium term.

Temporary or Permanent:

Some impacts will be temporary as walking and cycling levels can vary and be seasonal.

Likelihood of effects or impacts identified occurring:

Likely.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If lighting is installed ensure it has as little impact on biodiversity as possible.
- Ensure the design of the route is as user friendly as possible and does not deter usage by any equalities groups.
- Any new business travel plans for larger businesses in Maylands would be mindful to include, lockers and bike storage, and possibly showers for employees to store change of footwear and clothes, to encourage their workforce to walk, jog or cycle to work. They do not have to have a travel plan for this to happen of course, it could be part of the employer's rewards package to encourage employees to work for them and enhance the green credentials of the company.

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- Ensure it is promoted to employees via the Maylands Business Centre. Shift workers may dislike using the quietways when dark or lonely – consider travel buddying schemes to encourage their use, this could be part of a healthy journeys initiative. Consider ‘designing out crime’ recommendations – see Building Futures guidance, Manual for Streets and Roads in Herts for examples. Maintenance of vegetation and good surfaces all help towards safer routes. Design out the potential for flooded areas, e.g. avoid introducing large potholes full of rainwater
- Reuse and Recycle as much as possible whilst building the scheme.

Data Issues:

None.

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SCHEME PR99: QUIETWAY CHERRY TREE LANE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	Flora and fauna could be negatively impacted upon by heavier use from existing country lanes.	If lighting is installed ensure it has as little impact on biodiversity as possible.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	An excellent way for commuters to work and back include extra active travel opportunities into their daily lives.	Ensure the design is as user friendly as possible as does not deter usage by any groups of people. Any new business travel plans for larger businesses would be mindful to include, lockers and suchlike for employees to store change of footwear within and similar, especially if they wish to jog to work. Obviously employers may wish to offer this as part of the employee package.

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	To reduce crime and create safe environments	U	It depends on how the scheme is implemented, safety of the pedestrian from conflicts with cyclists, is important as well as perception of feeling safe whilst walking or cycling it vital.	Consider all designing out crime recommendations – see building futures guidance, manual for streets and roads in Herts for example. Maintenance of vegetation, good surfaces all help towards safer routes.
Water and soil	To improve the sustainable use of resources	U	Depends on implementation.	Recycle as much as possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Depends on implementation.	Reuse and Recycle as much as possible.
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	This route should take some employee cars off the main roads, and in theory minimise air pollution and noise from vehicles.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Previously there was little choice of sustainable modes into Maylands, but this route will improve the choice.	Ensure it is promoted to employees via the Maylands Business Centre.
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Potential for flooding should be designed out, or people will not use the route.	Design out potential for flooded areas, e.g. large potholes full of rainwater.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	This will reduce carbon emissions which impacts on climate change overall because in theory less people will use their cars.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment & Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Existing green spaces will not be destroyed.	
	To conserve and enhance the historic environment, heritage assets and their settings	O		

APPENDIX 3: APPRAISAL MATRICES

Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	More people on low salaries will be able to access jobs on the Maylands site. It is possible that some people are unable to afford passenger transport fares, but can walk for free.	Shift workers may dislike using the quietways when dark or lonely – consider lighting or travel buddying schemes to encourage their use.
	To empower all sections of the community to participate in decision making and local action	P+	Having a job can empower people to join in with communities.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓	LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability.	Any new business travel plans for larger businesses would be mindful to include, lockers and bike storage, possibly showers for employees to store change of footwear etc, to encourage their workforce to jog or cycle to work. They do not have to have a travel plan for this to happen.
	To spread economic growth more evenly to benefit deprived areas	P+	LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability from deprived areas.	

APPENDIX 3: APPRAISAL MATRICES

	To maintain the vitality and viability of existing centres	U		
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Significant Positive Effects:

This scheme will maximise the opportunities for leisure and a healthy lifestyle, improve the physical and mental health of the population, and reduce health inequalities. It will also help to protect and enhance air quality and minimise noise pollution. Previously there was little choice of sustainable modes into Maylands, but this route will improve the choice. More people on low salaries will be able to access jobs on the Maylands site. It is possible that some people are unable to afford pt fares, but can walk for free. LSTF survey work found that often Maylands employers need more employees; this should have a beneficial effect on employee availability.

Significant Negative Effects: None.

Timescale: short to medium term.

Temporary or Permanent:

Some impacts will be temporary as walking and cycling levels can vary and be seasonal.

Likelihood of effects or impacts identified occurring: Likely.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If lighting is installed ensure it has as little impact on biodiversity as possible.
- Ensure the design of the route is as user friendly as possible and does not deter usage by any equalities groups.
- Any new business travel plans for larger businesses in Maylands would be mindful to include, lockers and bike storage, and possibly showers for employees to store change of footwear and clothes, to encourage their workforce to walk, jog or cycle to work. They do not have to have a travel plan for this to happen of course, it could be part of the employer's rewards package to encourage employees to work for them and enhance the green credentials of the company.
- Ensure it is promoted to employees via the Maylands Business Centre. Shift workers may dislike using the quietways when dark or lonely – consider travel buddying schemes to encourage their use, this could be part of a healthy journeys initiative. Consider 'designing out crime' recommendations – see Building Futures guidance, Manual for Streets and Roads in Herts

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for examples. Maintenance of vegetation and good surfaces all help towards safer routes. Design out the potential for flooded areas, e.g. avoid introducing large potholes full of rainwater

- Reuse and Recycle as much as possible whilst building the scheme.

Data Issues:

None.

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR100: IMPROVED STEP FREE ACCESS FROM CHERRY TREE LANE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Ensure creation of step free access does not result in damage to surrounding flora and fauna.	Ensure creation of step free access does not result in damage to surrounding flora and fauna.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Step free access will allow more people to access the Nickey Line therefore improving physical and mental health for all.	Promote the Nickey Line and associated improvements.

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	To reduce crime and create safe environments	P+	Replacement of steps with a ramp structure creates a safer environment.	
Water and soil	To improve the sustainable use of resources	U	Dependent on construction being completed using recycled materials.	Use recycled materials where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Dependent on sustainable construction practices being used and work completed using recycled materials.	Use recycled materials and sustainable construction practices where possible.
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	U	Reduce and prevent soil removal when constructing new ramps.	Reduce and prevent soil removal when constructing new ramps.
Air	To protect and enhance air quality and minimise noise pollution	P+	Step free access may encourage people to walk or cycle.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	Step free access will allow more people to access sustainable forms of transport along the Nickey Line.	Promote the Nickey Line and active travel.

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Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	Step free access may encourage people to walk or cycle.	
	To ensure the sustainable supply and use of energy	P+	Step free access may encourage people to walk or cycle so reducing the use of fossil fuels.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Step free access will broaden and improve access to the natural environment and Hemel Hempstead.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Step free access will broaden and improve the number of people able to access local heritage and culture.	Recommend that the HCC map of historic assets is consulted.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Step free access will enable more people in society, particularly the elderly or disabled, to access facilities and services.	Target specific promotion of the Nickey Line and the improvements to relevant groups.

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	To empower all sections of the community to participate in decision making and local action	P+	Step free access will enable more people in society, particularly the elderly or disabled, to access key locations in Hemel Hempstead where they can participate in decision making and local action.	Target specific promotion of the Nickey Line and the improvements to relevant groups.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Disadvantaged groups, such as those with physical disabilities, may benefit from easier travel to employment centres in Hemel Hempstead as a result of step free access.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects:

- Step free access will allow more people to access the Nickey Line therefore improving physical and mental health for all.
- Replacement of steps with a ramp structure creates a safer environment.
- Step free access will allow more people to access sustainable forms of transport along the Nickey Line.
- Step free access will broaden and improve access to the natural environment, key services and facilities in and around Hemel Hempstead.
- Disadvantaged groups, such as those with physical disabilities, may benefit from easier travel to employment centres in Hemel Hempstead as a result of step free access.

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Significant Negative Effects:

None.

Timescale:

0-2 Years.

Temporary or Permanent:

The new step free access would be permanent, but any positive impacts as a result of people walking or cycling more could be temporary as these can vary over time.

Likelihood of effects or impacts identified occurring:

Medium Likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Ensure creation of step free access does not result in damage to surrounding flora and fauna.
- Promote the Nickey Line and associated improvements.
- Use recycled materials and sustainable construction practices where possible.
- Reduce and prevent soil removal when constructing new ramps.
- Target specific promotion of the Nickey Line and the improvements to relevant groups.
- Recommend that the HCC map of historic assets is consulted.

Data Issues:

- Number of people cycling on Nickey Line.

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SCHEME PR101: IMPROVED STEP FREE ACCESS FROM THREE CHERRY TREES LANE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	U	Ensure creation of step free access does not result in damage to surrounding flora and fauna.	Ensure creation of step free access does not result in damage to surrounding flora and fauna.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	Step free access will allow more people to access the Nickey Line therefore improving physical and mental health for all.	Promote the Nickey Line and associated improvements.

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	To reduce crime and create safe environments	P+	Replacement of steps with a ramp structure creates a safer environment.	
Water and soil	To improve the sustainable use of resources	U	Dependent on construction being completed using recycled materials.	Use recycled materials where possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Dependent on sustainable construction practices being used and work completed using recycled materials.	Use recycled materials and sustainable construction practices where possible.
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	U	Reduce and prevent soil removal when constructing new ramps.	Reduce and prevent soil removal when constructing new ramps.
Air	To protect and enhance air quality and minimise noise pollution	P+	This scheme could result in modal shift to walking or cycling.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	Step free access will allow more people to access sustainable forms of transport along the Nickey Line.	Promote the Nickey Line and active travel.

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Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	This scheme could result in modal shift to walking or cycling.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Step free access will broaden and improve access to the natural environment and Hemel Hempstead.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Step free access will broaden and improve the number of people able to access local heritage and culture.	Recommend that the HCC map of historic assets is consulted.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	Step free access will enable more people in society, particularly the elderly or disabled, to access facilities and services.	Target specific promotion of the Nickey Line and the improvements to relevant groups.

