Potential Measures Appraisal Report

Greater Dublin Area
Draft Transport Strategy 2011-2030
2030 vision

Údarás Náisiúnta Iompair
National Transport Authority

Appendix C

Detailed results of Stage 1 measures appraisal

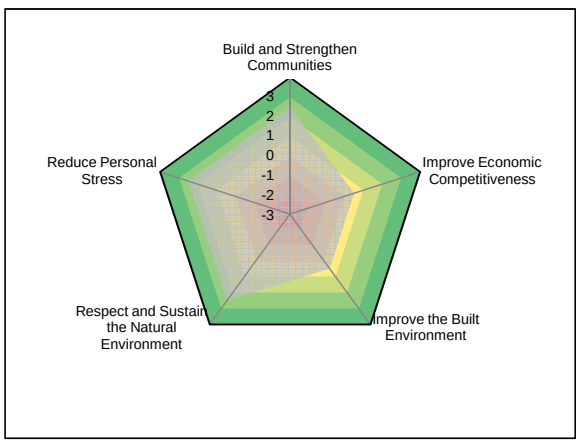
Measure Name:	Enhance bus priority and segregation
Measure Category:	Bus Strategy
Potential Delivery Agents:	Operators DTO Local Authorities
How would we measure a successful transport outcome?	More reliable and efficient services Improvement in bus punctuality Shorter bus journey times Increase in patronage on QBCs
Cost band	Very low cost

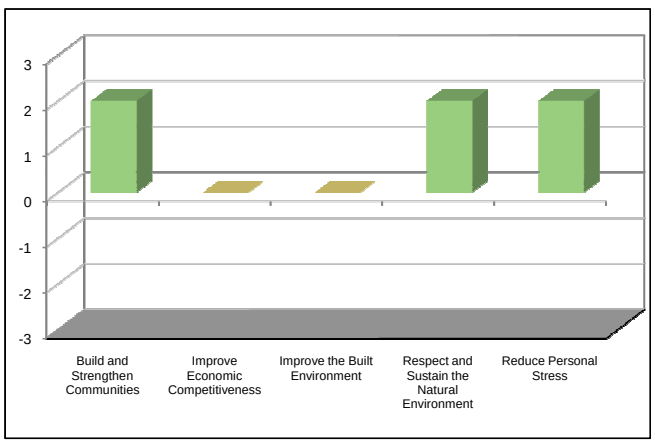
Stage 1a	**Appraisal**	**Notes**
Political		Needs guidance to highway authorities
Technological		
Legal		

Measure Description & Supporting Information:

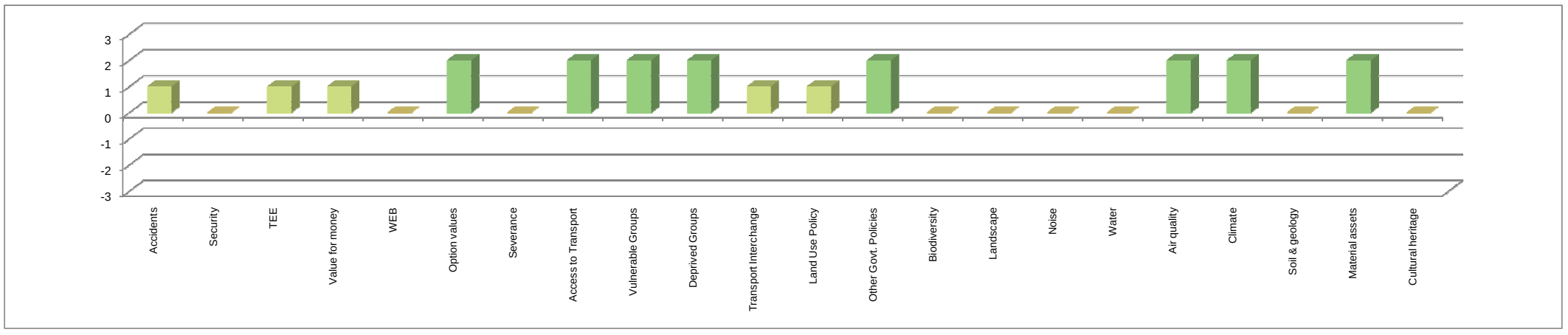
Enhanced bus priority and guided bus infrastructure on existing routes, as well as introduction of further QBCs along other routes.
Bus priority techniques include the more widespread introduction of selective vehicle detection in UTC etc. and bus gates where feasible.
Enhanced segregation - could lead to a reallocation of road space from car to public transport which could lead to an increase in congestion for car users. Assume potential increase in journey times for car users and substantial levels of priority implemented.
Can include the conversion of the main QBC routes to Bus Rapid Transit corridors with greater physical segregation and guidance.
Assume cyclists can also use QBC bus lanes (but not guided busways) so would also benefit from an improved journey.
Assume only applied on corridors where benefits outweigh the costs.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Small benefit for large numbers, as substantial bus priority is already available. This measure would add to what is already there on those routes and introduce a small number of others.
Improve Economic Competitiveness	0	Will reduce journey times for public transport. Assume small benefit for small number of businesses. Offset against this is the potential for increased car journey times and detrimental impact on freight from some loss of roadspace.
Improve the Built Environment	0	Well designed facilities can enhance the built environment however also possibility of street clutter (new signals etc.) therefore net neutral.
Respect and Sustain the Natural Environment	2	Measure will encourage a shift to more sustainable modes. Assume small benefit for for large number of people across GDA. Potential reduction in bus emissions through fewer delays and more efficient bus operation.
Reduce Personal Stress	2	Improve journey time reliability for personal travel. Reduced overall journey times for personal travel. Assuming a significant benefit for moderate number of people across much of GDA.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Increased segregation of buses should reduce accidents associated with public transport. Cyclists will also benefit from increased segregation. Small positive benefit.
	Security	0	Minimal impact on security.
Economy	TEE	1	Improved journey times and reliability result in small reduction in generalised cost of travel to medium number of bus users; however, the reduction of road space for other users and changes to signal timings will result in longer journey times for car users. Therefore overall impact is a small positive.
	Value for money	1	
	WEB	0	Minimal wider economic benefits are expected from this measure. Business/commuter travel by bus is improved but access for goods and business trip by road is likely to be reduced.
Accessibility	Option values	2	Bus service alternatives, accessible to many non-users, will be enhanced by providing improved journey times and reliability
	Severance	0	Mode shift to bus may reduce severance, but benefits could be lost from construction of segregated bus routes.
	Access to Transport	2	Improves journey times by public transport - small benefit to medium numbers.
Social Inclusion	Vulnerable Groups	2	Public transport improvements are likely to benefit vulnerable groups such as those on low income and non car owners.Significant number of vulnerable users likely to experience a modest benefit.
	Deprived Groups	2	Improved reliability and journey times on public transport journeys beneficial for deprived groups
Integration	Transport Interchange	1	Improved reliability of services improves interchange potential. Small benefit to small number (only relevant to those interchanging).
	Land Use Policy	1	Invest in long term environmental sustainability Minimal support for addressing congestion in major urban areas
	Other Govt. Policies	2	Provides minor support to the other key government policies: social inclusion improved education opportunities encourage innovation promote tourism
Environment	Biodiversity	0	Enhancing bus priority and segregation would facilitate modal shift, potentially resulting in a moderate positive impact on air quality, a moderate reduction in greenhouse gas emissions and a moderate reduction of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	2	
	Climate	2	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	0	



Measure Name:	Optimise bus network performance
Measure Category:	Bus Strategy
Potential Delivery Agents:	Operators DTO Local Authorities
How would we measure a successful transport outcome?	Improved city centre bus access Improvement in bus punctuality Shorter bus journey times Increase in bus patronage 'Clock face' bus departure times
Cost band	Very low cost

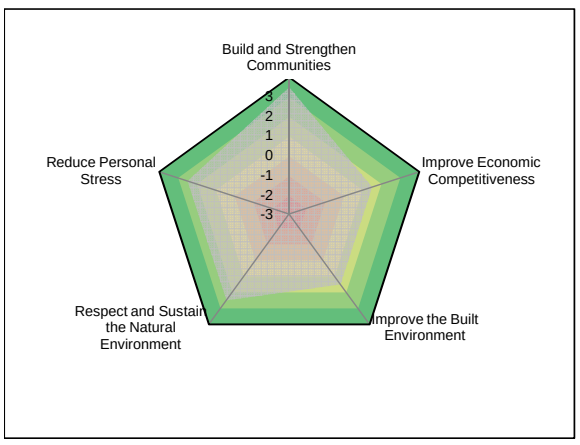
Stage 1a	Appraisal	Notes
Political		
Technological		
Legal		

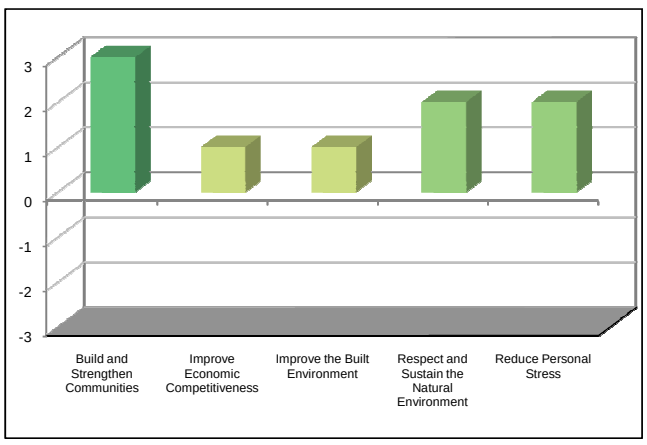
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Minimal impact on accidents expected.
	Security	1	Potentially a small positive impact on security, with reduced uncertainty over wait times and improvements to the quality of services.
Economy	TEE	2	Reduce uncertainty in wait time would reduce the generalised cost of travel, plus potential reduction in journey times. More efficient bus provision will result in small benefit for medium number of people, with no negative impacts for other road users.
	Value for money	2	
	WEB	0	Minimal wider economic benefits are expected with a small improvement for business/commuter travel by bus but no impact on freight.
Accessibility	Option values	2	Improvements in bus services throughout GDA. Small accessibility benefit for large volumes of people.
	Severance	1	Small reduction in severance as improved city centre circulation could include reduction in severance problems.
	Access to Transport	2	Improvement to the public transport network. Large number of people likely to experience moderate improvement in access to bus transport.
Social Inclusion	Vulnerable Groups	2	Significant number of vulnerable users are likely to experience a modest benefit. Public transport improvements are likely to bring benefits to vulnerable groups such as those on low income and non car owners.
	Deprived Groups	2	Improved reliability and journey times on public transport journeys for deprived groups
Integration	Transport Interchange	2	Improves the bus network; restructuring routes and frequencies should allow more interchange opportunities.
	Land Use Policy	1	Invest in long term environmental sustainability. Minimal support for addressing congestion in major urban areas.
	Other Govt. Policies	2	Provides minor support to the other key government policies: social inclusion improved education opportunities encourage innovation promote tourism
Environment	Biodiversity	0	Optimising bus network performance would facilitate modal shift, potentially resulting in a minor positive impact on air quality, a minor reduction in greenhouse gas emissions and a minor reduction of the fossil fuel demand. The rationalisation of bus stop infrastructure would potentially result in a minor positive impact on the landscape.
	Landscape	1	
	Noise	0	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	

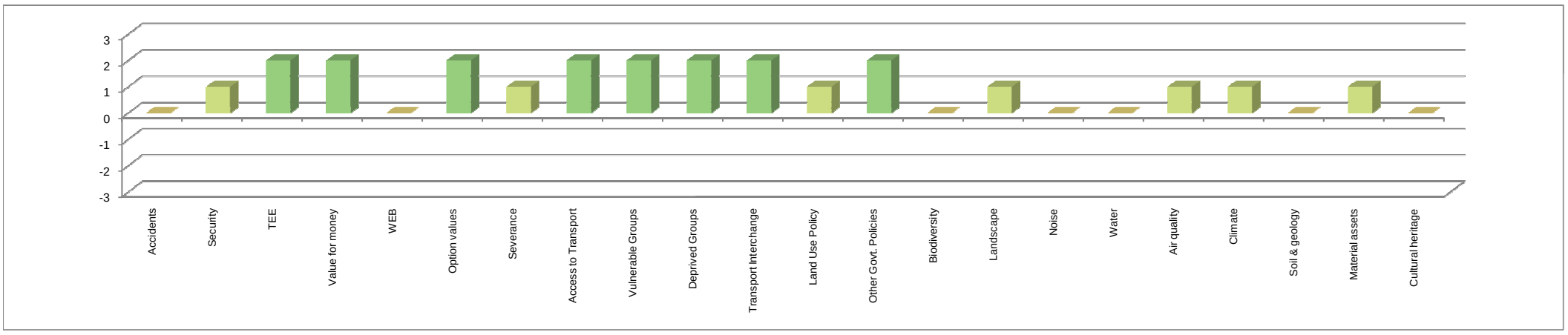
Measure Description & Supporting Information:

Restructure routes and frequencies across the bus network, including better separation of direct and indirect services on QBCs and improved city centre circulation, to meet changing demands for access to different parts of the City.
Will improve reliability of bus services and enhance quality of direct service along key bus corridors, as well as off-corridor access routes. Includes even-interval timetabled departures to reduce uncertainty in wait times.

Stage 1b	Score	Notes
Build and Strengthen Communities	3	Improved access to and within the city centre through reorganisation of routes. GDA wide benefits from reliability in timetable enhancements.
Improve Economic Competitiveness	1	Improved journey time reliability for public transport; small benefit for small number of businesses who use bus mode for travel. Assume small modal shift and therefore a small positive impact on car and freight movements.
Improve the Built Environment	1	Improved circulation and operational patterns could reduce the traffic impact on a number of city centre streets – including O'Connell Street which is currently heavily trafficked by buses. Helps to minimise visual intrusion of transport.
Respect and Sustain the Natural Environment	2	Measure will encourage mode shift to sustainable modes through more reliable services. Will directly improve air quality in areas with high numbers of pedestrians by improving city centre circulation of buses. Small benefit for large numbers of people.
Reduce Personal Stress	2	Improve journey time reliability for personal travel. Small benefit for large number of people.







Measure Name:	Improve carrying capacity of fleet
Measure Category:	Bus Strategy
Potential Delivery Agents:	Operators, DTO, Local Authorities
How would we measure a successful transport outcome?	Reduce crowding on targeted routes More passenger seats supplied Increase bus patronage on targeted routes ncreased passenger satisfaction
Cost band	Low cost

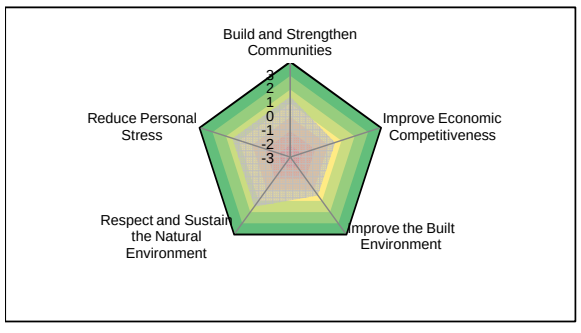
Stage 1a	**Appraisal**	**Notes**
Political		New buses need Ministerial approval
Technological		
Legal		

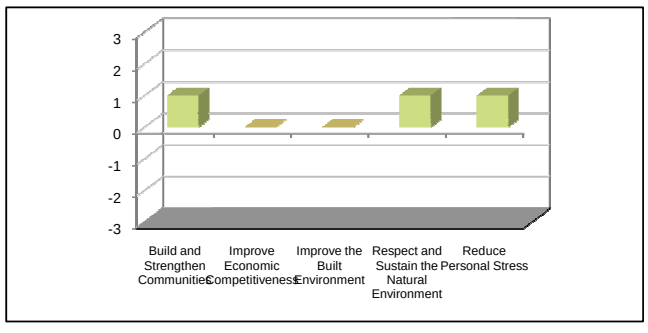
Measure Description & Supporting Information:

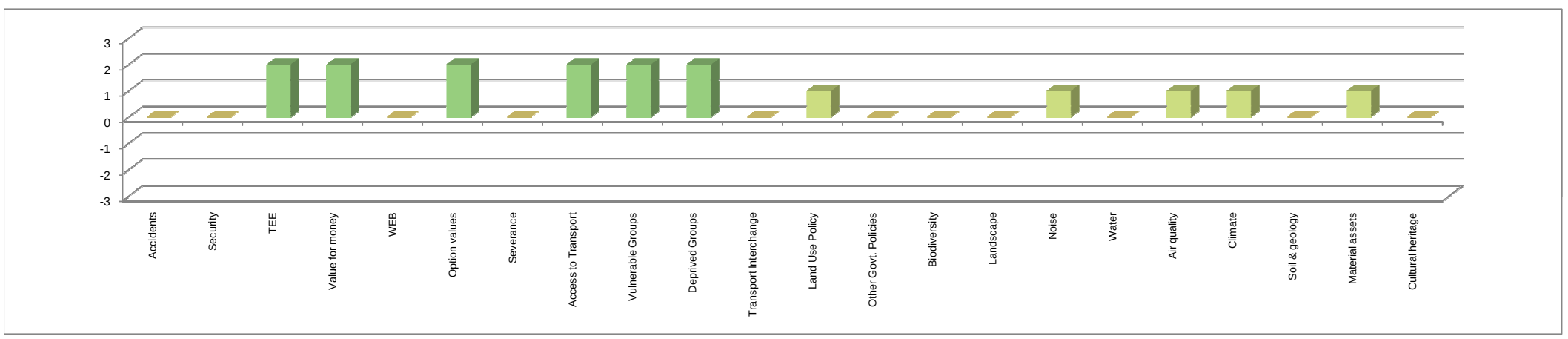
Additional higher capacity vehicles where required to meet demand. Assume that this measure is only applied to currently overcrowded routes. The additional capacity will bring forward suppressed demand which could be exploited by other measures to target car users.
Potential trade off in how vehicle capacity is provided - longer vehicles versus more standing and less seating on standard size vehicles - not considered directly here, however generally assumed new vehicles with higher standards orf comfort and acessiblity.
(Also may be some potential to replace single deckers with double deckers on Bus Eireann routes; limited options in Dublin Bus fleet).

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Improvement to existing services, small benefit for a small number of people
Improve Economic Competitiveness	0	Minimal impacts on economic competitiveness are expected.
Improve the Built Environment	0	May include enhanced quality of vehicles but impact assumed to be of limited scope.
Respect and Sustain the Natural Environment	1	Improve the efficiency of vehicles in terms of fuel per passenger. Small mode shift potential.
Reduce Personal Stress	1	Improvement in journey quality. Small benefit to small number of people

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Minimal impact on accidents.
	Security	0	Potentially new, larger vehicles could also be safer and more secure; however this is not the primary focus of the measure, and therefore a neutral score has been assumed.
Economy	TEE	2	Improves journey quality, reduces wait time and provides additional benefits from increased patronage along overcrowded corridors.
	Value for money	2	
	WEB	0	Minimal wider economic benefits are expected
Accessibility	Option values	2	Accessibility benefit from reduction in overcrowding for small proportion of population.
	Severance	0	Minimal impact on severance. There is not likely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Benefit from allowing additional bus trips on targeted corridors.
Social Inclusion	Vulnerable Groups	2	Enhancements to bus services can be particularly beneficial for vulnerable groups, and additional capacity and enhanced vehicle design and be beneficial to disabled persons. However measure only applies over targeted corridors.
	Deprived Groups	2	Enhancements to bus services can be particularly beneficial for disadvantaged groups who are non-car owners. However only applies over targeted corridors so medium benefits to small numbers.
Integration	Transport Interchange	0	Minimal impact on transport interchange.
	Land Use Policy	1	Provides minor support for : Addressing congestion in urban areas Investing in long term sustainability
	Other Govt. Policies	0	Minimal impact on other government policies
Environment	Biodiversity	0	Improving carrying capacity of fleet would facilitate modal shift, potentially resulting in a minor positive impact on air quality, a minor reduction in greenhouse gas emissions and a minor reduction of the fossil fuel demand. Improved efficiencies would potentially have a minor positive impact on noise.
	Landscape	0	
	Noise	1	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	







Measure Name:	Reducing bus delays from boarding and ticketing issues
Measure Category:	Bus Strategy
Potential Delivery Agents:	Operators DTO & Local Authorities
How would we measure a successful transport outcome?	Improved bus punctuality Shorter scheduled public transport journey times Increase in bus patronage Reduction in boarding times
Cost band	None

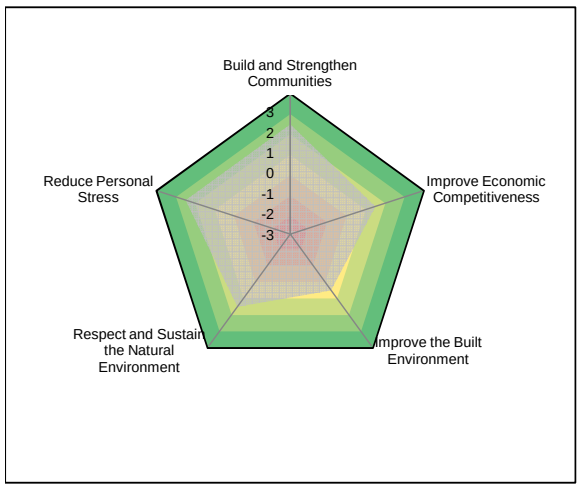
Measure Description & Supporting Information:

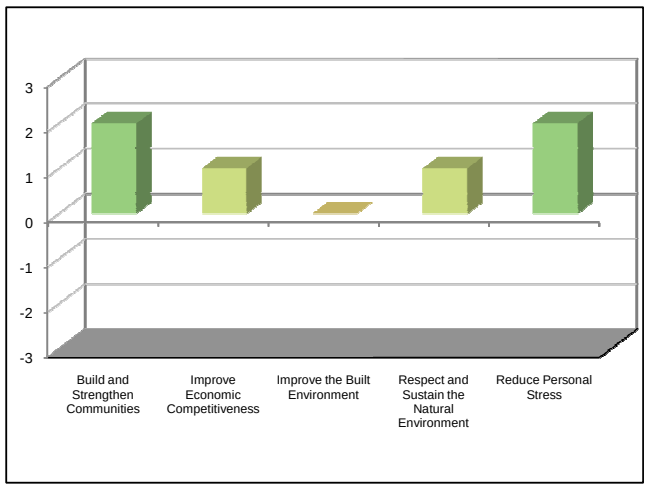
Non traffic measures including better enforcement to keep bus lanes and bus stops clear of traffic/parking; multi-door boarding and alighting; limited use of cash fares and easier-to-access vehicles. Faster journey times through reduction in boarding times releases the opportunities for efficiency (ablility to run the same service with fewer vehicles). Benefits are multiplied if considered with priority. Multi door boarding only feasible with cashless buses/stronger inspection and fraud detection regime otherwise impact on revenues.
Assumes better access to off-bus ticket buying opportunities for vulnerable and derpived groups.

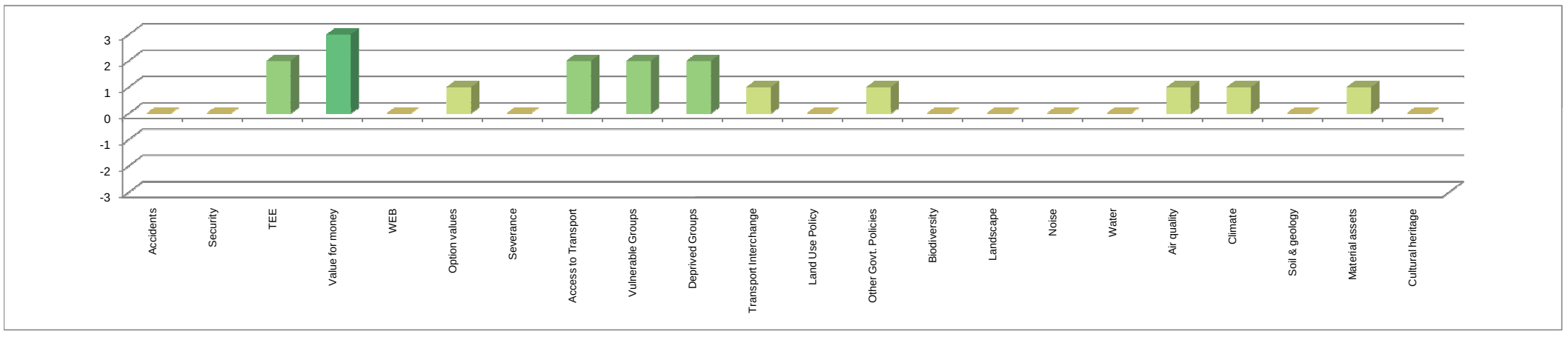
Stage 1a	Appraisal	Notes
Political		Potential Union opposition to changes in operating requirements for drivers.
Technological		
Legal		

Stage 1b	Score	Notes
Build and Strengthen Communities	2	Marginally improves journey times to most bus services. Small impact on large numbers.
Improve Economic Competitiveness	1	Improves journey time reliability and reduces overall journey times making bus more attractive for people on business journeys. Small benefit for medium number of people No impact on freight movements.
Improve the Built Environment	0	Some benefits may accrue from enhanced vehicle design, but are assumed to be small and form only a minor part of this objective.
Respect and Sustain the Natural Environment	1	Measure will encourage a small shift to more sustainable modes, also reduction in bus emissions from long dwell times at bus stops. Small benefit for large numbers of people.
Reduce Personal Stress	2	Improves journey time reliability and overall journey times for personal travel and improves ease of using public transport, although initiatives such as cashless buses may be confusing for vulnerable groups. Overall, a small benefit for a large number of people.

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	No impact on accidents expected.
	Security	0	Cashless buses reduces need to carry money; however impact unlikely to be that significant.
Economy	TEE	2	Improving journey times and journey time reliability reduces generalised cost of travel. Benefits accrued across the whole of the network.
	Value for money	3	
	WEB	0	Minimal wider economic benefits are expected.
Accessibility	Option values	1	Makes the bus a more attractive option to people, but does not greatly increase travel options.
	Severance	0	Severance problems not greatly altered. There is not likely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Medium number of people receive a modest improvement in accessibility. Better journey times and reliability would enable some people to travel further and offer more interchange opportunities.
Social Inclusion	Vulnerable Groups	2	Reduced journey times will result in significant number of vulnerable users experiencing a modest benefit. Bus lane and stop enforcement will assist buses in stopping close to the kerbside. Potential issues in terms of understanding of cash-free ticketing systems by vulnerable users.
	Deprived Groups	2	Improved reliability and journey times on public transport journeys particularly benefit deprived groups.
Integration	Transport Interchange	1	Improvements in reliability makes interchange a better option.
	Land Use Policy	0	Minimal impact on land use policy.
	Other Govt. Policies	1	Complements some of the other key government policies but in a relatively minor way. Promotes tourism as shorter and more reliable personal and leisure trips and promotes education through access to education establishments - reducing journey times could increase the area of search for suitable education facilities.
Environment	Biodiversity	0	Reducing bus delays from boarding and ticketing issues would facilitate modal shift, potentially resulting in a minor positive impact on air quality, a minor reduction in greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	







Measure Name:	Enhancement of off-peak networks
Measure Category:	Bus Strategy
Potential Delivery Agents:	Operators DTO Local Authorities
How would we measure a successful transport outcome?	Increase in off peak bus patronage Increase off-peak vehicle mileage Improved off-peak accessibility
Cost band	Very low cost

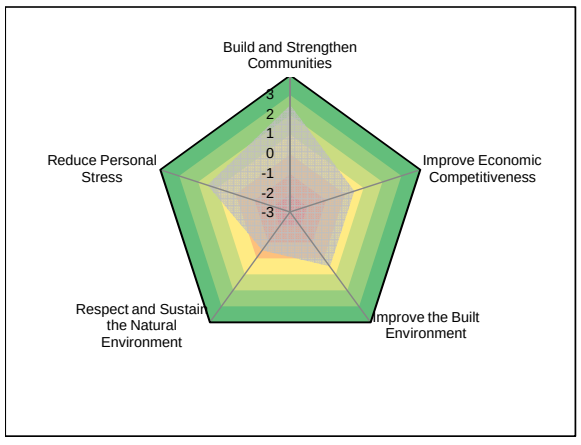
Stage 1a	**Appraisal**	**Notes**
Political		No transparent arrangements for subsidy
Technological		
Legal		Provided for in DTA Act and new EU Law from 2009

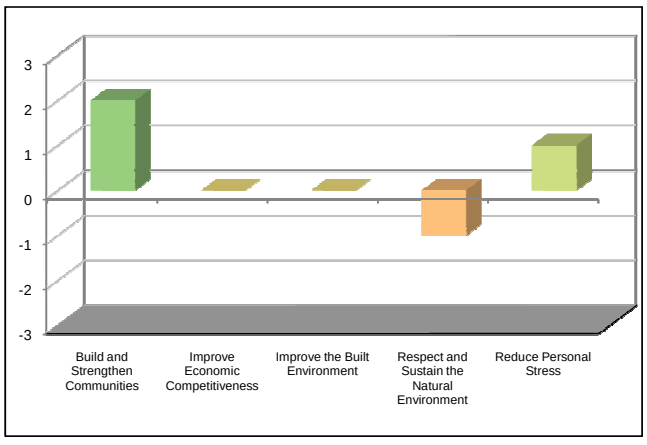
Measure Description & Supporting Information:

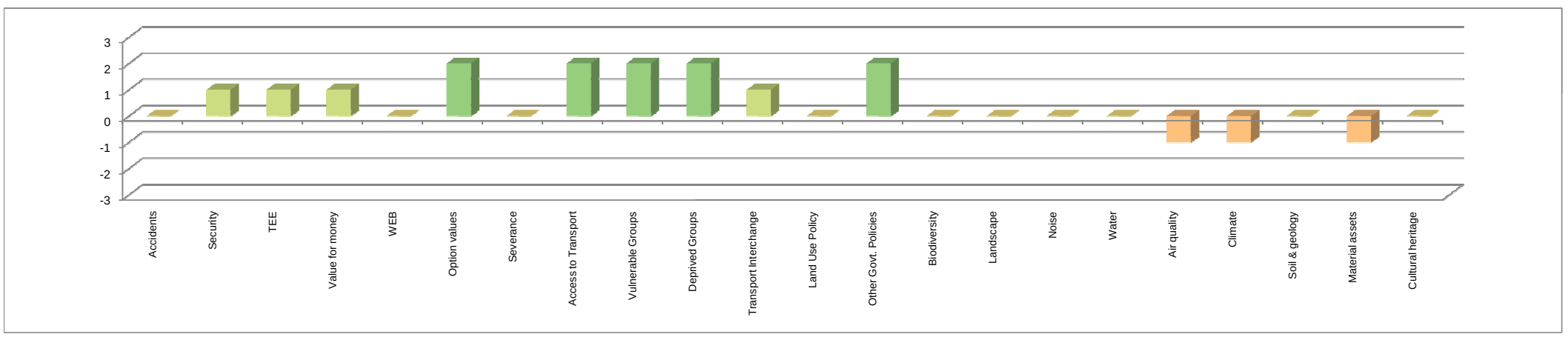
High frequency evening and weekend service with clock face departures and even interval timetables.
Will generate additional patronage and revenue but this may not cover the extra cost of providing the services.
Won't impact on large numbers of travel to employment trips - the largest impact will be on leisure trips and those in shift work.
Potential for some peak trips to transfer to the off peak therefore improving journey quality for some peak time travellers.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Improves accessibility in off peak, particularly advantageous to disadvantaged groups in terms of providing opportunities for accessing shift work by public transport and providing more social opportunities for 'bus dependent' people. Moderate impact for many deprived groups.
Improve Economic Competitiveness	0	Largest impact on leisure trips, but also some benefit to shift workers No impact upon fright movement
Improve the Built Environment	0	The measure would have limited impact.
Respect and Sustain the Natural Environment	-1	A very small benefit from mode shift would be expected - but only in the off peak. However, disbenefits would also be incurred from increased bus mileage and these are expected to result in a net environmental disbenefit.
Reduce Personal Stress	1	Improves public transport provision for personal trips taken in the off peak period. Improves journey quality for passengers as some trips may transfer from peak to off peak.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Minimal impact on accidents
	Security	1	Higher frequency of services at night could reduce wait times at bus stops and improve personal safety; small benefit to small number of travellers.
Economy	TEE	1	Reduces wait times during the off-peak, so has a small benefit to a small number of travellers.
	Value for money	1	
	WEB	0	No wider economic benefits are expected.
Accessibility	Option values	2	By increasing the number of journeys that can be made by public transport, this measure makes public transport a more viable option for more non-users on the parts of the network affected.
	Severance	0	This measure is likely to have only minimal impacts on severance. There is not likely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Expanding the geographic coverage of the transport system means that existing and potential new passengers will experience a modest improvement in the accessibility of transport facilities.
Social Inclusion	Vulnerable Groups	2	People dependent on bus (e.g. disabled, non-car owners and those on low incomes) would have more work and social opportunities on weekday evenings and weekends.
	Deprived Groups	2	This measure has particular benefits for those on low incomes and poor access to employment.
Integration	Transport Interchange	1	Improves accessibility in the off peak period and therefore reduces interchange penalties. Minor benefit.
	Land Use Policy	0	Minimal impact on land use policy
	Other Govt. Policies	2	Promotes: Social inclusion and cohesion; Access to education; Access to health facilities; Tourism across the GDA and maintain and develop heritage.
Environment	Biodiversity	0	Enhancing off-peak networks would increase bus mileage, potentially resulting in a minor negative impact on air quality, a minor increase in greenhouse gas emissions and a minor increase of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	-1	
	Climate	-1	
	Soil & geology	0	
	Material assets	-1	
	Cultural heritage	0	







Measure Name:	Expansion of network (spatially)
Measure Category:	Bus Strategy
Potential Delivery Agents:	Operators DTO Local Authorities
How would we measure a successful transport outcome?	Increase bus patronage Improved local accessibility
Cost band	Medium Cost

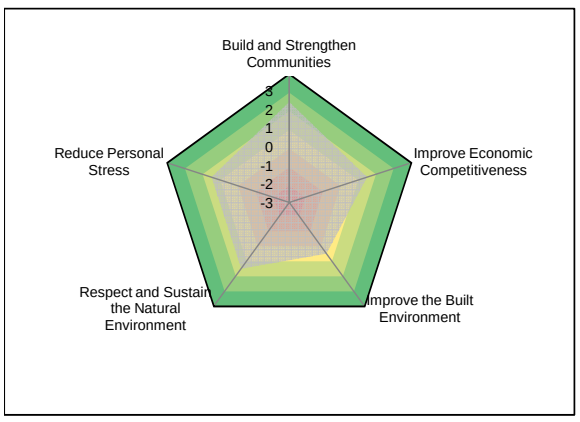
Stage 1a	**Appraisal**	**Notes**
Political		No transparent arrangements for subsidy
Technological		
Legal		Provided for in DTA Act and new EU Law from 2009

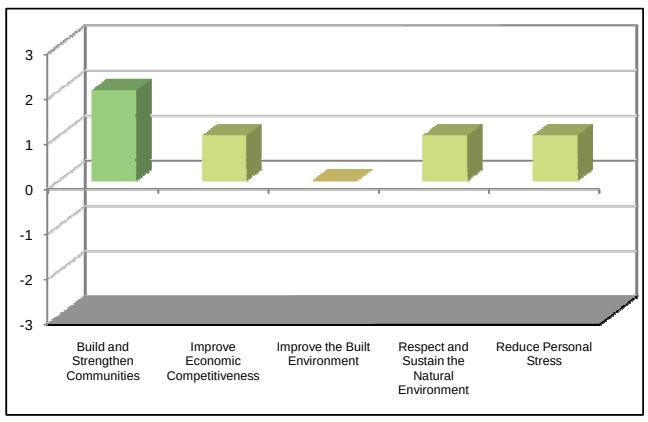
Measure Description & Supporting Information:

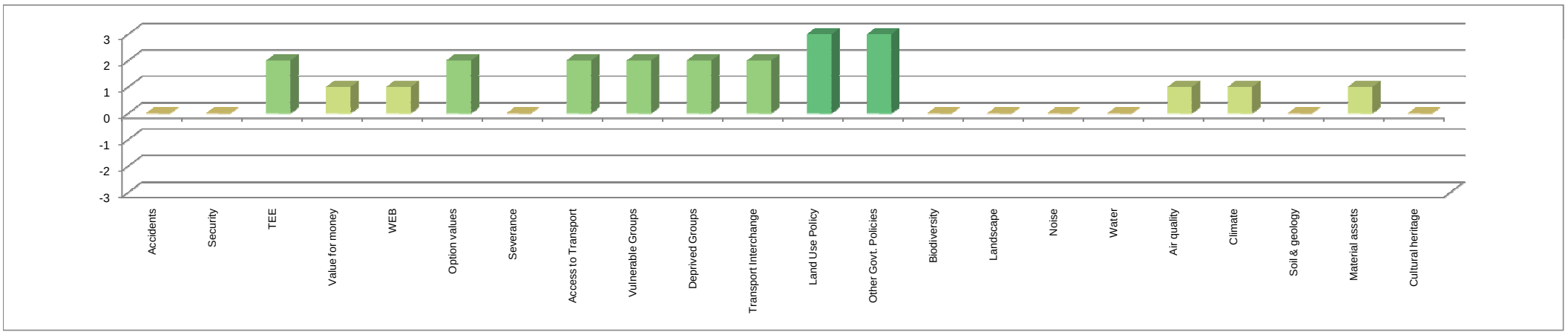
New or extended routes to include new development areas. Focus on orbital routes, improved bus services in hinterland and 'growth towns'. Improves access to the wider network and provides extra travel options for those who are bus dependent.
Orbital routes will improve accessibility and network connectivity, althiough demand is more diffuse for orbital movements, and harder to satisfy effectively - may increase costs to achieve largest benefits.
Measure would need to be reinforced by new infrastructure provision (assumed) and effective interchange and ticketing arrangements.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Providing new routes would improve linkages between communities within the region. Improves accessibility to key local services and employment. Improves access to the wider network for those dependent on buses. However, most useful links likely to already exist hence scope of benefits may be limited.
Improve Economic Competitiveness	1	Supports the more efficient location of businesses outside inner City. Some reductions in congestion through mode shift to bus but no impact upon freight movements. Large benefits for small number of businesses.
Improve the Built Environment	0	Although may lead to some new on-street infrastructure, minimal impacts on the built environment are expected
Respect and Sustain the Natural Environment	1	Mode shift will have a positive impact on air quality, greenhouse gases, efficient use of natural resources. However, demand for these services is likely to be lower than on existing routes and hence benefits are limited in scope.
Reduce Personal Stress	1	Will improve use of public transport through filling in gaps and expanding the network.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Could reduce the amount of traffic on the road but not expected to be significant nor busiest places.
	Security	0	Minimal impact on security
Economy	TEE	2	Improved generalised cost of journey - filling in gaps in network will reduce the need to change at a town centre hub to reach certain destinations.
	Value for money	1	
	WEB	1	Opens up public transport access to new areas / corridors for business travel and access to labour force; however no impact upon freight
Accessibility	Option values	2	By increasing the number of journeys that can be made by public transport, this measure makes public transport a more viable option for more non-users along the corridors affected.
	Severance	0	Minimal impacts on severance are anticipated.
	Access to Transport	2	New routes expand the transport network and allow more people access into the existing network who previously were not served by a route. However, most useful links likely to already exist hence scope of benefits limited.
Social Inclusion	Vulnerable Groups	2	Vulnerable groups are commonly dependent on public transport - hence they will benefit from the expansion of bus network coverage.
	Deprived Groups	2	Deprived groups are commonly dependent on public transport systems - hence they will benefit from this expansion in bus network coverage.
Integration	Transport Interchange	2	Increases the number of routes available and expands the network so will increase the number of destinations served by public transport. Enhance interchange options for all travellers.
	Land Use Policy	3	Supports spatially balanced development and provision of key social and economic infrastructure in areas currently without bus services. Allows enhanced access to inter-regional transport networks from additional parts of the GDA. Invests in long term environmental sustainability.
	Other Govt. Policies	3	Supports policies promoting: access to education, health and work social inclusion and cohesion. tourism across GDA and maintain and develop heritage.
Environment	Biodiversity	0	Expansion of the network (spatially) would facilitate modal shift, potentially resulting in a minor positive impact on air quality, a minor reduction in greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	







Measure Name:	Region-wide road pricing ('pay-per-km')
Measure Category:	Direct charges on road users
Potential Delivery Agents:	Local Authorities DTO
How would we measure a successful transport outcome?	Reduce travel times/increased speeds on strategic network Reduction in the number of car journeys and distances travelled Reduction in vehicle-person kms. Increases in public transport patronage and cycling trips
Cost band	None

Stage 1a	Appraisal	Notes
Political		Issue with cross-border journeys into the GDA if a similar scheme were not adopted nationally
Technological		
Legal		Would require new legislation

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Will encourage mode shift from cars thus reducing the amount of traffic on the roads and bringing a reduction in the number of accident; however potential reduction in congestion will also increase road speeds. Overall, there may be a marginal positive benefit, but not significant
	Security	0	Assume the system would be secure against fraud. Generally this will have no impact on this sub-objective.
Economy	TEE	0	The scheme should improve both journey times and journey time reliability by all highway modes. However, there will also be an increased cost of travel by car in order to cover the cost of implementation. It is assumed that the price structure would be set to optimise the market for road transport, rather than for raising revenue.
	Value for money	1	
	WEB	1	Assume that the scheme would be designed to optimise road space allocation therefore there could be improvements in access for businesses and freight through reduced congestion; however, increased costs of travel may be negative impact on some businesses. Overall, a small positive.
Accessibility	Option values	2	Reduced highway congestion means bus services likely to be quicker and more reliable, resulting in improved option values for car users. Improved car journey times but higher financial cost means no net change in option values for existing bus users.
	Severance	3	Region wide reduction in road traffic should reduce the severance impact of the transport network - making all roads easier to cross and thus opening up new destinations by foot for many communities across the GDA.
	Access to Transport	-1	Reduced highway congestion would improve journey times and thus access to destinations by car and bus. However, small net disbenefit due to increased financial cost of travel for all car users.
Social Inclusion	Vulnerable Groups	-1	Assume small net disbenefit overall, as the large impact of increased financial cost of travel would impact only on the small numbers of vulnerable people whose journey can only be made by car, and disabled drivers are assumed to be exempt.
	Deprived Groups	-1	Assume small net disbenefit overall, as the large imapct of increased financial cost of travel would impact only on those deprived people whose journey can only be made by car, who are likely to be a small minority. Improved journey times for road modes will in part counter the higher cost.
Integration	Transport Interchange	-1	Minimal impact on transport interchange, although transfer of trips from road to public transport will increase the pressure on interchange facilities.
	Land Use Policy	3	Enhances Dublin's role as international gateway with a 'world city' economic role though reducing congestion and improving access to city centre . Enhance use of key inter-regional rail & road links to other regions, improve the environmental performance and sustainability of transport sector.
	Other Govt. Policies	-1	Minimal impact on other government policies. May have small negative impact on social inclusion due to increased cost of car travel for some.
Environment	Biodiversity	0	Region-wide road pricing ('pay-per-km') would facilitate modal shift and lead to private vehicle traffic reductions, potentially resulting in a minor positive impact on landscape, a major positive impact on noise and air quality, a major reduction in greenhouse gas emissions, a major reduction of the fossil fuel demand and a minor positive impact on cultural heritage.
	Landscape	1	
	Noise	3	
	Water	0	
	Air quality	3	
	Climate	3	
	Soil & geology	0	
	Material assets	3	
	Cultural heritage	1	

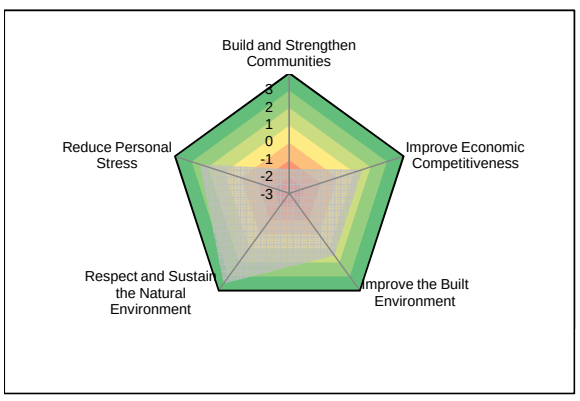
Measure Description & Supporting Information:

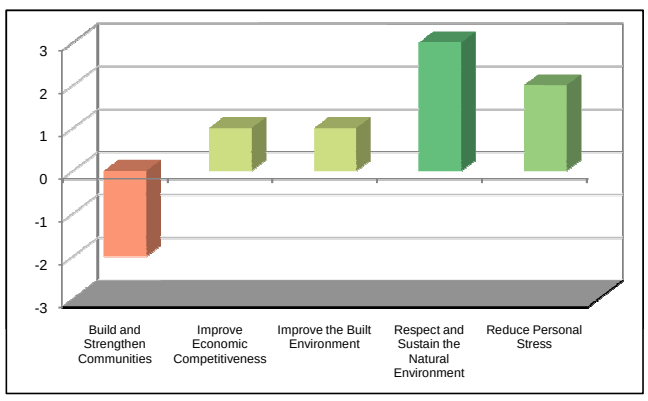
Distance based charge on all roads to manage demand and raise revenue - no assumptions made about how revenues would be used.

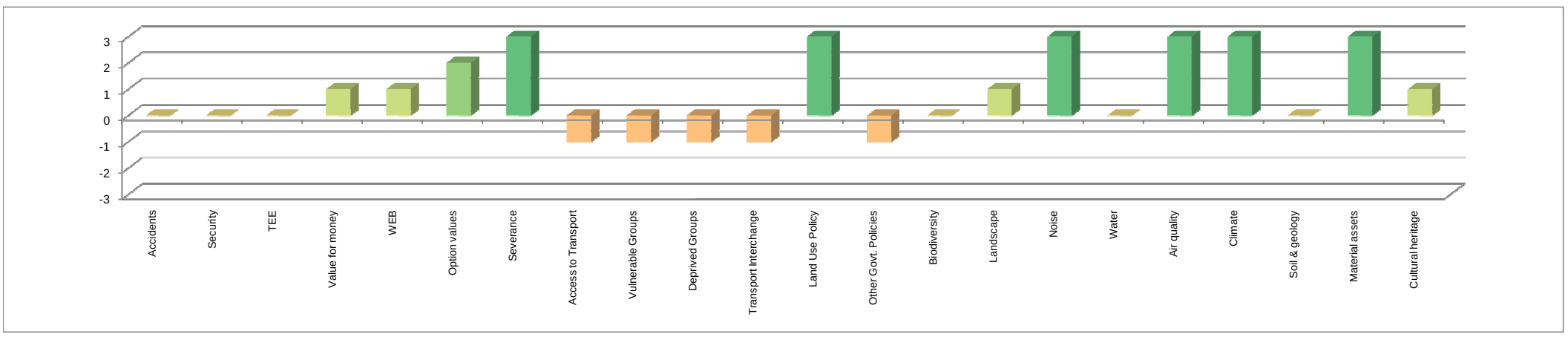
Assume that road based public transport capacity and journey times would improve as a result of the reduced congestion, but measure does not include additional other public transport enhancements. Applied to private vehicles, but exemptions likely to be provided for, e.g. people with disabilities. Excludes costs or beneifts of freight trips as these are covered by Freight charging measure DC6 below.

Measure is not revenue neutral as the charge is additional to existing road charges. Focus on reducing the number of car journeys made and the distance travelled.

Stage 1b	Score	Notes
Build and Strengthen Communities	-2	Reduced congestion therefore improved accessibility for remaining road users, offset by the increased cost of accessing services and employment by private car. May particularly disadvantage low income car-using groups.
Improve Economic Competitiveness	1	Reduced congestion, therefore reduced journey times for remaining business use and freight movement. However, increased cost of travel for business could reduce value for money overall.
Improve the Built Environment	1	Possibility of street clutter (from enforcement cameras etc.) but traffic in urban areas is likely to be significantly reduced to compensate.
Respect and Sustain the Natural Environment	3	Significant mode shift to more sustainable modes expected. Distance based nature of the charge reduces the need to travel and energy consumption. Improved air quality from less traffic congestion and lower levels of emissions.
Reduce Personal Stress	2	Improves journey times and reliability through reduced congestion. Also promotes modal shift to healthier alternative transport modes







Measure Name:	Cordon (or area) based 12 hour congestion charge
Measure Category:	Direct charges on road users
Potential Delivery Agents:	Local Authorities DTO
How would we measure a successful transport outcome?	Reduction in vehicles entering the cordon area Reduced congestion on arterial routes heading towards cordon Increase in public transport trips to destinations within cordon Increase in bus patronage and cycle trips within cordon
Cost band	Very Small Saving

Stage 1a	Appraisal	Notes
Political		
Technological		
Legal		Would require new legislation

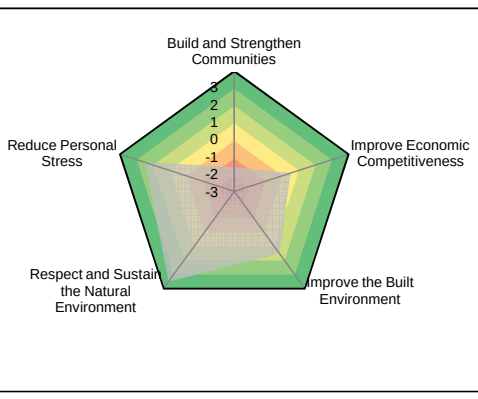
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Will encourage mode shift from cars thus reducing the amount of traffic on the roads and bringing a reduction in the number of accidents; however potential reduction in congestion will also increase road speeds. Overall, there may be a marginal positive benefit, but not significant.
	Security	0	Assume the system would be secure against fraud. Generally this will have no impact on this sub-objective.
Economy	TEE	0	Should improve both journey times and journey time reliability by all modes; however will also increase the cost of travel by car. It is assumed that the price structure would be set to optimise the market for road transport within the cordon, therefore the benefits should outweigh the additional costs. No assumption here that generated revenue would be used for transport, therefore overall effect is neutral.
	Value for money	1	
	WEB	1	Assume that the scheme would be designed to optimise road space allocation, therefore there could be improvements in access for businesses within the cordon through reduced congestion. However, increased cost of travel may affect some other businesses. Overall, small positive benefit.
Accessibility	Option values	1	Reduced highway congestion means that bus services are likely to be quicker and more reliable, resulting in improved option values for car users. Improved car journey times, but higher financial costs, means no net change in option values for existing bus users. Benefits largely constrained to the cordon area.
	Severance	2	Reduction in road traffic within the cordon should reduce the severance impact of the transport network - making roads easier to cross and thus opening up new destinations by foot but only for those communities within the charging cordon.
	Access to Transport	0	Reduced highway congestion would be expected improving journey times and thus access to destinations by car and bus. However, offset by increased financial cost of travel for car users. Neutral impact as there are likely to be alternative non-car modes to and within the cordon area.
Social Inclusion	Vulnerable Groups	0	Impacts largely constrained to the cordon area. Disabled people would be exempt from charges. Improve journey times for all road modes, but financial costs higher for motorists within this group - assumed to be negligible number affected.
	Deprived Groups	-1	Impacts largely constrained to the cordon area Improve journey times for all modes but financial cost higher for small number of deprived car users.
Integration	Transport Interchange	0	Minimal impact on transport interchange
	Land Use Policy	3	Enhances Dublin's role as international gateway with a 'world city' economic role though reducing congestion and improving access to city centre . Enhance use of key inter-regional rail & road links to other regions, improve the environmental performance and sustainability of transport sector.
	Other Govt. Policies	-1	Minimal impact on other government policies. May have small negative impact on social inclusion due to increased cost of car travel for some.
Environment	Biodiversity	0	Cordon (or area) based 12 hour congestion charge would facilitate modal shift and lead to private vehicle traffic reductions, potentially resulting in a minor positive impact on landscape, a moderate positive impact on noise and air quality, a moderate reduction in greenhouse gas emissions, a moderate reduction of the fossil fuel demand and a minor positive impact on cultural heritage.
	Landscape	1	
	Noise	2	
	Water	0	
	Air quality	2	
	Climate	2	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	1	

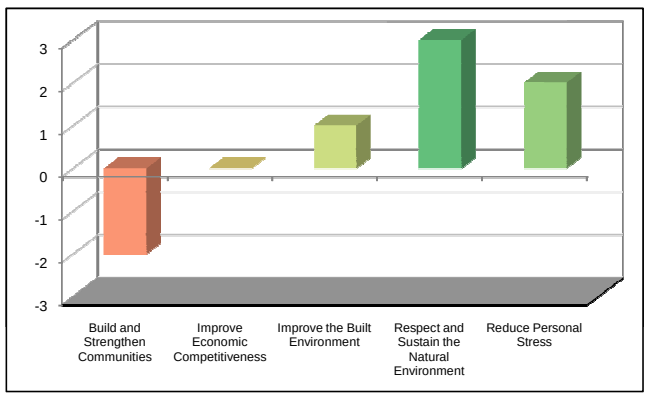
Measure Description & Supporting Information:

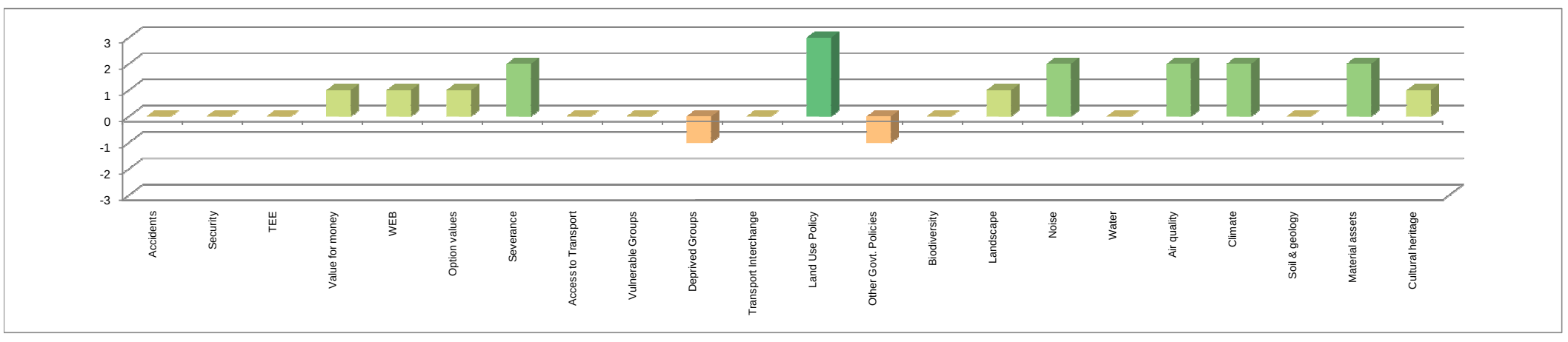
Assumes charging cordon round City Centre (i.e. 'Canals'/Docklands) initially, potentially expanded later to manage demand within M50.

Charges levied for inbound and outbound crossings of the cordon from start of am peak to end of pm peak (notionally 7am to 7pm).
Applied to freight and private vehicles, but exemptions provided for, e.g., people with disabilities.
Assume that road based public transport capacity and journey times improve as a result of the reduced congestion, but measure does not include additional other public transport enhancements.
Measure is not revenue neutral as the charge is additional to existing road charges. No assumptions about how revenue would be used.

Stage 1b	Score	Notes
Build and Strengthen Communities	-2	Reduced congestion therefore improved local accessibility within cordon. But net disbenefit overall as increases cost of accessing services and employment inside cordon by private car. Particularly disadvantages low income drivers.
Improve Economic Competitiveness	0	Reduced congestion, therefore reduced journey times for business travellers. However, increased cost of travel for business and freight would reduce value for money offsetting benefit.
Improve the Built Environment	1	Motorised traffic in towns likely to be reduced all day. Some risk of increased 'street clutter' at cordon, depending on the technology used.
Respect and Sustain the Natural Environment	3	Significant mode shift to more sustainable modes associated with measure. Improved air quality as less congestion and fewer car trips.
Reduce Personal Stress	2	Improves journey times and reliability through reduced congestion. Also promotes greater use of healthier alternative transport modes.







Measure Name:	Cordon (or area) based peak only congestion charge
Measure Category:	Direct charges on road users
Potential Delivery Agents:	Local Authorities DTO
How would we measure a successful transport outcome?	Reduction in vehicles entering the cordon area during peaks Reduced peak congestion on arterial routes accessing cordon Increase in peak public transport trips to destinations in cordon Increase in bus patronage and cycle trips within cordon
Cost band	None

Stage 1a	Appraisal	Notes
Political		
Technological		
Legal		Would require new legislation

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Will encourage mode shift from cars thus reducing the amount of traffic on the roads and bringing a reduction in the number of accidents; however potential reduction in congestion will also increase road speeds. Overall, there may be a marginal positive benefit, but not significant.
	Security	0	Assume the system would be secure against fraud. Generally this will have no impact on this sub-objective.
Economy	TEE	0	Should improve both journey times and journey time reliability by all modes; however will also increase the cost of travel by car. It is assumed that the price structure would be set to optimise the market for road transport within the cordon, therefore the benefits should outweigh the additional costs. No assumption here that generated revenue would be used for transport, therefore overall effect is neutral.
	Value for money	1	
	WEB	1	Assume that the scheme would be designed to optimise road space allocation therefore there could be improvements in access for businesses through reduced congestion; however, increased cost of travel may affect some businesses. Only impact in peak period. Overall, very small positive.
Accessibility	Option values	1	Reduced morning peak highway congestion means that bus services are likely to be quicker and more reliable, resulting in improved option values for non-users. Improved car journey times, but higher financial costs, means no net change in option values for existing bus users. Benefits largely constrained to the cordon area.
	Severance	1	Reduction in morning peak road traffic within the cordon should reduce the severance impact of the transport network - making roads easier to cross and thus opening up new destinations by foot for some communities.
	Access to Transport	0	Reduced morning peak highway congestion would be expected improving journey times and thus access to destinations by car and bus. However, increased financial cost of travel for the some car users. Neutral impact as there are likely to be alternative non-car modes to and within the cordon area.
Social Inclusion	Vulnerable Groups	0	Impacts largely constrained to the morning peak in the cordon area Disabled people would be exempt from the charge. Improve journey times for all road modes, but financial costs higher for motorists.
	Deprived Groups	-1	Impacts largely constrained to the morning peak in the cordon area. Improve journey times for all modes but financial costs higher for motorists.
Integration	Transport Interchange	0	Minimal impact on transport interchange
	Land Use Policy	3	Enhance the role of Dublin as an international gateway with a 'world city' economic role Enhance the use of key inter-regional rail & road links providing access to other regions Address congestion in major urban areas Improve the environmental performance of the transport sector and invest in sustainability
	Other Govt. Policies	-1	Minimal impact on other government policies. May have small negative impact on social inclusion due to increased cost of car travel for some.
Environment	Biodiversity	0	Cordon (or area) based peak hour congestion charge would facilitate modal shift and lead to private vehicle traffic reductions, potentially resulting in a minor positive impact on landscape, a moderate positive impact on noise and air quality, a moderate reduction in greenhouse gas emissions, a moderate reduction of the fossil fuel demand and a minor positive impact on cultural heritage.
	Landscape	1	
	Noise	2	
	Water	0	
	Air quality	2	
	Climate	2	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	1	

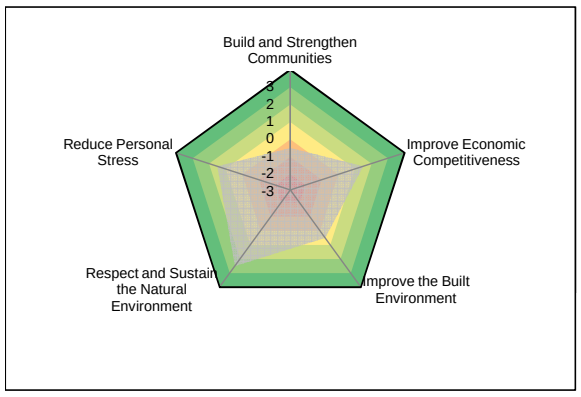
Measure Description & Supporting Information:

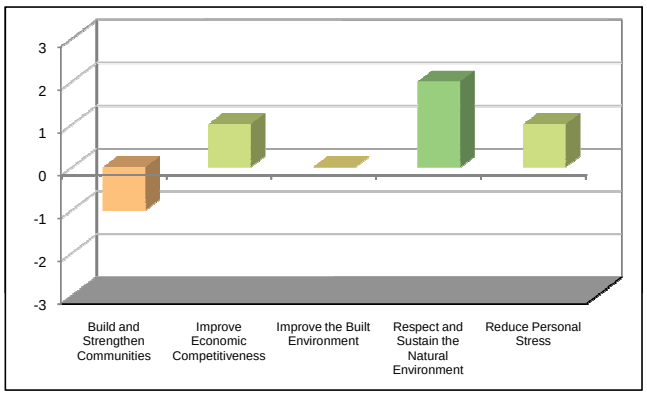
Assumes charging cordon round City Centre (i.e. 'Canals'/Docklands) initially, potentially expanded later to manage demand within M50, to manage demand flows in peak directions only (charges levied for crossing the cordon inbound in the AM peak, outbound in PM peak).

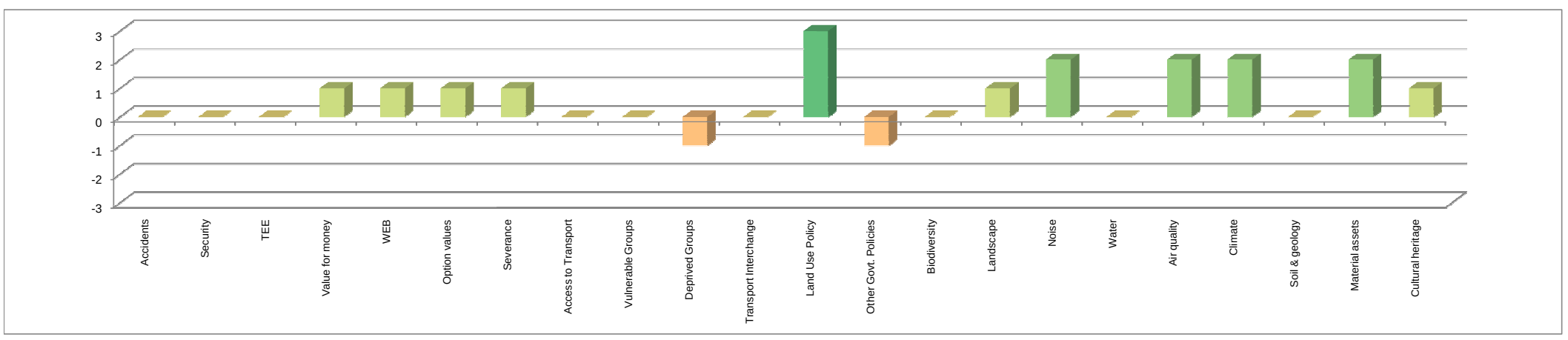
Applied to freight and private vehicles, but exemptions provided for, e.g., people with disabilities. Limited impact on personal (leisure, shopper etc.) journeys as only applies in the peak. Principal impact is therefore on commuters.

Assume that road based public transport capacity and journey times improve as a result of the reduced congestion, but measure does not include additional other public transport enhancements.
Measure is not revenue neutral as the charge is additional to existing road charges. No assumptions about how revenue would be used.

Stage 1b	Score	Notes
Build and Strengthen Communities	-1	Reduced peak congestion therefore increased accessibility. But net disbenefit overall as Increasing the cost of accessing services and employment by private car.
Improve Economic Competitiveness	1	Reduced peak congestion, therefore reduced journey times for business use during peak hours. Although increased cost of travel for business could reduce value for money, this only affects peak hour travel not travel during working day.
Improve the Built Environment	0	Motorised traffic within cordon likely to be reduced but only at peak. Some risk of increased 'street clutter' at cordon, depending on technology used.
Respect and Sustain the Natural Environment	2	Significant mode shift to more sustainable modes associated with this measure. Improved air quality as less congestion, though only affects peak trips and some journeys may be re-timed
Reduce Personal Stress	1	Improves journey times and reliability through reduced congestion. Also promotes healthier alternative transport modes. Only affects peak trips and some journeys may be re-timed







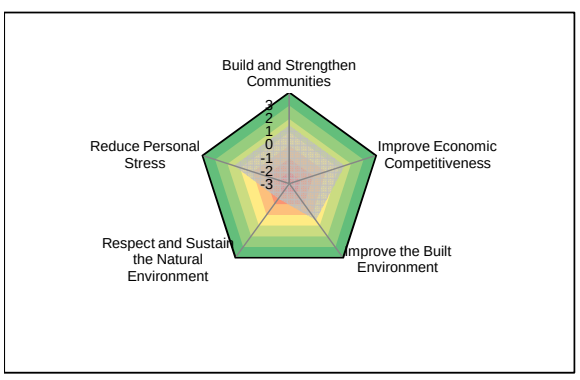
Measure Name:	Provide new tolled roads or toll lanes
Measure Category:	Direct charges on road users
Potential Delivery Agents:	NRA Local authorities
How would we measure a successful transport outcome?	Distance of toll road introduced Number of vehicles using tolled road Reduced congestion on parallel routes
Cost band	Very low cost

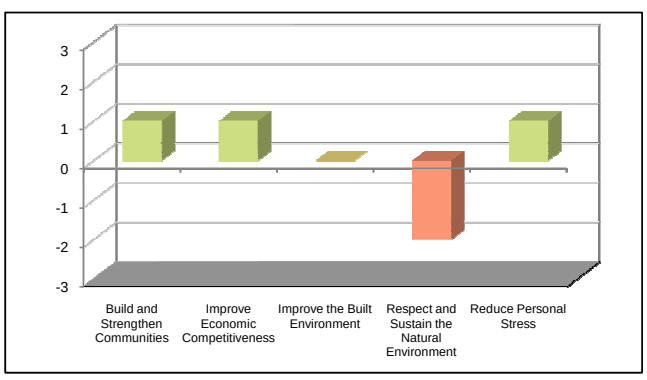
Measure Description & Supporting Information:
Tolling is used solely to provide and manage new road capacity, which will have the potential to relieve congestion on other roads. Routes concerned likely to be strategic roads, as they will need to be segregated with a low number of (grade separated) junctions to allow toll collection. Could include similar construction options to measures covering RC3 "Provide New High Occupancy Vehicle or Freight Lanes" and RC4 "Widening of Strategic Roads" but in this case usage is charged for.

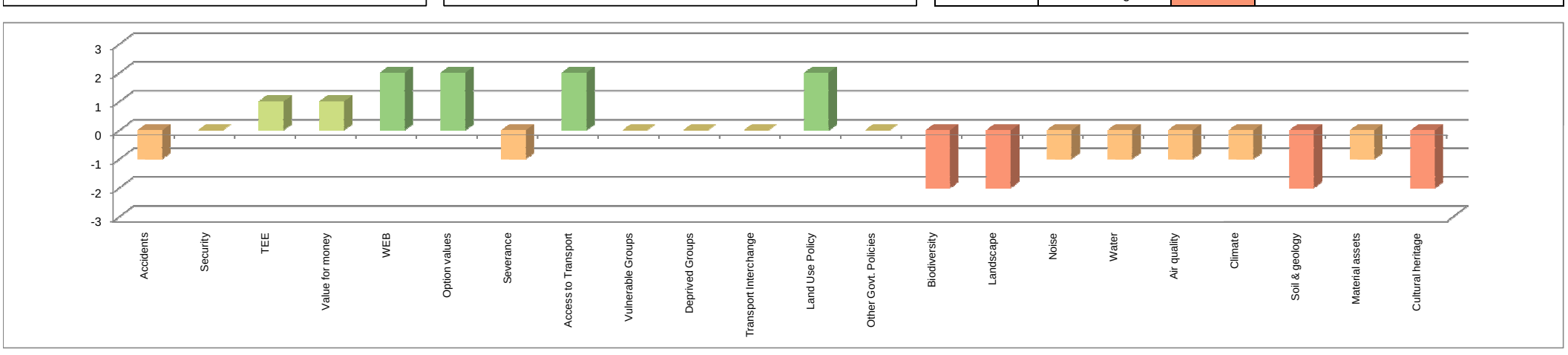
Stage 1a	**Appraisal**	**Notes**
Political		Already operational on some routes in Dublin
Technological		
Legal		

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	New links, therefore improved connectivity and accessibility. Benefit offset by increased cost of private car travel for some journeys, with relative disadvantage to low income groups.
Improve Economic Competitiveness	1	Reduction in congestion on alternative routes and new route will improve movement of goods. Whilst cost of travel for business could increase would only affect those choosing tolled routes, where the time savings/reliability benefits may outweigh the additional costs.
Improve the Built Environment	0	Limited impacts expected.
Respect and Sustain the Natural Environment	-2	Additional road construction with associated environmental disbenefits on landscape, biodiversity etc. May release suppressed demand, increasing car travel volumes, although in some cases new routes may reduce journey length.
Reduce Personal Stress	1	New or faster route options for personal journeys, though small net benefot as likely to work against promotion of healthier modes.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	-1	Measure is likely to result in both increased vehicle trips and increased speeds therefore have a potential negative impact on accidents.
	Security	0	Assume system would be secure against fraud; overall no impact on safety and security.
Economy	TEE	1	Additional road capacity will result in reduced journey times and improved reliability for the network as a whole. Offset by the negative impact of the cost of the tolls; however, overall small positive benefit.
	Value for money	1	
	WEB	2	Additional capacity and reduced congestion on alternative routes will improve access to markets and labour.
Accessibility	Option values	2	Providing a new route but only for those with access to a car
	Severance	-1	New road would create some severance, assume small impact as would be designed to reduce impact and my not be through built-up areas.
	Access to Transport	2	Access by car, and potentially bus/coach routes using new links, is enhanced between destinations served by new roads/lanes.
Social Inclusion	Vulnerable Groups	0	Minimal direct impacts on vulnerable groups.
	Deprived Groups	0	Minimal direct impacts on deprived groups.
Integration	Transport Interchange	0	Minimal Impact on transport interchange.
	Land Use Policy	2	Supports polices that: enhance inter-regional road links address congestion in urban areas Could potentially support some other land-use policies including enhancing the role of Dublin as an international gateway.
	Other Govt. Policies	0	New routes and capacity support improvements in access to work and education; however toll charge costs may worsen social exclusion.
Environment	Biodiversity	-2	Constructing new tolled roads or toll lanes would lead to construction impacts and landtake, potentially resulting in a moderate negative impact on biodiversity and landscape, a minor negative impact on noise, water and air quality, a minor increase in greenhouse gas emissions, a moderate negative impact on soils, a minor increase of the fossil fuel demand and a moderate negative impact on cultural heritage.
	Landscape	-2	
	Noise	-1	
	Water	-1	
	Air quality	-1	
	Climate	-1	
	Soil & geology	-2	
	Material assets	-1	
	Cultural heritage	-2	







Measure Name:	Tolling of existing strategic roads (or toll on existing lane on strategic roads)
Measure Category:	Direct charges on road users
Potential Delivery Agents:	Local Authorities NRA
How would we measure a successful transport outcome?	Improved road condition on strategic network Reduction in the number of vehicles on tolled strategic links Increase in bus patronage and cycle trips on parallel routes
Cost band	Very Small Saving

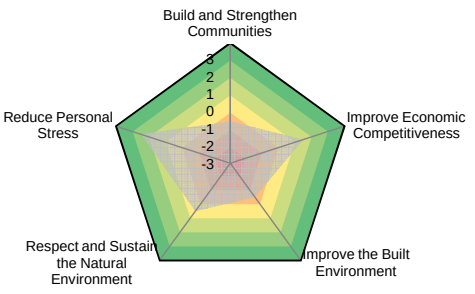
Stage 1a	Appraisal	Notes
Political		May require change in remit of NRA
Technological		
Legal		

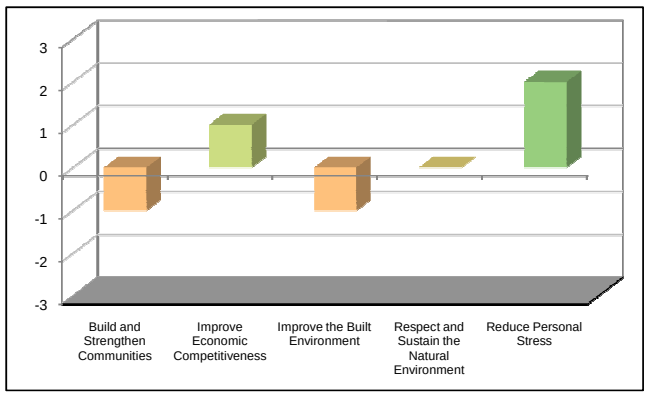
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Will encourage mode shift from cars thus reducing the amount of traffic on the roads and bringing a reduction in the number of accident; however this reduction in congestion will increase road speeds and diversion to less suitable routes. Overall, there may be a marginal positive benefit, but not significant
	Security	0	Assume system would be secure against fraud; overall no impact on safety and security.
Economy	TEE	0	Should improve journey times and journey time reliability on tolled routes; however will also increase the cost of travel by car. It is assumed that the price structure would be set to optimise the market for road transport overall, therefore the benefits should outweigh the additional costs. The assumption is that revenue would be recycled into maintenance but not improvements, therefore overall effect is neutral.
	Value for money	1	
	WEB	1	Assume that scheme would be designed to optimise cost of providing/maintaining road space. Could be improvements in access for businesses through reduced congestion; however, increased cost of travel may affect some businesses. Overall, small positive.
Accessibility	Option values	-1	Makes car option more expensive. Potentially offers small option benefits as a result of reduced congestion, but offfset by toll costs and diversion to non-charged routes means small negative impacts.
	Severance	-1	Possible benefits from reduced congestion on tolled routes - but diverted traffic on to non-charged local roads may have an adverse severance impact.
	Access to Transport	-1	Higher cost of some highway trips reduces accessibility, though reduced congestion may enhance movement in certain circumstances.
Social Inclusion	Vulnerable Groups	0	Assume a net neutral impact. Increased cost of travel for those who whose journey can only be made by car offsets the improved journey times for highway users. Assumes disabled people would be exempt from the charge.
	Deprived Groups	-1	Assume a marginal net disadvantage. Whilst car ownership is low amongst this group, those that do need to travel by car will be affected more significantly by the increased travel costs as a proportion of their income or benefits.
Integration	Transport Interchange	0	Minimal impact on transport interchange.
	Land Use Policy	2	Potential mode shift from car would address congestion in major urban areas and enhance the effective use of key inter regional rail and road links
	Other Govt. Policies	-1	Minimal impact on other government policies, although may have negative impact upon social inclusion as it could increase the cost of car travel
Environment	Biodiversity	0	Tolling of existing strategic roads (or toll on existing lane on strategic roads) would lead to traffic being diverted onto local routes, causing congestion, potentially resulting in a minor negative impact on landscape, noise and air quality.
	Landscape	-1	
	Noise	-1	
	Water	0	
	Air quality	-1	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	

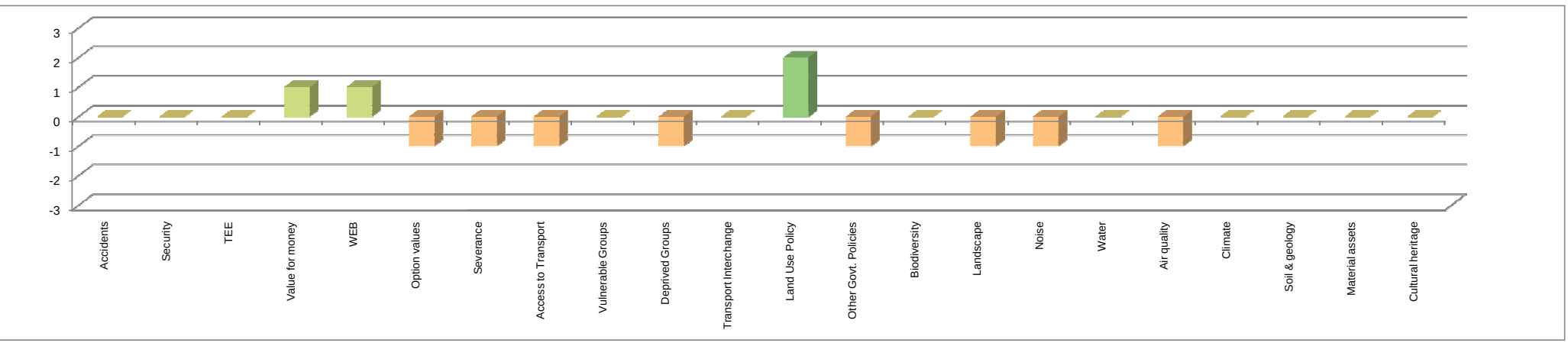
Measure Description & Supporting Information:

Toll used to manage demand only on existing infrastructure and raise revenue for maintenance and minor upgrading along existing strategic routes. Not assumed to apply to freight vehicles, as covered by DC6. Routes concerned likely to be strategic roads, as they will need to be segregated with a low number of (grade separated) junctions to allow toll collection.

Stage 1b	Score	Notes
Build and Strengthen Communities	-1	Reduced congestion therefore reduced journey times for journeys to work and key services. But net disbenefit overall as increased cost of accessing services and employment by private car. May also disadvantage low income groups.
Improve Economic Competitiveness	1	Reduced congestion, therefore reduced journey times for business use and movement of goods. However, increased cost of travel for business could reduce value for money.
Improve the Built Environment	-1	Traffic may divert from strategic to local roads as a result of charges, increasing the physical intrusion of motor vehicles on parallel routes.
Respect and Sustain the Natural Environment	0	Traffic reduction and a mode shift to more sustainable modes may occur on strategic routes. However, traffic would be displaced to other local roads and as this will bring environmental problems closer to population centres a neutral score has been assumed.
Reduce Personal Stress	2	Promotes shift to healthier forms of transport and likely to improve journey times and journey time reliability for those willing to pay the toll.





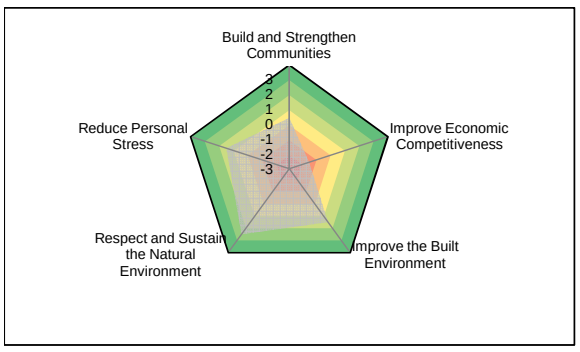


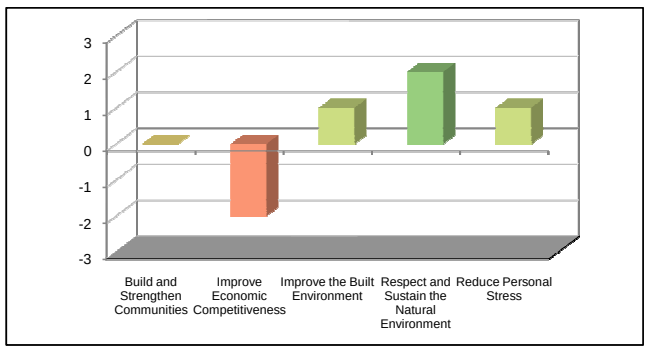
Measure Name:	Freight charging
Measure Category:	Direct charges on road users
Potential Delivery Agents:	Local Authorities NRA DTO
How would we measure a successful transport outcome?	Reduction in numbers of freight vehicles Higher tonnage per vehicle Improvement in road condition
Cost band	Very low cost

Stage 1a	**Appraisal**	**Notes**
Political		Cross-border journeys into GDA.
Technological		
Legal		Would require new legislation.