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	To empower all sections of the community to participate in decision making and local action	P+	Step free access will enable more people in society, particularly the elderly or disabled, to access key locations in Hemel Hempstead where they can participate in decision making and local action.	Target specific promotion of the Nickey Line and the improvements to relevant groups.
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Disadvantaged groups, such as those with physical disabilities, may benefit from easier travel to employment centres in Hemel Hempstead as a result of step free access.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects:

- Step free access will allow more people to access the Nickey Line therefore improving physical and mental health for all.
- Replacement of steps with a ramp structure creates a safer environment.
- Step free access will allow more people to access sustainable forms of transport along the Nickey Line.
- Step free access will broaden and improve access to the natural environment, key services and facilities in and around Hemel Hempstead.
- Disadvantaged groups, such as those with physical disabilities, may benefit from easier travel to employment centres in Hemel Hempstead as a result of step free access.

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Significant Negative Effects:

None.

Timescale:

0-2 Years

Temporary or Permanent:

The impacts from the new ramp would be permanent, but any positive impacts as a result of any modal shift could be temporary as walking and cycling can vary over time.

Likelihood of effects or impacts identified occurring:

Medium Likelihood

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Ensure creation of step free access does not result in damage to surrounding flora and fauna.
- Promote the Nickey Line and associated improvements.
- Use recycled materials and sustainable construction practices where possible.
- Reduce and prevent soil removal when constructing new ramps.
- Target specific promotion of the Nickey Line and the improvements to relevant groups.
- Recommend that the HCC map of historic assets is consulted.

Data Issues:

- Number of people cycling on Nickey Line.

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SCHEME PR102: ANTHONY CLOSE, THE PATHWAY, WATFORD HEATH

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	This scheme should improve pedestrian and cycle access over the railway bridge and access to green space in the local area. Although huge modal shift will not be achieved a reduction in car use should benefit the local habitats and biodiversity.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	For local residents wanting to walk or cycle, to and from residential areas in the Watford Heath area and local green spaces.	

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	To reduce crime and create safe environments	U	This scheme will involve improvements to an existing bridge over the railway, exact scheme details are not known i.e. lighting etc.	
Water and soil	To improve the sustainable use of resources	O	Minimal resources will be required.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	If there is modal shift to more people walking and cycling then local residents should experience better air quality and less noise due to fewer motor vehicles.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓		Recommend that any new/ improved walking and cycling routes are widely publicised to local people, emphasising benefits to health and any journey time savings.
Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	If there is modal shift to cycling and walking.	
	To ensure the sustainable supply and use of energy	U	It is uncertain at this stage if the scheme will involve new lighting.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	O	Improvements to be made to an existing bridge.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	There is a monument in the Watford Heath area that the improvements would improve access to by sustainable modes.	

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Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	This scheme should improve access to residential areas either side of the railway line by walking and cycling.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	O		
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

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Significant Positive Effects:

This scheme should improve the choice of sustainable modes, in particular walking and cycling, and improve access either side of the railway line between residential areas, and to local green areas (Hayling Road play area) and woodland. Modal shift would be minimal but the local area could benefit from better air quality and less greenhouse gas emissions.

Significant Negative Effects:

None.

Timescale: Short (0-2 years)

Temporary or Permanent impact:

Temporary, as walking and cycling levels are not static and will fluctuate over time, and can be seasonal.

Likelihood of effects or impacts identified occurring:

This will depend on the level of modal shift to walking and cycling, and how well any changes are publicised.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Recommend that any new/ improved walking and cycling routes are widely publicised to local people, emphasising benefits to health and any journey time savings.

Data Issues:

- Before and after walking and cycling levels.

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SCHEME PR103: DELTA GAIN (SOUTH OXHEY – CARPENDERS PARK)

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	This is a residential area.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	For local residents wanting to walk or cycle, especially to the railway station.	
	To reduce crime and create safe environments	O		

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Water and soil	To improve the sustainable use of resources	O	Minimal resources will be required.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	If there is modal shift to more people walking and cycling then local residents should experience better air quality and less noise due to fewer motor vehicles.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓		Recommend that any new/ improved walking and cycling routes are widely publicised to local people, emphasising benefits to health and any journey time savings.

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Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	If there is modal shift to cycling and walking.	
	To ensure the sustainable supply and use of energy	P+	Minimal reduction in fuel consumption from any modal shift to walking and cycling.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Potential to improve the townscape/landscape if the number of parked cars on-street can be managed and reduced.	
	To conserve and enhance the historic environment, heritage assets and their settings	O	There are no listed buildings in this area.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+		

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	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	If it improves access to the railway station.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects:

This scheme should improve the choice of sustainable modes, in particular walking and cycling, and improve access to the train station. If sufficient modal shift is achieved the local area should benefit from better air quality and less greenhouse gas emissions, improvements to access routes to the train station would improve access to employment opportunities. If car use can be reduced this would benefit the local townscape/landscape with fewer cars parked.

Significant Negative Effects:

None.

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Timescale: Short (0-2 years)

Temporary or Permanent impact:

Temporary, as walking and cycling levels are not static and will fluctuate over time, and can be seasonal.

Likelihood of effects or impacts identified occurring:

This will depend on the level of modal shift to walking and cycling, and how well any changes are publicised.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Recommend that any new/ improved walking and cycling routes are widely publicised to local people, emphasising benefits to health and any journey time savings.

Data Issues:

- Before and after walking and cycling levels.

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SCHEME PR104: PUBLIC REALM ENHANCEMENT, BEECHEN GROVE BUS INTERCHANGE

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	Enhancements on existing development.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	This will encourage more people to walk, cycle and use passenger transport.	

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	To reduce crime and create safe environments	✓	More people about will reduce crime and make people feel safer in their environment, especially if the public realm enhancements are designed well	Find out what people would like their public realm to look like, ensure it is a quality development as is the public realm improvements in Watford town centre.
Water and soil	To improve the sustainable use of resources	U		
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Depends on design	
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	More people walking and cycling in the public realm would mitigate poor air quality and noise, as long as cleaner buses used the interchange.	Check that the buses in use there are Euro VI or better.

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+		
Climatic factors	To adapt to the impacts of climate change such as flooding	U		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+		
	To ensure the sustainable supply and use of energy	U		Use LED lighting
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+		Use guidance documents such as manual for streets (or the updated roads in Herts) to get the most potential from this scheme.
	To conserve and enhance the historic	P+		Use guidance documents such as manual for streets (or the updated roads in Herts) to

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	environment, heritage assets and their settings			get the most potential from this scheme.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+		
	To empower all sections of the community to participate in decision making and local action	P+		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	✓		
	To spread economic growth more evenly to benefit deprived areas	P+		

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	To maintain the vitality and viability of existing centres	✓		
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Significant Positive Effects:

This will encourage more people to walk, cycle and use passenger transport, providing health benefits. More people out and about in the public realm will reduce crime and make people feel safer in their environment, especially if the public realm enhancements are designed well. If sufficient modal shift is achieved air quality and noise pollution should improve, which would also benefit from cleaner buses using the interchange. This scheme would reduce the need to travel by car and encourage active travel and bus and train usage. Less car usage would reduce the amount of carbon dioxide emissions coming from individual vehicles using the road. Significant bus interchange improvements if they generate modal shift would provide benefits to local employers and the economy and would aid in maintaining the vitality and viability of local town centres.

Significant Negative Effects: None.

Timescale: 5-10 years

Temporary or Permanent:

Temporary impacts, as bus use can vary over time.

Likelihood of effects or impacts identified occurring: medium likelihood

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Find out what people would like their public realm to look like, ensure it is a quality development.
- Check that the buses in use at this interchange and in the area generally are Euro VI compliant or even Electric Vehicles.
- Use LED lighting.
- Use guidance documents such as manual for streets (or the updated roads in Herts) to get the most potential from this scheme.

Data Issues:

- Numbers of buses that use cleaner technology.

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SCHEME PR105: A414 ACCESS CYCLE ROUTES LOWER YOTT – WINDMILL ROAD

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels.	Ensure use of recycled materials where possible in any construction.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits. It is also accessible to everyone in society at little cost.	Promote cycling as a form of exercise for everyone. Particular promotion to residents in Adeyfield neighbourhood centre could be beneficial.
	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help	Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists.

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			this. Safe crossings of the A414 are essential.	Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Cycling causes less wear to the roads, so more cycling would increase efficiency of use of the resource.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.

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Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating new cycle routes addresses the objective completely	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle routes should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new cycle routes may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	✓	Cycling is an energy efficient form of travel. Energy goes into the production of the bike and parts etc, but little/none for ongoing use of the bike. No fuel required to power unassisted bikes. E-bikes (electric assisted bikes) use electric energy as a boost to the power input by the rider when this is needed or desired by the rider. The electricity can be generated from	

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			renewables, nuclear or from less polluting fossil fuels (e.g. natural gas) so is cleaner than fossil fuel powered vehicles.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of cycle routes may result in damage to some green spaces.	The new cycle routes should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycle routes will improve access to services in Hemel Hempstead.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access
	To empower all sections of the community to participate in decision making and local action	P+	New cycle routes will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Hemel Hempstead. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	Promote the cycle routes to employees in Hemel Hempstead Town Centre and Jarman Square.
	To spread economic growth more evenly to benefit deprived areas	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Hemel Hempstead. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The cycle route will avoid congestion hotspots thus potentially facilitating more movement into Hemel Hempstead.	

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Significant Positive Effects:

- The creation of new cycle routes and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle route will also avoid congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle route may enable those on low incomes to access employment opportunities particularly due to the connectivity with Hemel Hempstead and Jarman Square.

Significant Negative Effects: None.

Timescale: 0-2 Years.

Temporary or Permanent: Temporary, as cycling levels can vary, and can be seasonal.