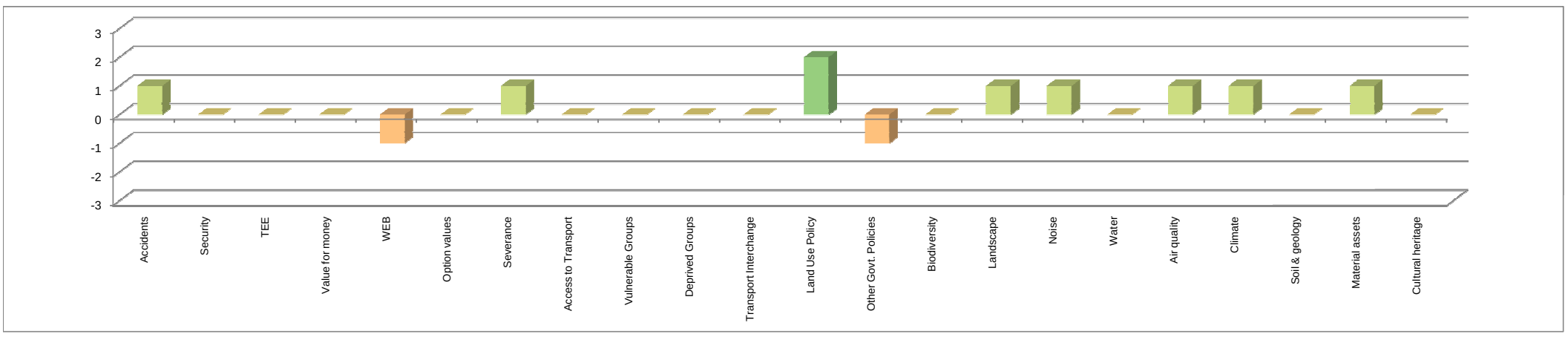
Measure Description & Supporting Information:
Area-wide charge per kilometre for heavy goods vehicles on GDA-wide (or national) basis to reduce impact on infrastructure and environment. May include differential charges on freight vehicles within urban areas. Measure is not revenue neutral as the charge is additional to existing road charges. Not assumed used in combination with car user charges. Promotes more efficient road haulage logistics and shift to rail freight.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	0	Limited impact on accessibility or deprived groups.
Improve Economic Competitiveness	-2	Increase cost of transporting goods, which could have a notable impact on internal and international markets. Improvements for non-freight movements but limited for business travel.
Improve the Built Environment	1	Minimises physical intrusion of freight traffic.
Respect and Sustain the Natural Environment	2	Encourages a transfer to rail freight and more efficient road haulage logistics. Benefits to air quality, noise and vibration.
Reduce Personal Stress	1	Improves road safety and driver personal security due to reduction in HGVs on the roads





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Improves road safety through reduction in HGVs on the roads.
	Security	0	Assume system would be secure against fraud; overall no impact on safety and security.
Economy	TEE	0	Scheme will have negative impact upon generalised journey cost for freight; however the reduction in freight trips would be a positive benefit to other road users. Overall impact considered to be neutral.
	Value for money	0	
	WEB	-1	Increased cost of road freight transport is likely to have a negative impact upon operational efficiency of firms and their ability to access markets.
Accessibility	Option values	0	Minimal impact on option values
	Severance	1	Small severance benefits as a result of reduced HGV movements on roads.
	Access to Transport	0	Minimal impact on accessibility levels.
Social Inclusion	Vulnerable Groups	0	Minimal impact on vulnerable groups.
	Deprived Groups	0	Minimal impact of deprived groups.
Integration	Transport Interchange	0	Minimal impact on transport interchange.
	Land Use Policy	2	Address congestion on strategic routes and in major urban areas. Improve environmental performance of freight sector and invest in sustainable distribution.
	Other Govt. Policies	-1	Measure potentially contradicts the policy to promote enterprise, trade and employment.
Environment	Biodiversity	0	Freight charging would lead to reduced levels of road freight, potentially resulting in a minor positive impact on landscape, noise and air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	1	
	Noise	1	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	



Measure Name:	Improved interchange between modes
Measure Category:	Network Integration and Development
Potential Delivery Agents:	Operators DTO Local Authorities
How would we measure a successful transport outcome?	Increase bus/rail/Luas patronage Increase in walking trips Improved accessibility by public transport
Cost band	Very low cost

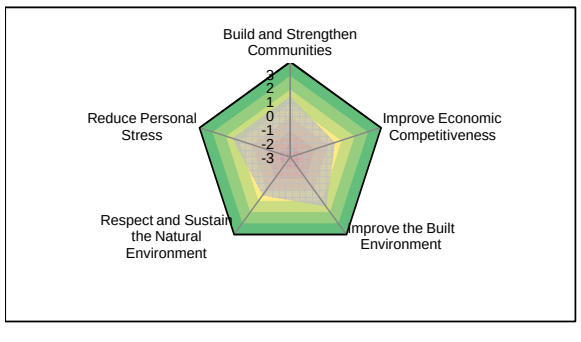
Stage 1a	Appraisal	Notes
Political		
Technological		
Legal		

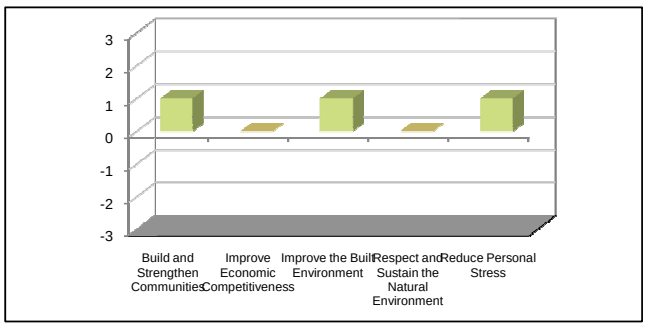
Measure Description & Supporting Information:

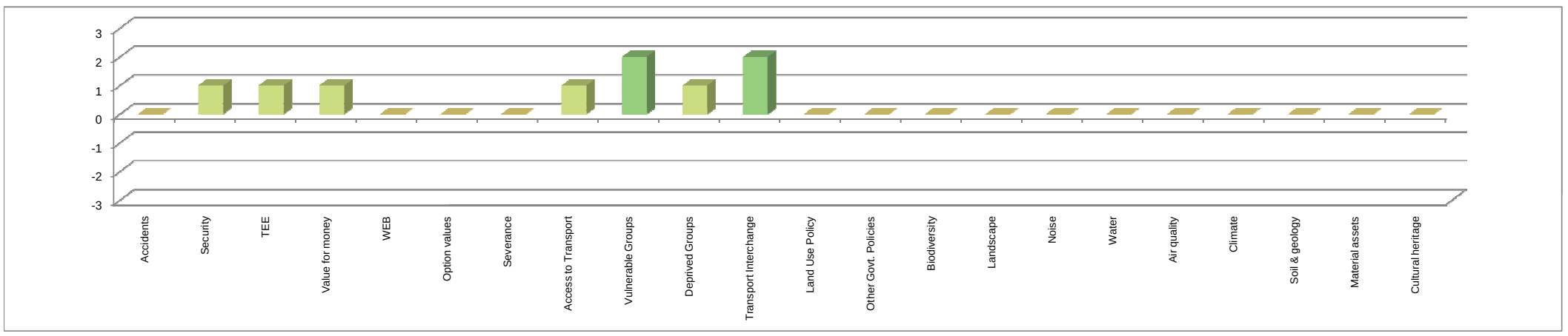
Improved pedestrian/cyclist routes and signage between public transport interchange points (e.g. bus stops, Luas stops, railway stations). Relocation of stops where necessary to enhance interchange options.
Makes using the network easier between and within modes. Improves physical accessibility for disadvantaged groups

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Likely to bring minor improvements in accessibility through making public transport easier to use. Small benefit to a small number of people whose journeys require interchange.
Improve Economic Competitiveness	0	Minimal impacts on economic competitiveness are expected as journey time reliability and journey time improvements will be limited in scope. No impact upon freight movements.
Improve the Built Environment	1	Limited benefits are expected through better designed environment for people movement.
Respect and Sustain the Natural Environment	0	The measure may result in a minor mode shift towards public transport, and hence some environmental benefits would be accrued. However, these are expected to be very small.
Reduce Personal Stress	1	Improves ease of use of public transport. Promotes healthier forms of travel and use of public space. Small benefit for small number of people.

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Minimal impact on accidents.
	Security	1	Improved interchange will increase perception of public safety with clearer knowledge of routes.
Economy	TEE	1	Improved interchange layouts will reduce overall interchange and therefore end-to-end journey time. Small positive improvement for small number of people whose journeys require such interchange.
	Value for money	1	
	WEB	0	Minimal wider economic benefits are expected.
Accessibility	Option values	0	This measure makes public transport a slightly more attractive option for car drivers, but the benefits are estimated to be very small.
	Severance	0	Minimal severance impacts are expected.
	Access to Transport	1	Improved interchange likely to bring minor improvements in accessibility. Small benefit to small number of people whose trips require interchange.
Social Inclusion	Vulnerable Groups	2	Improved routes between interchange points will support those with mobility impairments. Moderate numbers of vulnerable individuals are likely to experience a medium benefit.
	Deprived Groups	1	Improved public transport access would provide a small benefit for members of deprived groups whose journeys require interchange.
Integration	Transport Interchange	2	Scheme enhances provision for interchange on routes or areas which are well used by travellers who currently interchange, also improves physical accessibility for disadvantaged groups.
	Land Use Policy	0	Minimal impact on land use policies
	Other Govt. Policies	0	Minimal impact on other government policies.
Environment	Biodiversity	0	Improving interchanges between modes would result in no notable changes.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	







Measure Name:	Demand responsive services, taxi bus and community transport
Measure Category:	Network Integration and Development
Potential Delivery Agents:	Operators DTO Local Authorities
How would we measure a successful transport outcome?	Numbers of passengers carried on demand-responsive systems Accessibility levels of targeted groups and communities
Cost band	Low cost

Measure Description & Supporting Information:

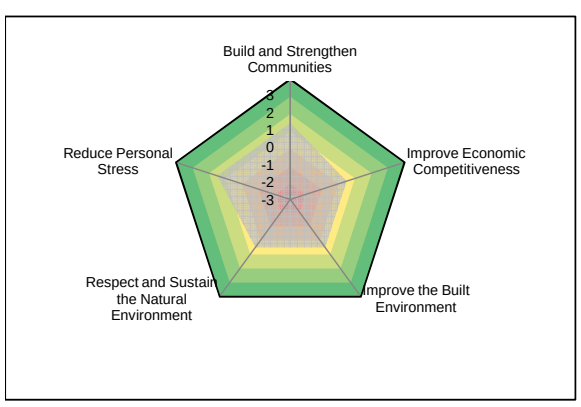
Expansion of demand responsive transport networks to complement conventional bus/rail/Luas routes. Focus on connections to other modes, increasing the ability to feed into the wider transport network, but also new local travel options in areas with no public transport network.

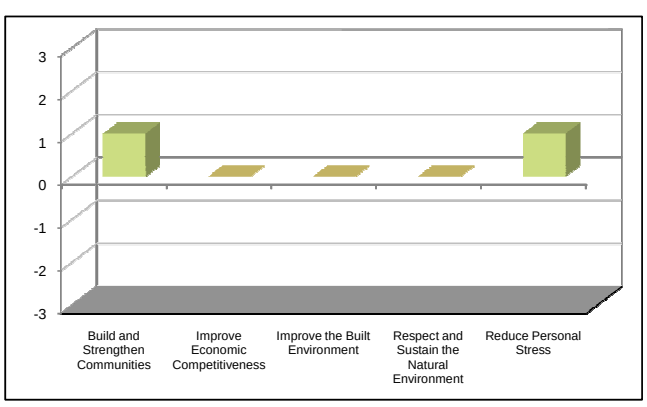
Includes specialist provision for mobility needs not met by conventional transport and creation of services in areas of lower demand where conventional public transport services are unavailable or under-used.

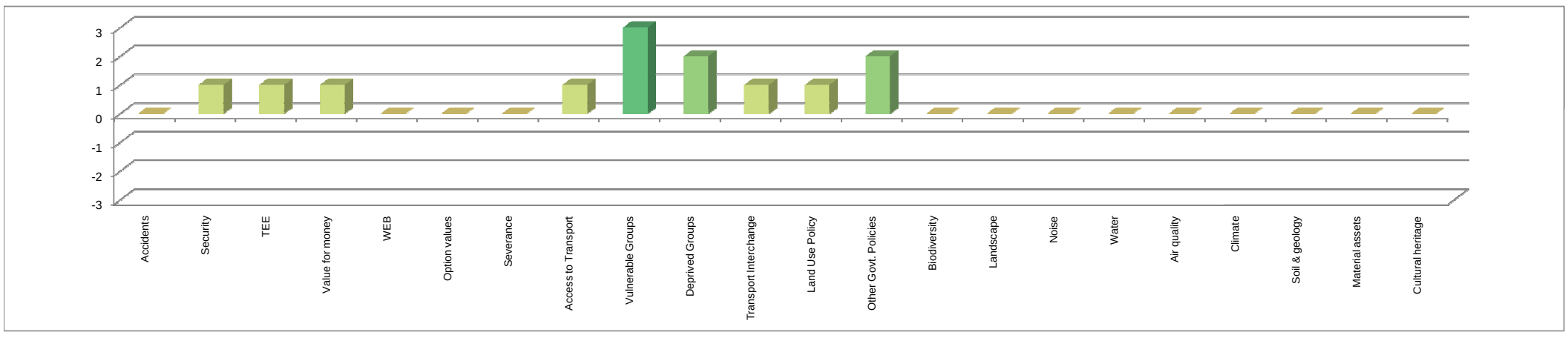
Stage 1a	Appraisal	Notes
Political		No obvious co-ordinating agency.
Technological		
Legal		Possible issues with legal framework for community transport and shared taxis etc.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Links communities without conventional bus service to transport hubs, rail, Luas and bus interchanges. Improves or creates new links between communities within the region. Large benefit for those served but assumed to only affect very small numbers without current access. Improves opportunities for personal travel and access to services and employment
Improve Economic Competitiveness	0	Minimal impacts on economic competitiveness are expected, journyes will tend to be slow and benefits will be more social inclusion oriented.
Improve the Built Environment	0	Minimal impacts on the built environment are expected.
Respect and Sustain the Natural Environment	0	Provides alternative to using car, but generally targeted at those with no access to car in any case, hence overall neutral impact.
Reduce Personal Stress	1	Ease of use and personal safety benefits as can specify door-to-door journeys. Medium benefit to very small number of people. Improves opportunities for personal travel.

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Minimal impact on accidents as aimed at non-car users.
	Security	1	Personal safety benefits for individuals using the extended services. Medium benefit to a very small number of people.
Economy	TEE	1	Will provide an improvement to the generalised cost of travel to a very small number of individuals; however benefit to each could be relatively large.
	Value for money	1	
	WEB	0	No wider economics benefits are expected.
Accessibility	Option values	0	Enhances public transport provision in certain areas but mainly of benefit to those without alternative options.
	Severance	0	No severance impacts anticipated. There is not likely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	1	Transport accessibility enhanced for those who gain new services. However, this is assumed to be a small impact on relatively small number of people.
Social Inclusion	Vulnerable Groups	3	Can benefit those with mobility issues (assumed that most DRT vehicles will be fully accessible). Also helps vulnerable groups more dependent on public transport, especially in otherwise unserved areas
	Deprived Groups	2	Can significantly increase area of access for work and services for those without any access to a car.
Integration	Transport Interchange	1	Improve accessibility to interchange hubs for those in areas not served by conventional public transport. Medium impact on very small number of people.
	Land Use Policy	1	Provides marginal support for policies to: Balance provision of social infrastructure between Dublin and other towns in the GDA; Improve environmental performance of transport sector.
	Other Govt. Policies	2	Supports marginal support policies to: Promote social inclusion and cohesion; Promote access to employment, education and health
Environment	Biodiversity	0	Demand responsive services, taxi bus and community transport would result in no notable changes.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	







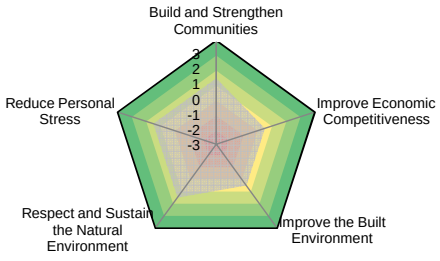
Measure Name:	Permit cycles on bus and rail
Measure Category:	Network Integration and Development
Potential Delivery Agents:	Operators DTO
How would we measure a successful transport outcome?	Available cycle-carrying network Number of cycles carried Cycling mode share for station access
Cost band	Very low cost

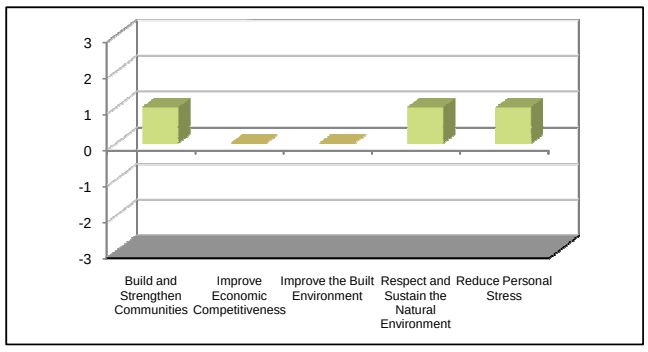
Stage 1a	**Appraisal**	**Notes**
Political		Health & safety issues.
Technological		
Legal		

Measure Description & Supporting Information:

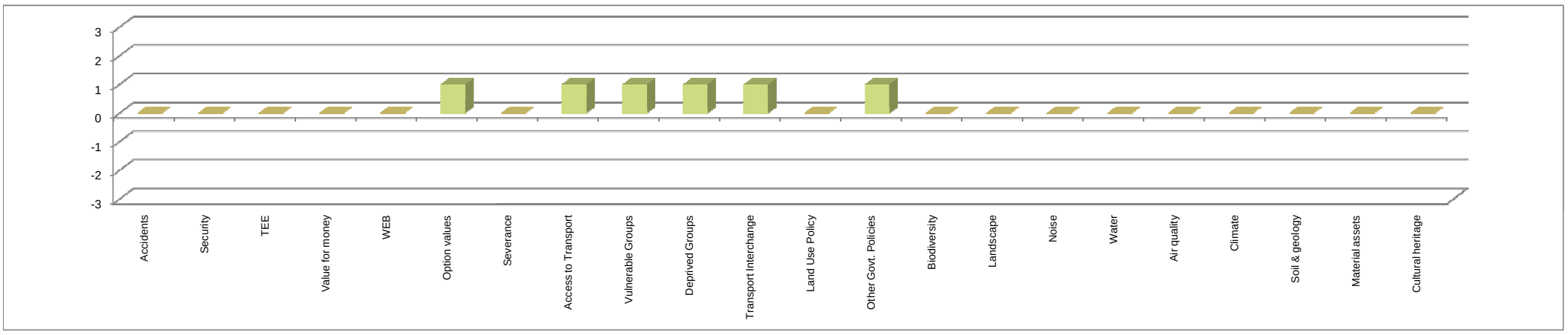
Agreement with operators to allow bikes on bus, light rail and rail.
Likely to require modification to vehicles to accommodate bikes, so more opportunity for rail and light rail than for bus.
Buses need to be specifically adapted and there is a trade off to be made between space for passengers and bikes. May also need to be linked to measures to replace/renew fleet.
Facilitating this on some services could have negative impacts - potentially increasing stop/dwell times and reducing passenger capacity - therefore assumed likely to mainly relate to off peak, contra-peak direction and rural services.
Benefits of measure are marginal - mainly for people who cycle at both ends of public transport journey and have cycle storage available at destination. Provides additional opportunities for longer and more diverse leisure trips.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Improves opportunities to interchange between bike and train and bus. Small benefit for small number of people.
Improve Economic Competitiveness	0	Minimal impacts on economic competitiveness are expected as peak time access benefits would be offset by lost passenger carrying capacity.
Improve the Built Environment	0	Permitting cycles on bus and rail has implications for the vehicle fleet in terms of space for passengers but is unlikely to have a significant impact on the overall quality of the vehicle.
Respect and Sustain the Natural Environment	1	Encourage mode shift to cycling. Only impact for very small number of current and potential cyclists who would find it useful to cycle at both ends of public transport journeys.
Reduce Personal Stress	1	Promotes healthier forms of travel. Small benefit for small number of people.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Minimal impact on accidents.
	Security	0	Minimal impact on security.
Economy	TEE	0	Small positive impact upon transport economic efficiency; however could only benefit a very small number of travellers without disbenefits to others, so overall insignificant.
	Value for money	0	
	WEB	0	Minimal wider economic benefits are expected.
Accessibility	Option values	1	Makes public transport an attractive option for cyclists, creates another option for car drivers.
	Severance	0	No severance impacts anticipated. There is not likely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	1	Improves access for cyclists to the wider public transport network. Potential disbenefits to other passengers if bus and rail services not equiped to cope with carriage of cycles without lost capacity.
Social Inclusion	Vulnerable Groups	1	Benefits some vulnerable groups - e.g. those without access to a car. Unlikely to assist disabled travellers.
	Deprived Groups	1	Benefits deprived groups without access to a car.
Integration	Transport Interchange	1	Improves interchange between cycle and bus/train. Potential disbenefits to other passengers if bus and rail services ill-equiped to cope with cycle carriage.
	Land Use Policy	0	No significant impact on land use policy.
	Other Govt. Policies	1	Supports policies regarding public health, reducing obesity and better mental health.
Environment	Biodiversity	0	Permitting cycles on bus or rail would result in no notable changes.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	



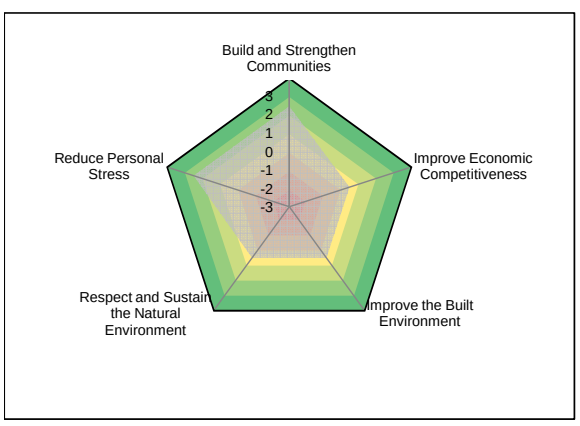
Measure Name:	Integrated Ticketing
Measure Category:	Network Integration and Development
Potential Delivery Agents:	DTO Operators
How would we measure a successful transport outcome?	Increase in public transport patronage Increase in distances travelled by public transport
Cost band	Low cost

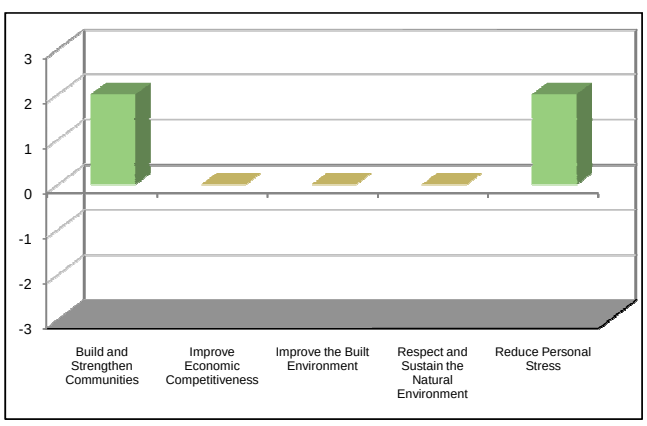
Measure Description & Supporting Information:
Introduce range of multi modal/all-operator tickets (single/day and period). Reduces interchange penalty and makes it quicker and easier to travel between both the same public transport and different public transport modes. Does not impact upon the overall cost of travel. Increases areas of search for key facilities and employment and reduces interchange penalties. Reduces boarding times and therefore increases efficiency of services (could possibly allow services to run with fewer vehicles).

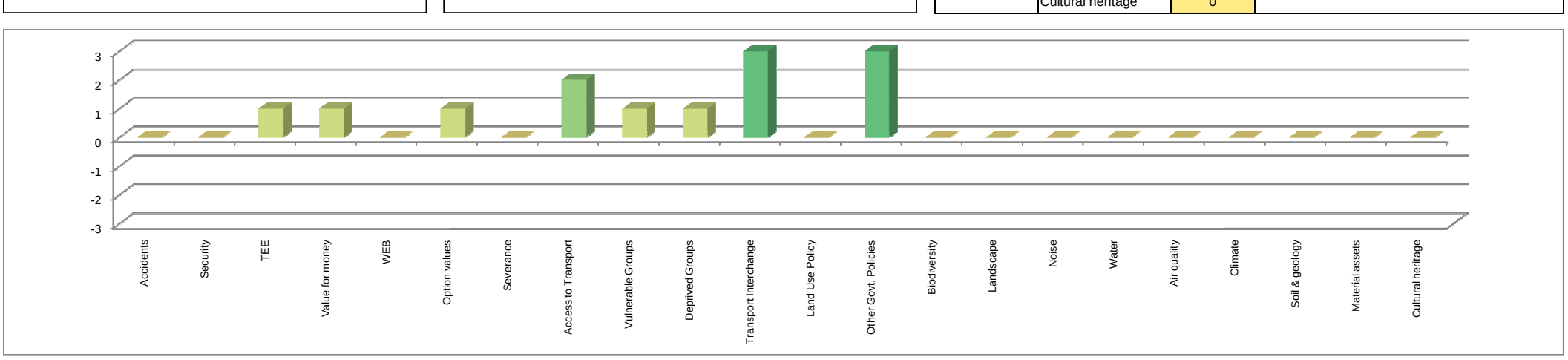
Stage 1a	**Appraisal**	**Notes**
Political		No obvious co-ordinating or delivery agency.
Technological		
Legal		

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Improves accessibility by making public transport journeys more efficient, reducing interchange penalty and ticket buying time between journey segments and modes. Helps increase the area of search for key facilities and employment. Small benefit for a large number of people.
Improve Economic Competitiveness	0	Could make public transport journeys more attractive for business users, leading to potential reduction in congestion. However, this it is not considered to have more than an overall slight positive impact upon business competitiveness.
Improve the Built Environment	0	Potential mode shift to public transport would reduce the intrusion of motor traffic; however impact would not be expected to be significant.
Respect and Sustain the Natural Environment	0	Potential mode shift by making public transport more attractive, reducing car CO2 emissions; however impact not expected to be significant.
Reduce Personal Stress	2	Improve ease of using public transport, reduced through-journey times and more convenient personal travel. Small benefit for a large number of people.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Minimal impact on accidents.
	Security	0	Assume the system would be secure against fraud. Generally this will have no impact on this sub-objective.
Economy	TEE	1	Reduce penalty associated with interchange and potentially reduced whole-journey times leading to improved generalised cost across public transport network. Small benefit for large number of people.
	Value for money	1	
	WEB	0	Very small positive benefit on access to labour market; however not significant.
Accessibility	Option values	1	Makes public transport more convenient and attractive for all categories of non users.
	Severance	0	There is not likely to be any overall change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Makes journeys with an interchange more efficient. Also reduces journey times through reduced tiekct purchase and boarding times. therefore improving access to the wider transport network. Medium benefit to moderate numbers of cross-mode users.
Social Inclusion	Vulnerable Groups	1	Makes journeys with an interchange more efficient - public transport improvements particularly benefit vulnerable groups (though disabled people may already have cross-mode concessionary passes).
	Deprived Groups	1	Makes journeys with an interchange more efficient and increases ease of access to wider set of destinations - public transport improvements tend to particularly benefit deprived groups.
Integration	Transport Interchange	3	This measure will actively encourage interchange between transport modes. The scheme significantly enhances provision for interchange all across GDA.
	Land Use Policy	0	Limited impact on land use policy.
	Other Govt. Policies	3	Supports: Policies which encourage innovation Promote tourism across the GDA Promote social inclusion and cohesion Enhance access to education and work
Environment	Biodiversity	0	Integrated ticketing would result in no notable changes.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	







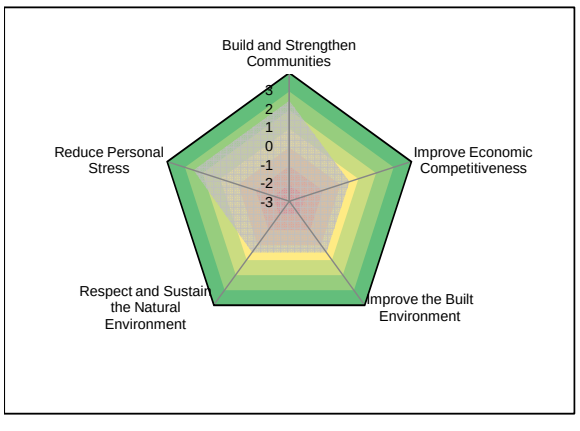
Measure Name:	Integrated fares
Measure Category:	Network Integration and Development
Potential Delivery Agents:	DTO Operators
How would we measure a successful transport outcome?	Increase in public transport patronage Increase in distances travelled by public transport
Cost band	Very low cost

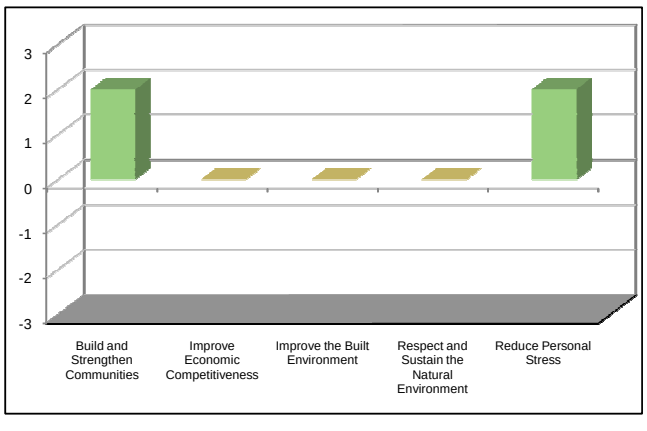
Stage 1a	**Appraisal**	**Notes**
Political		No obvious delivery agent and potential issues with co-ordination.
Technological		
Legal		

Measure Description & Supporting Information:

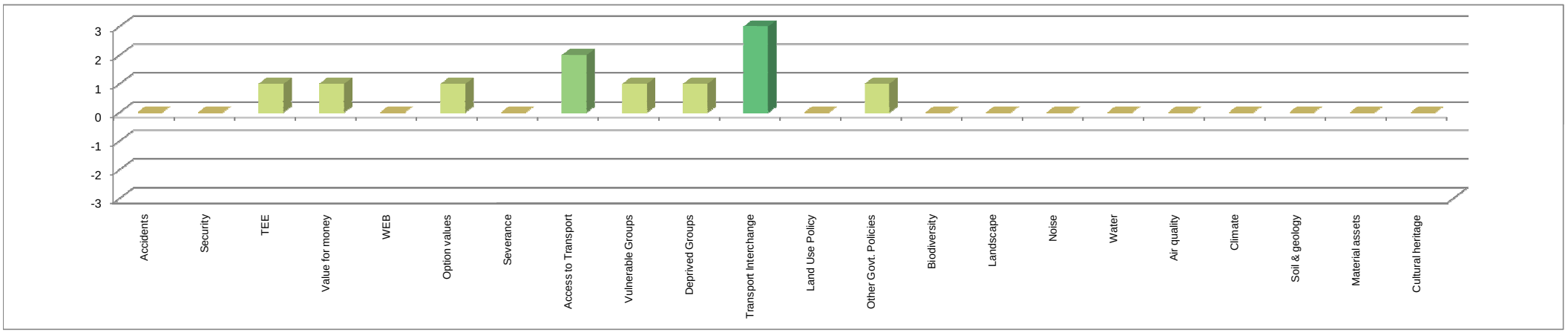
All-mode zonal fares structure with simplified range of zone-to-zone fares regardless of mode used. No overall impact on cost of public transport travel, but would increase chocie of routes for any given fare.
Reduces the interchange penalty for certain journeys, increases the area of search for employment and key facilities.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Improves accessibility by making public transport more accessible and easier to use, reducing the difficulty of changing between services and modes. Helps increase the area of search for key facilities and employment. Small benefit for large number of people.
Improve Economic Competitiveness	0	Simplified fares make public transport more attractive for business users, hence mode shift and potential reduction in congestion. However, overall slight positive impact is not considered to be significant.
Improve the Built Environment	0	Potential mode shift to public transport would reduce the intrusion of motor traffic; however impact not expected to be significant.
Respect and Sustain the Natural Environment	0	Potential mode shift to public transport, through making public transport more attractive and affordable. However, only a very small benefit anticipated.
Reduce Personal Stress	2	Improve ease of using public transport with simplified and more predictable fares, could lead to potential reductions in boarding and ticket buying times and so reduce journey times for personal travel. Small benefit for large numbers.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Limited impact on accidents.
	Security	0	Limited impact on security.
Economy	TEE	1	Reduced penalty associated with interchange and potential reduction in boarding and ticket purchase times from more advance ticket purchase, leading to improved generalised cost of journey for all users.
	Value for money	1	
	WEB	0	Very small positive benefit of more convenient access to labour markets; however not significant.
Accessibility	Option values	1	Makes public transport more convenient and attractive for all categories of non users.
	Severance	0	There is not likely to be any overall change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Makes complex interchanging journey costs more transparent and therefore attractive and efficient. Also may reduces journey times through quicker boarding (fewer questrions over fares), therefore improving access to the wider transport network.
Social Inclusion	Vulnerable Groups	1	Makes journeys with an interchange more efficient - public transport improvements particularly benefit vulnerable groups (though disabled people may already have cross-mode concessionary passes).
	Deprived Groups	1	Makes journeys with an interchange more efficient and increases ease of access to wider set of destinations - public transport improvements tend to particularly benefit deprived groups.
Integration	Transport Interchange	3	This measure will actively reduce barriers to interchange between transport modes due to lack of information about costs. Therefore significantly enhances provision for interchange all across GDA.
	Land Use Policy	0	Limited impact on land use policy.
	Other Govt. Policies	1	Provides minimal support for: Policies which encourage innovation Promote tourism across the GDA Promote social inclusion and cohesion Enhance access to education and work
Environment	Biodiversity	0	Integrated fares would result in no notable changes.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	

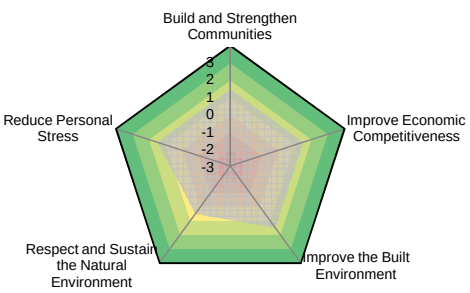


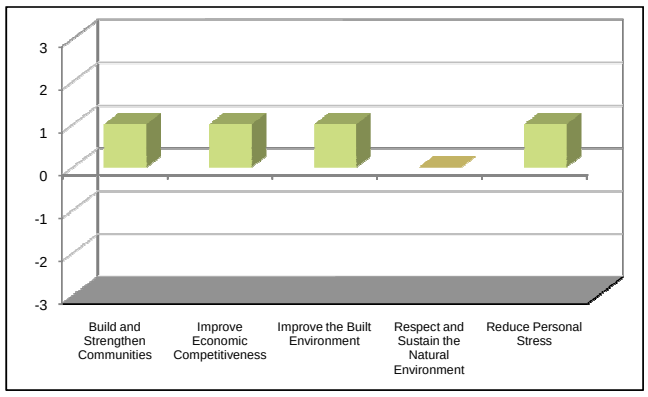
Measure Name:	Public transport fares reductions
Measure Category:	Network Integration and Development
Potential Delivery Agents:	Operators DTO
How would we measure a successful transport outcome?	Lower fares per km or per passenger Increased bus/rail/Luas patronage Higher vehicle occupancy levels
Cost band	Very low cost

Stage 1a	**Appraisal**	**Notes**
Political		
Technological		
Legal		

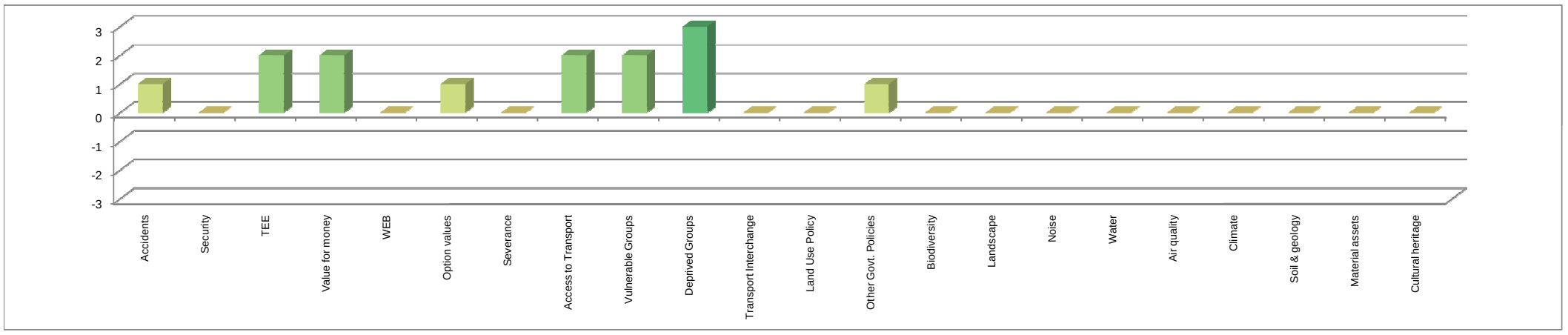
Measure Description & Supporting Information:
Introduction of lower bus, rail and tram fares outside of peak services to take up unused capacity. May include other lightly-used services e.g. contra-peak direction services within peak times. Encourage new travel on these services across all modes. Increases inclusion particularly for those on low incomes and adults working non-standard hours. Net effect is likely to be more journeys and better vehicle utilisation, though may require minimal additional operating subsidy in certain cases.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Improves accessibility by making non-work journeys more affordable. Therefore increasing the area of search for key facilities other than employment, albeit only a minority of journeys
Improve Economic Competitiveness	1	Could make public transport more attractive overall, hence generating mode shift and potential reduction in inter-peak congestion. However, only brings small benefit to some businesses.
Improve the Built Environment	1	Some benefits expected in terms of reduced traffic as a result of mode shift outside peak period. Small benefit to small numbers.
Respect and Sustain the Natural Environment	0	May promote a mode shift to more sustainable modes overall, though impact assumed to be very small, as only off-peak or in contra-peak direction.
Reduce Personal Stress	1	Makes it easier to use alternatives to the car. However, likely to affect only a small number of journeys, outside most 'stressed' periods.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Potential benefits through reduced traffic volumes on the road overall through some mode shift.
	Security	0	Limited impact on security.
Economy	TEE	2	Reduced fares reduce cost for public transport users in the off-peak and improve operating efficiency. Medium reduction in generalised cost for medium numbers, assuming no large increases in operating subsidy needed.
	Value for money	2	
	WEB	0	Minimal wider economic benefits are expected as only relates to public transport travel in off-peaks.
Accessibility	Option values	1	Makes public transport a more attractive option for car users. Small benefit outside peak journeys only.
	Severance	0	No impact on severance expected. There is unlikely to be any overall change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Makes using public transport more affordable in the off-peak, so improves access by the wider public transport network. Significant number of people, moderate impact.
Social Inclusion	Vulnerable Groups	2	Makes journeys by public transport more affordable so benefits vulnerable groups such as those on low incomes and those not in work. (Note that many vulnerable users likely to already receive free or reduced fare concession benefits). Small benefit to large numbers of vulnerable individuals and groups.
	Deprived Groups	3	Makes many journeys by public transport more affordable so benefits deprived groups including those on low incomes. Small benefit to large number of vulnerable individuals and communities.
Integration	Transport Interchange	0	Limited impact on transport interchange.
	Land Use Policy	0	Limited impact on land use policy.
	Other Govt. Policies	1	Strongly supports policies which promote social inclusion and cohesion; also supports policies to promote tourism, as attractions accessed off-peak.
Environment	Biodiversity	0	Reducing public transport fares would result in no notable changes.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	



Measure Name:	Lower public transport fares overall
Measure Category:	Network Integration and Development
Potential Delivery Agents:	DTA, public transport operators, central government
How would we measure a successful transport outcome?	Higher levels of public transport use; increased public transport mode shares; reduced private vehicle use
Cost band	Low cost

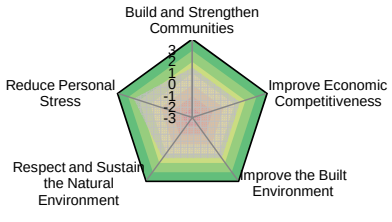
Stage 1a	Appraisal	Notes
Political		Government funding and support required.
Technological		No new technology required.
Legal		Possible conflict with EU subsidy and competition laws to be investigated

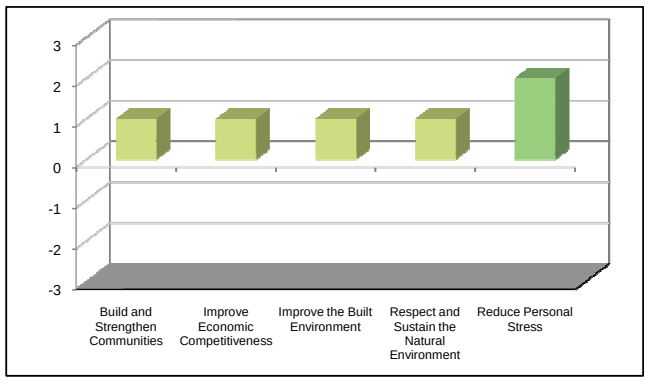
Measure Description & Supporting Information:

Make the cost of public transport cheaper for all users (including commuters and occasional users) at all times. Requires new funding - e.g. govt. support - in order to subsidise fares for all users.

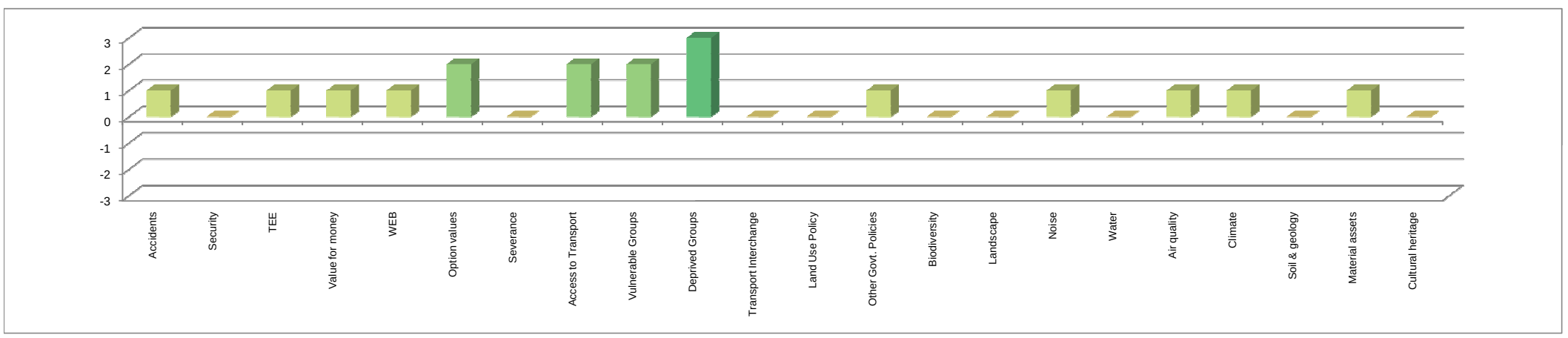
Increases inclusion particularly for those on low incomes and adults of working age.
Net effect is likely to be more journeys, though will require operating subsidy.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Improves accessibility for all users. Particular benefit to low income groups.
Improve Economic Competitiveness	1	Could make public transport more attractive overall, hence generating mode shift and potential reduction in peak and inter-peak congestion. However, only brings small benefit to some businesses.
Improve the Built Environment	1	Some benefits expected in terms of reduced traffic as a result of mode shift. Small benefit to small numbers.
Respect and Sustain the Natural Environment	1	May promote a mode shift to more sustainable modes overall and therefore positive benefits associated with reductions in impact of transport.
Reduce Personal Stress	2	Makes it easier to use alternatives to the car. Will affect all users, including commuters travelling during most 'stressed' periods.





Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	1	Potential benefits through reduced traffic volumes on the road overall through some mode shift.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	1	Reduced fares reduce cost for public transport users at all times and improve operating efficiency. Medium reduction in generalised cost for medium numbers, athough large increases in operating subsidy likely.
	Value for money	1	
	WEB	1	Some wider economic benefits are expected as measure relates to public transport travel at all times.
Accessibility	Option values	2	Makes public transport a more attractive option for car users. Benefits peak and off peak journeys.
	Severance	0	No impact on severance expected. There is unlikely to be any overall change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Makes using public transport more affordable at all times, so improves access by the wider public transport network. Significant number of people, moderate impact.
Social Inclusion	Vulnerable Groups	2	Makes journeys by public transport more affordable so benefits vulnerable groups such as those on low incomes and those not in work. (Note that many vulnerable users likely to already receive free or reduced fare concession benefits). Small benefit to large numbers of vulnerable individuals and groups.
	Deprived Groups	3	Makes many journeys by public transport more affordable so benefits deprived groups including those on low incomes. Small benefit to large number of vulnerable individuals and communities.
Integration	Transport Interchange	0	Limited impact on transport interchange.
	Land Use Policy	0	Limited impact on land use policy.
	Other Govt. Policies	1	Strongly supports policies which promote social inclusion and cohesion; also supports policies to promote tourism..
Environment	Biodiversity	0	No additional land impacts envisaged.
	Landscape	0	No additional land impacts envisaged.
	Noise	1	Modal shift to PT should reduce road-based noise levels.
	Water	0	No additional land impacts envisaged.
	Air quality	1	Modal shift to PT should reduce road-based pollution emissions.
	Climate	1	Modal shift to PT should reduce road-based HGH emissions (on a per-capita basis).
	Soil & geology	0	No additional land impacts envisaged.
	Material assets	1	Modal shift to PT should reduce road-based fossil fuel consumption.
	Cultural heritage	0	No additional land impacts envisaged.

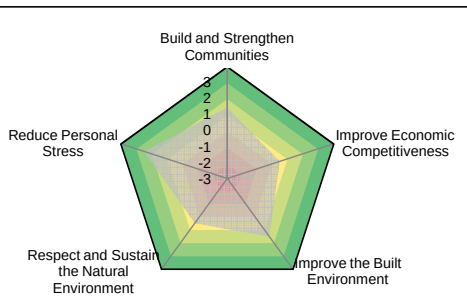


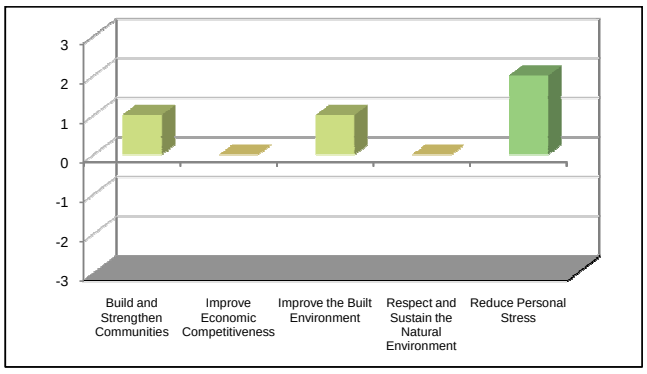
Measure Name:	Enhance quality of public transport vehicles
Measure Category:	Improved Passenger Environment
Potential Delivery Agents:	Operators
How would we measure a successful transport outcome?	Increase in public transport passenger satisfaction Increase in public transport patronage
Cost band	Very low cost

Stage 1a	**Appraisal**	**Notes**
Political		New vehicles require ministerial approval.
Technological		
Legal		

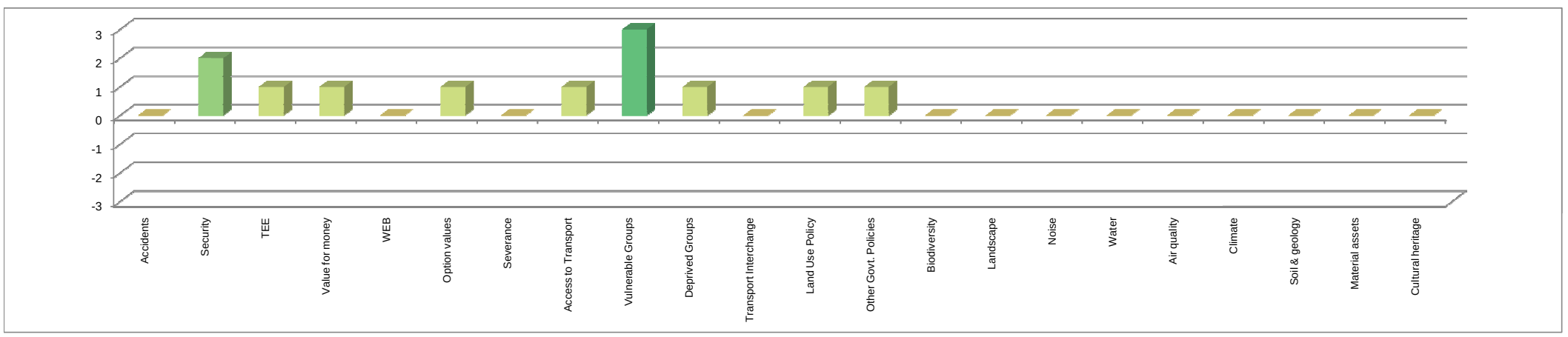
Measure Description & Supporting Information:
Improvements to the on-board experience - including seating, boarding and internal circulation layouts, ride quality, real-time information and CCTV. Makes public transport more attractive, makes people feel safer. Doesn't reduce journey times as likely to increase the number of people using the services offsetting access improvements in boarding times. Assume that the information is fully accessible on-vehicle information which will have benefits for new users, people with sensory impairments and non-local passengers.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	This measure will have limited impact on overall accessibility to services for most regular users. However, vehicles may be more accessible for mobility impaired hence a small benefit assumed.
Improve Economic Competitiveness	0	This measure will support business travel in a very minor way only, by making travelling by public transport a more pleasant experience.
Improve the Built Environment	1	Improves public transport vehicle design, but does not affect other sub-objectives in this category.
Respect and Sustain the Natural Environment	0	This measure will have only a minor impact on mode shift, by making public transport more attractive. Impact is assuyed to be insignificant.
Reduce Personal Stress	2	Improve travel comfort and sense of personal security. Improved in-vehicle travel information.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Minimal impact on accidents.
	Security	2	On board CCTV will improve personal security and safety, medium impact on medium sized group.
Economy	TEE	1	Improved quality would have a positive journey experience benefit, although very small for a medium number of users across all transport modes.
	Value for money	1	
	WEB	0	Minimal wider economic benefits are expected.
Accessibility	Option values	1	Will make public transport more attractive for all categories of non-users. Minor positive benefit.
	Severance	0	Minimal impacts on severance expected. There is not likely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	1	Small improvements to public transport access through information/physical access improvements
Social Inclusion	Vulnerable Groups	3	Measures to improve the accessibility of vehicles will have benefits for those with mobility impairments.
	Deprived Groups	1	Public transport enhancements particularly benefit dependent users such as deprived groups. Small benefits to a moderate number of deprived users.
Integration	Transport Interchange	0	Improved on board information would make some interchange easier; however, very small benefit to a very small number of travellers.
	Land Use Policy	1	Through encouraging mode shift, measure supports policies to improve the environmental performance of the transport sector and invest in sustainability
	Other Govt. Policies	1	Improved quality of service may assist in: Promoting tourism across GDA, and to maintain and develop heritage
Environment	Biodiversity	0	Enhancing the quality of public transport vehicles would result in no notable changes.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	

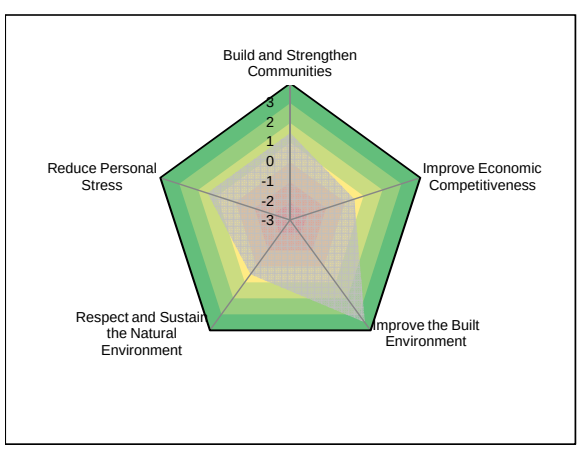


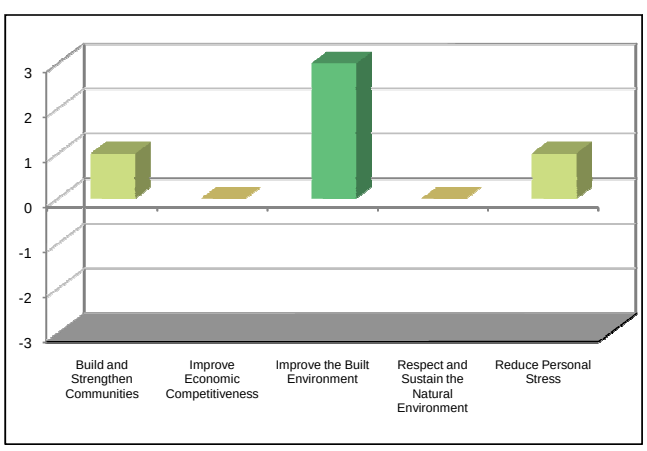
Measure Name:	High quality interchanges
Measure Category:	Improved Passenger Environment
Potential Delivery Agents:	Operators DTO Local Authorities
How would we measure a successful transport outcome?	Increase in public transport passenger satisfaction
Cost band	Low cost

Stage 1a	**Appraisal**	**Notes**
Political		
Technological		
Legal		

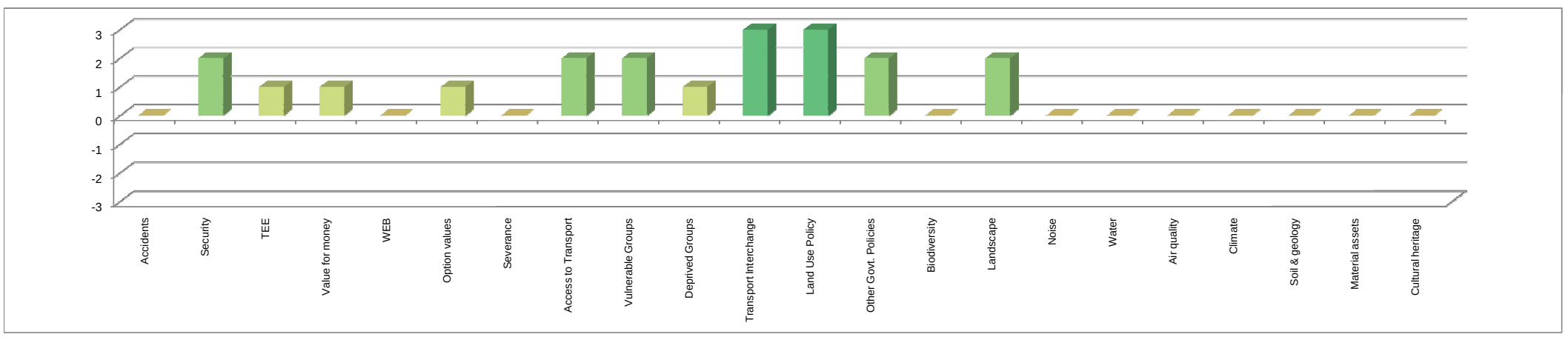
Measure Description & Supporting Information:
Create high quality interchanges at public transport hubs and gateways. Improvements to bus and major rail stations, including full range of appropriate facilities (catering, retailing etc.). Focus on major interchange locations (e.g. rail termini) rather than informal on-street bus/rail/light rail interchange (covered by NI1 and PE4) Include information and physical access improvements (to platforms, vehicles) that make using the network easier.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Some improvement in accessibility particularly for the mobility impaired. However, only affects small part of the journey for those users who travel through the major transport interchanges or hubs.
Improve Economic Competitiveness	0	Minimal impacts on economic competitiveness are expected. Although high quality interchange facilities may include improved Port or Airport accesss, this is not primarily for business travel.
Improve the Built Environment	3	Improving the quality of design of interchange infrastructure, with improved off-board passenger facilities, would create large benefit for large number of people within the built environment.
Respect and Sustain the Natural Environment	0	May encourage some mode shift to public transport, though minimal change assumed.
Reduce Personal Stress	1	Improve journey quality, sense of personal security and ease of use of public transport.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Minimal impact on accidents.
	Security	2	Improves sense of personal security, potentially also some safety enhancements (e.g. at rail stations). Medium improvement for moderate numbers.
Economy	TEE	1	Helps to improve interchange experience, creating a very small benefit to a medium number of travellers.
	Value for money	1	
	WEB	0	Minimal wider economic benefits are expected, even though high quality interchanges can improve image of the city, making it more attractive to investors.
Accessibility	Option values	1	Makes public transport more attractive to non-users.
	Severance	0	Minimal impact on severance. There is not likely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Improving major stations and interchanges is likely to include improvements in accessibility and visibility.
Social Inclusion	Vulnerable Groups	2	Improvements would reduce feelings of vulnerability to crime within public transport system and improve physical accessibility for those with impaired mobility. Medium improvement for small number of groups.
	Deprived Groups	1	High quality interchanges would bring small benefits to non-car owning groups dependent on public transport, but only to those who use interchanges.
Integration	Transport Interchange	3	Measure will encourage interchange between modes and services. Large improvement for many users.
	Land Use Policy	3	High quality interchanges on major corridors can help: Enhance the use of key inter-regional rail and road links providing access to other regions. Enhance the role of Dublin as an international gateway with a world city economic role. Could help address local environmental issues and improve public transport access at port and airport.
	Other Govt. Policies	2	Supports Polices which promote social inclusion Policies that enhance access to work and education Policies to promote tourism across the GDA and to maintain and develop heritage
Environment	Biodiversity	0	High quality interchanges, designed to compliment the existing landscapes, would potentially result in a moderate positive impact on landscape.
	Landscape	2	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	



Measure Name:	Bus stop improvements
Measure Category:	Improved Passenger Environment
Potential Delivery Agents:	Local Authorities Operators
How would we measure a successful transport outcome?	Percentage of accessible stops Increase in public transport passenger satisfaction Increase in bus patronage
Cost band	Very low cost

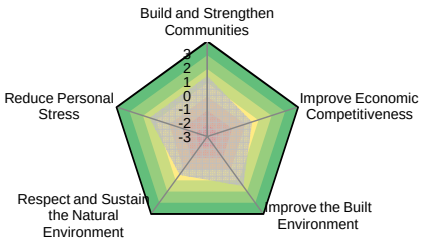
Stage 1a	Appraisal	Notes
Political		
Technological		
Legal		

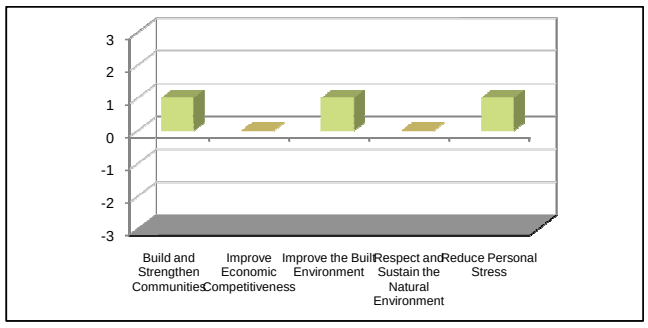
Measure Description & Supporting Information:

Corridor-wide improvements to bus stop waiting environment, rolled out across network over time. Includes improvements to bus waiting facilities to reduce fear of crime including lighting, help points and CCTV; improvement in physical accessibility assisting boarding and alighting, better infomation (not real-time , which is included in measure MM3) and passenger comfort (shelters, seating etc.).

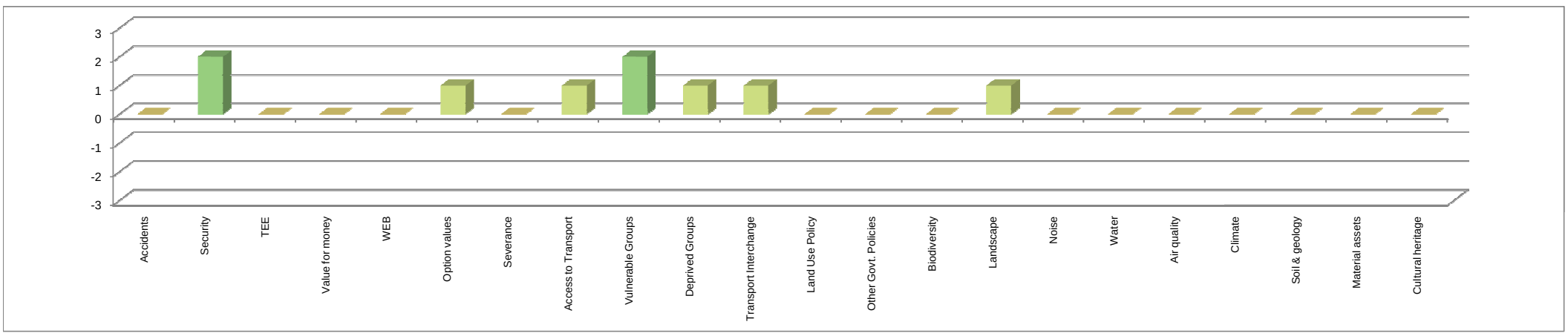
Assumed minor impact on interchange as many bus/bus interchanges are simply stops where roads and corridors intersect; more significiant interchange being covered in measure NI1.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Make public transport a more attractive option for accessing key services and employment. Disadvantaged groups may potentially benefit through improvements in physical accessibility.
Improve Economic Competitiveness	0	Make public transport a more attractive option, therefore small mode shift and potential reduction in congestion for non-users; however this is unlikely to be significant for business travellers.
Improve the Built Environment	1	Improve quality of transport infrastructure (off-board passenger facilities and waiting environment) can improve built environment, for small numbers and small level of benefit overall.
Respect and Sustain the Natural Environment	0	Measure will have minimal impact on mode shift and hence elements of the natural environment.
Reduce Personal Stress	1	Improve travel comfort through improved waiting areas, improving perceptions of personal safety. Small benefit from enhanced journey experience.





Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	No impacts on accidents.
	Security	2	Improving perceptions of personal safety and minor improvements in personal security for moderate numbers of people.
Economy	TEE	0	Limited impact on transport economic efficiency.
	Value for money	0	
	WEB	0	Minimal wider economic benefits are expected.
Accessibility	Option values	1	Makes public transport more attractive to non-users.
	Severance	0	Minimal impact on severance. There is not likely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	1	General improvement to quality of waiting environment creates minor improvement in accessibility. Small impact overall on small numbers.
Social Inclusion	Vulnerable Groups	2	Improvement in physical accessibility of stops will benefit vulnerable groups with mobility impairments. Also reduces vulnerable groups fear of crime on public transport. Small improvement for significant groups of vulnerable travellers.
	Deprived Groups	1	Bus stop improvements would improve public transport, bringing benefits to non car owners, who are likely to be a majority within deprived groups.
Integration	Transport Interchange	1	Major enhancements to interchange are counted in NI1. Some benefit from better facilities at bus/bus interchange points where route corridors intersect.
	Land Use Policy	0	Minimal impact on land use policy.
	Other Govt. Policies	0	Minimal impact on other government policies.
Environment	Biodiversity	0	Bus stop improvements, designed to complement the existing landscapes, would potentially result in a minor positive impact on landscape.
	Landscape	1	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	



Measure Name:	Improve off peak service levels
Measure Category:	Rail and Light Rail Strategy
Potential Delivery Agents:	Operators
How would we measure a successful transport outcome?	Higher off peak frequencies. Increase in rail patronage
Cost band	Very low cost

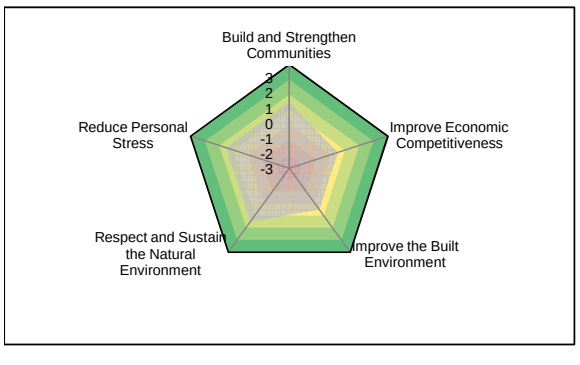
Stage 1a	Appraisal	Notes
Political		
Technological		
Legal		

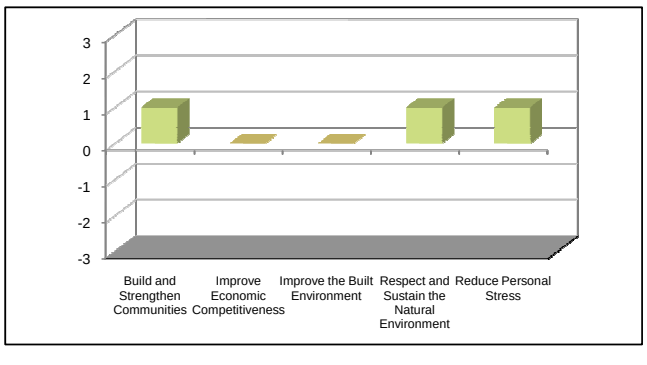
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Could have a minor positive as attracts people from cars and so may reduce the amount of traffic on the roads; however could result in higher traffic speeds.
	Security	0	No impact on security, assume off peak services will have same level of security as peak time services.
Economy	TEE	2	Improved journey times and reduced wait times during off-peak periods will result in medium benefits for small number of travellers during these periods.
	Value for money	2	
	WEB	0	Minimal wider economic benefits are expected.
Accessibility	Option values	1	Makes rail and Luas moderately more attractive to non-users for leisure and other off peak journeys
	Severance	0	Minimal impact on severance. There is not likely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Improves off-peak access only to existing rail/Luas network. Medium improvement for medium number.
Social Inclusion	Vulnerable Groups	1	Improves access for those without access to a car in off peak period only. Benefit restricted to existing rail and tram corridors so small numbers only.
	Deprived Groups	1	Improves access for those without access to a car in off peak periods. Benefits restricted to existing rail and tram corridors so small numbers only.
Integration	Transport Interchange	1	Increased availability of onward travel in off peak for small numbers of users who interchange.
	Land Use Policy	1	Enhanced inter-regional rail during off-peak Improve environmental performance of transport sector overall as may discourage car ownership.
	Other Govt. Policies	2	Promotes social inclusion and cohesion; promotes tourism across the GDA.
Environment	Biodiversity	0	Improving off-peak services would result in no notable changes.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	

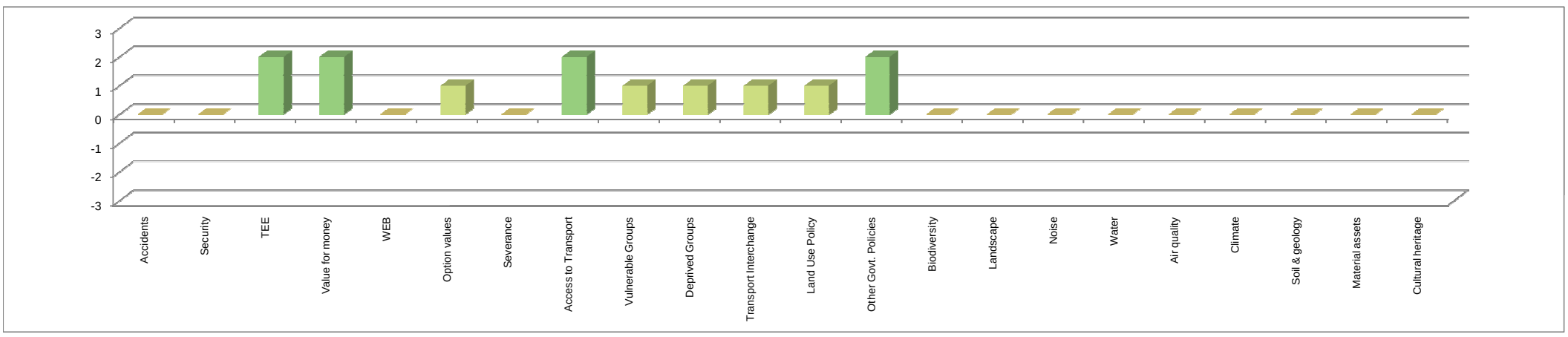
Measure Description & Supporting Information:

Service levels enhanced at all times outside peaks (inter-peak, evening and weekend periods are referred to collectively here as 'off peak').
Primarily heavy rail as frequencies already high on Luas in these periods.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Improves off-peak accessibility, providing more social opportunities for public transport using people. Moderate impact for small numbers.
Improve Economic Competitiveness	0	Minimal impacts on economic competitiveness or business travel are expected, benefits will be more social inclusion and leisure-oriented.
Improve the Built Environment	0	No impact on the built environment or on-street vehicle impact expected (minimal Luas change).
Respect and Sustain the Natural Environment	1	Small benefit from mode shift from car may be expected. Additional emissions from services will be minimal as these are energy-efficient modes.
Reduce Personal Stress	1	Provides overall improved journey times for personal travel other than peak time commuting, improves overall ease of use of public transport.







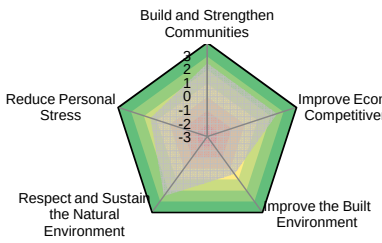
Measure Name:	New rail and tram corridors
Measure Category:	Rail and Light Rail Strategy
Potential Delivery Agents:	Operators
How would we measure a successful transport outcome?	Higher public transport accessibility, larger network Increase in rail and light rail patronage
Cost band	Medium Cost

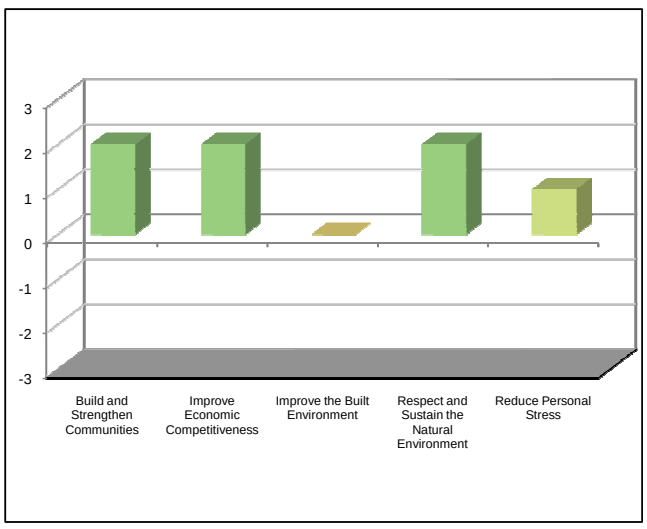
Stage 1a	**Appraisal**	**Notes**
Political		Requires An Bord Pleanala approval
Technological		No technology issues
Legal		

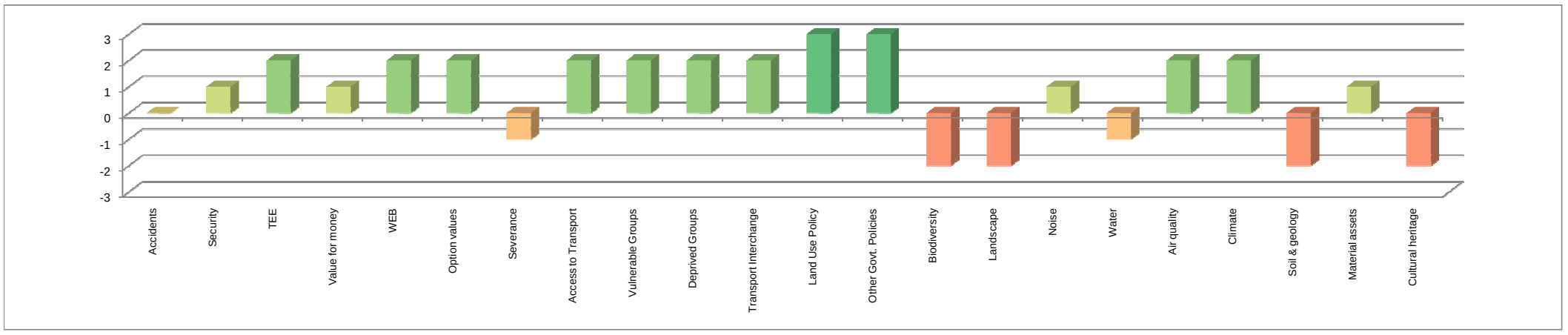
Measure Description & Supporting Information:
New lines and/or extensions/branches to existing rail and LUAS lines to provide fixed link transport to corridors not already served. These may include taking over an existing QBC corridor by LUAS or the provision of services in wholly new areas. Significant disruption during construction can impact upon demand and accessibility; these impacts are short term and have not been considered as part of this assessment.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Large benefit as new routes being provided and crowding reduced. However, most useful links likely to already exist hence scope of benefits limited.
Improve Economic Competitiveness	2	Reduces highway congestion and improves journey time reliability through mode shift. Improves access to markets. Effective public transport makes GDA more attractive to investors.
Improve the Built Environment	0	Mode shift may reduce impacts of motor traffic; however, new rail/LUAS lines may have adverse impact on the environment for people, even if rail stations themselves are well designed.
Respect and Sustain the Natural Environment	2	Mode shift to more sustainable modes, through making public transport a more attractive option. Construction of new rail lines may have negative impact on landscape, biodiversity, noise etc.
Reduce Personal Stress	1	Measure makes it easier for people to use alternative to the car. Benefits for personal journeys.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Could have a minor positive as trips attracted from car thereby reducing the amount of traffic on the road; however could also result in higher speeds.
	Security	1	Assume that new corridors will be developed with high standard of security, therefore positive benefits to the new travellers on these routes.
Economy	TEE	2	Additional corridors will provide individuals with new options for travel and therefore the potential to reduce their generalised cost of travel. Potentially medium benefits to medium numbers of travellers
	Value for money	1	
	WEB	2	The development of entirely new PT corridors and the extension of existing corridors enables considerable labour market productivity gains to be realised as well as opening up new markets for trade. Medium benefit to medium numbers of firms.
Accessibility	Option values	2	New corridors make public transport an attractive alternative for additional numbers of car drivers. However, in some cases the new lines will be taking over existing QBC corridors.
	Severance	-1	Modal shift from car could ease severance but the new rail and light rail corridors are likely to result in a net increase in severance problems.
	Access to Transport	2	Expansion of network into wholly new areas significantly improves access to destination by the wider transport network. However, the most useful links likely to already exist hence scope of benefits limited.
Social Inclusion	Vulnerable Groups	2	Vulnerable groups tend to be more dependant on public transport as their main mode. New public transport routes will improve access to opportunities for those who are dependant on public transport.
	Deprived Groups	2	Deprived groups are more dependant on public transport therefore new public transport routes will improve access to opportunities for those who are dependant on public transport.
Integration	Transport Interchange	2	Increased availability of onward travel options.
	Land Use Policy	3	Enhances Dublin as a world city. Could facilitate a balanced approach to spatial development between the GDA and other regions. Enhances the use of key inter regional rail providing access to other regions.Balanced provision of social infrastructure. Addresses congestion in major urban areas.Improve the environmental performance of transport sector.
	Other Govt. Policies	3	Actively supports policies which promote social inclusion and cohesion, polices that enhance access to work, education and health care, policies to promote tourism across the GDA and to maintain and develop heritage and policies which encourage innovation in relation to science, business and enterprise.
Environment	Biodiversity	-2	The construction of new rail and tram corridors would facilitate modal shift, potentially resulting in a minor positive impact on noise, a moderate positive impact on air quality, a moderate reduction in greenhouse gas emissions. While there would potentially be a positive impact on material assets due to the reuse of brownfield sites and the reduction of the fossil fuel demand there would also be negative impacts on public assets and infrastructure. The construction and landtake associated with new rail and tram corridors would potentially result in moderate negative impacts on biodiversity, landscape and cultural heritage and a minor negative impact on water.
	Landscape	-2	
	Noise	1	
	Water	-1	
	Air quality	2	
	Climate	2	
	Soil & geology	-2	
	Material assets	1	
	Cultural heritage	-2	







Measure Name:	More rail stations/stops
Measure Category:	Rail and Light Rail Strategy
Potential Delivery Agents:	Operators Local Authorities
How would we measure a successful transport outcome?	Increase in rail and light rail patronage Higher level of network access Number of accessible stations
Cost band	Low cost

Stage 1a	Appraisal	Notes
Political		Local planning approval may be required.
Technological		
Legal		

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Could have a minor positive as attracts people from cars and so may reduce the amount of traffic on the roads; however could result in higher traffic speeds.
	Security	1	Assume that new stations will be developed with high standards of security, therefore positive benefits to the moderate numbers of new travellers using them.
Economy	TEE	1	Additional stops/stations will provide new users with a reduced generalised cost of travel. This is offeset by additional journey time and crowding for existing rail/tram users. Overall potentially a small benefit.
	Value for money	1	
	WEB	1	The development of new stations will enable small labour market productivity gains to be realised as well as some potential to open up new labour/trade markets; however benefits will be limited to existing transport corridors. Small benefit to small numbers.
Accessibility	Option values	2	New stops/stations make public transport a more attractive alternative for additional numbers of car drivers (including the option of driving to stations).
	Severance	0	Minimal impact on severance, assume facilities will be constructed to minimise impact on any existing key pedestrian routes.
	Access to Transport	1	Significant access benefit to new catchments as the rail system is opened up to additional users. However, benefits limited to people on rail corridors with busiest sites likely to be already served. Offset by the journey time disbenefit to existing passengers.
Social Inclusion	Vulnerable Groups	1	Improves travel options for those within catchment of new station but also increases journey times for existing users. Small benefit to small number overall.
	Deprived Groups	1	Improves travel options for those within catchment of new station but also increases journey times for existing users. Small benefit to small number overall.
Integration	Transport Interchange	2	Create additional opportunities for interchange and outward journey destinations for moderate numbers.
	Land Use Policy	3	Enhance the use of key inter regional rail links providing access to other regions Balance provision of social infrastructure between Dublin and other towns in GDA Address congestion in major urban areas Improve the environmental performance of the transport sector and invest in sustainability
	Other Govt. Policies	2	Some support for: Promotion of social inclusion and cohesion. Improved access to work, education and health care Potentially supports tourism
Environment	Biodiversity	-1	The construction of additional stops/stations would facilitate modal shift, potentially resulting in a moderate positive impact on air quality, a moderate reduction in greenhouse gas emissions and a moderate reduction of the fossil fuel demand. The construction and landtake associated with new stops/stations would potentially result in minor negative impacts on biodiversity, landscape, water, soil and geology and cultural heritage.
	Landscape	-1	
	Noise	0	
	Water	-1	
	Air quality	1	
	Climate	1	
	Soil & geology	-1	
	Material assets	1	
	Cultural heritage	-1	

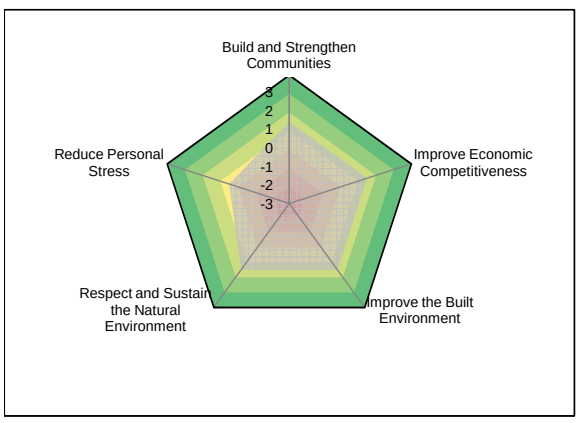
Measure Description & Supporting Information:

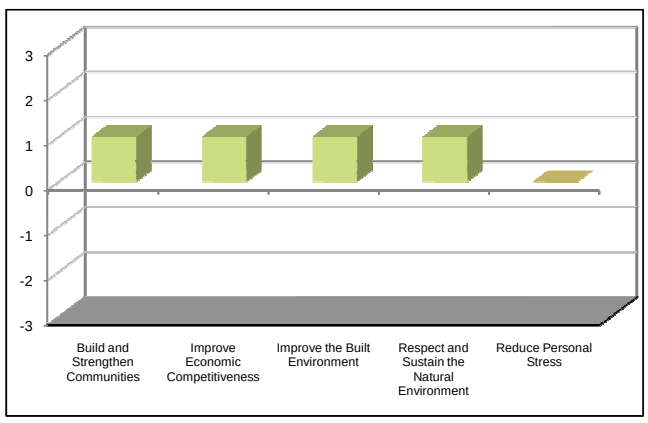
New stops and stations to inprove access on existing and planed rail, Luas and metro lines (new stations on new lines are covered in RL5).

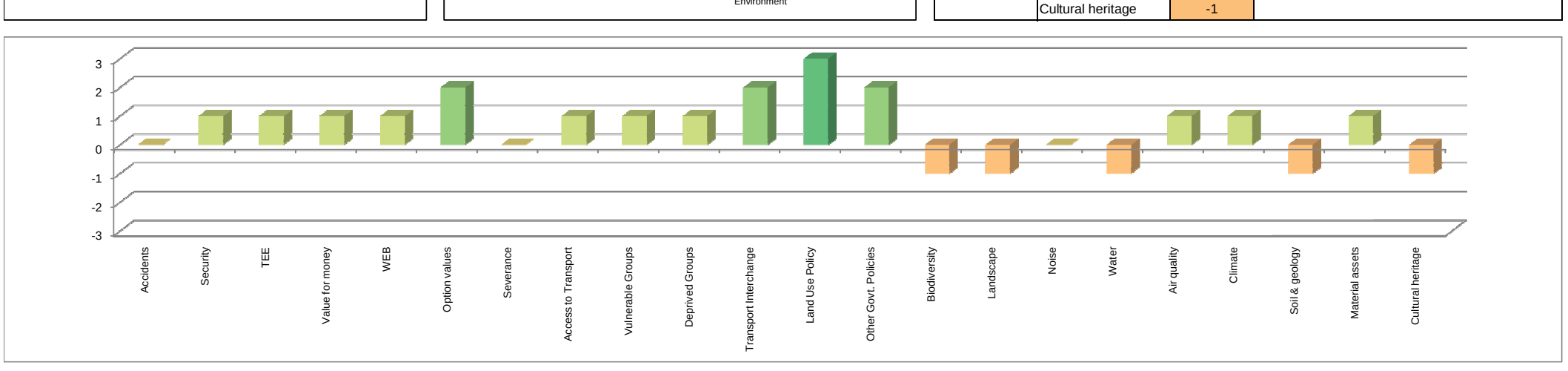
Could lead to increased journey time for existing users on outer part of service. The more stops and stations on a corridor the less attractive it may become. This is more of an issue on heavy rail than on tram where stops are closer together and walking is an alternative option.

Suburban and hinterland town centres are often not close to existing rail lines; therefore new stations, whilst seeing some improvements in access, may not be that significant in linking to communities in all cases.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Small improvement in accessibility for small numbers of people. Some residential areas and local/town centres may become more accessible, although links may be required to access stations.
Improve Economic Competitiveness	1	Improve access to labour market, encourage a shift to more sustainable modes and therefore reduce traffic congestion for commercial users.
Improve the Built Environment	1	Potential benefits in reducing motor traffic levels. Well-designed stations these could also positively impact on the built environment in their locality.
Respect and Sustain the Natural Environment	1	Encourage mode shift to more sustainable modes by increasing penetration of rail and light rail services in communities. making public transport a more attractive option in some areas. Construction of new stops/stations may have offsetting landscape and biodiversity disbenefits.
Reduce Personal Stress	0	Travel and access benefits for new users may be outweighed by the journey time disbenefits to existing users from the additional service stops.







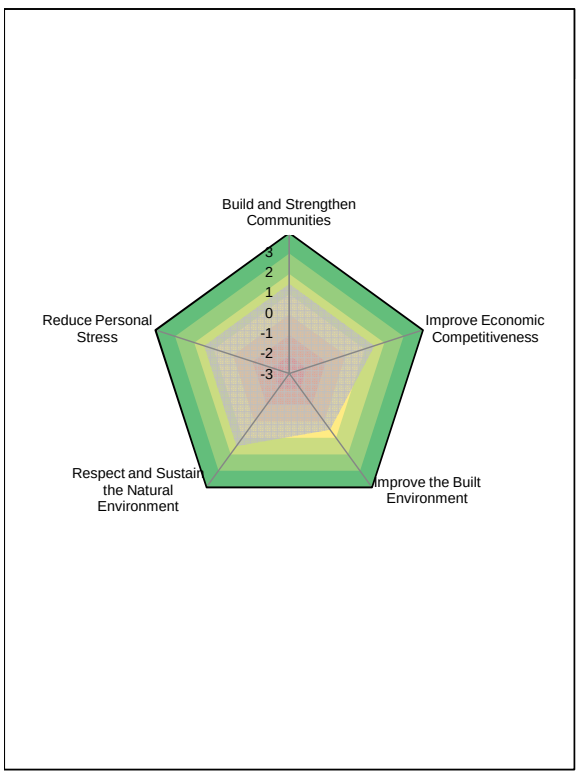
Measure Name:	Station parking expansion
Measure Category:	Rail and Light Rail Strategy
Potential Delivery Agents:	Rail operators; local authorities
How would we measure a successful transport outcome?	Increased parking at stations; increased rail patronage/mode share
Cost band	Very low cost

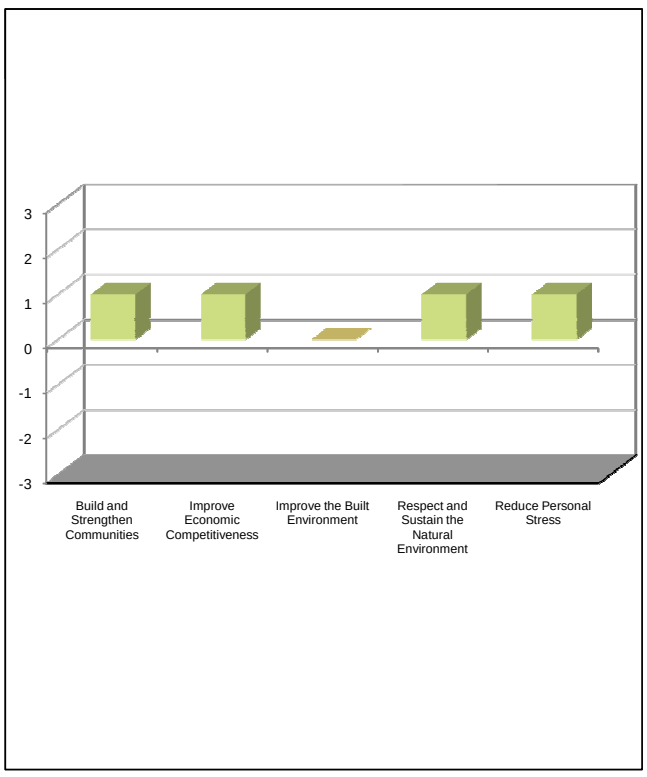
Stage 1a	**Appraisal**	**Notes**
Political		No institutional/governance changes required.
Technological		No new technology required.
Legal		No changes to legislation required.