Likelihood of effects or impacts identified occurring:

High Likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees at Jarman Square or Hemel Hempstead town centre.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the route.
- Recycled materials should also be used where possible to reduce potential environmental impacts.
- The cycle route construction should consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.

Data Issues:

Monitoring modal shift to cycling in the area.

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SCHEME PR106: A414 ACCESS CYCLE ROUTES JARMAN PARK

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels.	Ensure use of recycled materials where possible in any construction.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits. It is also accessible to everyone in society at little cost.	Promote cycling as a form of exercise for everyone. Particular promotion to employees in Jarman Square could be beneficial.
	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help	Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists.

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			this. Safe crossings of the A414 are essential.	Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.

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Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating new cycle routes addresses the objective completely.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle routes should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new cycle routes may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	✓	Cycling does not use any energy other than that produced by individuals. Even electric bikes generate power from human energy	

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of cycle routes may result in damage to some green spaces.	The new cycle routes should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycle routes will improve access to services in Jarman Square.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.
	To empower all sections of the community to participate in decision making and local action	P+	New cycle routes will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as at Jarman Square. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	Promote the cycle routes to employees at Jarman Square.
	To spread economic growth more evenly to benefit deprived areas	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Jarman Square. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The cycle route will avoid congestion hotspots thus potentially facilitating more movement into Jarman Square.	

Significant Positive Effects:

- The creation of new cycle routes and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle route will also avoid congestion hotspots thus tackling noise and air pollution issues.

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- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle route may enable those on low incomes to access employment opportunities particularly due to the connectivity with Jarman Square.

Significant Negative Effects:

None.

Timescale:

0-2 Years.

Temporary or Permanent:

Temporary, as cycling levels can vary, and be seasonal.

Likelihood of effects or impacts identified occurring:

High Likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees at Jarman Square.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the route.
- Recycled materials should also be used where possible to reduce potential environmental impacts.
- The cycle route construction should consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.

Data Issues:

Monitoring modal shift to cycling in the area.

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR107: A414 ACCESS CYCLE ROUTES BENNETTS END ROAD

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels.	Ensure use of recycled materials where possible in any construction.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits. It is also accessible to everyone in society at little cost.	Promote cycling as a form of exercise for everyone. Particular promotion to residents in Bennetts End neighbourhood centre could be beneficial.
	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help	Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists.

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			this. Safe crossings of the A414 are essential.	Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating new cycle routes addresses the objective completely	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle routes should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new cycle routes may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	✓	Cycling does not use any energy other than that produced by individuals. Even electric bikes generate power from human energy.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of cycle routes may result in damage to some green spaces.	The new cycle routes should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.

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	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycle routes will improve access to services in Hemel Hempstead.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.
	To empower all sections of the community to participate in decision making and local action	P+	New cycle routes will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Jarman Square. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	Promote the cycle routes to employees in Hemel Hempstead Town Centre and Jarman Square.

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	To spread economic growth more evenly to benefit deprived areas	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Jarman Square. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The cycle route will avoid congestion hotspots thus potentially facilitating more movement into Hemel Hempstead and Jarman Square.	

Significant Positive Effects:

- The creation of new cycle routes and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle route will also avoid congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle route may enable those on low incomes to access employment opportunities particularly due to the connectivity with Hemel Hempstead and Jarman Square.

Significant Negative Effects:

None.

Timescale: 0-2 Years.

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Temporary or Permanent:

Temporary, as cycling levels can vary, and be seasonal.

Likelihood of effects or impacts identified occurring:

High Likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees at Jarman Square or Hemel Hempstead town centre.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the route.
- Recycled materials should also be used where possible to reduce potential environmental impacts.
- The cycle route construction should consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.

Data Issues:

Monitoring modal shift to cycling in the area.

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR108: A414 ACCESS CYCLE ROUTES WHITE HART ROAD - LONGLANDS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels.	Ensure use of recycled materials where possible in any construction.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits. It is also accessible to everyone in society at little cost.	Promote cycling as a form of exercise for everyone. Particular promotion to residents in Bennetts End and Adeyfield neighbourhood centres could be beneficial.
	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training	Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists.

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			and infrastructure can help this. Safe crossings of the A414 are essential.	Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution.	

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	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating new cycle routes addresses the objective completely	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle routes should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new cycle routes may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	✓	Cycling does not use any energy other than that produced by individuals. Even electric bikes generate power from human energy.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of cycle routes may result in damage to some green spaces.	The new cycle routes should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.

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	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycle routes will improve access to services in Hemel Hempstead.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.
	To empower all sections of the community to participate in decision making and local action	P+	New cycle routes will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Hemel Hempstead. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	Promote the cycle routes to employees in Hemel Hempstead Town Centre and Jarman Square.

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	To spread economic growth more evenly to benefit deprived areas	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Hemel Hempstead. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The cycle route will avoid congestion hotspots thus potentially facilitating more movement into Hemel Hempstead.	

Significant Positive Effects:

- The creation of new cycle routes and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle route will also avoid congestion hotspots thus tackling noise and air pollution issues.
- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle route may enable those on low incomes to access employment opportunities particularly due to the connectivity with Hemel Hempstead and Jarman Square.

Significant Negative Effects: None.

Timescale: 0-2 Years.

Temporary or Permanent:

Temporary, as cycling levels can vary, and be seasonal.

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Likelihood of effects or impacts identified occurring:

High Likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees at Jarman Square or Hemel Hempstead town centre.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the route.
- Recycled materials should also be used where possible to reduce potential environmental impacts.
- The cycle route construction should consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.

Data Issues: Monitoring modal shift to cycling in the area.

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR109: A414 ACCESS CYCLE ROUTES LEVERSTOCK GREEN ROAD

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling has fewer negative impacts on biodiversity than modes of transport dependent on fossil fuels.	Ensure use of recycled materials where possible in any construction.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	Cycling has proven physical and mental health benefits. It is also accessible to everyone in society at little cost.	Promote cycling as a form of exercise for everyone. Particular promotion to employees of Maylands industrial estate could be beneficial.

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	To reduce crime and create safe environments	P+	More people cycling in public places leads to safer environments and a feeling of personal security. Cyclists need to ensure they are safe. Training and infrastructure can help this. Safe crossings of the A414 are essential.	Bikeability training can help cyclists ride safely; drivers also need tuition to be aware of cyclists. Cycle storage in destinations needs to include the ability to lock bicycles securely.
Water and soil	To improve the sustainable use of resources	P+	Cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Increased use of sustainable surfaces for cyclists will see less spent on resurfacing roads.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycle ways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS.
	To reduce contamination, and safeguard soil quality and quantity	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and construction on greenfield sites.

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Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling has no negative impacts on air quality or noise pollution.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating new cycle routes addresses the objective completely	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling has no negative impact on the causes of climate change. However extreme weather events will become more common, so the cycle routes should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling does not emit greenhouse gases and a new cycle routes may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	✓	Cycling does not use any energy other than that produced by individuals. Even electric bikes generate power from human energy.	

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	Cycling in the public domain will enhance the landscape of Hertfordshire's towns. Tranquillity and air quality may be improved by modal shift to cycling. Construction of cycle routes may result in damage to some green spaces.	The new cycle routes should be designed using established standards such as Manual for Streets or Roads in Herts. Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Cycling is open to everyone and the cost of a bicycle is generally affordable for most people. Creating new cycle routes will improve access to services in Hemel Hempstead.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.
	To empower all sections of the community to participate in decision making and local action	P+	New cycle routes will enable those who are more able to ride bicycles than run cars to better access key locations and so are better able to participate in decision making and local action.	

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Maylands industrial estate. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	Promote the cycle routes to employees in Maylands industrial estate.
	To spread economic growth more evenly to benefit deprived areas	P+	The new cycle routes may allow potential employees on low incomes to better access employment opportunities such as in Maylands industrial estate. The cycle route will also avoid congestion hotspots on the A414 having potential economic benefits.	As above
	To maintain the vitality and viability of existing centres	P+	With any potential increases in employment there will be more spending power in existing centres leading to improved vitality. The cycle route will avoid congestion hotspots thus potentially facilitating more movement into Hemel Hempstead.	

Significant Positive Effects:

- The creation of new cycle routes and the resultant cycling has fewer negative impacts on the biodiversity, historic and natural environment than the continued use of transport modes reliant on fossil fuels.
- The possibility of achieving modal shift due to the cycle infrastructure improvements will lead to improved air quality and less noise pollution.
- The cycle route will also avoid congestion hotspots thus tackling noise and air pollution issues.

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- Additional health benefits of cycling and the possibility of creating a safer environment from the point of view of more people being around to deter anti-social behaviour.
- Economically, the cycle route may enable those on low incomes to access employment opportunities particularly due to the connectivity with Maylands industrial estate.

Significant Negative Effects: None.

Timescale: 0-2 Years.

Temporary or Permanent: Temporary, as cycling levels can vary, and be seasonal.

Likelihood of effects or impacts identified occurring:
High Likelihood.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Promote cycling as often as possible as a form of active travel. This promotion could be specifically tailored to groups that will be affected by the creation of the cycle way such as employees at Maylands industrial estate.
- Consider bikeability training to help cyclists ride safely.
- Cycle storage at destinations needs to include the ability to lock them securely.
- Effort should be made to minimise soil removal and damage to green spaces when constructing the route.
- Recycled materials should also be used where possible to reduce potential environmental impacts.
- The cycle route construction should consider SUDS where possible and need to consult the section in HIAMP about SUDS.
- Consideration should be made for those that cannot afford bicycles through recycling schemes.

Data Issues:

Monitoring modal shift to cycling in the area.