Measure Description & Supporting Information:

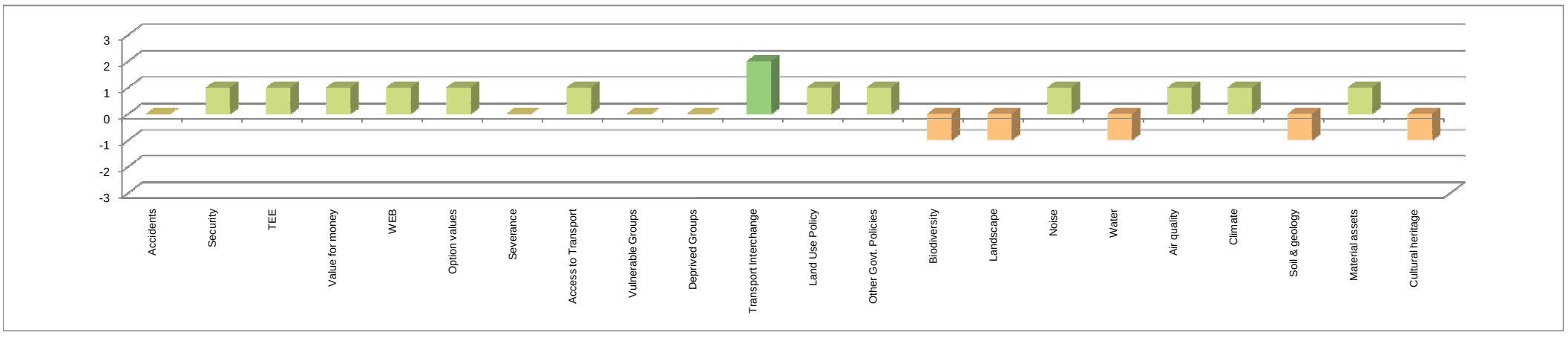
Additional car parking at existing or planned rail and Metro stops. Assume this includes only the provision of additional parking capacity with no additional rail capacity provided. Car parking charging policy to reflect existing and neighbouring station policies.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Improves access to transport systems by giving people an interchange option. Potentially improves access to and from other communities at both a local and regional level.
Improve Economic Competitiveness	1	Potential to reduce journey times by providing an alternative (i.e. car to train as oppose to car only). Could reduce congestion if people opt to park and ride as oppose to drive for the full distance.
Improve the Built Environment	0	Disbenefits (i.e. physical and visual instrusion of car parks) cancel out benefits (i.e. potential reduction of motor vehicles along certain routes).
Respect and Sustain the Natural Environment	1	Encourages minor level shift to rail.
Reduce Personal Stress	1	Easier to use alternatives to the car (i.e. park and ride). Also reduces pressure on parking spaces at destinations such as City Centre.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Unlikely to significantly impact upon accident rates, potentially small improvement.
	Security	1	Some small improvements to personal safety and security possible if car parks are well designed (e.g. lighting, CCTV, etc.).
Economy	TEE	1	Potentially reduces journey times and congestion. Charges for travelling could increase depending on parking charges levied at station compared to ultimate destination.
	Value for money	1	
	WEB	1	Possible small, positive impact as benefit to business travel into congested areas.
Accessibility	Option values	1	Primarily aimed at car drivers as a car is still required to benefit from the measure. The rail services already exist, but the parking provision has the potential to open up rail as an option to more people.
	Severance	0	Very small benefit through reduced traffic flows and congestion which should make routes easier to use by cyclists / cross for pedestrians.
	Access to Transport	1	Will make it easier to access rail services and therefore destinations within and beyond the GDA.
Social Inclusion	Vulnerable Groups	0	Benefits existing car users. Little or no change in benefits for vulnerable individuals.
	Deprived Groups	0	Benefits existing car users. Little or no change in benefits for people from deprived groups.
Integration	Transport Interchange	2	Actively encourages interchange between car and rail. Score depends on scale of car parking provision.
	Land Use Policy	1	Measure strongly supports policy to address congestion in major urban areas and weakly supports policy to enhance the use of key inter-regional rail links.
	Other Govt. Policies	1	Overall the measure neither supports nor contradicts any of the other key government policies.
Environment	Biodiversity	-1	Additional land development required around stations.
	Landscape	-1	Additional land development required around stations.
	Noise	1	Additional parking provision will encourage greater use of rail and Metro, thereby result in a modal shift and an associated reduction in road-based noise.
	Water	-1	Additional land development required around stations.
	Air quality	1	Additional parking provision will encourage greater use of rail and Metro, thereby result in a modal shift and an associated reduction in road-based emissions.
	Climate	1	Additional parking provision will encourage greater use of rail and Metro, thereby result in a modal shift and an associated reduction in road-based GHG emissions.
	Soil & geology	-1	Additional land development required around stations.
	Material assets	1	Additional parking provision will encourage greater use of rail and Metro, thereby result in a modal shift and an associated reduction in road-based fossil fuel consumption. It will also enhance the viability of brownfield sites along transport corridors which have the additional parking, thereby encouraging their redevelopment.
	Cultural heritage	-1	Additional land development required around stations.



Measure Name:	Improve rail services and capacity
Measure Category:	Rail and Light Rail Strategy
Potential Delivery Agents:	Rail operator;
How would we measure a successful transport outcome?	Reduced rail headways; increased passenger capacity; reduced crowding levels; increased rail patronage.
Cost band	Medium Cost

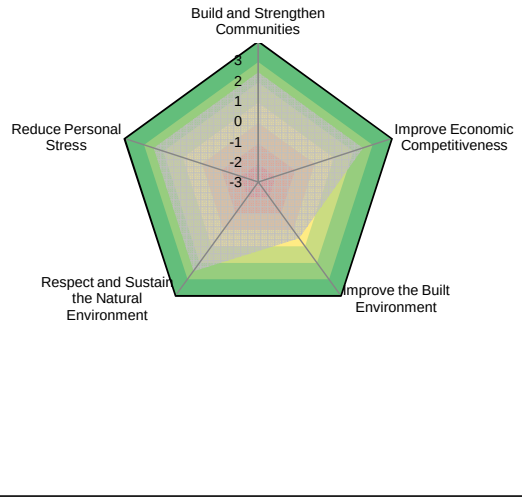
Stage 1a	**Appraisal**	**Notes**
Political		No institutional/governance changes required.
Technological		No significant technology required.
Legal		No changes in legislation required.

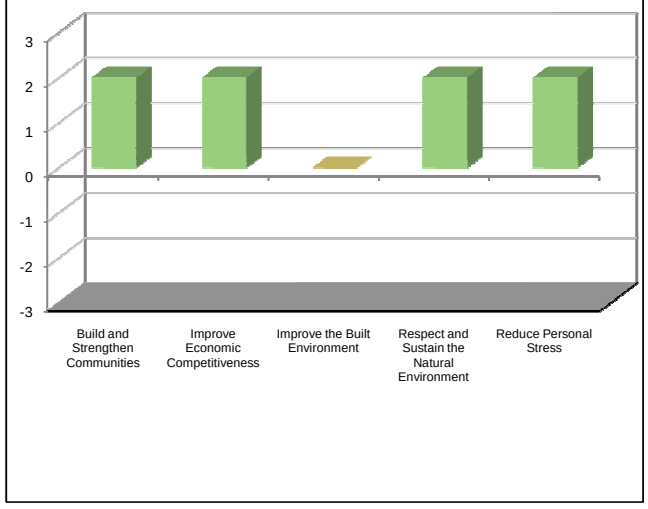
Measure Description & Supporting Information:

Include all capacity and frequency enhancement measures - new rolling stock with higher carrying capacity (potentially double decked); additional rolling stock to enhance frequency; and/or rail infrastructure measures (four-tracking; resignalling, grade separation, junction remodelling, loading gauge enhancement etc.).

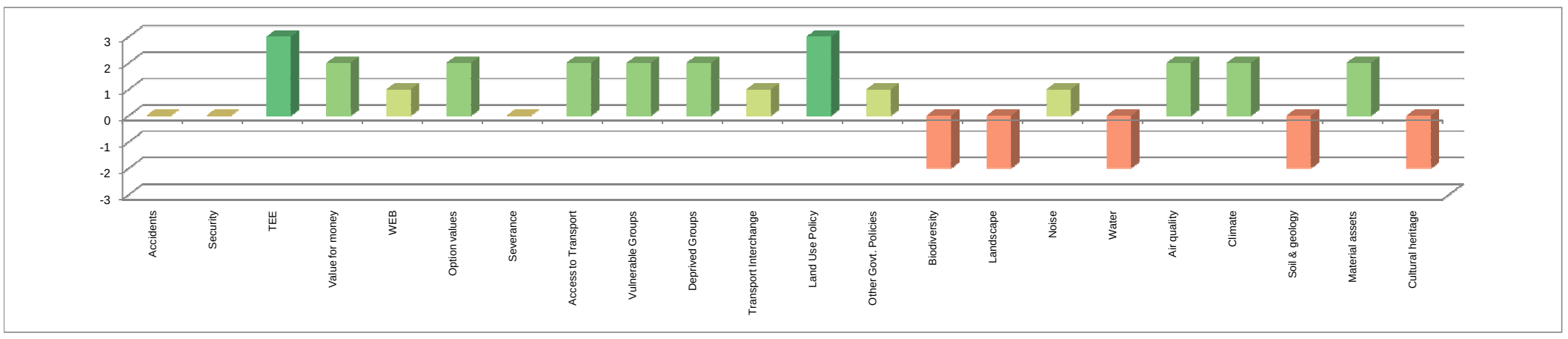
Benefits confined to corridors already served by heavy rail.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Improves accessibility through reduced wait times from higher frequencies and less crowding. Large benefit on enhanced corridors.
Improve Economic Competitiveness	2	Improves economic competitiveness through reduced journey times for business travel and more reliable journeys. Small benefit for large number of businesses.
Improve the Built Environment	0	Assume any works undertaken are technical in nature and largely confined within systems, having only minimal impact on the urban public realm.
Respect and Sustain the Natural Environment	2	Modal shift through making public transport more attractive through improved journey opportunities, reliability and reduced crowding.
Reduce Personal Stress	2	Improves journey times and reliability for personal journeys, based on higher frequencies. Improved journey comfort if service was previously overcrowded.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Could have a minor positive as attracts people from cars and so may reduce the amount of traffic on the roads; however could result in higher traffic speeds.
	Security	0	Improved reliability resulting from infrastructure measures will lead to increased perception of personal safety/security, especially while waiting.
Economy	TEE	3	Reduced journey times and improved reliability, lower wait times and less overcrowding will all have a positive impact on the generalised journey cost. Large benefit for medium numbers of passengers on existing corridors only.
	Value for money	2	
	WEB	1	Good public transport and improved reliability enables productivity gains to be realised through improved labour market and customer access for small numbers of businesses on corridors. Little impact on movement of goods.
Accessibility	Option values	2	Makes rail a moderately more attractive and practical option for large numbers of non-users through increased capacity and improved reliability.
	Severance	0	Minimal impact on severance. There is not likely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Access to the rail system is enhanced through reduced crowding levels, wait times and improved reliability. Medium impact for medium numbers along existing routes.
Social Inclusion	Vulnerable Groups	2	Public transport enhancements particularly benefit vulnerable groups. Assume new vehicles will be fully accessible, therefore large benefit to small number.
	Deprived Groups	2	Public transport enhancements particularly benefit deprived groups. Assume medium benefit to medium numbers as along existing heavy rail routes only.
Integration	Transport Interchange	1	Minor impact in allowing more interchange to/from currently overcrowded routes, and reducing wait times for services through improved frequency. More reliable journeys minimally improves options for onward travel and reduces missed connections.
	Land Use Policy	3	Supports policies: Improve inter-regional rail links providing access to other regions Address congestion in major urban areas Improve environmental performance of transport sector Also could be used to help balance spatial development between GDA and other regions
	Other Govt. Policies	1	Supports policies to promote enterprise, trade and employment and promote tourism.
Environment	Biodiversity	-2	Moderately negative impacts caused by four-tracking along some corridors.
	Landscape	-2	Moderately negative impacts caused by four-tracking along some corridors.
	Noise	1	Significant modal shift to PT will result in significant reductions in road-based noise levels, although this is off-set by localised negative impacts along four-tracked corridors.
	Water	-2	Moderately negative impacts caused by four-tracking along some corridors.
	Air quality	2	Significant modal shift to PT will result in significant reductions in road-based emissions.
	Climate	2	Significant modal shift to PT will result in significant reductions in road-based GHG emissions.
	Soil & geology	-2	Moderately negative impacts caused by four-tracking along some corridors.
	Material assets	2	Significant modal shift to PT will result in significant reductions in road-based fossil fuel consumption. It will also enhance the viability of brownfield sites alongside these transport corridors.
	Cultural heritage	-2	Moderately negative impacts caused by four-tracking along some corridors.



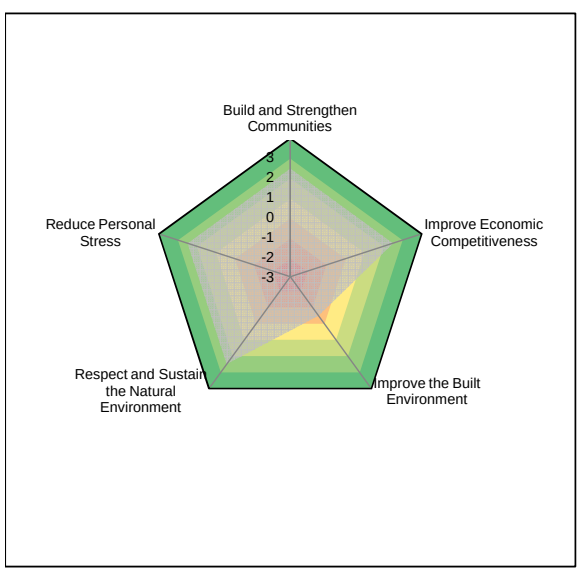
Measure Name:	Improve light rail services and capacity
Measure Category:	Rail and Light Rail Strategy
Potential Delivery Agents:	RPA; local authorities
How would we measure a successful transport outcome?	Reduced tram headways; increased passenger capacity; reduced crowding levels; increased tram patronage.
Cost band	Medium Cost

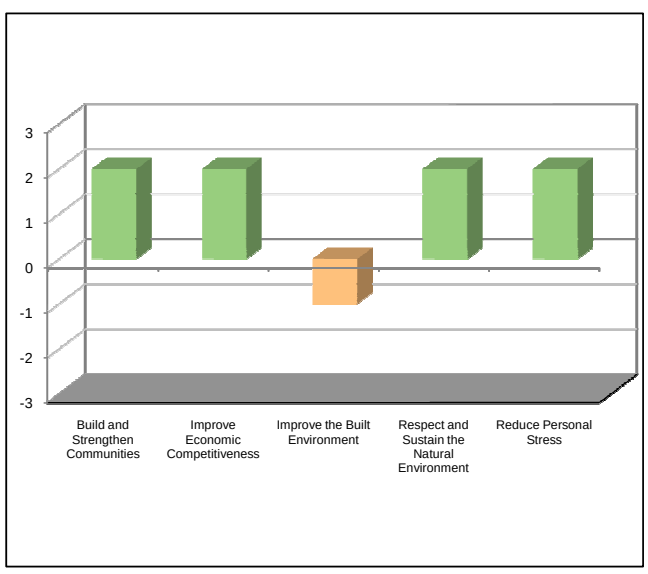
Stage 1a	**Appraisal**	**Notes**
Political		No institutional/governance changes required.
Technological		No significant technology required.
Legal		No changes in legislation required.

Measure Description & Supporting Information:

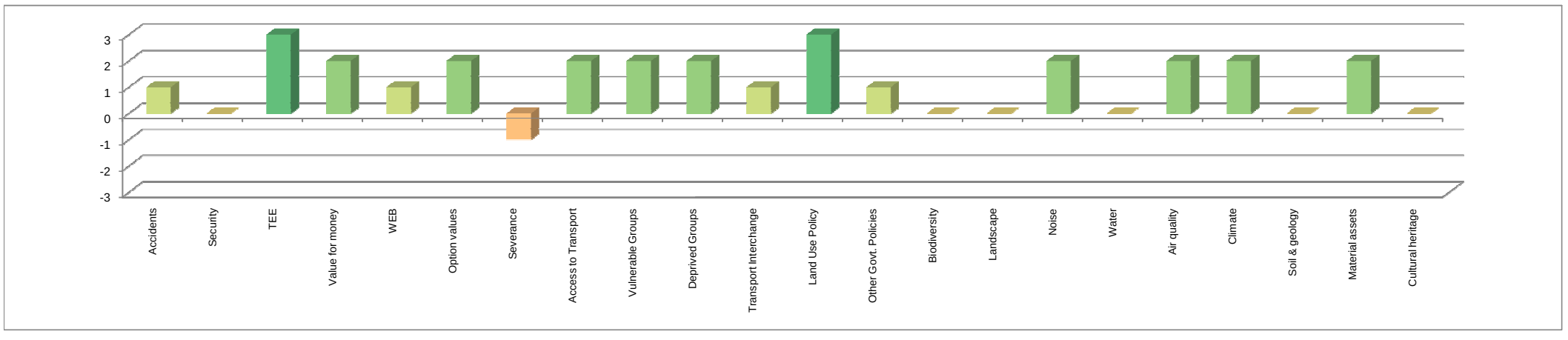
Include all capacity and frequency enhancement measures - new rolling stock with higher carrying capacity; additional rolling stock to enhance frequency; and/or infrastructure measures (greater segregation - Luas upgrade to Metro standard etc. - greater traffic signal priority etc.)

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Improves accessibility through reduced wait times from higher frequencies and less overcrowding. Large benefit on enhanced corridors.
Improve Economic Competitiveness	2	Improves economic competitiveness through reduced journey times for business travel and more reliable journeys. Small benefit for large number of businesses.
Improve the Built Environment	-1	Assume any works undertaken are technical in nature and largely confined within systems, having only minimal impact on the urban public realm. Visual intrusion of increased number of light rail vehicles and potential reduction in permeability.
Respect and Sustain the Natural Environment	2	Modal shift through making public transport more attractive through improved journey opportunities, reliability and reduced overcrowding.
Reduce Personal Stress	2	Improves journey times and reliability for personal journeys, based on higher frequencies. Improved journey comfort if service was previously overcrowded. Greater segregation will help to improve safety and reduce accidents.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Could have a minor positive impact as attracts people from cars and so may reduce the amount of traffic on the roads; however could result in higher traffic speeds. Greater segregation will help to improve safety and reduce accidents.
	Security	0	Improved reliability resulting from infrastructure measures will lead to increased perception of personal safety/security, especially while waiting.
Economy	TEE	3	Reduced journey times and improved reliability, lower wait times and less overcrowding will all have a positive impact on the generalised journey cost. Large benefit for medium numbers of passengers on existing corridors only.
	Value for money	2	
	WEB	1	Good public transport and improved reliability enables productivity gains to be realised through improved labour market and customer access for small numbers of businesses on corridors. Little impact on movement of goods.
Accessibility	Option values	2	Makes light rail a moderately more attractive and practical option for large numbers of non-users through increased capacity and improved reliability.
	Severance	-1	Infrastructure measures; in particular segregation, could result in increased severance for non-motorised modes.
	Access to Transport	2	Access to the light rail system is enhanced through reduced crowding levels, wait times and improved reliability. Medium impact for medium numbers along existing routes.
Social Inclusion	Vulnerable Groups	2	Public transport enhancements particularly benefit vulnerable groups. Assume new vehicles will be fully accessible, therefore large benefit to small number.
	Deprived Groups	2	Public transport enhancements particularly benefit deprived groups. Assume medium benefit to medium numbers as along existing light rail routes only.
Integration	Transport Interchange	1	Minor impact in allowing more interchange to/from currently overcrowded routes, and reducing wait times for services through improved frequency. More reliable journeys minimally improves options for onward travel and reduces missed connections.
	Land Use Policy	3	Actively supports a number of national land-use and development policies.
	Other Govt. Policies	1	Supports policies to promote enterprise, trade and employment and promote tourism.
Environment	Biodiversity	0	Limited land imapcts confined to existing rail lands.
	Landscape	0	Limited land imapcts confined to existing rail lands.
	Noise	2	Significant modal shift to PT will result in significant reductions in road-based noise levels.
	Water	0	Limited land imapcts confined to existing rail lands.
	Air quality	2	Significant modal shift to PT will result in significant reductions in road-based emissions.
	Climate	2	Significant modal shift to PT will result in significant reductions in road-based GHG emissions.
	Soil & geology	0	Limited land imapcts confined to existing rail lands.
	Material assets	2	Significant modal shift to PT will result in significant reductions in road-based fossil fuel consumption. It will also enhance the viability of brownfield sites alongside these transport corridors.
	Cultural heritage	0	Limited land imapcts confined to existing rail lands.



Measure Name:	Support use of motorcycles and mopeds
Measure Category:	Motorcycling strategy
Potential Delivery Agents:	DTO Local authorities Motorcycling organisations
How would we measure a successful transport outcome?	Increased motorcycle modal share; Reduced single occupancy private cars especially in urban centres
Cost band	Very low cost

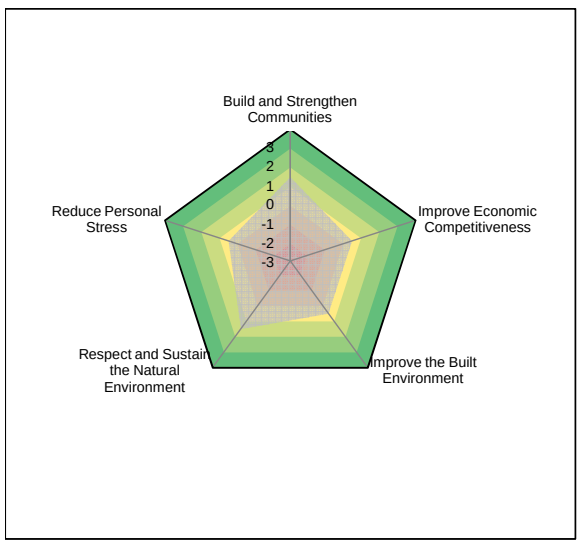
Stage 1a	Appraisal	Notes
Political		No political issues identified
Technological		No significant technology required.
Legal		Minor changes to existing legislation may be required to initiate exemption from demand restraint measures and allow use of bus lanes.

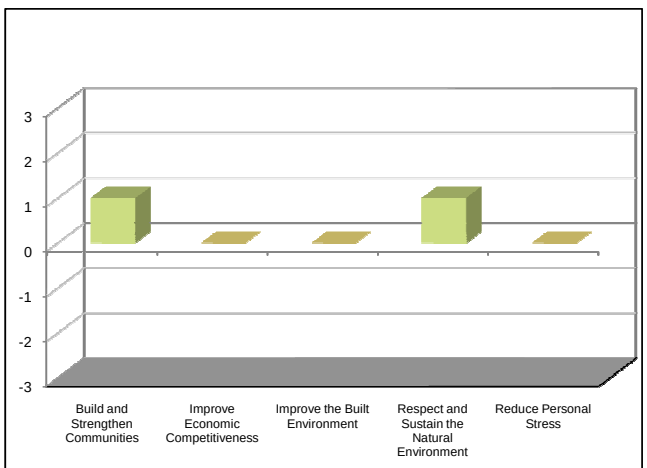
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Measure is unlikely to result in conditions that reduce the level of accidents. An increase in motorcycles and mopeds could result in an slight increase in accidents amongst users though higher numbers may also highten awareness thus reducing the accident rate per kilometre ridden.
	Security	0	Measure is unlikely to impact on personal safety and security whilst travelling.
Economy	TEE	1	Measure will result in reduced charges for travel (i.e. exemption from parking charges and toll roads) and improvemens in the reliability of journey times for users (e.g. able to use bus lanes, etc.). Small benefit for a small number of people.
	Value for money	1	
	WEB	0	Unlikely to have any significant impact upon WEBs.
Accessibility	Option values	1	Small increase in transport options available.
	Severance	0	An increase in motorcycles and mopeds in the urban environment could result in some minor severance of pedestrian movements, though this is considered to be very small.
	Access to Transport	0	Measure could slightly improve access to destinations by the wider transport network (e.g. use motorcycle or moped to access rail station, etc.) Very small benefit for a small number of people (i.e. owners of motorcycles and mopeds).
Social Inclusion	Vulnerable Groups	0	Measure is unlikely to benefit people from vulnerable groups.
	Deprived Groups	1	May assist lower income groups and accessibility of those too young to drive a car.
Integration	Transport Interchange	0	Measure does not actively encouarge increased levels of interchange.
	Land Use Policy	1	Measure weakly supports policy to address congestion in major urban areas without contradicting significant numbers of the others.
	Other Govt. Policies	0	Overall the measure neither supports nor contradicts the policies.
Environment	Biodiversity	0	No land impacts.
	Landscape	0	No land impacts.
	Noise	0	Any positive benefits from modal shift away from car-based transport (such as noise, air quality etc.) would be off-set by corresponding impacts from increased use of motorcycles.
	Water	0	No land impacts.
	Air quality	0	Any positive benefits from modal shift away from car-based transport (such as noise, air quality etc.) would be off-set by corresponding impacts from increased use of motorcycles.
	Climate	0	Any positive benefits from modal shift away from car-based transport (such as noise, air quality etc.) would be off-set by corresponding impacts from increased use of motorcycles.
	Soil & geology	0	No land impacts.
	Material assets	0	Any positive benefits from modal shift away from car-based transport (such as noise, air quality etc.) would be off-set by corresponding impacts from increased use of motorcycles.
	Cultural heritage	0	No land impacts.

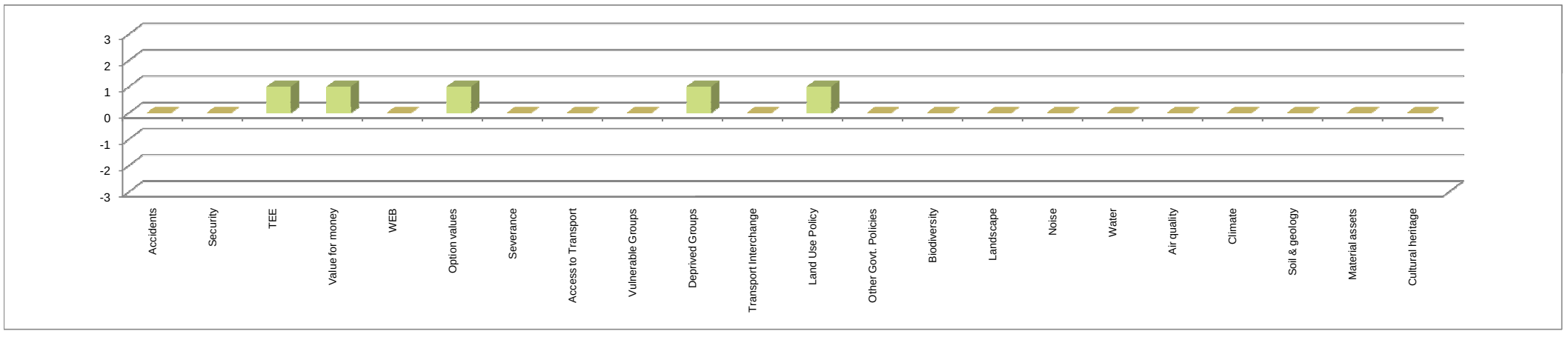
Measure Description & Supporting Information:

Measures to promote and support motorcycling, including: free parking provision, permission to use bus lanes and exemption from demand restraint measures such as congestion charging.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Measure could improve accessibility for a small number of people. May assist lower income groups and accessibility of those too young to drive a car.
Improve Economic Competitiveness	0	Measure could result in some very small scale modal shift away from the car, but unlikely to result in any significant benefits for business or freight movements.
Improve the Built Environment	0	Measure has the potential to minimise the intrustion of motor traffic through modal shift, though increased numbers of motorcycles and mopeds could be viewed negatively.
Respect and Sustain the Natural Environment	1	Small modal shift to motorcycle from car could help minimise impact of transport on air quality and noise and vibration, though benefits would be small.
Reduce Personal Stress	0	Measure is considered unlikely to have more than a very small positive impact on personal stress.







Measure Name:	Water taxis and new river ferries
Measure Category:	Water Network
Potential Delivery Agents:	Operators
How would we measure a successful transport outcome?	Accessibility by new services Passengers carried by waterway Mode shift from car along routes
Cost band	Low cost

Stage 1a	**Appraisal**	**Notes**
Political		Not clear what agency would oversee/regulate services
Technological		
Legal		

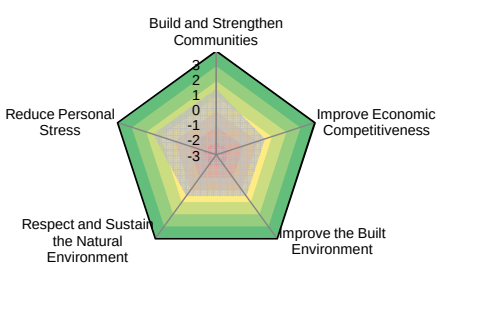
Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Could have minor positive impact through attracting people from cars and so reduce amount of traffic on the road; but not significant. Assume safe operation.
	Security	0	No impact on security as would have same standard of security as other modes of public transport.
Economy	TEE	0	Potential impact for some travellers of availability of a new route; however likely to be a slow travel mode and small impact for very small number of travellers.
	Value for money	0	
	WEB	0	Minimal wider economic benefits are expected.
Accessibility	Option values	1	Service would provide an alternative mode for large numbers travelling by bus, train or private car.
	Severance	0	New ferries could give a minimal positive impact on waterway severance at a small number of locations.
	Access to Transport	1	Improves access to destinations on wider transport network - small number of new links for few people.
Social Inclusion	Vulnerable Groups	1	Provides new mode for those without car access if fully accessible to those with mobility impairments.
	Deprived Groups	1	Provides new mode for those without car access in a potentially small number of lcoations and corridors.
Integration	Transport Interchange	1	Increases availability of travel options by expanding network. Medium benefit to a very small number.
	Land Use Policy	1	Minor support for: Addressing congestion in major urban areas Improve the environmental performance of the transport sector and invest in sustainability.
	Other Govt. Policies	1	Policies to promotes tourism across the GDA and to maintain and develop heritage
Environment	Biodiversity	0	The operation of water taxis and new river ferries would increase water pollution, potentially resulting in a minor negative impact on water.
	Landscape	0	
	Noise	0	
	Water	-1	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	

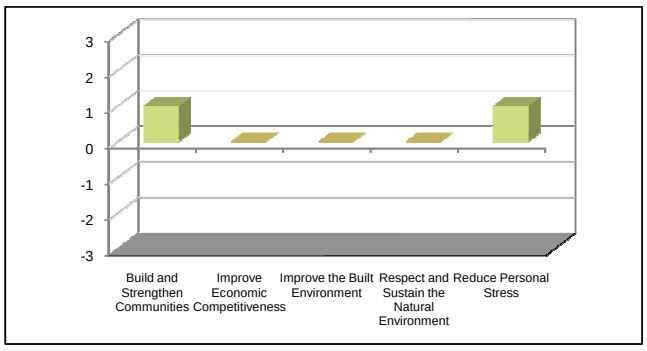
Measure Description & Supporting Information:

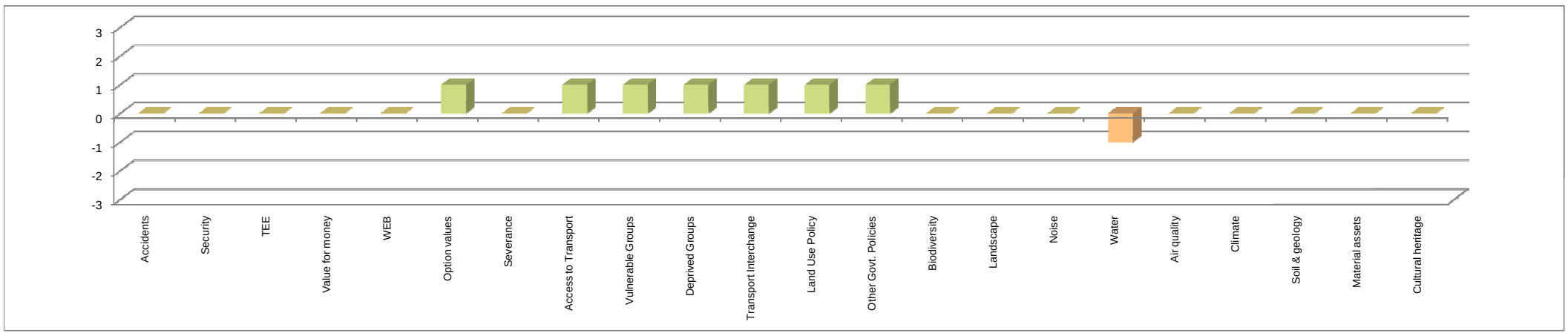
Ferry services along (and potentially across) the Liffey, Dublin Bay and other rivers in the GDA. Aim to increase use of the water network where apporpriate for commuter and leisure use (excludes freight as covered in FS4). Canal barges unlikely to provide acceptable journey times for most travel purposes though may have small benefit as tourist attraction.

Assumes services will be fully accessible for those with mobility impairments.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	New links may deliver large accessibility benefit for very small numbers along waterways. Limited access to key destinations for commuter travel.
Improve Economic Competitiveness	0	Mode shift, reduce congestion for commercial users; however overall impact on businesses not likely to be significant enough. Freight excluded.
Improve the Built Environment	0	Reduction in road traffic likely to be very limited due to resticted opporunities for new services.
Respect and Sustain the Natural Environment	0	Only a very small mode shift expected. Unclear if emissions would be greatly reduced by this shift.
Reduce Personal Stress	1	Increases travel options for personal journeys to limited number of destinations. Low-stress mode.







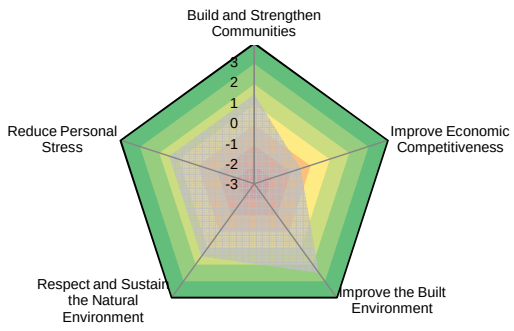
Measure Name:	Traffic management plans and road user hierarchy
Measure Category:	Traffic management
Potential Delivery Agents:	NRA, Local Authorities, Bus Operators, Utility Companies
How would we measure a successful transport outcome?	Improved flow of traffic, especially in urban centres. Reduced delays from street works. Reduced accidents - especially those involving vulnerable road users.
Cost band	Low cost

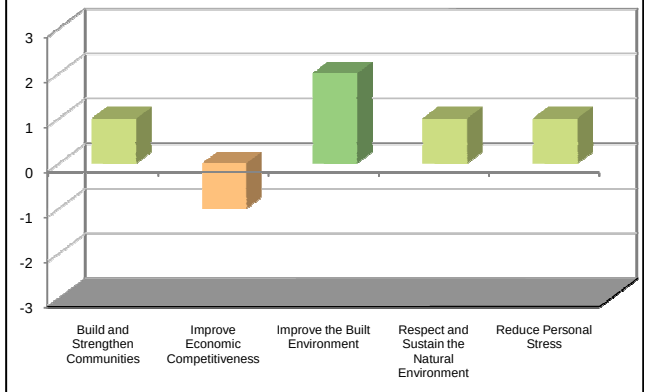
Stage 1a	**Appraisal**	**Notes**
Political		Would require co-ordination of various agencies.
Technological		
Legal		May require some changes to road use and traffic legislation. Enforcement of traffic and parking regulations too.

Measure Description & Supporting Information:

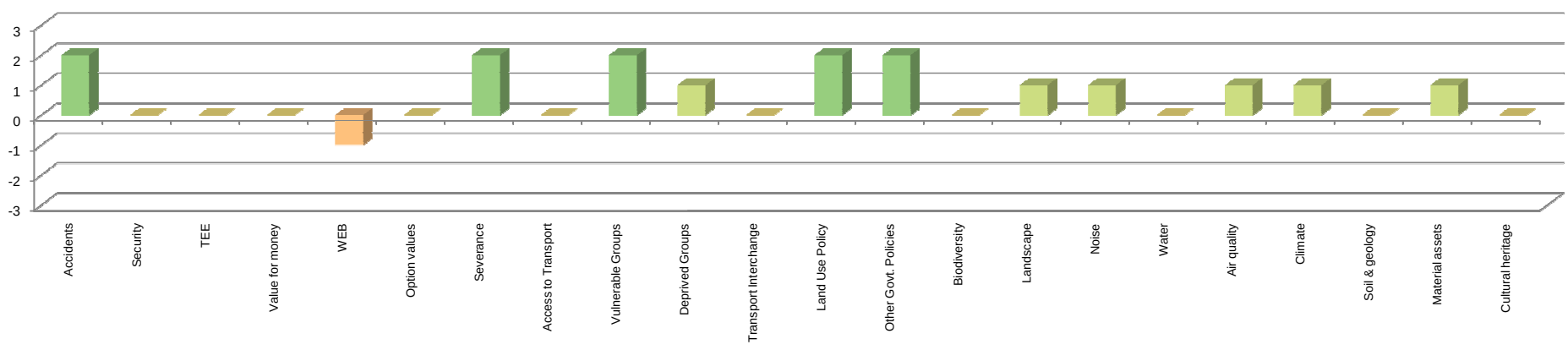
Establish a road user hierarchy (by road type, user type and time period) and reallocate road space in accordance with new priorities. Managed restrictions for car traffic in urban centres (e.g. traffic cells, no through car traffic); plus physical speed limiting, traffic calming and junction accident remedial measures. Traffic management plans to reduce delays associated with street works. A strategy for on street waiting, loading & parking, with full enforcement of moving traffic and parking regulations.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Reduces car accessibility but reduces congestion and would benefit all other modes - in particular vulnerable road users (i.e. pedestrians and cyclists).
Improve Economic Competitiveness	-1	This measure is likely to have both benefits and disbenefits dependant on which road types and modes are prioritised where. It is likely that delays in urban centres will be reduced through traffic management plans and enforcement of parking regulations, however journey times for business travel and the movement of goods may be increased due to priority being given to other users in the hierarchy.
Improve the Built Environment	2	This measure could significantly enhance the quality of environment for people. It will reduce the visual and physical intrusion of transport where implemented.
Respect and Sustain the Natural Environment	1	Traffic restrictions and pedestrian priority could reduce the environmental impacts of vehicular traffic.
Reduce Personal Stress	1	Healthier forms of travel such as walking and cycling can be encouraged through prioritisation. In addition travel safety is likely to be improved by a reduction in conflict between different users.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	2	Prioritisation of modes within their appropriate environment and reducing conflicts should significantly reduce accident rates. In addition speed limiting, traffic calming and junction accident remedial measures will also help reduce the level of accidents across all modes.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	0	There will be benefits and disbenefits as result of this measure. Whilst journey times for some may be improved through traffic management plans and parking enforcement journey times for some users are likely to increase, though restrictions and reallocation.
	Value for money	0	
	WEB	-1	Slight disbenefit as access to markets, suppliers or employment areas may be reduced through reallocation and traffic restrictions.
Accessibility	Option values	0	Options to use modes other than car likely to increase in some cases, though car based options likely to decrease.
	Severance	2	Reallocation of space has the potential to significantly reduce severance within urban areas. Pedestrian and cyclist accessibility should be enhanced. In addition the safety measures (speed limiting, traffic calming and junction accident remedial measures) will help to improve access and reduce severance. However the measure is concentrated on urban centres.
	Access to Transport	0	Some benefit to walking and cycling, etc., but small driver disbenefit.
Social Inclusion	Vulnerable Groups	2	Any reallocation of road space is likely to enhance provision for pedestrians and public transport users and thus benefit vulnerable groups (i.e. non-car owners and people with a disability).
	Deprived Groups	1	Reallocation of road space is likely to enhance provision for pedestrians and public transport users and thus benefit deprived groups.
Integration	Transport Interchange	0	No significant impact.
	Land Use Policy	2	Measure complements two policies, i.e. 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability' without contradicting significant numbers of the others.
	Other Govt. Policies	2	Measure somewhat complements two policies, without contradicting significant numbers of others, i.e. 'social, community and family policies which promote social inclusion and cohesion' and 'policies that promote improved public and mental health, including reducing obesity'.
Environment	Biodiversity	0	No land impacts.
	Landscape	1	Reallocation of road-space in favour of non-car modes of transport will reduce traffic congestion and the associated negative impacts (primarity in heavily-trafficked urban areas).
	Noise	1	Reallocation of road-space in favour of non-car modes of transport will reduce traffic congestion and result in a modal shift to PT and softer modes of transport (primarity in heavily-trafficked urban areas). This will reduce road-based noise.
	Water	0	No land impacts.
	Air quality	1	Reallocation of road-space in favour of non-car modes of transport will reduce traffic congestion and result in a modal shift to PT and softer modes of transport (primarity in heavily-trafficked urban areas). This will reduce road-based emissions.
	Climate	1	Reallocation of road-space in favour of non-car modes of transport will reduce traffic congestion and result in a modal shift to PT and softer modes of transport (primarity in heavily-trafficked urban areas). This will reduce road-based GHG emissions.
	Soil & geology	0	No land impacts.
	Material assets	1	Reallocation of road-space in favour of non-car modes of transport will reduce traffic congestion and result in a modal shift to PT and softer modes of transport (primarity in heavily-trafficked urban areas). This will reduce road-based fossil fuel consumption.
	Cultural heritage	0	No land impacts.