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR110: BY-THE-WOOD/OXHEY LANE/MERRY HILL GREENWAY CYCLE LINK

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	No new major infrastructure is required, the existing road and greenway will be enhanced.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	This will provide a more pleasant experience for those wishing to cycle for leisure or commuting on the road or the greenway.	
	To reduce crime and create safe environments	O		

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Water and soil	To improve the sustainable use of resources	O	Minimal resources required for improvements.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	O		
	To ensure the efficient use of water, and safeguard water resources	O		
	To reduce contamination, and safeguard soil quality and quantity	O		
Air	To protect and enhance air quality and minimise noise pollution	P+	Enhancing the existing route for cyclists could improve local air quality if there is sufficient modal shift.	Recommend that the local residents are made aware of the improvements to ensure maximum opportunity for modal shift.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓		

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Climatic factors	To adapt to the impacts of climate change such as flooding	O		
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	If there is sufficient modal shift from motor vehicles to cycling.	Recommend that the local residents are made aware of the improvements to ensure maximum opportunity for modal shift.
	To ensure the sustainable supply and use of energy	P+	A reduction in fuel consumption if there is sufficient modal shift to cycling or walking along the route.	Recommend that the local residents are made aware of the improvements to ensure maximum opportunity for modal shift.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	This scheme will only be enhancing existing infrastructure.	
	To conserve and enhance the historic environment, heritage assets and their settings	P+	There are two grade II listed buildings in the vicinity of the enhancements. Cycling improvements are not expected to have any negative impacts on these buildings.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and	P+	This scheme aims to improve links between Carpenders Park and Merry Hill Road.	

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	community facilities for all			
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	This may improve links for those wishing to access employment in that area of Watford/Oxhey.	
	To spread economic growth more evenly to benefit deprived areas	O		
	To maintain the vitality and viability of existing centres	O		

Significant Positive Effects:

This scheme aims to facilitate cycling in this area of Watford/Oxhey, by creating a consistent cycle route and a more pleasant experience for the user, and improve access between Carpenders Park and Merry Hill Road. It improves the choice in the local area for travelling by a sustainable mode, and if there is sufficient modal shift it will improve the local air quality and reduce fuel consumption.

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Significant Negative Effects:

None.

Timescale:

Short-term (0-2 years).

Temporary or Permanent:

Any infrastructure built would have permanent impacts, but impacts from modal shift to cycling could be temporary as cycling levels can vary and be seasonal.

Likelihood of effects or impacts identified occurring:

This will depend on the level of modal shift from motor vehicle to cycling/walking along the route.

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Recommend that the local residents are made aware of the improvements to ensure maximum opportunity for modal shift.

Data Issues:

None.

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SCHEME PR111: Breakspear Way signalised pedestrian & cycle crossing

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling and walking has fewer negative impacts on biodiversity than motorised modes of transport dependent on fossil fuels. The new crossing would be on existing road therefore no loss of habitat. Any modal shift would be beneficial to nearby Marchmont pond, and grassland in the cemetery.	If lighting is installed ensure it has as little impact on biodiversity as possible
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and	✓	Cycling and walking have proven physical and mental health benefits. It is also more accessible to more people in society at little cost relative to other means of travel.	Ensure the design is as user friendly as possible and does not deter usage by any groups of people. Promotion of walking and cycling to employees in Maylands and the Enterprise Zone could be beneficial, via employer Travel Plans.

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	reduce health inequalities			
	To reduce crime and create safe environments	P+	The scheme would create a safe crossing of a busy and high speed section of the A414, on an existing desire line where there is no safe crossing currently. More people walking and cycling in public places can lead to safer environments and a feeling of personal security. The design must ensure conflicts between pedestrians and cyclists are minimised.	Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples. Design to reduce conflict risks between users of the crossing. Bikeability training can help cyclists ride safely.
Water and soil	To improve the sustainable use of resources	U	Depends on implementation. Cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Greater use of cycling infrastructure replacing car journeys could reduce road maintenance need.	Use recycled materials as much as possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycleways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS.	Consult the section in the HIAMP about SUDS

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	To reduce contamination, and safeguard soil quality and quantity	U	Depends on implementation. Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity. Disturbance of soils can affect structure and quality. Importing material could affect composition and quality of soil.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to reduce removal of soil and encourage soil reuse within the site, and avoid/reduce disturbance of soils and habitats.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling and walking has no negative impact on air quality or noise pollution	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating a new pedestrian/cycle crossing addresses this objective.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling and walking has no negative impact on the causes of climate change. However, extreme weather events becoming more common means any new infrastructure should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS.

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	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling and walking does not emit greenhouse gases and a new cycle route may encourage a modal shift away from forms of transport dependent on fossil fuels	
	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	More walking and cycling in the public domain will enhance the townscape of Hertfordshire's towns. Prioritising routes for walking and cycling over cars could improve landscape and environmental quality (air quality, noise disturbance etc). Construction of new infrastructure may result in damage to some green spaces or features.	New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts Damage to green spaces should be avoided where possible.
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Walking and cycling is open to everyone and the cost of cycling is more affordable for most people than other modes of transport. Creating new pedestrian and cycle routes will improve access to services and employment in Maylands to more people.	Bikeability or other cycle training should be promoted for those that cannot cycle. There should be consideration of opening places for bicycles to be recycled so that those that cannot afford bicycles may still have access.

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	To empower all sections of the community to participate in decision making and local action	P+	New cycle routes may allow potential employees on low incomes to better access employment opportunities such as at Maylands. Employment helps empower communities.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Better cycling and walking routes to Maylands will make employment opportunities accessible to more people locally. Improving the sustainable transport access will also help reduce car dependency in Maylands, helping reduce congestion and supporting the local economy and EZ.	Any new business travel plans for larger businesses would be mindful to include lockers and bike storage, showers and changing facilities etc to encourage their workforce to jog or cycle to work.
	To spread economic growth more evenly to benefit deprived areas	P+	The new cycle and walking routes may allow potential employees on low incomes to better access employment opportunities such as in Maylands.	
	To maintain the vitality and viability of existing centres	O	No impact on town centre	

Significant Positive Effects: This scheme will help increase opportunities for active commuting, leisure and healthy lifestyle, improving the physical and mental health of the population and reducing health inequalities. It will also help protect and enhance air quality and minimise noise pollution. Previously there was little choice of sustainable modes into Maylands, but this route improve the choice. More people on low salaries will be able to access jobs on Maylands and in the Enterprise Zone. It is possible that people are unable to afford public transport, but walking and cycling is more affordable. This should open employment opportunities to more people and encourage people to work at Maylands.

Significant Negative Effects: none

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Timescale: short to medium term

Temporary or permanent: Some impacts will be temporary, as walking and cycling levels can vary and be seasonal.

Likelihood of effects or impacts identified occurring: likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If lighting is installed ensure it has as little impact on biodiversity as possible
- Ensure the design of the route is as user friendly as possible and does not deter usage by any equalities groups
- Promotion of walking and cycling to employees in Maylands and the Enterprise Zone could be beneficial, via employer Travel Plans. Any new business travel plans for larger businesses would be mindful to include lockers and bike storage, showers and changing facilities etc to encourage their workforce to jog or cycle to work.
- Promotion of bikeability training can encourage more people to cycle and feel safer and more confident.
- New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts
- Damage to green spaces should be avoided where possible.
- Consider SUDS and consult the section in the HIAMP about SUDS.
- Avoid/reduce disturbance of soils and habitats, reduce removal of soil and encourage soil reuse within the site.
- Ensure use of recycled materials where possible.
- Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples.

Data Issues:

- Monitoring modal shift in the study area

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR112: B653 Lower Luton Road pedestrian and cycle crossing

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling and walking has fewer negative impacts on biodiversity than motorised modes of transport dependent on fossil fuels. The crossing should be designed and constructed to avoid and reduce any loss of habitat. Street lighting should be designed to avoid harm to wildlife and habitat. Any modal shift would be beneficial to the nearby River Lea Corridor.	If lighting is installed ensure it has as little impact on biodiversity as possible. Ensure construction avoids/reduces habitat loss through following best practice.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and	✓	Cycling and walking have proven physical and mental health benefits. It is also more accessible to more people in society at little cost relative to other means of travel.	Ensure the design is as user friendly as possible and does not deter usage by any groups of people.

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	mental health of the population, and reduce health inequalities			
	To reduce crime and create safe environments	P+	The scheme would make it easier and safer for people to cross the road. More people walking and cycling in public places can lead to safer environments and a feeling of personal security. The design must ensure conflicts between pedestrians and cyclists are minimised.	Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples. Design to reduce conflict risks between users of the crossing. Bikeability training can help cyclists ride with more confidence and safety.
Water and soil	To improve the sustainable use of resources	U	Depends on implementation. Cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Greater use of cycling infrastructure replacing car journeys could reduce road maintenance need.	Use recycled materials as much as possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	P+	Cycleways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.

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	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses, particularly the nearby River Lea and floodplain. Benefits will be dependent on implementation and use of SUDS	Consult the section in the HIAMP about SUDS
	To reduce contamination, and safeguard soil quality and quantity	U	Depends on implementation. Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity. Disturbance of soils can affect structure and quality. Importing material could affect composition and quality of soil.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to avoid/reduce disturbance of soils and habitats, reduce removal of soil and encourage soil reuse within the site.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling and walking has no negative impact on air quality or noise pollution	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Creating a new pedestrian/cycle crossing addresses this objective.	

APPENDIX 3: APPRAISAL MATRICES

Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling and walking has no negative impact on the causes of climate change. However, extreme weather events becoming more common means any new infrastructure should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling and walking does not emit greenhouse gases and a new cycling/walking facility may encourage a modal shift away from forms of transport dependent on fossil fuels.	
	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	More walking and cycling in the public domain will enhance the townscape of Hertfordshire's towns. Prioritising routes for walking and cycling over cars could improve landscape and environmental quality (air quality, noise disturbance etc). Construction of new infrastructure may result in damage to some green spaces or features.	New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts Damage to green spaces and features should be avoided where possible.