Measure Name:	Traffic signal control and co-ordination
Measure Category:	Traffic management
Potential Delivery Agents:	NRA, Local Authorities
How would we measure a successful transport outcome?	Reduced traffic delays at junctions. Reduced pedestrian wait times at crossings. Increased pedestrian movements in targeted areas.
Cost band	Low cost

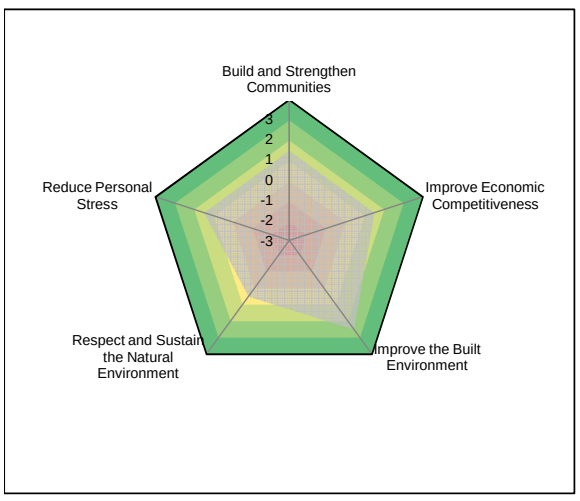
Stage 1a	Appraisal	Notes
Political		
Technological		
Legal		

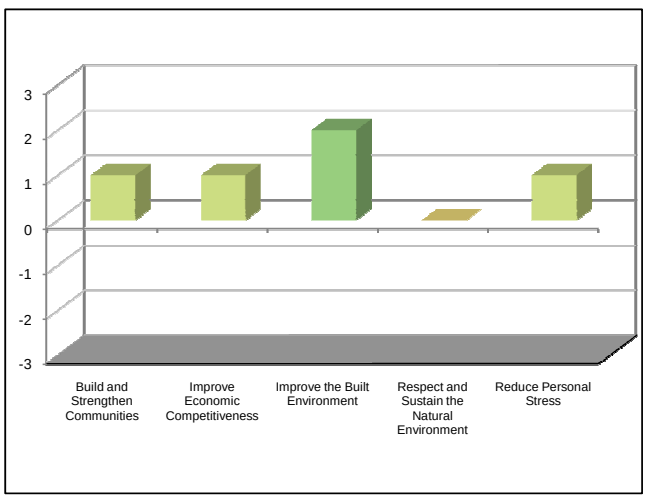
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Some concerns may exist with pedestrian safety as a result of with flow and diagonal crossings, but the enhanced pedestrian provision should also reduce incidences of pedestrains 'crossing on red' and thereby enhance safety.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	2	The 'Generalised Cost' of travel for both individual travellers and freight movements should be reduced. This is due to reduced delays and improved efficiency for all users.
	Value for money	2	
	WEB	0	May result in slightly better access to markets and labour; however scale of improvement is unlikely to have significant impact upon economy.
Accessibility	Option values	0	Unlikely to have any effect on providing an alternative option to travel.
	Severance	1	Improved pedestrian crossing facilities would reduce severance in urban areas, but enhanced traffic flow will reduce opportunities for crossing roads at other locations.
	Access to Transport	1	Would generally improve efficiency of access along targeted corridors.
Social Inclusion	Vulnerable Groups	2	Would support vulnerable groups (i.e.. non-car owners and mobility-impaired) through improved pedestrian crossing facilities.
	Deprived Groups	1	May somewhat help to increase accessibility to employment and services for deprived groups.
Integration	Transport Interchange	0	No significant impact.
	Land Use Policy	1	Measure complements one policy i.e. 'address congestion in major urban areas' , without contradicting any others.
	Other Govt. Policies	1	Measure slightly complements 'policies that promote improved public and mental health, including reducing obesity'.
Environment	Biodiversity	0	No land impacts.
	Landscape	0	No land impacts.
	Noise	0	Although a small modal shift to PT is expected, as are reductions in car idling times; these are not thought sufficient to benefit noise.
	Water	0	No land impacts.
	Air quality	0	Although a small modal shift to PT is expected, as are reductions in car idling times; these are not thought sufficient to benefit air quality.
	Climate	0	Although a small modal shift to PT is expected, as are reductions in car idling times; these are not thought sufficient to benefit climate.
	Soil & geology	0	No land impacts.
	Material assets	0	Although a small modal shift to PT is expected, as are reductions in car idling times; these are not thought sufficient to benefit fossil fuel consumption.
	Cultural heritage	0	No land impacts.

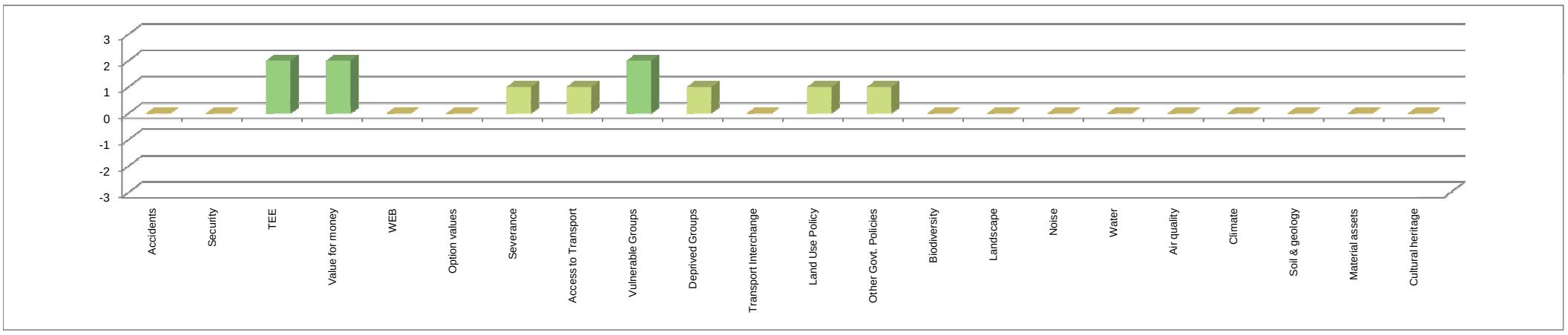
Measure Description & Supporting Information:

Enhance efficiency through measures to reduce signal delays for all users. Includes adaptive traffic signal control, dynamic signal timings, revised cycle times and traffic/pedestrian phases. For pedestrians consider all green phases, diagonal crossings, with flow green crossings. Also for highway traffic consider left turn on red.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Reducing signal delays for all users could result in slightly improved accessibility. In addition through considering the needs of pedestrians and all green crossings access for disadvantaged people, including the mobility-impaired, could be improved.
Improve Economic Competitiveness	1	Potential to improve journey times and journey time reliability for business travel and the movement of goods, for both road users and non-motorised users.
Improve the Built Environment	2	Through improved pedestrian crossings the environment and permeability for people can be increased.
Respect and Sustain the Natural Environment	0	May have a very small positive effect through reducing delays and therefore idling engine emissions, however improved journey times may encourage more people to drive.
Reduce Personal Stress	1	Journey times and journey time reliability for personal travel should be improved. In addition healthier forms of travel can be encouraged through improved pedestrian crossing facilities.







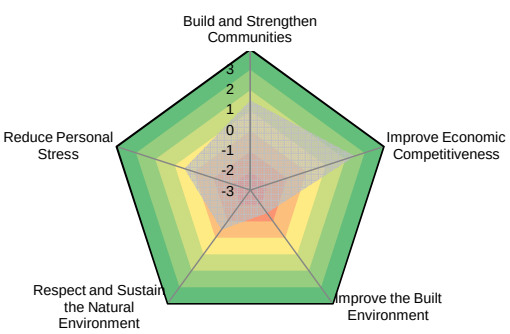
Measure Name:	Capacity enhancements on strategic and local road networks using 'active traffic management' measures and ramp metering.
Measure Category:	Traffic management
Potential Delivery Agents:	NRA, Local Authorities
How would we measure a successful transport outcome?	Reduced delays and increased capacity on targeted links. Reduced motorway congestion
Cost band	Low cost

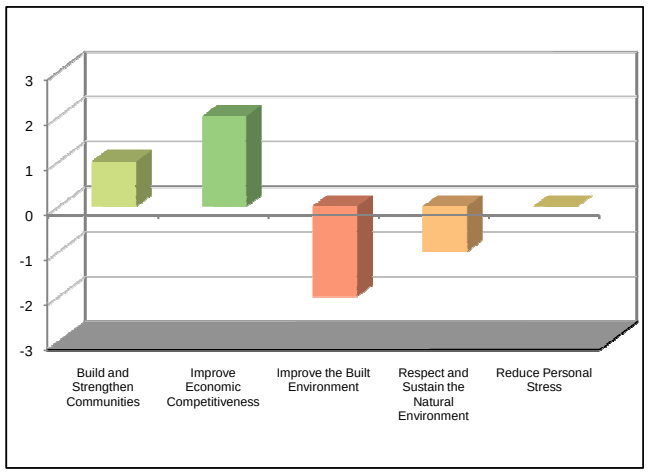
Stage 1a	**Appraisal**	**Notes**
Political		Requires co-ordination between NRA and local authorities.
Technological		Proven technology
Legal		May require changes in legislation

Measure Description & Supporting Information:

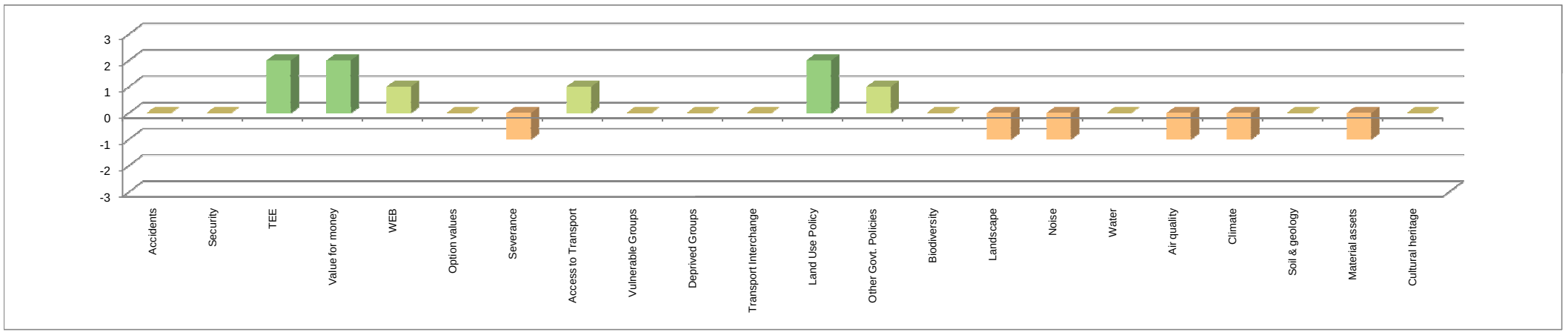
Measures to maximise peak capacity, including hard shoulder running, tidal flow operations, ramp metering and incident response.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Improvements to strategic and local network assists access e.g. to work and improves links to other regions. However, this is primarily of benefit to road users.
Improve Economic Competitiveness	2	The measure should help to improve journey times and journey time reliability for business travel and the movement of goods.
Improve the Built Environment	-2	People movement will not be improved. Motor traffic may increase as a result of this measure increasing the physical intrusion of this. Ramp metering may result in more traffic diverting to local roads.
Respect and Sustain the Natural Environment	-1	Through reducing journey times for car users and allowing hard shoulder running driving on the targeted links is likely to become more appealing. This will result in an increased negative impact on air quality and increased associated noise and vibration.
Reduce Personal Stress	0	This measure would reduce delay / stress for significant working population in GDA. Improves journey time and reliability; however, limited benefit for public transport and likely disbenefits for promoting healthier forms of travel.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	This measure is likely to have positive impacts through managing capacity but also negative impacts through introducing hard shoulder running. Overall neutral in effect.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	2	Potential to accrue significant journey time savings across the GDA through more efficient use of existing network capacity.
	Value for money	2	
	WEB	1	Improved access to markets and labour could have a small benefit for the economy
Accessibility	Option values	0	Capacity enhancements may enhance existing road based options, but few additional options for travel created.
	Severance	-1	Potential to increase severance - more trips on local roads and better flow of traffic / tidal flow creates additional severance amongst non-motorised users.
	Access to Transport	1	Improved access to destinations for motorised users.
Social Inclusion	Vulnerable Groups	0	Limited specific benefits expected from this measure for vulnerable groups.
	Deprived Groups	0	Limited specific benefits from this measure for deprived groups.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	The measure complements two policies i.e. 'enhance the use of key inter-regional road links' and 'address congestion in major urban areas' without contradicting significant numbers of others.
	Other Govt. Policies	1	Measure may indirectly support polices to improve access to work and education and also support tourism.
Environment	Biodiversity	0	No land impacts envisaged.
	Landscape	-1	The increase in car-based transport (both on new road space - hard shoulders etc. - and on the road network in general) will result in congestion, resulting in negative and lcoalised landscaoe imapcts.
	Noise	-1	Increase in car use will increase road-based noise levels.
	Water	0	No land impacts envisaged.
	Air quality	-1	Increase in car use will increase road-based emissions.
	Climate	-1	Increase in car use will increase road-based GHG emissions.
	Soil & geology	0	No land impacts envisaged.
	Material assets	-1	Increase in car use will increase road-based fossil fuel consumption.
	Cultural heritage	0	No land impacts envisaged.



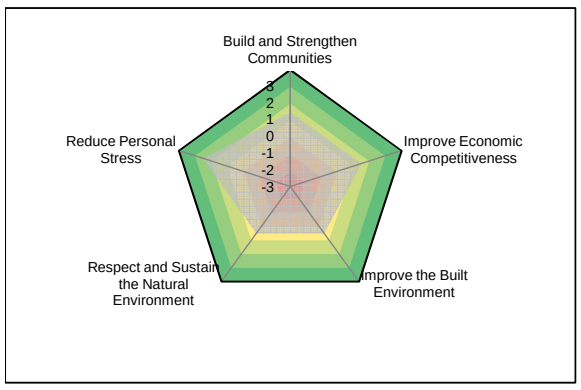
Measure Name:	Real Time Passenger Information
Measure Category:	Multi Modal Information
Potential Delivery Agents:	Operators, LAs
How would we measure a successful transport outcome?	Number of services included. Accuracy of information. Passenger satisfaction.
Cost band	Low cost

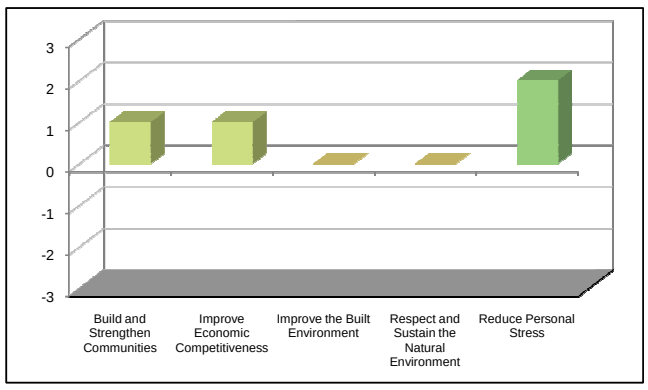
Stage 1a	**Appraisal**	**Notes**
Political		
Technological		Technology proven elsewhere. Possible issues in the Dublin context depending on availability of required data.
Legal		

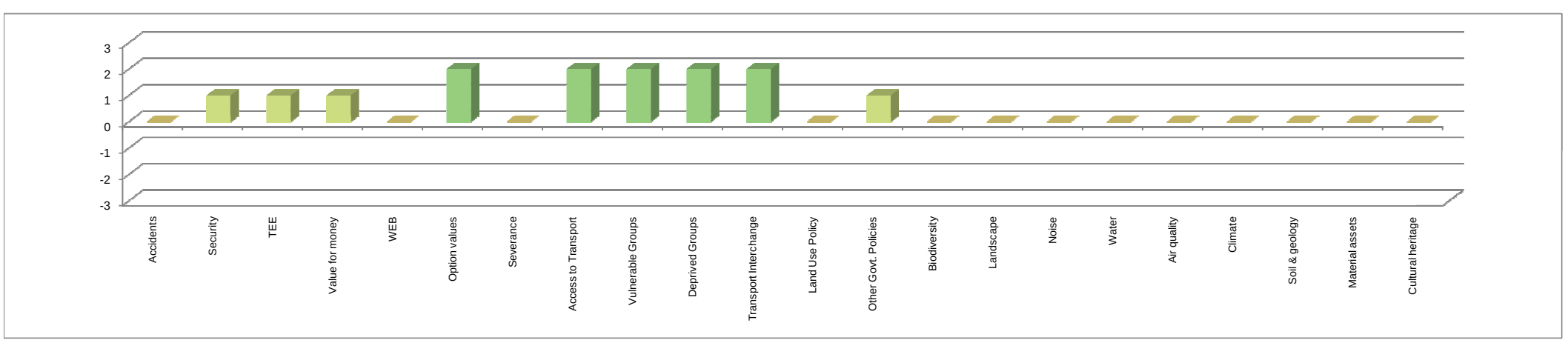
Measure Description & Supporting Information:
Real time information at key bus stops, initially on all QBCs. Requires data collection as well as distribution systems. Could consider display units at key transport hubs, such as hospitals, colleges, universities, retail centres and tying real time in with the Multi Modal Journey Planner. Possible expansion to other sources such as internet or personal mobile devices (this could be linked to other modes too, such as rail and light rail.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Potentially improves access through the provision of information. Available to residents and tourists / visitors. Small benefit.
Improve Economic Competitiveness	1	Small improvement in journey time reliability for business travel (by public transport) through provision of real time information. Small benefit.
Improve the Built Environment	0	Possibly small benefit in terms of improving the quality of off-board passenger facilities, though potential disbenefit as display boards could be visually intrusive.
Respect and Sustain the Natural Environment	0	Improved information provision, could result in minor modal shift to sustainable mode, though some evidence of reduced patronage from this measure.
Reduce Personal Stress	2	Improved journey time reliability, improved travel information, improved use of public transport. Large benefit, small numbers.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Unlikely to have any significant impact upon accident rates.
	Security	1	Presence of RTPI can improve perceptions of personal safety and security.
Economy	TEE	1	Measure is unlikely to directly improve journey times or reliability, although does allow passengers to make more informed decisions about the routes that they take and avoids long wait periods.
	Value for money	1	
	WEB	0	Unlikely to have any impact upon WEBs.
Accessibility	Option values	2	Measure could open up alternative options to travel through the improved provision of information and greater confidence in reliability of journey times.
	Severance	0	Not likely to impact on this.
	Access to Transport	2	Measure would improve access to destinations through the improved provision of information.
Social Inclusion	Vulnerable Groups	2	Vulnerable groups are likely to benefit from increased information on public transport services, though less likely to be able to benefit from internet/PDA based enhancements.
	Deprived Groups	2	Deprived groups are likely to benefit from increased information on public transport services, though less likely to be able to benefit from internet/PDA based enhancements.
Integration	Transport Interchange	2	This score will depend on the extent of RTPI, though the provision of information and improvements to journey time reliability should result in increased levels of interchange between modes. Available to residents and visitors / tourists using QBCs, etc.
	Land Use Policy	0	Does not appear to support land-use policies directly, though could be considered to support policy to address congestion in major urban areas. Does not contradict national policy objectives.
	Other Govt. Policies	1	Measure weakly supports at least three of the policies, namely promote improved public health, social inclusion and tourism.
Environment	Biodiversity	0	Real time passenger information would result in no notable changes.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	







Measure Name:	Public transport information
Measure Category:	Better public transport information plus internet journey planner
Potential Delivery Agents:	Operators DTO Local authorities
How would we measure a successful transport outcome?	Achievement of pre-agreed levels of provision; customer feedback/complaint reduction; existence and use of journey planner.
Cost band	Very low cost

Measure Description & Supporting Information:

Information on:

Public transport departure times - timetables showing departure times/headways for all stops along routes. Stop specific timetables. Available at stops/stations plus printed & on-line (including personalised journey timetables)

Public transport routes - diagramatic and geographic maps of public transport networks. Available in printed form plus at stops/stations and on-line.

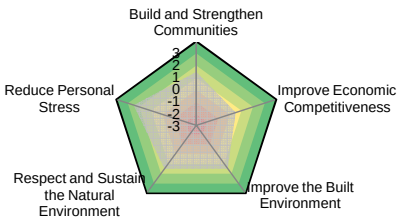
Public transport fares - fare zone maps and cost calculators incorporated within journey planners.

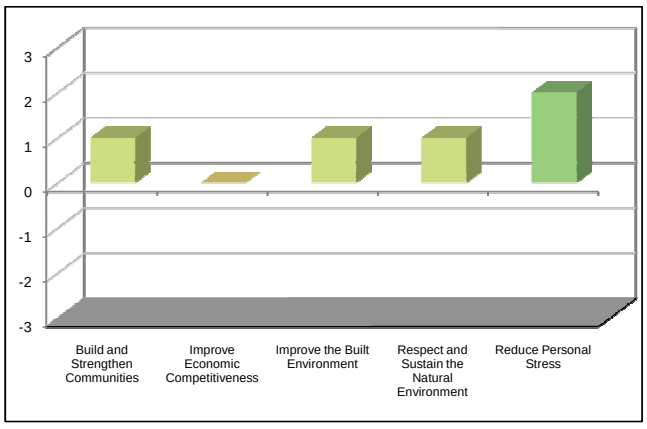
Multi-modal journey planners available on-line & by phone/text. Include public transport modes plus walking routes and cycling routes. May also include highway routes. Assume that this does not include RTI as this is covered in MM3.

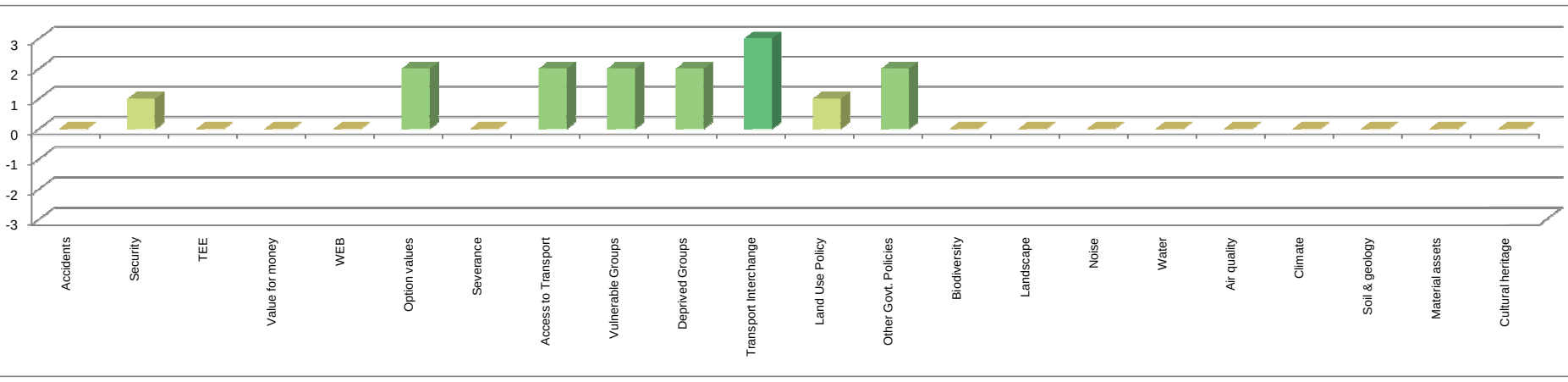
Stage 1a	Appraisal	Notes
Political		No institutional/governance changes required.
Technological		Proven technology, though availability of data could be an issue for the multi-modal journey planner.
Legal		No changes in legislation required.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Small benefit – improving information provision improves access options, providing a better understanding of the travel options available but not services. Benefits people living close to networks and visitors (e.g. online planner, etc.). Low income groups may not have access to internet. Improvement to access on a more regional level /national level will depend on extent of journey planner. Provision of walking and cycling information particularly benefits deprived and vulnerable groups.
Improve Economic Competitiveness	0	Perceived improvement in journey time and congestion through better information provision and modal shift. No significant impact on business travel or freight.
Improve the Built Environment	1	Potential to minimise physical intrusion of motor traffic through modal shift. Measure encourages permeability and people movement.
Respect and Sustain the Natural Environment	1	Improved information provision could result in small modal shift and small reduction in car use, congestion and physical intrusion of motor traffic. Positive impact on air quality and greenhouse gases.
Reduce Personal Stress	2	Significant improvement in traveller information should reduce pre-journey and during journey stress for travellers. Improves perception of reliability and journey times. Improves ease of use of public transport and promotes healthier forms of travel. Benefits the whole of the GDA and visitors / tourists.

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Minimal transfer from car to public transport thus reducing congestion but not necessarily a reduction in accidents as resulting traffic speed will be higher. Measure could result in more vulnerable road users (i.e. walkers and cyclists).
	Security	1	Better information provision improves perceptions of personal safety and security when making journeys. Assumed information would be network wide and not targeted at specific corridors.
Economy	TEE	0	Slightly improves journey times due to modal shift reducing generalised cost of travel. Could reduce vehicle operating costs. Multi-modal journey planner allows people to make more informed decisions about routes. Very small benefit for a small number of people.
	Value for money	0	
	WEB	0	Unlikley to impact on wider economic benefits.
Accessibility	Option values	2	Better information will increase awareness to non-users so benefits are accrued by them as if it were a new option.
	Severance	0	Unlikely to be any change or hindrance to movement of people. All modes will still use the same route and traffic reduction impacts likely to be limited.
	Access to Transport	2	Improved transport information will improve access to the transport system and to sustainable transport options. Available to all residents and visitors. Small benefit to large number of people.
Social Inclusion	Vulnerable Groups	2	Vulnerable groups and non-car owners will benefit from this measure as improved transport information and awareness will support improved access to key facilities. Small benefit for a medium/large number of people.
	Deprived Groups	2	Deprived groups and non-car owners may benefit from this measure as improved transport information and awareness will support improved access to key facilities. Small benefit for a medium/large number of people.
Integration	Transport Interchange	3	Targeted marketing and better information can enhance knowledge of interchange opportunities. This score will depend on the extent of the journey planner though it is likely that it will enhance provision for interchange through the provision of information on a large number of routes and areas including those that are heavily used by travellers.
	Land Use Policy	1	Measure supports policy to address congestion in major urban areas without contradicting significant numbers of others.
	Other Govt. Policies	2	The measure complements policies on tourism, public and mental health, including obesity and social inclusion without contradicting significant numbers of others.
Environment	Biodiversity	0	No land impacts.
	Landscape	0	No land impacts.
	Noise	0	Expected modal shift to PT to sufficient to benefit noise.
	Water	0	No land impacts.
	Air quality	0	Expected modal shift to PT to sufficient to benefit air quality.
	Climate	0	Expected modal shift to PT to sufficient to benefit climate.
	Soil & geology	0	No land impacts.
	Material assets	0	Expected modal shift to PT to sufficient to benefit fossil fuel consumption or encourage brownfield land redevelopment.
	Cultural heritage	0	No land impacts.







Measure Name:	Co-ordinated and simplified advanced direction signing on national, strategic and local roads, including freight routes and local cycling/walking signage.
Measure Category:	Multi-modal information
Potential Delivery Agents:	Local Authorities, NRA, DTO
How would we measure a successful transport outcome?	Existence of co-ordinated signing strategy for all modes and routes, including an implementation and updating programme.
Cost band	Very low cost

Stage 1a	**Appraisal**	**Notes**
Political		Requires co-ordination between NRA and Local Authorities.
Technological		No significant technology required.
Legal		No changes in legislation required.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Unlikely to have any significant impact upon accident rates.
	Security	0	Perceptions of safety and security for walkers and cyclists may increase (i.e. confidence that they are going to right way). Though unlikely to result in any significant improvements to personal safety and security.
Economy	TEE	1	Small reductions in generalised cost of travel possible for small volumes of travellers, through shorter journey times and improvements in journey time reliability. Reduced vehicle operating costs and travel charges for people encouraged to walk or cycle.
	Value for money	1	
	WEB	0	Unlikely to have any significant impact upon WEBs.
Accessibility	Option values	1	Improved signage should raise awareness of route options for different modes of transport and therefore provide people with an alternative travel option.
	Severance	0	Not likely to impact on this.
	Access to Transport	1	Small number of people likely to experience modest improvement in accessibility of transport facilities.
Social Inclusion	Vulnerable Groups	1	Small number of vulnerable individuals are likely to experience a modest benefit; particularly from improvements to local signing. Increased awareness of walking and cycling routes may enhance access to key facilities.
	Deprived Groups	1	Small number of deprived groups are likely to experience a modest benefit; particularly from improvements to local signing. Increased awareness of walking and cycling routes may enhance access to key facilities.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	1	Measure supports policy to address congestion in major urban areas without contradicting significant numbers of others.
	Other Govt. Policies	2	The measure complements policies on tourism, public and mental health, including obesity and social inclusion without contradicting significant numbers of others.
Environment	Biodiversity	0	No land impacts.
	Landscape	1	Minor localised landscape benefits to arise from the rationalisation of on-street signage.
	Noise	0	Insufficient modal shift to benefit noise.
	Water	0	No land impacts.
	Air quality	0	Insufficient modal shift to benefit air quality.
	Climate	0	Insufficient modal shift to benefit climate.
	Soil & geology	0	No land impacts.
	Material assets	0	Insufficient modal shift to benefit fossil fuels or brownfield land redevelopment.
	Cultural heritage	0	No land impacts.

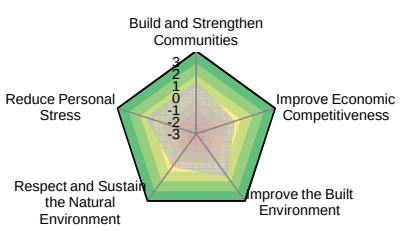
Measure Description & Supporting Information:

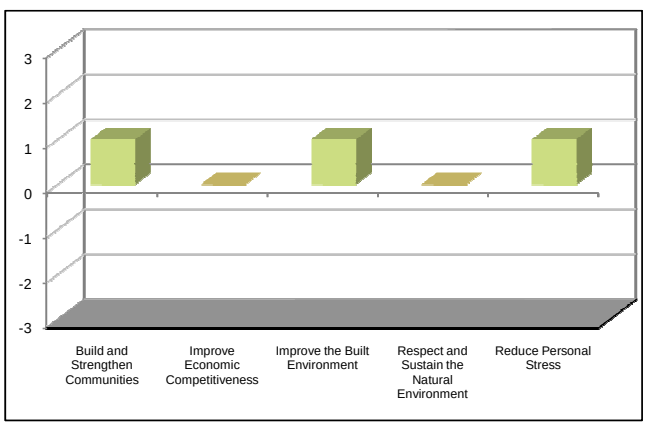
Simplify and improve traffic signs that show directions to important places.

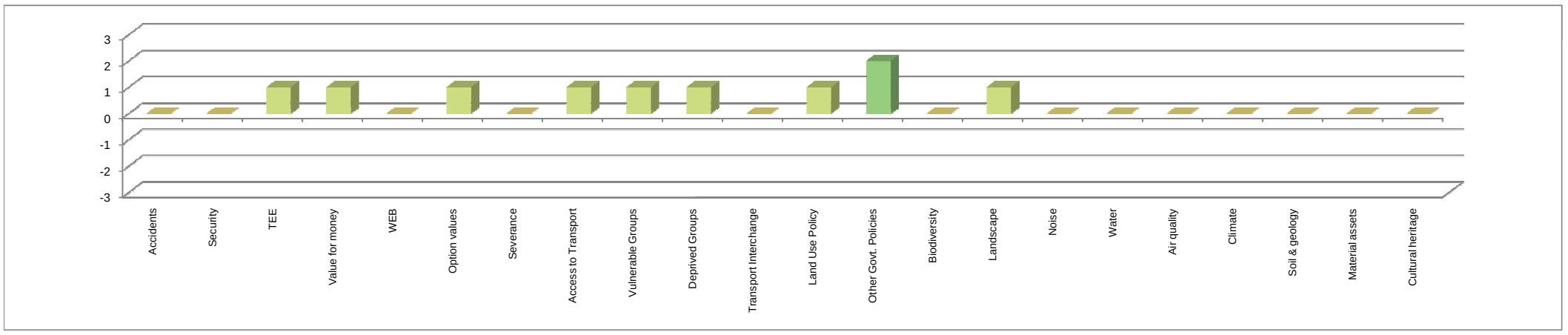
Co-ordinated and simplified advanced direction signing on national, strategic and local roads.

Improve on-street visibility for walking and cycling including local area maps, improved street and direction (fingerpost etc.) signage. Full cycle route signage and information should also be considered here, including off-road facilities and routes targeted primarily at leisure cycling.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Improved signing can improve accessibility and enhance links. Small benefit to small number, (e.g. tourists / visitors and vulnerable / deprived groups) as most people already know where they are going.
Improve Economic Competitiveness	0	Improvements in journey times and journey time reliability through use of most appropriate route may exist but the impact of these for the business and freight sub objectives is assumed to be negligible. Small benefit to businesses and tourists / visitors.
Improve the Built Environment	1	Improvements to local access through signing should minimise visual and physical intrusion of transport. Also improved signing for more sustainble modes could result in small modal shift. Possibly visually intrusive, depending on nature of signing..
Respect and Sustain the Natural Environment	0	Minimises impact of transport on air quality and noise and vibration through better signing and therefore use of more appropriate routes, etc. Only very minor benefits predicted.
Reduce Personal Stress	1	Some minor benefits across the different sub objectives. Easier to use the car and also alternatives to the car. Small benefit, small number of people.







Measure Name:	Live traffic condition information; Live parking Information
Measure Category:	Multi-modal information
Potential Delivery Agents:	NRA, local authorities, privately owned car parks, system providers, motoring organisations
How would we measure a successful transport outcome?	Improved user satisfaction Reduction in parking queues Balanced use of available parking capacity
Cost band	Low cost

Stage 1a	**Appraisal**	**Notes**
Political		Requires co-ordination between NRA, local authorities and privately owned car parks.
Technological		Proven technology, though the provision of accurate and up to date information will be crucial.
Legal		No changes in legislation required.

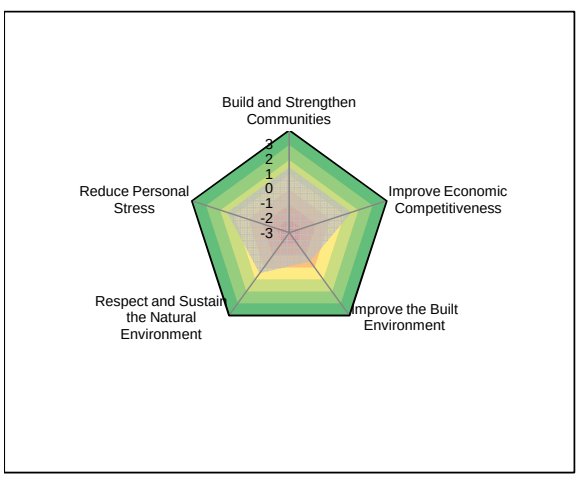
Measure Description & Supporting Information:

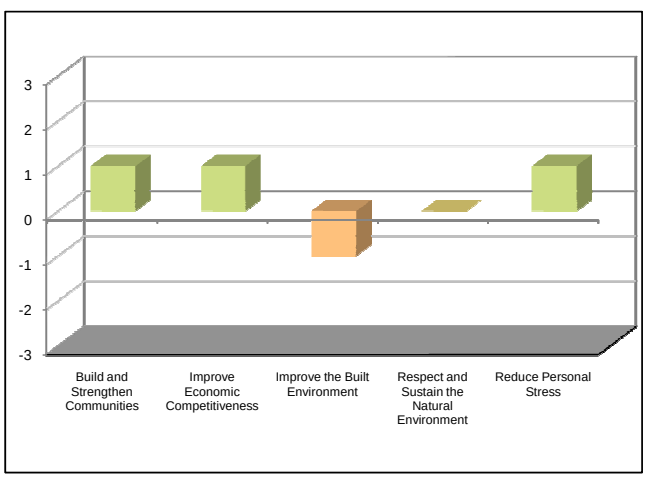
Make road travel information available by internet, mobile phone (SMS), in-car devices (SatNav etc.) and on-street live signing. Includes journey time and destination info. including city centre parking availability.

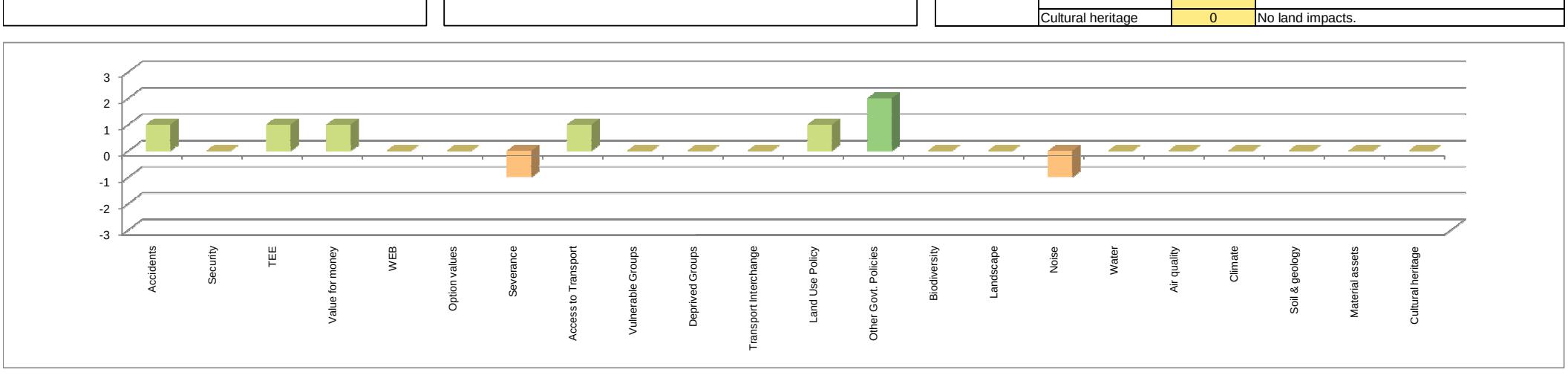
Incorporate ability to pre-book and/or pre-pay all parking and road user charge fees and advance access information for tourist locations, major sports events etc.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Improved access through the provision of information relating to road conditions and parking availability. Small benefit expected. Assists GDA residents and tourists / visitors, though low income groups are less likely to benefit.
Improve Economic Competitiveness	1	Measure will improve journey time reliability for business travel and movement of goods, overall journey times and efficiency of distribution (i.e. reduced time delayed by congestion, etc.). Small benefit to large number of business and tourists / visitors.
Improve the Built Environment	-1	Possibly visually intrusive through use of signing on major routes and in urban areas (i.e. parking). Traffic diverting to other routes to avoid incidents / congestion will reduce visual intrusion of traffic in some areas and increase it in others. Small negative impact.
Respect and Sustain the Natural Environment	0	Reducing congestion should result in more free flowing traffic which in turn should minimise the impact of transport on air quality and reduce vehicle emissions (i.e. traffic at a stand still), assuming alternative routes have some spare capacity. However, may encourage more traffic.
Reduce Personal Stress	1	Will improve journey time reliability for personal travel, potentially reduce overall journey times (e.g. less time spent looking for parking spaces, incidents / congestion avoided) and improve travel information. Benefits mainly during periods of disruption and peak car park usage.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Through advanced warning of emergencies and incidents there should be a positive impact on the level of accidents.
	Security	0	Unlikely to result in any improvements to personal safety and security, though a small number of people may feel safer knowing where there is parking available.
Economy	TEE	1	Measure will improve journey time reliability and potentially reduce journey times as congested areas can be avoided. Medium number of people, small benefit.
	Value for money	1	
	WEB	0	Unlikely to have any significant impact upon WEBs.
Accessibility	Option values	0	Not likely to impact on this.
	Severance	-1	Vehicles are more likely to divert on to local roads as a result of warnings about disruption on strategic links, thereby increasing severance (e.g. harder to cross busier routes).
	Access to Transport	1	VMS on strategic roads should make it easier to access destinations within and beyond the GDA. A small improvement in accessibility by car would also be expected as a result of a reduction in search time for parking spaces. Small benefit to large number of businesses, residents and tourists / visitors.
Social Inclusion	Vulnerable Groups	0	Limited specific benefits expected from this measure for vulnerable groups.
	Deprived Groups	0	Limited specific benefits expected from this measure for deprived groups.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	1	The measure complements two of the policies (e.g. address congestion in major urban areas and enhance use of key road links) though conflicts with the policy to invest in sustainability as it makes it easier to travel by car.
	Other Govt. Policies	2	The measure complements two of the policies (i.e. helps to promote tourism across the GDA and enterprise, trade and employment).
Environment	Biodiversity	0	No land impacts.
	Landscape	0	No land impacts.
	Noise	-1	Diversion of traffic may result in localised noise impacts on lesser-trafficked roads.
	Water	0	No land impacts.
	Air quality	0	There may be a small increase in overall car-based travel, but this is not expected to be sufficient to negatively impact on air quality.
	Climate	0	There may be a small increase in overall car-based travel, but this is not expected to be sufficient to negatively impact on climate.
	Soil & geology	0	No land impacts.
	Material assets	0	There may be a small increase in overall car-based travel, but this is not expected to be sufficient to negatively impact on fossil fuel demand.
	Cultural heritage	0	No land impacts.







Measure Name:	Local Road and Junction Improvements
Measure Category:	New Road Capacity
Potential Delivery Agents:	Local Authorities
How would we measure a successful transport outcome?	Vehicle speeds Network congestion
Cost band	Low cost

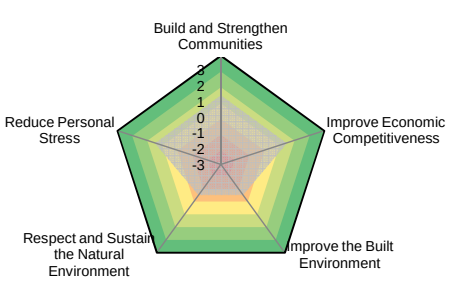
Stage 1a	**Appraisal**	**Notes**
Political		
Technological		
Legal		

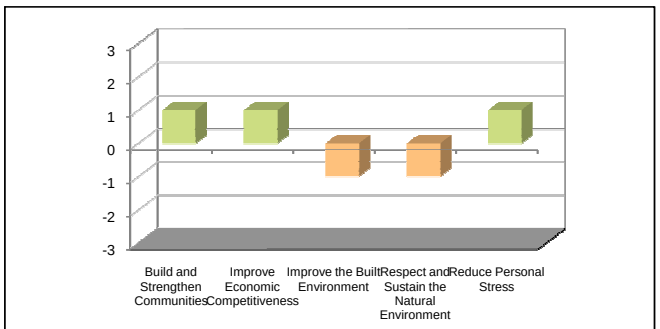
Measure Description & Supporting Information:

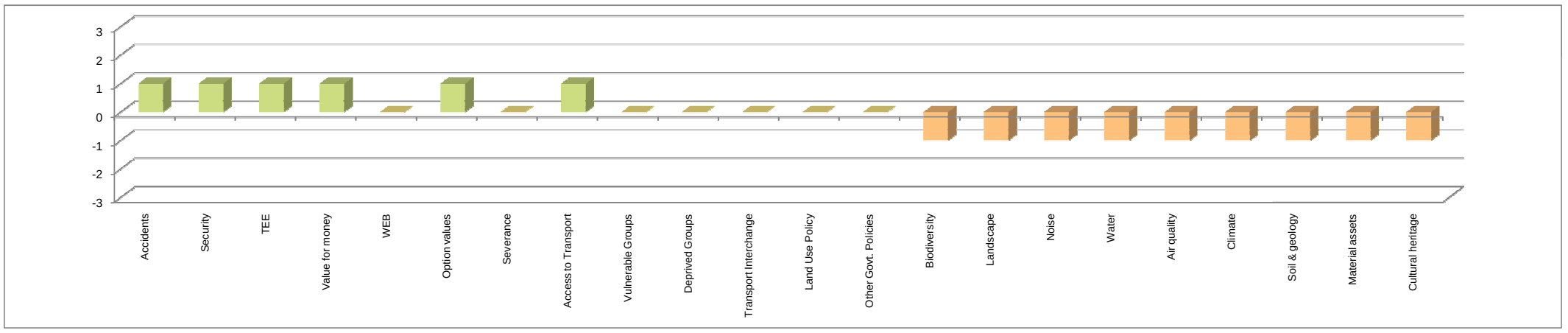
Create additional capacity for traffic at locations with excessive demand pressure.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Measure could result in improved accessibility and improved links at a local level, etc.
Improve Economic Competitiveness	1	Measure will help reduce congestion at specific locations at a local level.
Improve the Built Environment	-1	Measure will help to minimise the physical intrusion of motor traffic (i.e. freer flowing), though is likely to be visually intrusive (e.g. signing, etc.) and could result in loss of land through construction, etc.; overall impact will be small but slightly negative.
Respect and Sustain the Natural Environment	-1	Measure could reduce impact of transport on air quality, through freer flowing traffic. Possible reductions in noise and vibration. Loss of land through construction could have an adverse impact on biodiversity depending on scale. However, likely to lead to an increase in car trips.
Reduce Personal Stress	1	Measure could result in improved journey time reliability and overall journey times for personal travel. There could also be benefits to travel safety resulting from better designed junctions. Induced traffic may limit the benefits.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Possibly some reduction in accidents, in particular for vulnerable road users (e.g. pedestrians and cyclists).
	Security	1	Possibly some improvements to safety for people through improvements to the public realm, e.g. walking and cycling conditions.
Economy	TEE	1	Creating additional capacity at locations with excessive demand should result in some improvements to reliability and journey times at a local level.
	Value for money	1	
	WEB	0	Measure is not likely to result in conditions that will improve productivity greatly for firms in vicinity. Some small benefits, but less than 1.
Accessibility	Option values	1	Improvements could result in reduced congestion for highway modes, enhancing options to use these modes.
	Severance	0	Careful design of measure could result in reduced severance for pedestrians, though improvements focused on enhancing traffic flow (e.g. wider junctions) are likely to increase severance.
	Access to Transport	1	Measure may result in some improvements to access to destinations by wider transport network, through improved road access and additional capacity.
Social Inclusion	Vulnerable Groups	0	Measure is likely to provide little specific benefit / support to vulnerable groups.
	Deprived Groups	0	Measure is not likely to particularly enhance opportunities for socially deprived individuals.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	0	The measure complements one of the policies (i.e. address congestion in major urban areas) though there is some contradiction of others (i.e. improve the environmental performance of transport sector and invest in sustainability) as the measure is likely to have a negative impact on the natural environment overall. Benefits cancelled out by disbenefits.
	Other Govt. Policies	0	The measure neither supports nor contradicts the policies.
Environment	Biodiversity	-1	Local road and junction improvements would facilitate an increase in private vehicle traffic levels. There will also be construction and landtake impacts associated with this measure. These would potentially result in minor negative impacts on biodiversity, landscape, noise, water, air quality, soil and geology and cultural heritage, a minor increase in greenhouse gas emissions and a minor increase of the fossil fuel demand.
	Landscape	-1	
	Noise	-1	
	Water	-1	
	Air quality	-1	
	Climate	-1	
	Soil & geology	-1	
	Material assets	-1	
	Cultural heritage	-1	







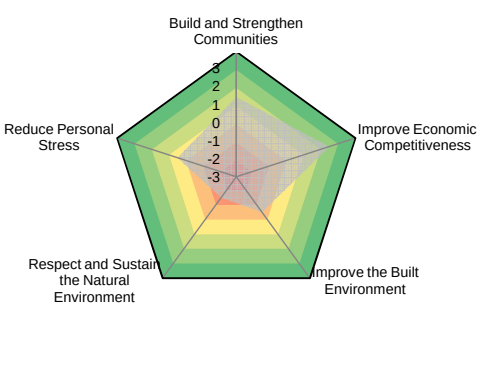
Measure Name:	New Road Links
Measure Category:	New Road Capacity
Potential Delivery Agents:	Local Authorities, NRA
How would we measure a successful transport outcome?	Vehicle flows Network congestion
Cost band	Medium Cost

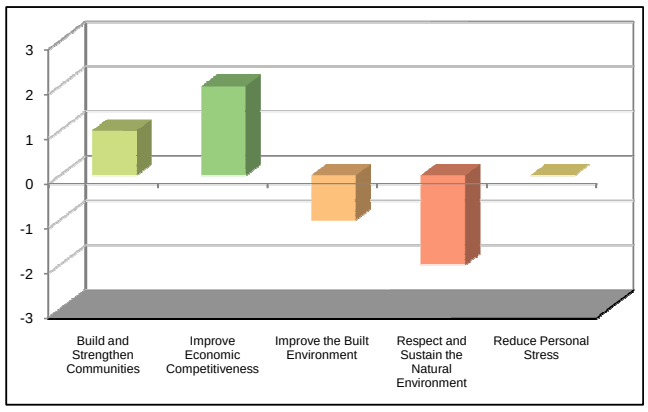
Stage 1a	**Appraisal**	**Notes**
Political		Requires An Bord Pleanala approval.
Technological		
Legal		

Measure Description & Supporting Information:

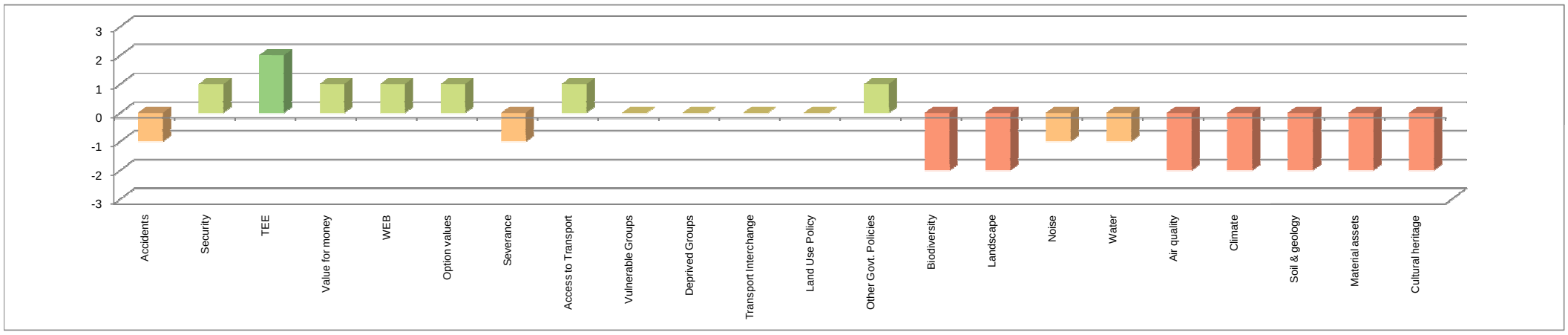
Create new links to potential development locations, for all road user types (e.g. freight, bus, cycle, pedestrian as well as car) as part of delivering sustainable development.
Road links would be designed with consideration for urban realm (e.g. good design, safety and security considerations, etc.)

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Measure will result in improved accessibility across all modes to work, education, retail, leisure and other activities and improved links at a local level, etc. However, only affects new developments.
Improve Economic Competitiveness	2	Measure is likely to benefit businesses and improve access to markets at a local level.
Improve the Built Environment	-1	Measure will be designed to take into consideration all road users, though is likely to be visually intrusive (e.g. introducing motor traffic into new areas, signing, traffic lights, etc.) and will result in loss of land through construction, etc.
Respect and Sustain the Natural Environment	-2	Loss of land through construction could have an adverse impact on biodiversity depending on scale. Induced traffic will increase CO2 emissions etc and will affect air quality in urban areas.
Reduce Personal Stress	0	Improves journey times for new development trips. However, induced traffic may adversely affect other trips on the networks.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	-1	Consideration would be given to all road user types within the design of the new links which should minimise accident rates; however greater volumes of traffic are likely to be generated so total accident level could rise.
	Security	1	Road links likely to be designed with consideration for safety and security i.e. with good urban realm, lighting etc.
Economy	TEE	2	Measure will result in improvements to transport provision for all road users and potentially improvements to the reliability of journey times.
	Value for money	1	
	WEB	1	Measure is likely to result in small improvements in access to labour markets and / or customers / suppliers.
Accessibility	Option values	1	Measure to provide links suitable for all road user types, so could provide an alternative option to travel for a small number.
	Severance	-1	Measure could result in increased severance for non-motorised modes, though all road user types will be catered for.
	Access to Transport	1	This measure is associated with new developments so could improve access to destinations to and from these locations.
Social Inclusion	Vulnerable Groups	0	Measure is likely to provide little specific benefit / support to vulnerable groups.
	Deprived Groups	0	Measure is not likely to particularly enhance opportunities for socially deprived individuals.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	0	The measure could support the policy to reduce congestion; however, since it encourages road traffic it does contradict the policy to improve the environmental performance of the transport sector
	Other Govt. Policies	1	The measure supports one of the policies (i.e. promote enterprise, trade and employment) without contradicting significant numbers of others.
Environment	Biodiversity	-2	New local road links would facilitate an increase in private vehicle traffic levels. There would also be construction and land-take impacts associated with this measure. These would potentially result in moderate negative impacts on biodiversity, landscape, air quality, soil and geology and cultural heritage, minor negative impacts on noise and water, a moderate increase of greenhouse gas emissions and a moderate increase of the fossil fuel demand.
	Landscape	-2	
	Noise	-1	
	Water	-1	
	Air quality	-2	
	Climate	-2	
	Soil & geology	-2	
	Material assets	-2	
	Cultural heritage	-2	

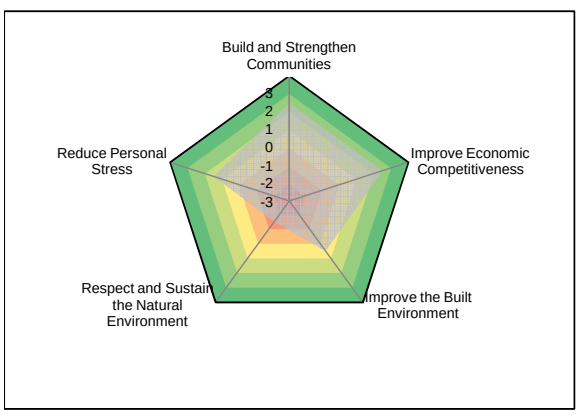


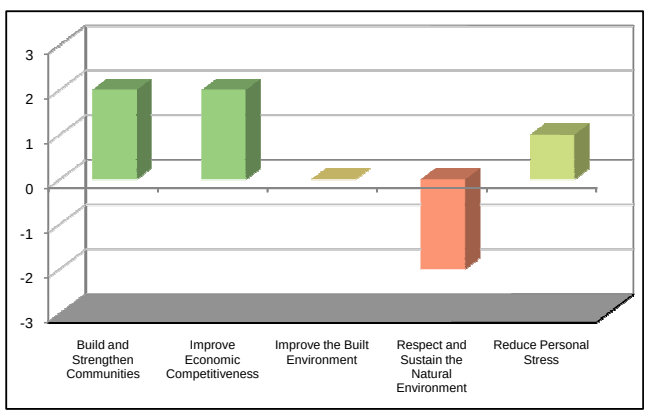
Measure Name:	Widening of Strategic Roads
Measure Category:	New Road Capacity
Potential Delivery Agents:	NRA
How would we measure a successful transport outcome?	Vehicle speeds
Cost band	Large cost

Stage 1a	**Appraisal**	**Notes**
Political		Requires An Bord Pleanala approval.
Technological		
Legal		

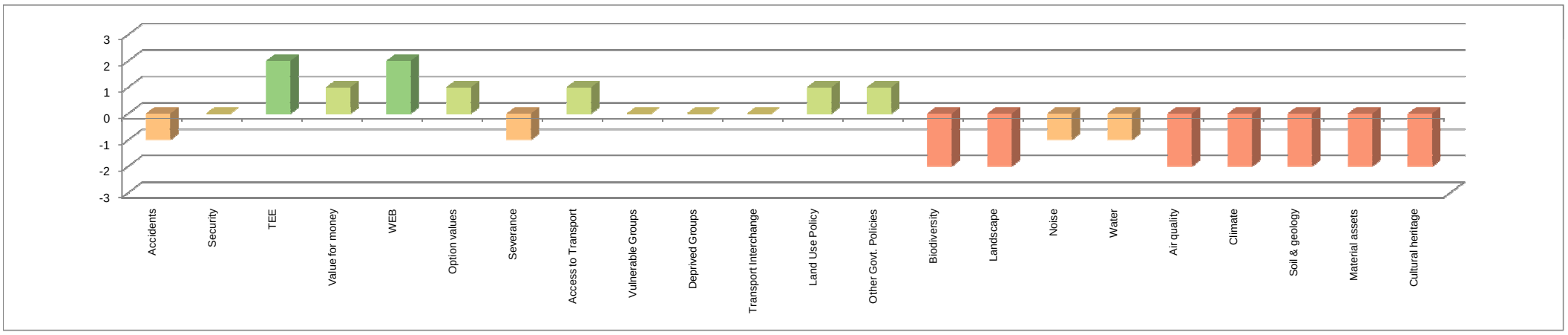
Measure Description & Supporting Information:
Additional capacity for traffic to existing roads where excessive demand pressure exists. Effectively the same construction as RC3 "Provide New HOV or Freight Lanes" measure, but use not restricted to freight or HOVs. Assumed that majority of construction will be in rural areas.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Measure will improve accessibility and links between communities, other regions and the rest of Ireland.
Improve Economic Competitiveness	2	Measure is likely to improve journey time reliability, reduce overall journey times for business travel, support businesses, improve access to GDA ports and Dublin airport (depending on choice of strategic roads) and provide for efficient goods distribution.
Improve the Built Environment	0	Measure will be visually intrusive (e.g. wider roads, extensive signing and road marking, etc.) and will result in loss of land through construction; however it is assumed this will be in rural areas therefore will not impact upon pedestrians or the built environment.
Respect and Sustain the Natural Environment	-2	Loss of land through construction could have an adverse impact on biodiversity. Measure could unlock latent demand for motor traffic. Additional capacity will generate new trips and therefore increase CO2 emissions etc.
Reduce Personal Stress	1	Measure is likely to improve journey time reliability and overall journey times for personal travel and improve travel safety through reduced congestion. However, induced traffic may create extra delays network wide.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	-1	Consideration would be given to all road user types within the design of the new links which should minimise accident rates; however, overall there is likely to higher levels of traffic and higher speeds as a result of the additional capacity, therefore potentially greater volumes of accidents.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	2	Measure is likely to result in improved journey times and journey time reliability for all road users on a strategic level. Score will depend on the extent of the widening.
	Value for money	1	
	WEB	2	Measure is likely to result in improved journey times and journey time reliability for all road users on strategic level. Score will depend on the extent of the widening.
Accessibility	Option values	1	Increased road capacity enhances options to travel by highway based modes.
	Severance	-1	Impact upon pedestrians will be small due to location of construction. However there is potentially an issue for some pedestrians as roads will be wider to cross.
	Access to Transport	1	Measure may result in some improvements re access to destinations by wider transport network, through improved road access and additional capacity.
Social Inclusion	Vulnerable Groups	0	Measure is likely to provide little specific benefit / support to vulnerable groups.
	Deprived Groups	0	Measure is not likely to particularly enhance opportunities for socially deprived individuals.
Integration	Transport Interchange	0	No net impact. Possibly slight disbenefit to interchange as measure will make it easier to travel by motorised vehicles.
	Land Use Policy	1	The measure complements two or three of policies (i.e. enhance use of key inter-regional road links, address congestion and improve role of Dublin Airport and Dublin Port); however, since it encourages road traffic it does contradict the policy to improve the environmental performance of the transport sector.
	Other Govt. Policies	1	The measure complements one of the policies (i.e. promote enterprise, trade and employment) without contradicting significant numbers of others.
Environment	Biodiversity	-2	Widening of strategic roads would facilitate and increase in private vehicle traffic levels and involve construction and landtake, potentially resulting in moderate negative impacts on biodiversity, landscape, air quality, soil and geology and cultural heritage, minor negative impacts on noise and water, a moderate increase in greenhouse gas emissions and a moderate increase in the fossil fuel demand.
	Landscape	-2	
	Noise	-1	
	Water	-1	
	Air quality	-2	
	Climate	-2	
	Soil & geology	-2	
	Material assets	-2	
	Cultural heritage	-2	



Measure Name:	New Strategic Links / Bypasses
Measure Category:	New Strategic Links / Bypasses
Potential Delivery Agents:	Local Authorities
How would we measure a successful transport outcome?	Vehicle flows. Network congestion.
Cost band	Large cost

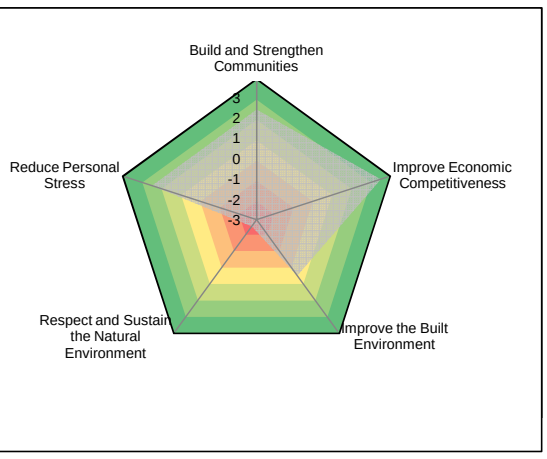
Stage 1a	**Appraisal**	**Notes**
Political		Requires An Bord Pleanala approval.
Technological		
Legal		

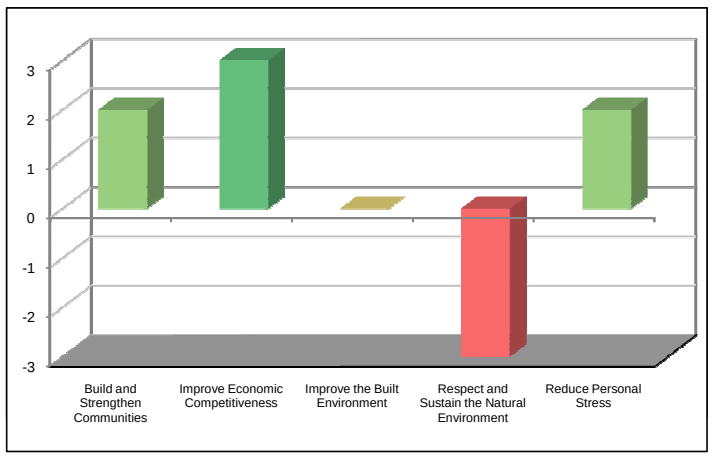
Measure Description & Supporting Information:

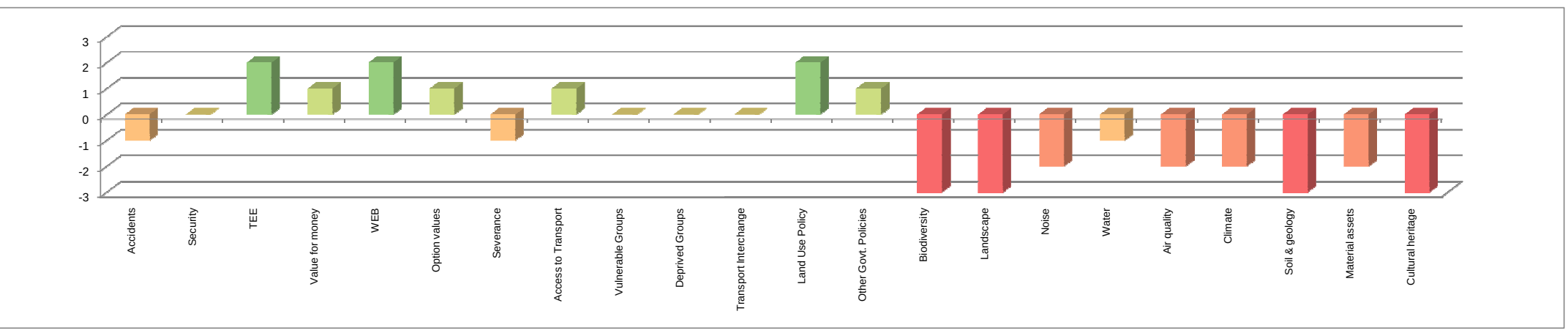
For example orbital roads, linking outer areas of GDA, and bypasses. Assumed that majority of construction will be in rural areas.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Measure will improve accessibility and links to other regions and the rest of Ireland. Relative disbenefit for mobility impaired.
Improve Economic Competitiveness	3	Measure is likely to improve journey time reliability, reduce overall journey times for business travel, support businesses, improve access to GDA ports and Dublin airport (depending on choice of strategic roads) and provide for efficient goods distribution.
Improve the Built Environment	0	Measure will be visually intrusive (e.g. wider roads, extensive signing and road marking, etc.) and will result in loss of land through construction; however likely to be in rural areas and therefore will not impact upon pedestrians or the built environment.
Respect and Sustain the Natural Environment	-3	Loss of land through construction could have an adverse impact on biodiversity, landscape etc. Measure could unlock latent demand for motor traffic. Bypasses will minimise the impact of transport in urban areas, (e.g. improvements to air quality and reduction of noise and vibration), though impacts could simply be relocated.
Reduce Personal Stress	2	Measure is likely to improve journey time reliability and overall journey times for personal travel and improve travel safety through reduced congestion. Measure potentially makes it easier to travel by car with induced traffic causing delays elsewhere on the networks.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	-1	Consideration would be given to all road user types within the design of the new links which should minimise accident rates. Accidents should also be reduced within urban areas, in particularly protecting vulnerable users; however, overall there is likely to be higher levels of traffic and higher speeds as a result of the additional capacity, therefore potentially greater volumes of accidents.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	2	Measure is likely to result in improved journey times and journey time reliability for all road users on a strategic level.
	Value for money	1	
	WEB	2	Measure is likely to result in improved journey times and journey time reliability for all road users on strategic level and give significant improvement in access to markets, etc.
Accessibility	Option values	1	Increased road capacity enhances options to travel by highway based modes.
	Severance	-1	Impact upon pedestrians will be small due to location of construction. However there is potentially an issue for some pedestrians as roads will be wider to cross.
	Access to Transport	1	Measure should result in some improvements re access to destinations by wider transport network, through improved road access and additional capacity.
Social Inclusion	Vulnerable Groups	0	Measure is likely to provide little specific benefit / support to vulnerable groups.
	Deprived Groups	0	Measure is not likely to particularly enhance opportunities for socially deprived individuals.
Integration	Transport Interchange	0	No net impact. Possibly slight disbenefit to interchange as measure will make it easier to travel by motorised vehicles.
	Land Use Policy	2	Measure complements most of the policies (e.g. enhance role of Dublin and use of key inter-regional road links, improve role of Dublin Airport and Dublin Port, enhance role of Dublin as an international gateway and address congestion, etc.); however, since it encourages road traffic it does contradict the policy to improve the environmental performance of the transport sector.
	Other Govt. Policies	1	Measure complements two or three of the policies (e.g. promote enterprise, trade and employment, promote tourism), though possible contradiction with policies to promote social inclusion and maintain and develop heritage (i.e. cancels out some of benefit).
Environment	Biodiversity	-3	New strategic links/bypasses would facilitate an increase in private vehicle traffic levels and involve construction and landtake, potentially resulting in major negative impacts on biodiversity, landscape, soil and geology and cultural heritage, moderate negative impacts on noise and air quality, a moderate increase of greenhouse gas emissions, a moderate increase in the fossil fuel demand and a minor negative impact on water.
	Landscape	-3	
	Noise	-2	
	Water	-1	
	Air quality	-2	
	Climate	-2	
	Soil & geology	-3	
	Material assets	-2	
	Cultural heritage	-3	







Measure Name:	New River / Canal Crossings
Measure Category:	New Road Capacity
Potential Delivery Agents:	Local Authorities
How would we measure a successful transport outcome?	Vehicle flows Network congestion
Cost band	Medium Cost

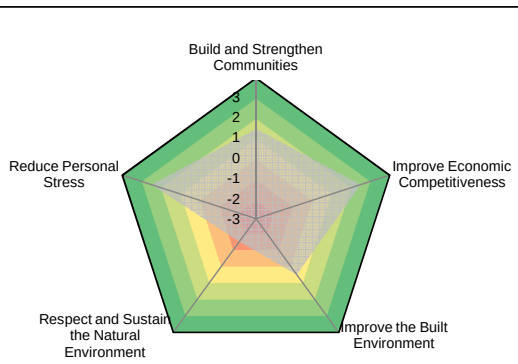
Stage 1a	**Appraisal**	**Notes**
Political		Requires An Bord Pleanala approval.
Technological		
Legal		

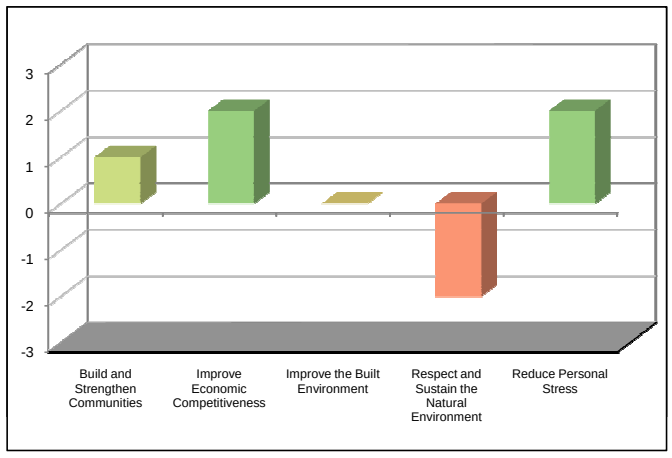
Measure Description & Supporting Information:

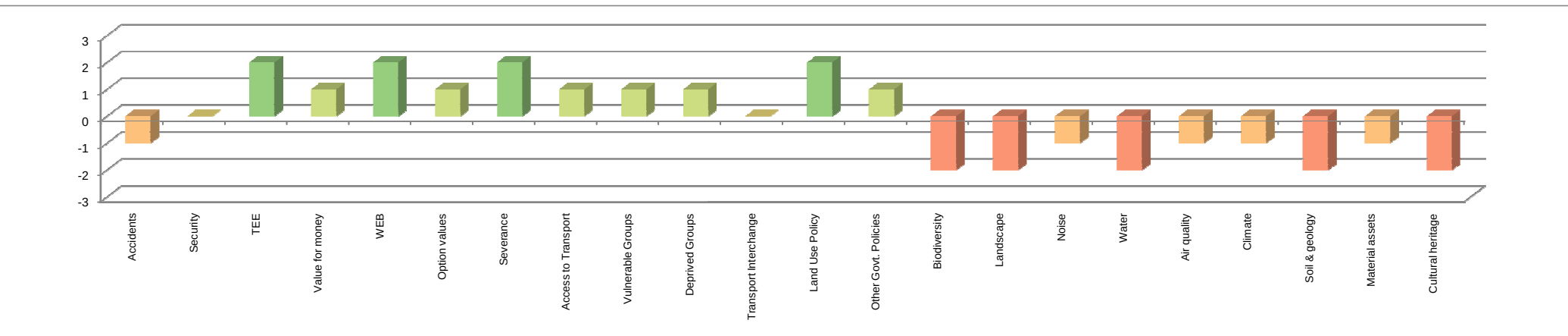
Additional crossings of canals / rivers / bay to relieve pressure on existing crossing points. Assumes the bridges would be designed for vehicles but would accommodate walking and cycling.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Measure will improve accessibility and links between communities within the region.
Improve Economic Competitiveness	2	Measure is likely to improve journey time reliability, reduce overall journey times for business travel, support businesses, improve access to GDA ports and Dublin airport (depending on choice of strategic roads) and provide for efficient goods distribution.
Improve the Built Environment	0	Measure will be visually intrusive and will result in loss of land through construction, etc. Extent to which this occurs depends upon individual designs and bridges can be iconic statements. The measure could improve permeability and people movement (e.g. provision for cyclists and pedestrians) and relieve physical intrusion of traffic and pressure at existing crossing points.
Respect and Sustain the Natural Environment	-2	Loss of land through construction could have an adverse impact on biodiversity. Measure could unlock latent demand for motor traffic and increase pollution. Will reduce impact of transport at existing crossing points (e.g. improvements to air quality and reduction of noise and vibration).
Reduce Personal Stress	2	Measure is likely to improve journey time reliability and overall journey times for personal travel and improve travel safety through reduced congestion. Measure potentially makes it easier to travel by car, though provision for cyclists and pedestrians would also be provided.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	-1	Consideration would be given to all road user types within the design of the new links which should minimise accident rates; however, overall there is likely to higher levels of traffic and higher speeds as a result of the additional capacity, therefore potentially greater volumes of accidents.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	2	Measure is likely to result in improved journey times and journey time reliability for all road users on a strategic level.
	Value for money	1	
	WEB	2	Measure is likely to result in improved journey times and journey time reliability for all road users on strategic level and give significant improvement in access to markets, etc.
Accessibility	Option values	1	Measure will make it easier to travel by motorised vehicle, though provision for walking and cycling should result in improvements in options to travel by other modes also.
	Severance	2	With provision for pedestrians and cyclists the measure should result in reduced severance.
	Access to Transport	1	Measure should result in some improvements with regards access to destinations by wider transport network, through improved road access.
Social Inclusion	Vulnerable Groups	1	Measure may enhance opportunities for some vulnerable groups by improving accessibility, particularly if new crossings are used by PT services and include provision for pedestrians.
	Deprived Groups	1	Measure may enhance opportunities for those on low incomes by improving access to employment, etc. though this will be limited as car ownership is likely to be small amongst this group. Provision for pedestrians and cyclists should benefit socially deprived individuals.
Integration	Transport Interchange	0	No net impact. Possibly slight disbenefit to interchange as measure will make it easier to travel by motorised vehicles.
	Land Use Policy	2	Measure complements four or more of the policies (e.g. enhance role of Dublin and use of key inter-regional road links, improve role of Dublin Airport and Dublin Port and address congestion, etc.); however, since it encourages road traffic it does contradict the policy to improve the environmental performance of the transport sector.
	Other Govt. Policies	1	Measure complements two or three of the policies (e.g. promote enterprise, trade and employment, promote tourism), though possible contradiction with policies to promote social inclusion and maintain and develop heritage (i.e. cancels out some of benefit).
Environment	Biodiversity	-2	New river/canal crossings would facilitate an increase in private vehicle traffic levels and involve construction and landtake, potentially resulting in moderate negative impacts on biodiversity, landscape, water, soil and geology and cultural heritage, minor negative impacts on noise and air quality, a minor increase in greenhouse gas emissions and a minor increase of the fossil fuel demand.
	Landscape	-2	
	Noise	-1	
	Water	-2	
	Air quality	-1	
	Climate	-1	
	Soil & geology	-2	
	Material assets	-1	
	Cultural heritage	-2	







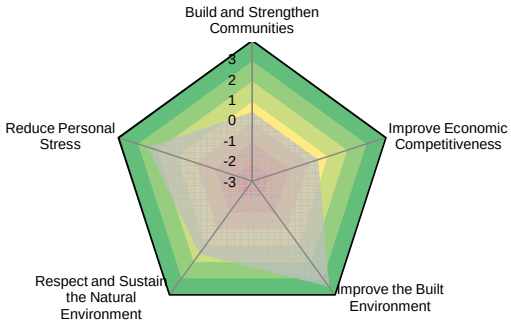
Measure Name:	Home Zones
Measure Category:	Streetscape
Potential Delivery Agents:	Local Authorities
How would we measure a successful transport outcome?	Area covered by zones. Accident rates within area. Resident satisfaction.
Cost band	Medium Cost

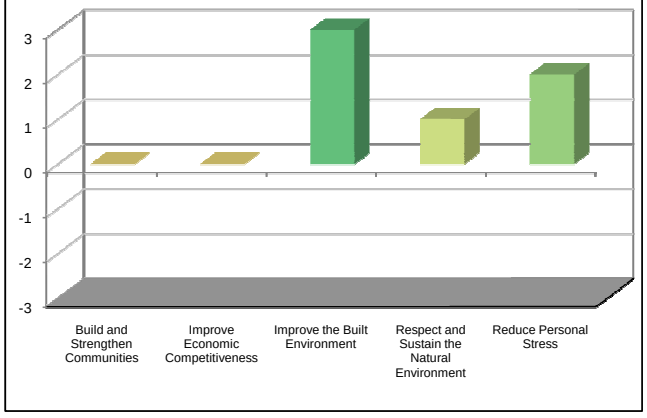
Stage 1a	**Appraisal**	**Notes**
Political		
Technological		
Legal		

Measure Description & Supporting Information:

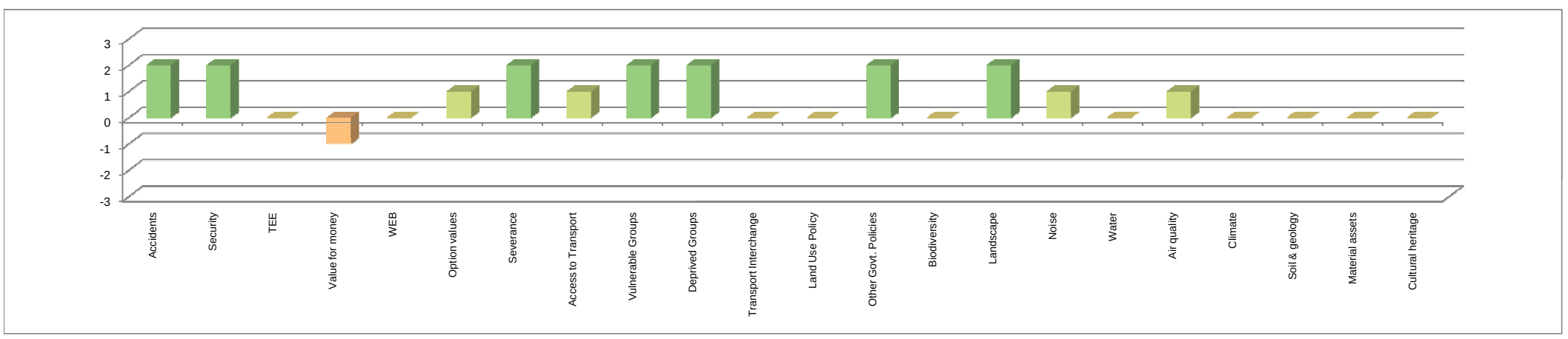
Home Zones are residential streets in which the road space is shared between drivers and other road users with the wider needs of residents (including people who walk and cycle); particularly children; in mind. The aim is to change the way that streets are used and to improve the quality of life in residential streets by making them places for people, not just traffic.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	0	Measure does not score particularly on key criteria.
Improve Economic Competitiveness	0	Not likely to impact on this.
Improve the Built Environment	3	Measure will improve and maintain the environment for people movement and minimise the physical intrusion of motor traffic. Small number of people, large benefit.
Respect and Sustain the Natural Environment	1	Measure will minimise the impact of noise and vibration and the impact of transport on air quality. Some minor level shift to sustainable modes may be experienced.
Reduce Personal Stress	2	Measure will promote healthier forms of travel, use of public space and improve travel safety.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	2	Benefit across a range of modes, particularly vulnerable road users. Medium / large benefit, small numbers.
	Security	2	Improvements to the public realm and on-street walking and cycling conditions. Medium / large benefit, small numbers.
Economy	TEE	0	Not likely to impact on generalised journey times.
	Value for money	-1	
	WEB	0	Not likely to impact on WEBs
Accessibility	Option values	1	Depending on the scale of the home zone (i.e. size, etc.) the measure may provide an alternative option to travel for short / local journeys through the provision of enhanced facilities for pedestrians and cyclists. Small benefit, small numbers.
	Severance	2	Measure is likely to result in reduced severance for pedestrians and cyclists. Scale of benefit largely depends on the extent of home zone implementation.
	Access to Transport	1	Local accessibility by car may be reduced while accessibility by non-motorised users is enhanced.
Social Inclusion	Vulnerable Groups	2	Improved safety for non-motorised users is likely to benefit vulnerable groups.
	Deprived Groups	2	Improved safety for non-motorised users is likely to benefit deprived groups.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	0	Does not directly support nor contradict any national land-use policy directives.
	Other Govt. Policies	2	Measure complements two of the policies (i.e. social, community and family policies which promote social inclusion and cohesion, promote improved public health, including reducing obesity) without contradicting significant numbers of others.
Environment	Biodiversity	0	Home zones, if they become standard planning practice, would lead to reduced presence of vehicles within residential areas, potentially resulting in a moderate positive impact on landscape and minor positive impacts on noise and air quality.
	Landscape	2	
	Noise	1	
	Water	0	
	Air quality	1	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	



Measure Name:	Vulnerable Users and Pedestrian Priority in Key Centres
Measure Category:	Streetscape
Potential Delivery Agents:	Local Authorities
How would we measure a successful transport outcome?	Area or kilometres covered by schemes. Footfall in areas. User satisfaction.
Cost band	Low cost

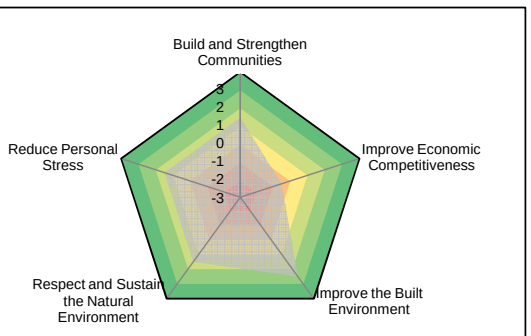
Stage 1a	**Appraisal**	**Notes**
Political		May require guidance on shared space design.
Technological		
Legal		May require changes in legislation.