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	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling and walking instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Walking and cycling is open to everyone and the cost of cycling is more affordable for most people than other modes of transport. Creating new pedestrian and cycle routes will improve access to services and employment in Harpenden.	Bikeability or other cycle training should be promoted for those that cannot cycle. Local bicycle recycling schemes can help make bikes affordable for more people.
	To empower all sections of the community to participate in decision making and local action	P+	Better cycling and walking routes can help more people access services, jobs and education/training more easily, which boosts access and empowers communities.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Better cycling and walking routes to Harpenden town centre will make local employment opportunities accessible to more people including residents of new developments. Improving sustainable transport access may also encourage more people to use local services and shops.	New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts, to ensure it is useable by all in the community.

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	To spread economic growth more evenly to benefit deprived areas	P+	Better cycling and walking routes can help more people access services, jobs and education/training more easily	
	To maintain the vitality and viability of existing centres	P+	Better cycling and walking routes to Harpenden town centre may encourage more people including new residents to use local services and shops in the town centre.	

Significant Positive Effects: This scheme will help increase opportunities for active commuting, education trips, leisure and healthy lifestyle, improving the physical and mental health of the population and reducing health inequalities. It will also help protect and enhance air quality and minimise noise pollution. The new crossing should improve walking and cycling access to Harpenden town centre and the jobs and services there.

Significant Negative Effects: none

Temporary or permanent: walking and cycling levels can vary and be seasonal.

Timescale: short to medium term

Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If lighting is installed ensure it has as little impact on biodiversity as possible. Ensure construction avoids/reduces habitat loss through following best practice.
- Ensure the design of the route is as user friendly as possible and does not deter usage by any equalities groups
- Promotion of bikeability training can encourage more people to cycle and feel safer and more confident.
- New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts
- Damage to green spaces should be avoided where possible.

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- Consider SUDS and consult the section in the HIAMP about SUDS.
- Avoid/reduce disturbance of soils and habitats, reduce removal of soil and encourage soil reuse within the site.
- Ensure use of recycled materials where possible.
- Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples.

Data Issues:

- none

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR113: OX LANE-SUN LANE-HOLLYBUSH LANE-WESTFIELD ROAD JUNCTION REVIEW

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling and walking has fewer negative impacts on biodiversity than motorised modes of transport dependent on fossil fuels. The junction should be designed and constructed to avoid and reduce any loss of habitat. Street lighting should be designed to avoid harm to wildlife and habitat. Any modal shift to walking or cycling will benefit the nearby woodland and Nickey Line	If lighting is installed ensure it has as little impact on biodiversity as possible. Ensure construction avoids/reduces habitat loss through following best practice.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and	P+	Cycling and walking have proven physical and mental health benefits. It is also more accessible to more people in society at little cost relative to other means of travel. The benefits will depend on how much improvement is made to perception of	Ensure the design is as safe and user friendly as possible and the junction not exclude usage by any groups of people either cycling or walking.

APPENDIX 3: APPRAISAL MATRICES

	mental health of the population, and reduce health inequalities		safety and how many new cycle users it attracts	
	To reduce crime and create safe environments	P+	The scheme could encourage more people to cycle if it makes it safer/feel safer. More people walking and cycling in public places can lead to safer environments and a feeling of personal security. Junction design should aim to reduce/avoid conflicts between pedestrians and cyclists as well as cyclists and other vehicles.	Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples. Design to reduce conflict risks between users of the junction. Bikeability training can help cyclists ride with more confidence and safety.
Water and soil	To improve the sustainable use of resources	U	Depends on implementation. Cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Greater use of cycling infrastructure replacing car journeys could reduce road maintenance need.	Use recycled materials as much as possible.
	To move away from waste disposal to minimisation,	U	Cycleways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.

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	reuse, recycling and recovery			
	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS	Consult the section in the HIAMP about SUDS
	To reduce contamination, and safeguard soil quality and quantity	U	<p>Depends on implementation.</p> <p>Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS.</p> <p>Potential removal of soil in construction will reduce quantity. Disturbance of soils can affect structure and quality. Importing material could affect composition and quality of soil.</p>	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to avoid/reduce disturbance of soils and habitats, reduce removal of soil and encourage soil reuse within the site.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling and walking has no negative impact on air quality or noise pollution	
	To improve the choice of sustainable transport modes, encourage their use, and reduce	P+	Creating a more cycle friendly junction helps to address this objective - benefits will depend on how much it improves the route and people's willingness or confidence to cycle.	

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	the need to travel by car			
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling and walking has no negative impact on the causes of climate change. However, extreme weather events becoming more common means any new infrastructure should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling and walking does not emit greenhouse gases and a new cycling/walking facility may encourage a modal shift away from forms of transport dependent on fossil fuels	
	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	More walking and cycling in the public domain will enhance the townscape of Hertfordshire's towns. Prioritising routes for walking and cycling over cars could improve environmental quality (air quality, noise disturbance etc). Construction of new infrastructure could result in damage to green spaces or features.	New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts Damage to green spaces and features should be avoided where possible.

APPENDIX 3: APPRAISAL MATRICES

	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling and walking instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Walking and cycling is open to everyone and the cost of cycling is more affordable for most people than other modes of transport. Creating new pedestrian and cycle routes will improve access to services and employment in Harpenden.	Bikeability or other cycle training should be promoted for those that cannot cycle. Local bicycle recycling schemes can help make bikes affordable for more people.
	To empower all sections of the community to participate in decision making and local action	P+	Better cycling and walking routes can help more people access services, jobs and education/training more easily, which boosts access and empowers communities.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Better cycling and walking routes to Harpenden town centre will make local employment opportunities accessible to more people including residents of new developments. Improving sustainable transport access may also encourage more people to use local services and shops.	New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts, to ensure it is useable by all in the community.

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	To spread economic growth more evenly to benefit deprived areas	P+	Better cycling and walking routes can help more people access services, jobs and education/training more easily	
	To maintain the vitality and viability of existing centres	P+	Better cycling and walking routes to Harpenden town centre may encourage more people including new residents to use local services and shops in the town centre.	

Significant Positive Effects: This scheme will help increase opportunities for active commuting, education trips, leisure and healthy lifestyle, improving the physical and mental health of the population and reducing health inequalities. It will also help protect and enhance air quality and minimise noise pollution. The new crossing should improve walking and cycling access to Harpenden town centre and the jobs and services there.

Significant Negative Effects: none

Temporary or permanent: walking and cycling levels can vary and be seasonal.

Timescale: short to medium term

Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If lighting is installed ensure it has as little impact on biodiversity as possible. Ensure construction avoids/reduces habitat loss through following best practice.
- Ensure the design of the route is as user friendly as possible and does not deter usage by any equalities groups
- Promotion of bikeability training can encourage more people to cycle and feel safer and more confident.
- New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts
- Damage to green spaces should be avoided where possible.

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- Consider SUDS and consult the section in the HIAMP about SUDS.
- Avoid/reduce disturbance of soils and habitats, reduce removal of soil and encourage soil reuse within the site.
- Ensure use of recycled materials where possible.
- Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples.

Data Issues:

- none

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR114: CARLTON ROAD-SUN LANE JUNCTION REVIEW

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Cycling and walking has fewer negative impacts on biodiversity than motorised modes of transport dependent on fossil fuels. The junction should be designed and constructed to avoid and reduce any loss of habitat. Street lighting should be designed to avoid harm to wildlife and habitat.	If lighting is installed ensure it has as little impact on biodiversity as possible. Ensure construction avoids/reduces habitat loss through following best practice.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and	P+	Cycling and walking have proven physical and mental health benefits. It is also more accessible to more people in society at little cost relative to other means of travel. The benefits will depend on how much improvement is made to perception of safety and how many new cycle users it attracts	Ensure the design is as safe and user friendly as possible and the junction not exclude usage by any groups of people either cycling or walking.

APPENDIX 3: APPRAISAL MATRICES

	reduce health inequalities			
	To reduce crime and create safe environments	P+	The scheme could encourage more people to cycle if it makes it safer/feel safer. More people walking and cycling in public places can lead to safer environments and a feeling of personal security. Junction design should aim to reduce/avoid conflicts between pedestrians and cyclists as well as cyclists and other vehicles. This should benefit the nearby school.	Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples. Design to reduce conflict risks between users of the junction. Bikeability training can help cyclists ride with more confidence and safety.
Water and soil	To improve the sustainable use of resources	U	Depends on implementation. Cycling surfaces are more sustainable in terms of environmental impact than road surfaces for vehicles. Greater use of cycling infrastructure replacing car journeys could reduce road maintenance need.	Use recycled materials as much as possible.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Cycleways use fewer resources than road surfaces. Recycled materials should be used during construction work.	Ensure use of recycled materials where possible.

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	To ensure the efficient use of water, and safeguard water resources	U	Potential to reduce roadway runoff including chemicals from tyres and road salt entering water courses. Benefits will be dependent on implementation and use of SUDS	Consult the section in the HIAMP about SUDS
	To reduce contamination, and safeguard soil quality and quantity	U	Depends on implementation. Potential to reduce roadway runoff including chemicals from tyres and road salt entering soil. Benefits will be dependent on implementation and use of SUDS. Potential removal of soil in construction will reduce quantity. Disturbance of soils can affect structure and quality. Importing material could affect composition and quality of soil.	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to avoid/reduce disturbance of soils and habitats, reduce removal of soil and encourage soil reuse within the site.
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling and walking has no negative impact on air quality or noise pollution. Any modal shift to cycling or walking will benefit the staff and children at the nearby school with regards to local air quality.	
	To improve the choice of sustainable transport modes, encourage their use, and reduce	P+	Creating a more cycle friendly junction helps to address this objective - benefits will depend on how much it improves the route and people's willingness or confidence to cycle.	

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	the need to travel by car			
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling and walking has no negative impact on the causes of climate change. However, extreme weather events becoming more common means any new infrastructure should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling and walking does not emit greenhouse gases and a new cycling/walking facility may encourage a modal shift away from forms of transport dependent on fossil fuels	
	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	More walking and cycling in the public domain will enhance the townscape of Hertfordshire's towns. Prioritising routes for walking and cycling over cars could improve environmental quality (air quality, noise disturbance etc). Construction of new infrastructure could result in damage to green spaces or features.	New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts Damage to green spaces and features should be avoided where possible.

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	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of cycling and walking instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Walking and cycling is open to everyone and the cost of cycling is more affordable for most people than other modes of transport. Creating new pedestrian and cycle routes will improve access to services and employment in Harpenden.	Bikeability or other cycle training should be promoted for those that cannot cycle. Local bicycle recycling schemes can help make bikes affordable for more people.
	To empower all sections of the community to participate in decision making and local action	P+	Better cycling and walking routes can help more people access services, jobs and education/training more easily, which boosts access and empowers communities.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Better cycling and walking routes to Harpenden town centre will make local employment opportunities accessible to more people including residents of new developments. Improving sustainable transport access may also encourage more people to use local services and shops.	New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts, to ensure it is useable by all in the community.

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	To spread economic growth more evenly to benefit deprived areas	P+	Better cycling and walking routes can help more people access services, jobs and education/training more easily	
	To maintain the vitality and viability of existing centres	P+	Better cycling and walking routes to Harpenden town centre may encourage more people including new residents to use local services and shops in the town centre.	

Significant Positive Effects: This scheme will help increase opportunities for active commuting, education trips, leisure and healthy lifestyle, improving the physical and mental health of the population and reducing health inequalities. It will also help protect and enhance air quality and minimise noise pollution. The new crossing should improve walking and cycling access to Harpenden town centre and the jobs and services there.

Significant Negative Effects: none

Temporary or permanent: walking and cycling levels can vary and be seasonal.

Timescale: short to medium term

Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If lighting is installed ensure it has as little impact on biodiversity as possible. Ensure construction avoids/reduces habitat loss through following best practice.
- Ensure the design of the route is as user friendly as possible and does not deter usage by any equalities groups
- Promotion of bikeability training can encourage more people to cycle and feel safer and more confident.
- New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts
- Damage to green spaces should be avoided where possible.
- Consider SUDS and consult the section in the HIAMP about SUDS.

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- Avoid/reduce disturbance of soils and habitats, reduce removal of soil and encourage soil reuse within the site.
- Ensure use of recycled materials where possible.
- Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples.

Data Issues:

- none

APPENDIX 3: APPRAISAL MATRICES

SCHEME PR117: COLDHARBOUR LANE-WAVENEY ROAD FOOTPATH

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P+	Walking has less negative impact on biodiversity than motorised modes of transport dependent on fossil fuels. The scheme is small in scale so impacts on biodiversity likely to be minimal. If significant vegetation needs to be removed, then good practice should be followed to avoid harm to biodiversity.	Ensure construction avoids/reduces habitat loss and disturbance of wildlife through following best practice.
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and	✓	Walking has proven physical and mental health benefits. It is also more accessible to more people in society at little/no cost relative to other means of travel.	Ensure the path is as safe and user friendly as possible to all in the community

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	reduce health inequalities			
	To reduce crime and create safe environments	P+	The scheme could encourage more people to walk if it makes it safer/feel safer. More people being active in public places can lead to safer environments and a feeling of personal security.	Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples.
Water and soil	To improve the sustainable use of resources	O	Small scale scheme - resource use likely to be minimal	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Depends on implementation.	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	U	Depends on implementation. Loss of permeable surfaces should be avoided or mitigated, including by use of SUDS. Any modal shift will reduce surface runoff pollution which will benefit the nearby River Lea.	Consult the section in the HIAMP about SUDS
	To reduce contamination, and safeguard soil quality and quantity	U	Depends on implementation. Impact likely to be minimal due to scheme scale. Potential removal of soil in construction will reduce quantity. Disturbance of soils can affect structure and quality. Importing	Consult the section in the HIAMP about SUDS. Where possible efforts should be made to avoid/reduce disturbance of soils and habitats, reduce removal of soil and

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			material could affect composition and quality of soil.	encourage soil reuse within the site.
Air	To protect and enhance air quality and minimise noise pollution	✓	walking has no negative impact on air quality or noise pollution	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+	Improving walking routes helps to address this objective - benefits will depend on how significant the route quality is overall	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Walking has no negative impact on the causes of climate change. However, extreme weather events becoming more common means any new infrastructure should not increase runoff. Drainage should be in place to prevent flooding/ponding on the footpath.	Consider SUDS and consult the section in the HIAMP about SUDS.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Walking does not emit greenhouse gases.	
	To ensure the sustainable supply and use of energy	O		

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Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P+	<p>More people walking in the public domain will enhance the townscape of Hertfordshire's towns. Prioritising routes for walking and cycling over cars could improve environmental quality (air quality, noise disturbance etc).</p> <p>Construction of new infrastructure could result in damage to green spaces or features.</p>	<p>New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts</p> <p>Damage to green spaces and features should be avoided where possible.</p>
	To conserve and enhance the historic environment, heritage assets and their settings	P+	Increased levels of walking instead of driving vehicles will protect the surrounding environment.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Walking is open to everyone and has no/low cost. Improving pedestrian routes will improve access to services and employment in Harpenden.	
	To empower all sections of the community to participate in decision making and local action	P+	Better walking routes can help more people access services, jobs and education/training more easily, which boosts access and empowers communities.	

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Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	Better walking routes to Harpenden town centre will make local employment opportunities accessible to more people including residents of new developments. Improving sustainable transport access may also encourage more people to use local services and shops.	New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts, to ensure it is useable by all in the community.
	To spread economic growth more evenly to benefit deprived areas	P+	Better walking routes can help more people access services, jobs and education/training more easily	
	To maintain the vitality and viability of existing centres	P+	Better walking routes to Harpenden town centre may encourage more people including new residents to use local services and shops in the town centre.	

Significant Positive Effects: This scheme is small in scale so benefits will depend on overall route improvement. However, as part of a wider series of improvements it could help increase opportunities for active commuting, education trips, leisure and healthy lifestyle, improving the physical and mental health of the population and reducing health inequalities. It will also help protect and enhance air quality and minimise noise pollution. The route may help improve walking access to Harpenden town centre and the jobs and services there and other local services.

Significant Negative Effects: none

Temporary or permanent: walking and cycling levels can vary and be seasonal.

Timescale: short to medium term

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Likelihood of effects or impacts identified occurring: Likely

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- If lighting is installed ensure it has as little impact on biodiversity as possible. Ensure construction avoids/reduces habitat loss and wildlife disturbance through following best practice.
- Ensure the design of the route is as user friendly as possible and does not deter usage by any equalities groups
- New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts
- Damage to green spaces/features should be avoided where possible.
- Consider SUDS and consult the section in the HIAMP about SUDS.
- Avoid/reduce disturbance of soils and habitats, reduce removal of soil and encourage soil reuse within the site.
- Ensure use of recycled materials where possible.
- Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples.

Data Issues:

- None

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SCHEME SM34: WATFORD CROSS-TOWN CONNECTIVITY STUDY

Note: The scheme is included in the SW Herts GTP as a study only - however for the purposes of this assessment it is assumed a new bus, pedestrian and cycling route is opened on the disused railway line, connecting with existing networks at either end. An EIA is likely to be required for the project.

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	The scheme will be within the existing highway area and will not affect any habitat or protected biodiversity areas.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	P+	<p>If it delivers a new active travel route, the scheme will provide a new active commuting and leisure route and therefore encourage more walking and cycling trips.</p> <p>Users of public transport also get more physical activity by walking to the bus stop/station. If the scheme encourages mode shift from cars it will support more active lifestyles.</p>	<p>Look for opportunities to improve and create new active travel routes as part of the scheme.</p> <p>Ensure any new hubs/stations have cycle parking.</p>

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	To reduce crime and create safe environments	U	Part of the route could be perceived as isolated, therefore may have perception of safety/fear of crime issues for users waiting at stops or walking/cycling. General issues around crime on public transport would apply.	Suitable lighting of the route is needed. CCTV should be considered at stops/stations. Support policies and campaigns with public transport operators and the police to tackle crime on public transport.
Water and soil	To improve the sustainable use of resources	U	Encouraging public transport, walking and cycling would potentially reduce car use - therefore fossil fuel use. Details of use of materials unknown at time of assessment.	Consideration should be given to opportunities and contract requirements for sustainable use of resources including use of recycled/reused materials.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of materials/ sustainable construction practices to be applied unknown at time of assessment	Consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials, including in contracts for works.
	To ensure the efficient use of water, and safeguard water resources	P-	Depends on the scope and construction practices of the scheme - unknown at time of assessment. Surface water run-off and contamination may be an issue. The route runs near and across the River Colne.	Consideration to SUDS and measures to prevent contamination of ground water and water courses should be put in place where possible.

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			The new route may create new impermeable surfaces and vehicles in operation may release pollutants, so sustainable drainage or other mitigation will be required.	
	To reduce contamination, and safeguard soil quality and quantity	P-	It is likely soil will need to be removed or redistributed on site and some soil capping as a result of new infrastructure.	Consideration should be given to opportunities and requirements for the reduction of contamination and safeguarding of soil quality and quantity. Reuse of soil on site where possible.
Air	To protect and enhance air quality and minimise noise pollution	P+/P-	As a new bus, cycle and walking route a currently disused railway line, the route may create a new source of noise pollution and some degree of additional air pollution. However, the project seeks to create a sustainable alternative to existing and new car trips through congested road networks in Watford - as such it may contribute to reducing air pollution overall.	It is expected a full Environmental Impact Assessment will be required for this project which would identify any mitigation requirements in terms of noise attenuation. Consideration should be given to low emission or electric vehicles operating on the route.
	To improve the choice of sustainable transport modes, encourage their use, and reduce	✓	The scheme would create a new sustainable travel route linking new developments, therefore will contribute to modal shift objectives.	

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	the need to travel by car			
Climatic factors	To adapt to the impacts of climate change such as flooding	P-	Part of the route runs through Flood Zone 2 and 3 areas near the River Colne, which may be subject to greater flooding as a result of heavier rainfall and more frequent/severe extreme weather events.	An EIA should be undertaken for the project to identify potential impacts and measures to reduce and mitigate the impact on flooding
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+	As a new bus, cycle and walking route a currently disused railway line, the route may create a new source of greenhouse gas emissions. However, the project seeks to create a sustainable alternative to existing and new car trips - as such it may contribute to reducing GHG emissions via modal shift.	Consideration should be given to low emission or electric vehicles operating on the route.
	To ensure the sustainable supply and use of energy	P-	There would be energy used in the construction of the route, as well as in operation and maintenance of it - including any route lighting, stations/stops with power and vehicle operations.	Use LED lighting Consider solar power supply and solar lighting if appropriate.
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	The new infrastructure could impact on the character of the landscape and greenspaces. The new route may require the removal of vegetation, trees and potentially reprofiling of land which could have visual impacts.	This should be further explored through the EIA with suitable landscape/visual impact assessment and associated mitigation implemented.

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	To conserve and enhance the historic environment, heritage assets and their settings	O	<p>There are no scheduled ancient monuments along the route and no listed buildings along the disused rail line.</p> <p>Depending on its nature and routing through the town, the scheme may affect the setting of listed buildings. However, impact is likely limited if contained within the current highway corridors.</p>	The EIA should confirm if there are any significant impacts on heritage assets or the historic environment.
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	The scheme would provide a new bus and cycle route serving and linking significant employment areas including the town centre and connecting Watford Junction. It would also serve the hospital, therefore improving access to jobs and services for those without access to cars.	
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental	✓	The scheme would provide a new bus and cycle route serving and linking significant employment areas including the town centre and connecting Watford Junction. It therefore supports new jobs,	

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	constraints) and create a vibrant economy		improves access to work, and supports the town centre economy.	
	To spread economic growth more evenly to benefit deprived areas	P+	A new bus/cycleway could provide opportunities for those without access to a car to access employment opportunities at the business parks, hospital, and town centre.	
	To maintain the vitality and viability of existing centres	✓	The scheme would provide a new bus and cycle route serving and linking significant employment and growth areas to the town centre and Watford Junction. It therefore supports the town centre economy.	

Significant Positive Effects: The main significant positive effects are through providing greater choice of sustainable transport modes along the corridor, serving key growth areas and employment sites, and linking them to the town centre and Watford Junction. The greater connectivity is likely to have economic benefits for the town and supports sustainable development. It will contribute to modal shift objectives and may help tackle congestion and air quality issues.

Significant Negative Effects: The EIA will establish any significant negative effects. The most likely potential negative impacts identified at this stage are around biodiversity, water quality and flooding.

Timescale: 5-15 years

Temporary or Permanent: some effects would be permanent as they relate to the new permanent infrastructure itself, others temporary (eg. during construction)

Likelihood of effects or impacts identified occurring: This will depend on scheme design and mitigation identified as part of the Environmental Impact Assessment

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Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- That a full Environmental Impact Assessment is undertaken to confirm likely impacts, how impacts can be avoided and needed mitigation
- Part of the route is subject to flooding due to its vicinity to the River Colne - flooding and drainage would require careful consideration at design stage
- The project may result in the loss of habitat and without suitable precautions and mitigation could also harm protected species - further investigation and ecological advice needed to ensure the project avoids as far as possible and mitigates ecological impacts
- Lighting is likely to be needed due to safety/perception of safety; however it should be low energy and minimise any local light pollution and impacts on habitat areas/wildlife
- If possible, the vehicles should be ULEV to minimise noise and air pollution

Data Issues:

None

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SCHEME SM35: EBURY WAY IMPROVEMENTS

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	P-	The route runs alongside Croxley Common Moor SSSI. Improved walk and cycle access may encourage greater use of the site for recreation. If lighting is introduced on the Ebury Way, this could adversely affect species such as moths and bats. However more active and sustainable travel has less negative impact on biodiversity than modes of transport dependent on fossil fuels. Some vegetation removal may be required which may impact species and habitat connectivity.	Impact on habitats and species will depend on the scope of the scheme. If lighting is proposed, the biodiversity impact of lighting including on the SSSI must be considered and mitigated through design. The project should be designed and constructed to avoid and mitigate adverse impacts on biodiversity, and seek to enhance the wildlife corridor.

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Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	✓	<p>Cycling and walking have proven physical and mental health benefits. It is also more accessible to more people in society at little cost relative to other means of travel.</p> <p>Access points to the Ebury Way could be improved, which would make it accessible to more people.</p> <p>Introducing a hard surface will open the route up to more people as a commute, utility and recreational route, and make it more usable year round.</p>	<p>Promote use of the route including through good signage and wayfinding.</p> <p>Ensure access improvements are part of the project scope and follow inclusive design principles.</p>
	To reduce crime and create safe environments	P+	<p>More people walking and cycling in public places leads to safer environments and a feeling of personal security. The scheme may help improve security and crime perceptions through increasing usage. If lighting were installed it could also help reduce crime and improve perception of personal security.</p>	<p>Cycle parking at destinations and stopping points to allow bicycles to be securely locked.</p> <p>The potential environmental and social benefits and disbenefits of introducing lighting on the route need to be explored further through the scheme development.</p>
Water and soil	To improve the sustainable use of resources	U	<p>Depends on design, materials and implementation.</p> <p>Cycling surfaces are more sustainable in terms of environmental impact than road</p>	<p>Use recycled materials as much as possible.</p>

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			surfaces for vehicles. Greater use of cycling infrastructure replacing car journeys could reduce road maintenance need.	
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	<p>Depends on design, materials and implementation.</p> <p>Cycleways use fewer resources than road surfaces. Recycled materials should be used during construction work.</p>	Ensure use of recycled materials where possible.
	To ensure the efficient use of water, and safeguard water resources	O	<p>If sealed, impermeable surface is introduced, this could create additional runoff.</p> <p>As a walk/cycle route only, pollution from chemicals, lubricants and oils being released from vehicles will not be significant. Potential benefits from modal shift.</p> <p>Use of SUDS approaches can reduce impacts.</p>	Consult the section in the HIAMP about SUDS
	To reduce contamination, and safeguard soil quality and quantity	U	<p>Depends on implementation.</p> <p>Potential removal of soil in construction will reduce quantity. Disturbance of soils can affect structure and quality. Importing material could affect composition and quality of soil.</p>	<p>Consult the section in the HIAMP about SUDS.</p> <p>Where possible efforts should be made to reduce removal of soil and encourage soil reuse within the site, and avoid/reduce disturbance of soils and habitats.</p>

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			Any impact on soil in vicinity of the SSSI should be avoided.	
Air	To protect and enhance air quality and minimise noise pollution	✓	Cycling and walking has no negative impact on air quality or noise pollution	
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	✓	Improving the existing pedestrian/cycle route addresses this objective. Introducing a hard surface will open the route up to more people as a commute, utility and recreational route, and make it more usable year round. Lighting on the route likewise may encourage extended use into evenings and winter.	
Climatic factors	To adapt to the impacts of climate change such as flooding	P+	Cycling and walking has no negative impact on the causes of climate change. However, extreme weather events becoming more common means any new infrastructure should not increase runoff.	Consider SUDS and consult the section in the HIAMP about SUDS.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	✓	Cycling and walking does not emit greenhouse gases and a new cycle route may encourage a modal shift away from forms of transport dependent on fossil fuels	

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	To ensure the sustainable supply and use of energy	O		
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	P-	<p>Prioritising routes for walking and cycling over cars could improve landscape and environmental quality (air quality, noise disturbance etc) including through modal shift.</p> <p>New hard surfacing, lighting and street furniture could have an 'urbanising' effect on the route character.</p> <p>Construction may impact green spaces or features.</p>	<p>The scheme design should aim to respond to the context of the scheme including through materials and features that fit the landscape and rural context.</p> <p>Any new planting should be of native species present in the local environment.</p>
	To conserve and enhance the historic environment, heritage assets and their settings	O	There are a few scheduled ancient monuments within 500m of the route, but these are unlikely to be affected.	
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	✓	Walking and cycling is open to everyone and the cost of cycling is more affordable for most people than other modes of transport. Creating new pedestrian and cycle routes will improve access to services and employment at West Watford, Croxley and Tolpits Lane business parks.	Bikeability or other cycle training should be promoted for those that cannot cycle.

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			The Watford Cycle Hub, which offers cycle training and refurbishes bikes for resale at affordable cost, is located in Holywell just off the Ebury Way.	
	To empower all sections of the community to participate in decision making and local action	P+	Improved cycle routes may allow potential employees on low incomes to better access employment opportunities such as at West Watford business park and Tolpits Lane. Employment helps empower communities.	
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental constraints) and create a vibrant economy	P+	The scheme would provide better cycling and walking access to business areas around Tolpits Lane and West Watford. This could make employment opportunities accessible to more people locally. Improving the sustainable transport access will also help reduce car dependency for commuters to these employment areas, helping reduce congestion and supporting the local economy.	Any new business travel plans for larger businesses would be mindful to include lockers and bike storage, showers and changing facilities etc to encourage their workforce to jog or cycle to work.
	To spread economic growth more evenly to benefit deprived areas	P+	The new cycle and walking routes may allow potential employees on low incomes to better access employment opportunities such as in Maylands.	

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	To maintain the vitality and viability of existing centres	P+	The Ebury Way provides a route to Rickmansworth Town Centre, so improvement could encourage more use of the town, replace some car trips and support vitality.	
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Significant Positive Effects:

This scheme will help increase opportunities for active commuting, leisure and healthy lifestyle, improving the physical and mental health of the population and reducing health inequalities. It will also help protect and enhance air quality and minimise noise pollution. The route improves travel choices including to key employment areas in West Watford, Croxley and Tolpits Lane. As a more affordable option, it may enable more people to access work in this area.

Significant Negative Effects:

Potential negative impacts on biodiversity (Croxley Common Moor SSSI) and on rural character/landscape. Such impacts can be avoided and mitigated through suitable design and construction methods. No significant residual negative effects would be expected.

Timescale:

0-5 years

Temporary/Permanent:

some temporary effects from construction. Benefits likely to be reduced in winter and outside daylight hours, as usage of the route may reduce.

Likelihood of effects or impacts identified occurring: Medium likelihood

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Any impacts on the SSSI should be avoided and mitigated. Impacts on habitats and species should be avoided and mitigated and opportunities to enhance the wildlife corridor through the scheme should be explored.
- If lighting is installed ensure it has as little impact on biodiversity as possible
- The scheme design should aim to respond to the context of the scheme including through materials and features that fit the landscape and rural context, and any new planting to be locally appropriate native species

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- Damage to green spaces should be avoided where possible.
- Ensure the design of the route is as user friendly as possible and does not deter usage by any equalities groups
- New infrastructure should be designed using established standards such as Manual for Streets and Roads in Herts
- Promotion of walking and cycling to employees in West Watford/Croxley business park and Tolpits Lane could be beneficial, including via employer Travel Plans. Any new business travel plans for larger businesses would be mindful to include lockers and bike storage, showers and changing facilities etc to encourage their workforce to jog or cycle to work.
- Promotion of bikeability training can encourage more people to cycle and feel safer and more confident.
- Consider SUDS and consult the section in the HIAMP about SUDS.
- Avoid/reduce disturbance of soils and habitats, reduce removal of soil and encourage soil reuse within the site.
- Ensure use of recycled materials where possible.
- Consider all designing out crime recommendations - see building futures guidance, Manual for Streets and Roads in Herts for examples.

Data Issues: none

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SCHEME SM36: BUSHEY ARCHES NETWORK ALL MODES MOVEMENT STUDY

Note: The scheme is included in the SW Herts GTP as a study only and the options are not known at this stage - however for the purposes of this assessment it is assumed that changes will be made to the local highway network to encourage more traffic onto Thomas Sawyer Way and improve pedestrian and cycling routes including better connections around Dalton Way, Thomas Sawyer Way and Lower High Street.

SEA Topic	SEA Objective	Assessment of Effect ✓ Positive impact P+ Potentially positive impact O No relationship/link U Uncertain/ Depends on implementation P- Potentially negative impact X Negative impact	Justification: <ul style="list-style-type: none"> • Likelihood of effect occurring • Permanence of effect • Geographic scale of effect • Cumulative effects • Current env. Social & economic trends of affected area • Likelihood of affecting particularly sensitive locations 	Recommendations (including mitigating negative effects and improving positive effects)
Biodiversity, fauna and flora	To protect and enhance biodiversity	O	Changes would be within the existing highway network therefore no direct impacts on habitat areas or biodiversity.	
Population and human health	To maximise the opportunities for leisure and a healthy lifestyle for all, and to improve the physical and mental health of the population, and reduce health inequalities	U/P-	Impacts on health will depend on what type of journeys and movement the network changes encourage. If it supports more car travel then potentially could attract new trips or discourage shifting to active modes. However, if the network changes improve walking and cycling routes it might encourage new active trips and modal shift.	The scheme should seek to improve walking and cycling network connectivity and quality

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	To reduce crime and create safe environments	U/P+	Providing safer and more direct and convenient walking and cycling routes should be part of the scheme scope. However, impacts on crime, perceptions of safety and safety are uncertain at this stage.	The scheme should seek to achieve safer and more direct walking and cycling routes. Consideration should be given to how the design and lighting of the scheme may help deter crime.
Water and soil	To improve the sustainable use of resources	O	The scheme is on existing networks therefore resource use is likely to be limited.	Consideration should be given to opportunities and requirements for the sustainable use of resources and included where possible when any contracts for works are drafted.
	To move away from waste disposal to minimisation, reuse, recycling and recovery	U	Details of use of materials/sustainable construction practices to be applied are unknown at the time of assessment.	Where relevant, consideration should be given to opportunities and requirements to minimise construction waste and recycle construction materials and included where possible when any contracts for work are drafted.
	To ensure the efficient use of water, and safeguard water resources	U/P-	Details unknown at time of assessment. Water run-off and contamination during any construction may be an issue. The scheme site is in close proximity to the River Colne.	Where relevant consideration should be given to opportunities and requirements for SUDS and to guard against

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				contamination of ground water and/or water courses. Consult the section in the HIAMP about SUDS
	To reduce contamination, and safeguard soil quality and quantity	O	The extent of works is likely to be within the existing highway corridor, therefore no impacts on soil are likely.	Consult the section in the HIAMP about SUDS
Air	To protect and enhance air quality and minimise noise pollution	P+/P-	The changes may encourage more car trips on the network generally and more car trips on this section of network. However, the scheme may reduce traffic around Bushey Arches which is an AQMA, by providing alternative routes.	The air quality and noise impacts of the scheme need to be better understood, including through appropriate use of traffic modelling.
	To improve the choice of sustainable transport modes, encourage their use, and reduce the need to travel by car	P+/P-	Impacts will depend on what type of journeys and movement the network changes encourage and enable. If the scheme improves walking, cycling and bus priority routes, then it should improve choice of sustainable transport modes. However, if it primarily opens additional route options for car travel it may have a negative impact.	The scheme should seek to improve walking and cycling network connectivity and quality Impacts on vehicle routing and traffic flows need to be better understood through transport modelling as part of the project development process.

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Climatic factors	To adapt to the impacts of climate change such as flooding	U	Details of the project and extent of any new works are unknown at the time of assessment.	Consideration should be given to opportunities and requirements to reduce surface water runoff, and to increase resilience to extreme temperature and weather events.
	To reduce greenhouse gases including carbon dioxide, emitted by vehicular transport	P+/P-	Impacts will depend on what type of journeys and movement the network changes encourage and enable. If the scheme opens additional route options for car travel it may have a negative impact on transport emissions overall. However, if it improves walking and cycling network connectivity and quality then it may also encourage some modal shift.	The scheme should seek to improve walking and cycling network connectivity and quality Impacts on vehicle routing and traffic flows need to be better understood through transport modelling as part of the project development process.
	To ensure the sustainable supply and use of energy	O	The project is not expected to affect supply and use of energy.	
Historic Environment and Landscape	To protect and enhance the character of landscape, townscape and green spaces	O	The extent of works is likely to be within the existing highway corridor, therefore no impacts on landscape, townscape or green spaces are expected.	
	To conserve and enhance the historic environment,	O	The extent of works is likely to be within the existing highway corridor, therefore no impacts on the historic environment or heritage assets expected.	

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	heritage assets and their settings			
Social inclusiveness	To tackle the causes of poverty and social exclusion by improving access to services and community facilities for all	P+	The scheme may improve access to the hospital and new development around the hospital by modes other than the car, therefore potentially improving access to services. The hospital is also a significant employer.	<p>The scheme should seek to improve walking and cycling network connectivity and quality including routes connecting communities to the hospital.</p> <p>Impacts on bus routing and service reliability need to be understood and designed to avoid adverse impact. Impacts on other vehicle routing and traffic flows need to be better understood through transport modelling as part of the project development process.</p>
	To empower all sections of the community to participate in decision making and local action	O		
Economic development	To maintain employment, improve economic competitiveness (consistent with environmental	P+	Improving movement and route options for different modes could improve accessibility to the hospital and other employment areas in the Lower High Street area as well as the town centre. The scheme may help	The scheme should seek to improve walking and cycling network connectivity and quality.

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	constraints) and create a vibrant economy		to relieve traffic congestion around Bushey Arches. The impact of the scheme will depend on the extent to which it supports sustainable modes relative to car trips.	Impacts on bus routing and service reliability need to be understood and designed to avoid adverse impact as part of the project development.
	To spread economic growth more evenly to benefit deprived areas	U	The project is not likely to spread economic growth more evenly due to the limited extent of the project. However, it may improve accessibility to the hospital and other employment areas generally.	
	To maintain the vitality and viability of existing centres	U	The scale and scope of impacts on traffic, travel patterns and modal choice are uncertain at this stage, so the impact on the town centre is not known.	<p>The scheme should seek to improve walking and cycling network connectivity and quality including linking to existing routes towards the town.</p> <p>Impacts on bus routing and service reliability need to be understood and designed to avoid adverse impact.</p> <p>Impacts on other vehicle routing and traffic flows need to be better understood through transport modelling as part of the project development process.</p>

APPENDIX 3: APPRAISAL MATRICES

Significant Positive Effects: The scheme could help improve access, route choice and sustainable mode choice including to the hospital, Lower High Street retail areas and the town centre, which would support social inclusion and economic goals. However, there is uncertainty around nature and scale of potential positive impacts at this stage.

Significant Negative Effects: Further scheme investigation and development is required to ensure any proposals do not have adverse impacts on transport objectives such as encouraging and enabling use of sustainable modes.

Timescale: 0-5 years

Temporary/Permanent: permanent

Likelihood of effects or impacts identified occurring: uncertain at this stage

Recommendation for mitigation for adverse effects and/or enhancement or positive effects:

- Further scheme investigation and development is required to understand both potential positive and potential adverse effects, including by understanding likely effect on trips, vehicle routing, traffic flows, bus services and walking and cycling network connectivity and quality.
- Consideration should be given to:
 - Design and lighting of the scheme to reduce/deter crime and fear of crime
 - Reducing surface water runoff, SUDS and contamination of ground water and water courses
 - Air quality and noise pollution effects of the scheme (construction and ongoing)
 - Minimising construction waste and use of recycled materials

Data Issues: None