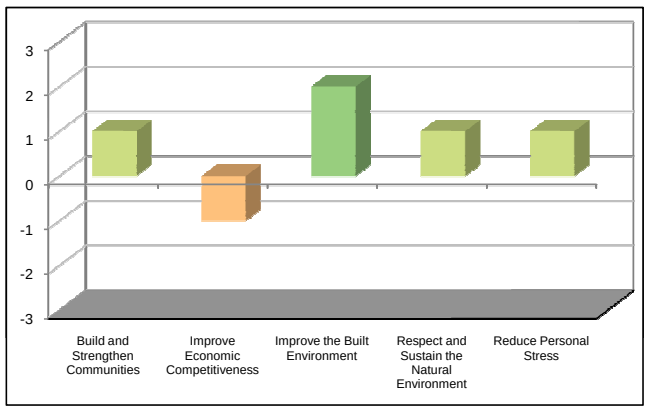
Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Should help reduce the number of pedestrian accidents, though this could be offset with cyclist accidents depending on the provision made (i.e. if cyclists are forced to use busier roads due to diverted motor traffic).
	Security	2	Improved lighting, CCTV, etc., will result in improvements to safety and security for people when making journeys. Medium benefit, large numbers.
Economy	TEE	0	Potential slight disbenefits to vehicles that may have slightly further to travel to avoid pedestrian areas and journeys may take longer due to speed restrictions; however benefits to pedestrians counter this impact.
	Value for money	0	
	WEB	1	There is evidence to suggest that pedestrianised areas enhance shop vitality due to increased perceptions of safety and security. However, there is likely to be some concern from local businesses re servicing depending on how the parking and loading restrictions are implemented.
Accessibility	Option values	-1	Possibly slight disbenefit as the measure may remove the option to travel by highway based modes
	Severance	2	If cyclists are not allowed through the measure is likely to cause some severance, though pedestrian movements will be enhanced. Overall, good design should result in a benefit.
	Access to Transport	-1	Some benefit to walking, though possible slight disbenefit to cycling and movements by other highway modes likely to be more restricted.
Social Inclusion	Vulnerable Groups	1	Speed restrictions and pedestrianisation schemes are likely to result in improved conditions for vulnerable groups. Shared pedestrian and cycle road space may create conflicts that have an adverse impact on visually impaired groups.
	Deprived Groups	1	Improved walking conditions are likely to benefit non-car owners.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	0	Does not directly support nor contradict any national land-use policy directives, other than potential support for improving environmental performance of transport sector.
	Other Govt. Policies	1	Measure complements two of the policies (i.e. promote tourism and maintain and develop heritage, promote social inclusion) without contradicting significant numbers of others.
Environment	Biodiversity	0	Pedestrian and vulnerable users priority in key centres would reduce the traffic levels within the key centres, potentially resulting in moderate positive impacts on landscape, noise and air quality, a minor reduction of greenhouse gas emissions, a minor reduction of the fossil fuel demand and a minor positive impact on cultural heritage.
	Landscape	2	
	Noise	2	
	Water	0	
	Air quality	2	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	1	

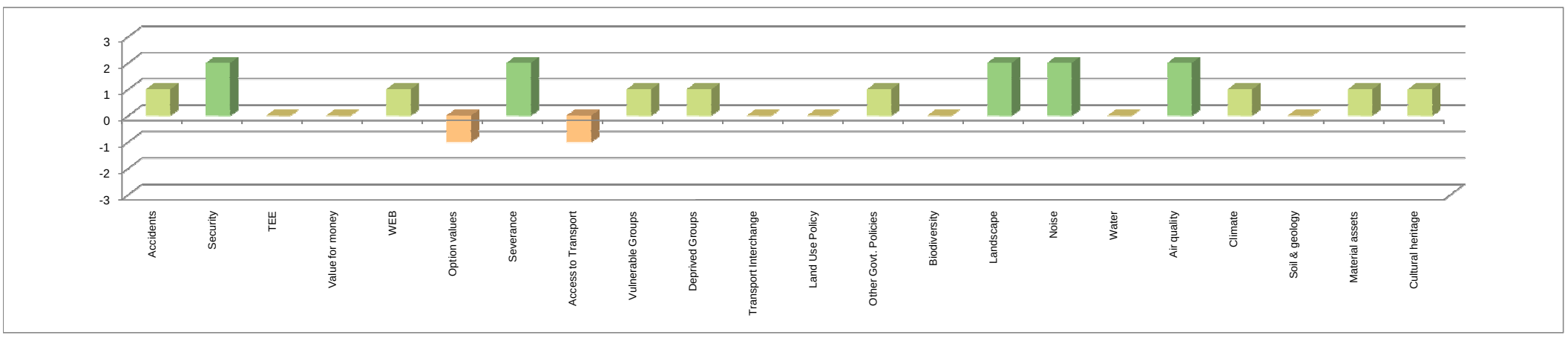
Measure Description & Supporting Information:

Pedestrianisation and shared spaces in commercial and local centres. Area wide 30kph speed limits; reduced traffic priority, limited / banned parking and loading, improved lighting and natural surveillance / CCTV to increase confidence. Shared spaces in local centres and on 'mixed priority routes' where arterial roads also have local services on frontages. With pedestrianisation schemes, need to think about whether cyclists are excluded and whether traffic be relocated to residential or commercial streets - implications for safety and air quality, etc. Impacts for people with visual and mobility impairments, i.e. conflicts between the two. Improvements to perceptions of safety and security, could indirectly improve business and shop vitality. Operational issues for businesses, servicing, etc., smaller businesses prefer servicing at front as oppose to rear. Impact on utility companies.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	May improve access for small number though access existed previously. Pedestrianisation schemes may sever access for vehicular traffic and cyclists (depending on arrangements). Shared space schemes will improve links between communities within the region. Some pedestrians / vulnerable groups could be discouraged from using shared spaces.
Improve Economic Competitiveness	-1	Servicing arrangements for businesses would require consideration. Journey times for motorised business travel and freight movements could see slight increases. Congestion and/or journey time could be adversely affected. Business travel on foot would be improved. Overall impact could have slight negative impact.
Improve the Built Environment	2	Will improve and maintain environment for people movement and minimise physical intrusion of motor traffic in select areas. Possibly some visual impacts through signing and CCTV, etc.
Respect and Sustain the Natural Environment	1	Will minimise impact of transport on air quality and noise and vibration at a local level (though may relocate impacts to other areas). Shared space measures should encourage a minor level shift to sustainable modes.
Reduce Personal Stress	1	Measure will make it easier and safer for people to use alternatives to the car and help improve safety / reduce accidents, though conversely could make if harder to cycle depending on access in pedestrianised areas. Journey times for motor traffic and cyclists could see a slight increase with pedestrianisation schemes.







Measure Name:	Land Value taxes
Measure Category:	Fiscal measures to encourage better transport and land use integration.
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	Reduced need to travel, particularly by car. Improved accessibility.
Cost band	None

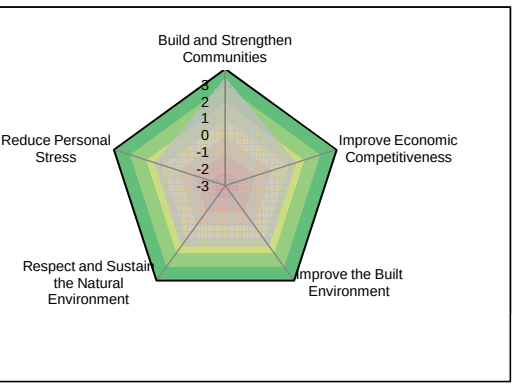
Stage 1a	Appraisal	Notes
Political		Assume some political implications.
Technological		
Legal		Assume legal implications.

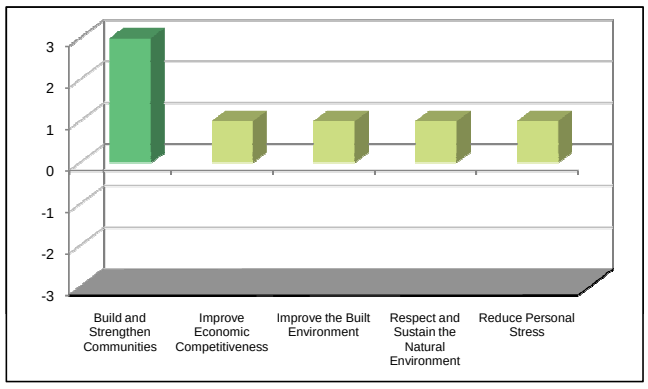
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	1	Reduced need to travel creating shorter trips between different facilities and hence reducing the potential for accidents across all modes i.e. reduced potential for collisions between different road users. Potentially large benefit at specific sites across the GDA.
	Security	1	May facilitate improvements to public realm and on-street walking and cycling conditions between key facilities. These can improve personal safety and security at specific sites across the GDA.
Economy	TEE	2	Could greatly reduce journey times, vehicle operating costs and travel costs whilst also improving journey time reliability, i.e. for individual travellers at sites benefiting from the measure and freight movements on the wider network.
	Value for money	3	
	WEB	1	Could improve productivity for firms in the vicinity of sites benefiting from the measure. Reduces the need to travel thus having a positive impact on congestion and also provides improved access to labour markets through effective transport and land use integration. Measure makes specific areas more attractive to locate businesses within. Potentially large benefit at specific areas across the GDA.
Accessibility	Option values	1	Measure provides an alternative option to travel by facilitating a reduced need to travel by car and hence an improved range of feasible travel options to key facilities. Large benefit at specific sites across the GDA.
	Severance	1	Improves the levels of access for pedestrians through reducing the need to travel by car and hence making walking and cycling more feasible modes for accessing key facilities. Small impact at specific sites across the GDA.
	Access to Transport	2	Facilitates the appropriate location of key land uses close to good transport links (and vice versa). Large impact at specific sites across the GDA.
Social Inclusion	Vulnerable Groups	1	Low income groups and non car owners will have improved access to key facilities (e.g. proximity of key land uses close to good transport links). Benefits in the developed areas.
	Deprived Groups	1	Deprived groups can benefit from enhanced opportunities due to the proximity of key land uses close to good transport links and a reduced need to travel by car. Benefits in the developed areas.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	Measure complements three of the policies without contradicting others i.e. spatial development, environmental performance and congestion.
	Other Govt. Policies	2	Measure complements policies on social inclusion, promoting employment and public health without contradicting other policies.
Environment	Biodiversity	0	Implementation of land value taxes would discourage development in particular places, potentially indirectly resulting in minor positive impacts on landscape, noise and air quality, a minor reduction of greenhouse gas emissions and a moderate negative effect on material assets, through a reduction of the fossil fuel demand and through minimising impacts on existing infrastructure.
	Landscape	1	
	Noise	1	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	0	

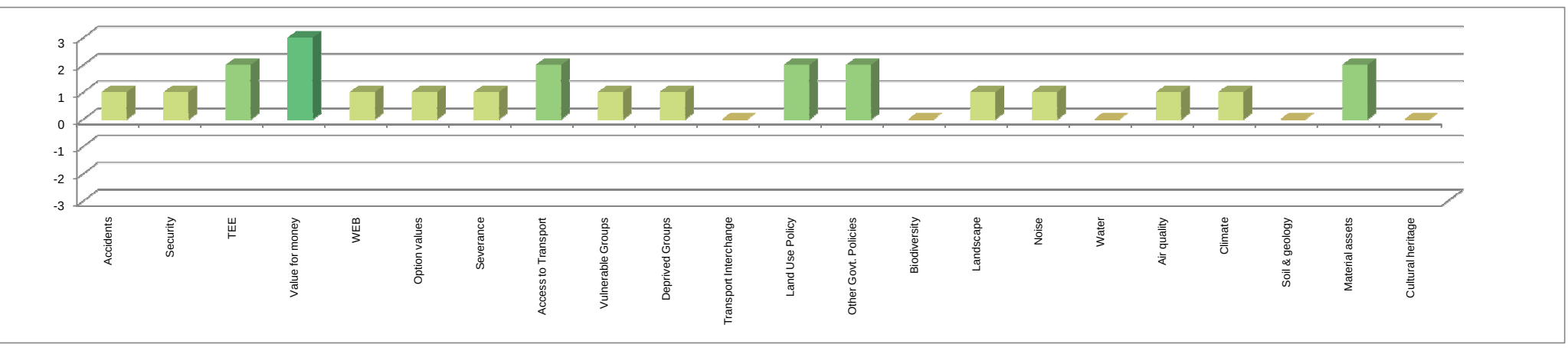
Measure Description & Supporting Information:

Taxing land (rather than property) based on its value to encourage owners to maximise use of the land (i.e. seek to increase densities where land values are higher such as close to public transport)
In addition, a zoning windfall tax could discourage lobbying for rezoning in inappropriate locations.
Land tax likely to require new legislation and treasury approval, therefore governance and legal implications.
Measure would affect landowners and developers primarily.
National roll out assumed.

Stage 1b	Score	Notes
Build and Strengthen Communities	3	Measure would improve access to public transport and hence to key facilities through to maximising the use of accessible land. Large benefit for a significant number of people who live/work in the accessible places.
Improve Economic Competitiveness	1	Measure may promote travel by sustainable modes (due to increase in development at accessible sites, e.g. near to public transport, etc.) and reduce single-occupancy vehicle use. Agglomeration benefits and some reduction in congestion and journey times across parts of the GDA. Potential for perverse impacts on other sectors, e.g. distortion of market for agricultural or other uses. Overall, small benefit across the GDA.
Improve the Built Environment	1	Measure encourages permeability and people movement on foot and to access public transport through maximising the number of people working/living in accessible locations. Moderate benefit for small number of people across the GDA.
Respect and Sustain the Natural Environment	1	Could encourage an increase in sustainable modes and a reduction in car use, particularly for short journeys. Benefits for air quality, noise and greenhouse gases. Moderate benefit for a small number of people across the GDA.
Reduce Personal Stress	1	Promotes healthier forms of travel and makes it easier to use alternatives to the car through increasing number of people living/working in accessible places. Overall, small benefit across the GDA.







Measure Name:	Car taxes
Measure Category:	Fiscal measures to encourage better transport and land use integration.
Potential Delivery Agents:	Government, Local Authorities, DTO
How would we measure a successful transport outcome?	Reduced car ownership. Reduced purchase of cars with high CO2 emissions. Reduced CO2 emissions
Cost band	Medium Saving

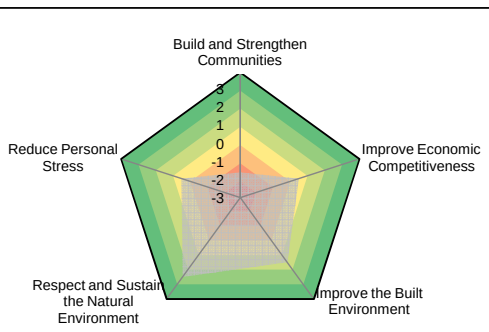
Stage 1a	**Appraisal**	**Notes**
Political		Requires government decision.
Technological		
Legal		

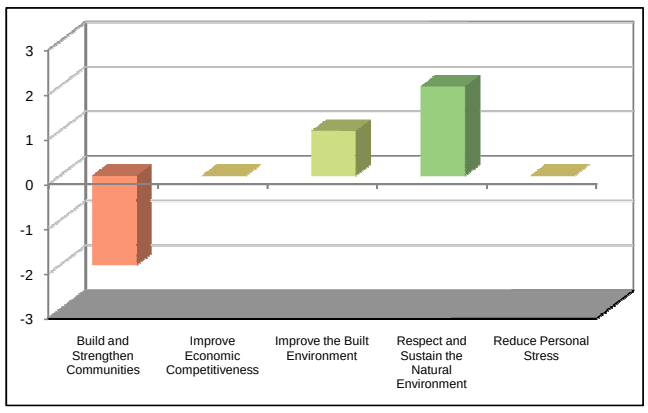
Measure Description & Supporting Information:

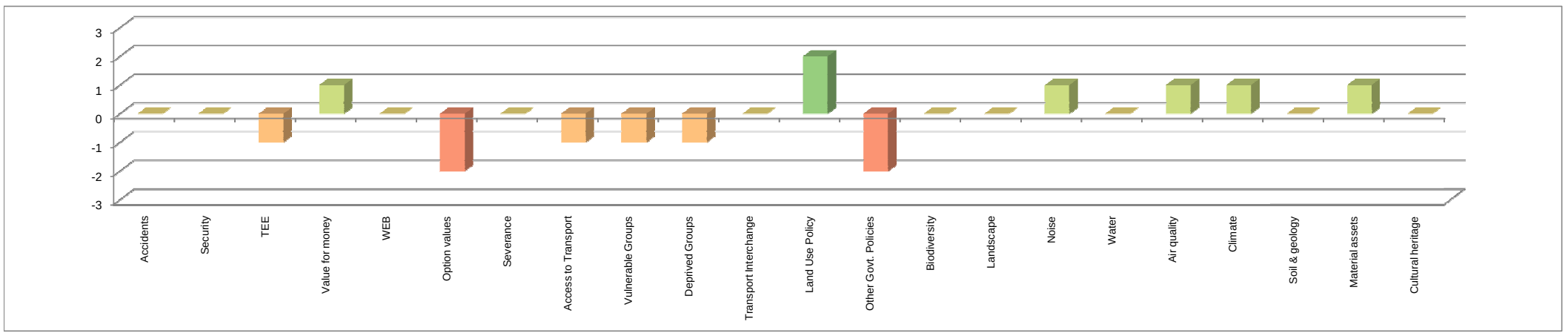
Increase Vehicle Registration Tax and Road tax to encourage lower car ownership.
Linking VRT directly to CO2 could be used to reduce ownership of cars with higher CO2 emissions.
Could affect those on lower incomes living in areas with poor PT access.
Income from taxes used to make sustainable travel improvements.
National roll out assumed.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	-2	Disadvantaged people on low incomes who own a car living in areas with poor public transport access would be particularly affected. Some benefits from reduced congestion, however, overall, in access terms, considerable disbenefit for a considerable number of people across the GDA.
Improve Economic Competitiveness	0	Potential reduction in car use and journey times for business travel across the GDA. Reduction is most likely to be by those on low incomes. Could encourage greater use of car due to higher costs paid. Tie with other measures (e.g. fuel taxes and congestion charging) to have a beneficial economic impact.
Improve the Built Environment	1	Should encourage permeability and people movement and minimise the visual and physical intrusion of transport vehicles. May encourage greater use of car due to higher costs paid though overall potential benefits should be positive.
Respect and Sustain the Natural Environment	2	Should result in a reduction in car use and encourage sustainable travel. Very beneficial for air quality and greenhouse gases. Focus on car ownership rather than use, serves as a cap to the environmental benefit (i.e. car ownership is inelastic and therefore demand is not greatly affected by price). Potentially large benefit across the GDA.
Reduce Personal Stress	0	Potential increases in journey times for accessing key services by sustainable modes. Conversely, potential reductions in journey times for car users due to less congestion. Lower income groups may struggle to find alternatives to the car to access key services. Benefits cancelled out by disbenefits.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Potential reductions in congestion due to lower levels of car ownership. Potential increases in car use due to higher costs paid. Benefits cancelled out by disbenefits.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	-1	Increased generalised cost of travel for individuals. Discouraging car ownership could result in improved journey time reliability for individuals and freight movements. Overall impact could be marginally negative for transport users.
	Value for money	1	
	WEB	0	Reduced accessibility by private car and business car use. Possible reductions in car usage and hence congestion. Overall impact considered neutral in terms of WEBs.
Accessibility	Option values	-2	Measure removes option of car travel for individuals who restrict car ownership. Disbenefit to large proportion of population across the GDA.
	Severance	0	No impact on severance for non-motorised users. Possible reduction in congestion may make roads easier to cross. Some small benefit, but less than '1'.
	Access to Transport	-1	Reduced access by car to destinations within and beyond the GDA. Funding for sustainable travel options could improve access to non-car modes. Overall, slightly greater disbenefit to individuals restricting car ownership than those benefiting from sustainable travel improvements.
Social Inclusion	Vulnerable Groups	-1	Possible disbenefit to vulnerable groups (i.e. lack of affordability and therefore reduced access, particularly in areas with poor public transport access). However, many in this category are non-car owners and therefore unaffected.
	Deprived Groups	-1	Possible disbenefit to deprived groups (i.e. lack of affordability and therefore reduced access, particularly in areas with poor public transport access). However, many in this category non-car owners and therefore unaffected.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	Measure is likely to complement two of the policies without contradicting others i.e. environmental performance and congestion.
	Other Govt. Policies	-2	Measure does not complement any policies and may contradict policies on social inclusion, and access to employment, education and public health.
Environment	Biodiversity	0	Implementation of a car tax would lead to a reduction in the size of cars being driven and encourage improved efficiencies, potentially resulting in minor positive impacts on noise and air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	1	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	







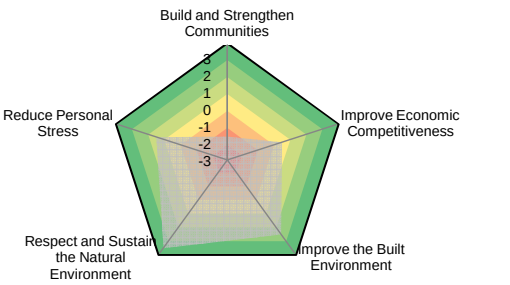
Measure Name:	Fuel taxes
Measure Category:	Fiscal measures to encourage better transport and land use integration.
Potential Delivery Agents:	Government, Local Authorities, DTO
How would we measure a successful transport outcome?	Reduction in car journeys. Reduced CO2 emissions from cars. Higher proportion of vehicles on the road with low CO2 emissions.
Cost band	Large Saving

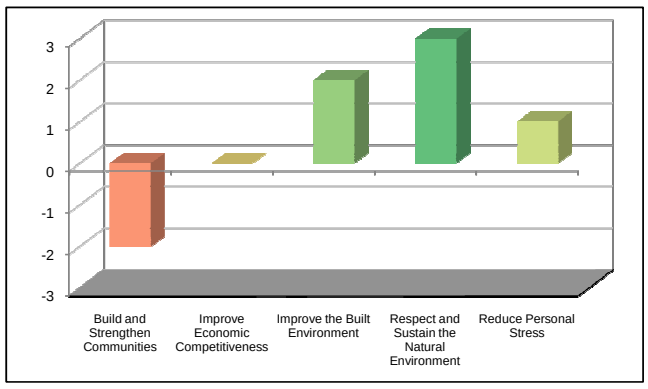
Stage 1a	**Appraisal**	**Notes**
Political		Requires government decision.
Technological		
Legal		

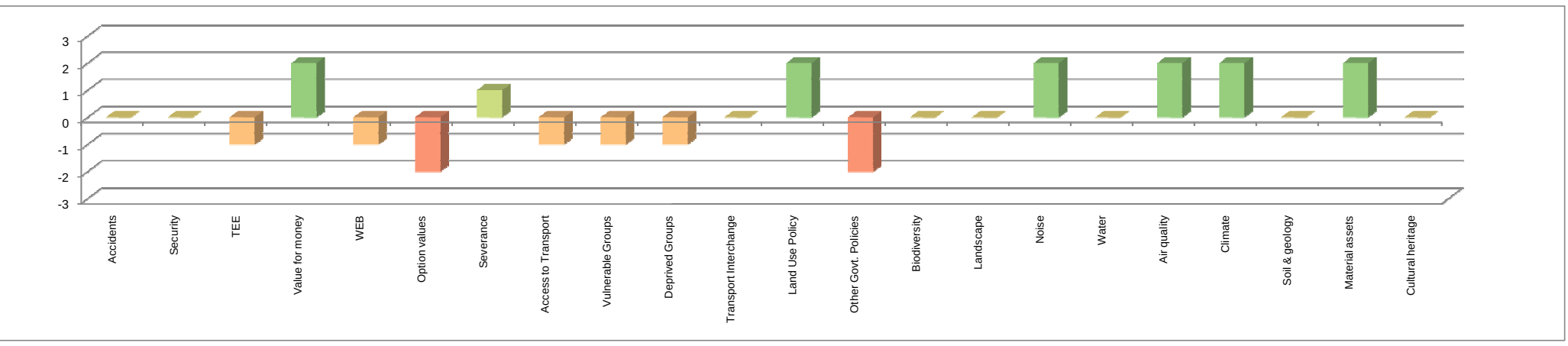
Measure Description & Supporting Information:
Increase fuel tax to restrict car use and encourage more fuel efficient vehicles and operation. Effectively a tax that reflects the carbon contribution of vehicle fuels but avoids the need to establish new collection methods. Could help to reduce unnecessary car use, especially for shorter journeys. Could help to reduce CO2 emissions from cars. Income from taxes used to make sustainable travel improvements. National rollout assumed.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	-2	Potential reduction in unnecessary car use and encourage use of sustainable modes. Could reduce accessibility in areas where public transport access is poor, especially for people on low incomes who own a car. Potentially considerable disbenefit for a significant number of people across the GDA overall.
Improve Economic Competitiveness	0	Potential reduction in unnecessary car journeys, journey times and congestion for business travel across the GDA. However, increase in fuel tax will make business travel more expensive. Benefits cancelled out by disbenefits.
Improve the Built Environment	2	Should encourage permeability and people movement by sustainable modes through reduction of unnecessary car journeys, particularly for short trips and minimise the visual and physical intrusion of transport vehicles. Overall, a moderate benefit across the GDA.
Respect and Sustain the Natural Environment	3	Should encourage sustainable travel and reduce CO2 emissions from cars. May influence number and type of vehicle purchase (e.g. fuel efficient, lower CO2 emissions, etc). Significant benefits for air quality and greenhouse gases throughout the GDA.
Reduce Personal Stress	1	Potential increases in journey times for accessing key services by sustainable modes. Conversely, potential reductions in journey times for car users due to less congestion. The focus on discouraging unnecessary car journeys, should result in small reductions in personal stress across the GDA.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Potential reductions in congestion due to lower levels of car use. However, reduced congestion is not directly related to the number of accidents as traffic speeds will be higher. Benefits cancelled out by disbenefits.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	-1	Increased generalised cost of travel for individuals. A reduction in congestion could result in improved journey time reliability for individuals and freight movements. Overall impact could be marginally negative for transport users.
	Value for money	2	
	WEB	-1	Overall, measure will reduce accessibility by vehicular modes. This is likely to impact upon a business' ability to access customers, suppliers and labour in the short-term until they are able to adjust.
Accessibility	Option values	-2	Measure removes option of car travel for individuals who restrict car ownership and use. Disbenefit to large proportion of population across the GDA.
	Severance	1	A reduction in traffic flow may make roads easier to cross.
	Access to Transport	-1	Reduced access by car to destinations within and beyond the GDA. Funding for sustainable travel options could improve access to non-car modes. Overall, slightly greater disbenefit to individuals restricting car use than those benefiting from sustainable travel improvements.
Social Inclusion	Vulnerable Groups	-1	Possible disbenefit to vulnerable groups (i.e. lack of affordability and therefore reduced access, particularly in areas with poor public transport access). However, many in this category are non-car owners and therefore unaffected.
	Deprived Groups	-1	Possible disbenefit to deprived groups (i.e. lack of affordability and therefore reduced access, particularly in areas with poor public transport access). However, many in this category non-car owners and therefore unaffected.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	The measure is likely to complement two of the policies without contradicting others i.e. environmental performance and congestion.
	Other Govt. Policies	-2	The measure does not complement any policies and may contradict policies on social inclusion, employment and public health.
Environment	Biodiversity	0	Implementation of a fuel tax would directly lead to a reduction in private vehicle use and encourage improved efficiencies, potentially resulting in moderate positive impacts on noise and air quality, a moderate reduction of greenhouse gas emissions and a moderate reduction of the fossil fuel demand.
	Landscape	0	
	Noise	2	
	Water	0	
	Air quality	2	
	Climate	2	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	0	







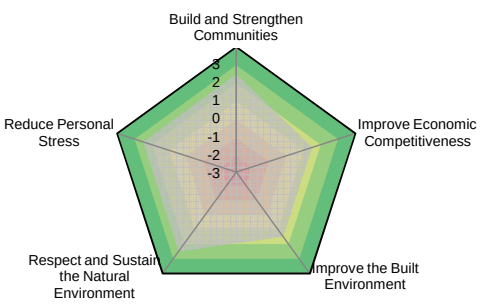
Measure Name:	Location and design of Health Facilities, Education Facilities and Industrial/Employment Facilities (especially those promoted by Development Agency IDA)
Measure Category:	Integration with Other Government Sectors
Potential Delivery Agents:	Government, Local Authorities, DTO, IDA
How would we measure a successful transport outcome?	Increased levels of sustainable transport usage to facilities. Reduction in transport related non-attendance.
Cost band	Very low cost

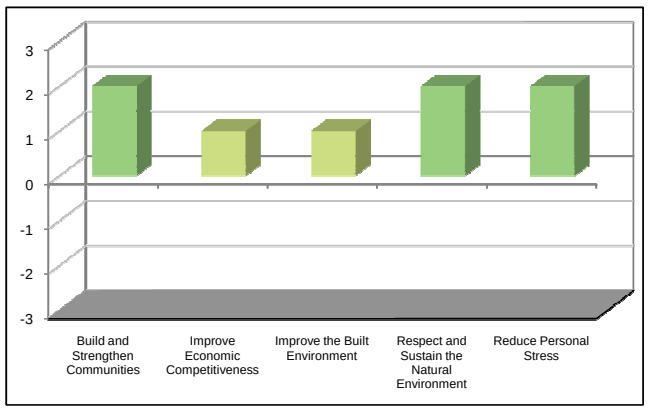
Stage 1a	**Appraisal**	**Notes**
Political		Requires co-operation from other government agencies and bodies therefore assume some political implications.
Technological		
Legal		

Measure Description & Supporting Information:

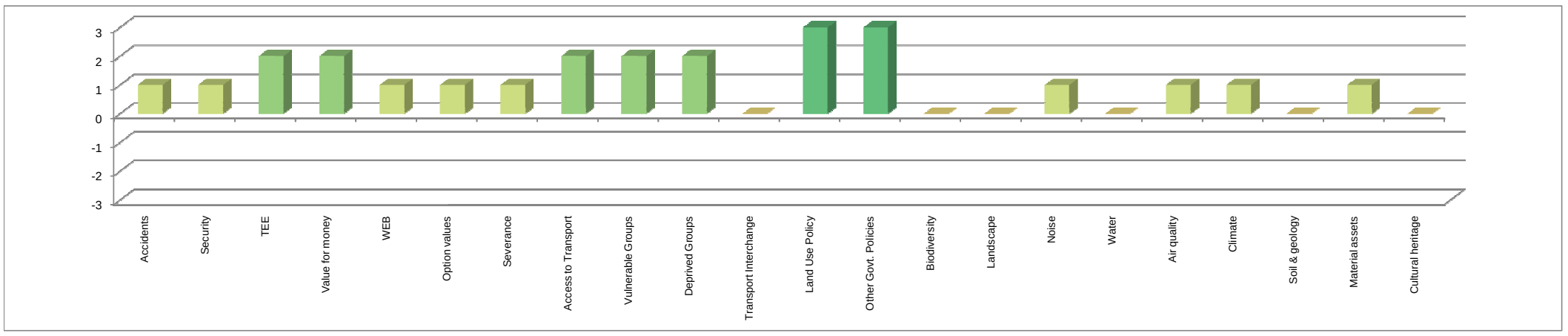
Educate and encourage government agencies and others to review policies, ensuring these key regional facilities are located in a way that reduces the need to travel and delivers accessibility.
Ensure design of facilities promotes accessibility, safety and security and supports walking, cycling and public transport choices.
Undertake accessibility mapping and/or audits to help understand accessibility implications of service location.
Changes to planning system e.g. basing development control decisions/developer contributions on accessibility.
Assume would need liaison directly with other government agencies and stakeholders from other sectors to discuss accessibility implications of locational decisions.
Assume GDA wide implementation.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Measure would improve access to key facilities by non car modes. It would particularly benefit disadvantaged people through improving non car access and reducing the need to travel and would therefore reduce social exclusion. Less impact on journeys to work and shops.
Improve Economic Competitiveness	1	Should be a reduction in car travel and therefore improved journey times and journey time reliability across the GDA. Small benefit to significant number of businesses across the GDA.
Improve the Built Environment	1	Measure encourages permeability and people movement by sustainable modes. The design of the facilities will improve design and quality of the environment for walking, cycling and public transport choices and will minimise the visual and physical intrusion of motor vehicles. Significant benefit across the GDA.
Respect and Sustain the Natural Environment	2	Should reduce the need to travel and encourage sustainable travel. Positive impact on air quality, noise and greenhouse gases. Large benefit to a significant number of people across the GDA.
Reduce Personal Stress	2	Measure promotes healthier forms of travel and improves the ease of use of public transport. Should reduce journey times and improve journey time reliability through better location between key facilities. Overall, large benefit for significant number of people across GDA.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Reduced need to travel creating shorter trips between different facilities and hence reducing the potential for accidents across all modes i.e. reduced potential for collisions between different road users. Potentially large benefit at specific sites across the GDA.
	Security	1	Measure should encourage walking, cycling and public transport choices.
Economy	TEE	2	Should assist in reducing journey times, vehicle operating costs and travel costs whilst also improving journey time reliability for individuals and freight movements on the wider network.
	Value for money	2	
	WEB	1	Measure is not specifically designed to assist business; however there could be secondary benefits for the economy through reductions in congestion and improvements to general accessibility.
Accessibility	Option values	1	Wider range of travel options and a reduced need to travel by car. Large benefit at specific sites across the GDA.
	Severance	1	A small reduction in severance as a result of modal shift and reduced traffic.
	Access to Transport	2	Good links to the wider transport network. Large impact at specific sites across the GDA i.e. where the measure is put into place.
Social Inclusion	Vulnerable Groups	2	Significant benefits to vulnerable groups due to facilitating good access to key facilities and hence a reduced need to travel by car. Large benefits to a specific proportion of the population in the areas benefiting from the measure.
	Deprived Groups	2	Significant benefits to deprived groups due to facilitating good access to key facilities and hence a reduced need to travel by car. Large benefits to a specific proportion of the population in areas benefiting from the measure.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	3	The measure is likely to complement four of the policies without contradicting others i.e. spatial development, enhancing use of key rail links, environmental performance and congestion.
	Other Govt. Policies	3	The measure complements policies on social inclusion, promoting employment, improved education opportunities and improved public health without contradicting other policies.
Environment	Biodiversity	0	The location and design of various facilities would reduce travel demand and facilitate a modal shift, potentially resulting in minor positive impacts on noise and air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	1	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	



Measure Name:	Mixed use development
Measure Category:	Planning measures which reduce the need to travel
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	More sustainable developments i.e. that reduce the need to travel by car and with good access to key services & facilities.
Cost band	None

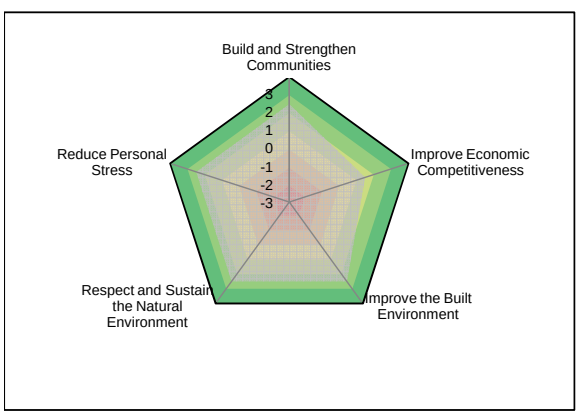
Stage 1a	Appraisal	Notes
Political		Need clear guidance in NSS/RPG to ensure it filters down into development plans & development control. Therefore may be some governance barriers.
Technological		
Legal		May require planning reform to deliver improvements.

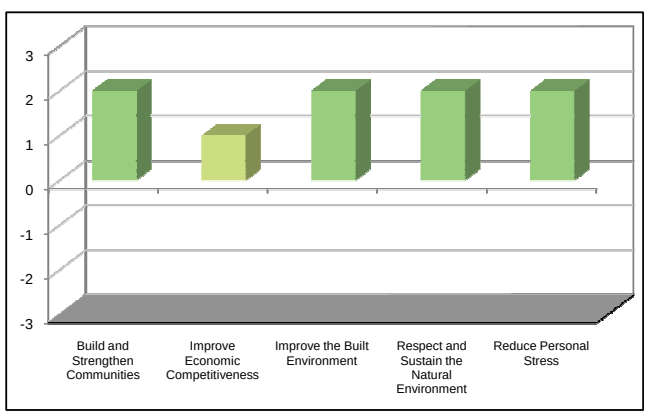
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	1	Not specifically aimed at improving safety; however, policy changes could have a resultant impact upon safety for users. Potential to reduce the need to travel, particularly by private car, could reduce the risk of accidents within vulnerable groups.
	Security	1	Promotion of sustainable development is intended to strengthen communities - it would theoretically improve safety and security at implementation.
Economy	TEE	1	Measure serves to reduce distances required to travel and, hence, the generalised cost of travel to the individual.
	Value for money	2	
	WEB	1	Increases access to local labour as well as reducing the overall need for travel, and, hence, congestion. Small positive benefits for the wider economy in terms of market efficiencies.
Accessibility	Option values	2	Measure may increase travel options through a reduction in distance between home and employment, education, retail and leisure opportunities
	Severance	1	Good design should ensure that local accessibility is enhanced, enabling pedestrians to access destinations without severance problems. Only affects new developments.
	Access to Transport	2	Significant improvement in access to destinations within developments. Scale of benefits largely related to scope of implementation
Social Inclusion	Vulnerable Groups	2	Benefits depend upon the extent of the policy and where it is implemented. Could theoretically assist vulnerable groups through the strengthening of communities and local delivery of locally.
	Deprived Groups	2	Benefits depend upon the extent of the policy and where it is implemented. Could theoretically assist deprived groups through the strengthening of communities and local delivery of services.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	As a planning policy measure it is assumed that it would be in accordance with aspirations at a national level. It would also support policies to balance spatial development between the GDA and other cities / regions of Ireland. It would also balance the provision of social infrastructure between Dublin and other towns within the GDA
	Other Govt. Policies	2	As a policy initiative, would be reasonable to assume a level of integration with that of other government policies, especially social, education and health
Environment	Biodiversity	0	Mixed use development would significantly reduce travel demand, potentially resulting in minor positive impacts on landscape and noise, a moderate positive impact on air quality, a moderate reduction of greenhouse gas emissions and a moderate reduction of the fossil fuel demand.
	Landscape	1	
	Noise	1	
	Water	0	
	Air quality	2	
	Climate	2	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	0	

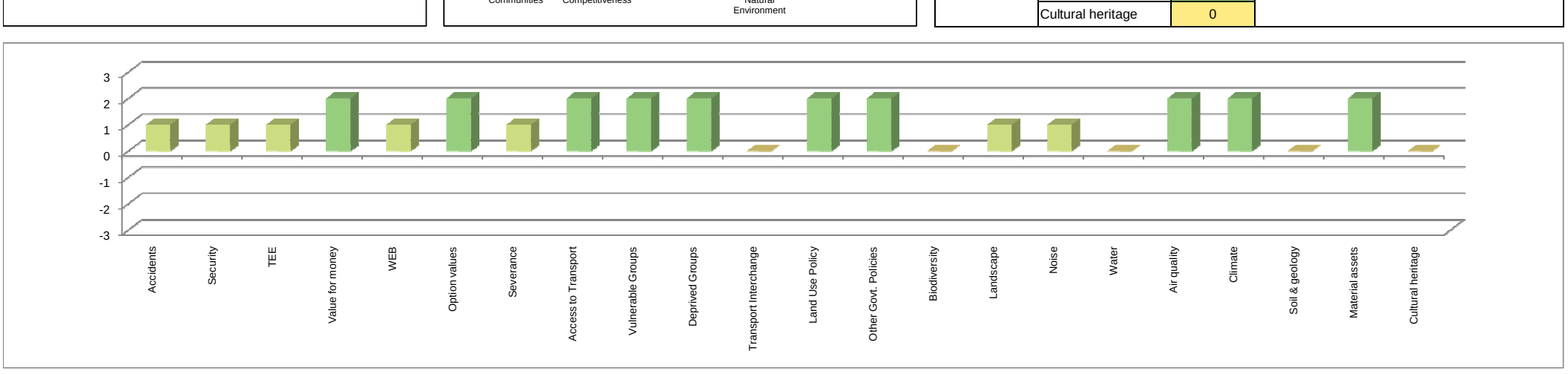
Measure Description & Supporting Information:

By locating development in such a way that houses are closer to places of work, schools, shops and leisure facilities, the need to travel and distances travelled can be reduced.
Potentially includes measures to create new 'town centres' in locations of significant out-of-centre employment, shopping or retailing with further balancing development. Assume would use development plans and development control to encourage development in locations that are accessible and sustainable. Accessibility mapping could be used to help identify locations for housing, for example, that are close to a number of existing key facilities. Encourage more mixed use development through development plans.
Measure would reduce need to travel by car and improve accessibility and promote stronger communities, as well as reducing CO2 emissions.
Assume will be implemented across all development plan areas.
National rollout assumed.

Stage 1b	Score	Notes
Build and Strengthen Communities	2	Residents still generally access work off-site, therefore they still require additional transport provision. Small benefit for a significant number of people.
Improve Economic Competitiveness	1	Potential to reduce congestion and journey times across the GDA. However evidence indicates that residents still generally travel to work off-site. Small benefit for a considerable number of businesses across the GDA.
Improve the Built Environment	2	Measure encourages permeability and people movement by walk, cycle and public transport. Minimises the visual and physical intrusion of transport vehicles, improves sense of place and supports greater human interaction. A large benefit at new mixed use developments across the GDA.
Respect and Sustain the Natural Environment	2	Measure reduces the need to travel and distance travelled, encourages an increase in sustainable modes and a reduction in car use. Benefits for air quality, noise and greenhouse gases. Large benefit at new mixed use developments across the GDA.
Reduce Personal Stress	2	Promotes healthier forms of travel and makes it easier to use alternatives to the car. Makes public transport use easier and improves journey time reliability on the road network. Potentially a large benefit at specific areas across the GDA.







Measure Name:	Increase availability of wider variation in housing type (reducing need to relocate elsewhere if household size goes up or down)
Measure Category:	Planning measures which reduce the need to travel
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	A wider availability of different sizes and types of housing.
Cost band	Very low cost

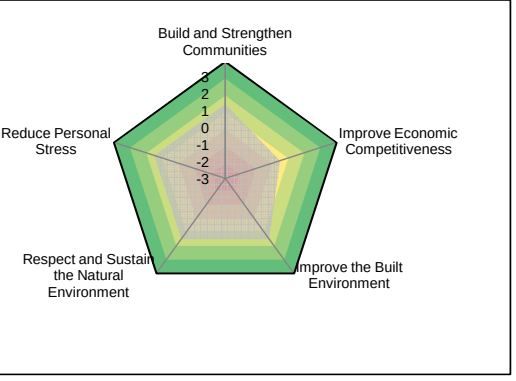
Stage 1a	Appraisal	Notes
Political		Requires new government guidance.
Technological		
Legal		Legislation to reform property transaction costs.

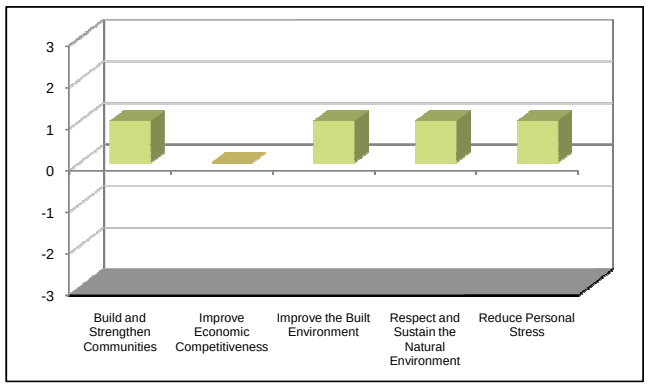
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	1	May reduce the need to travel and therefore could have a positive impact on the overall level of accidents.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	1	Should enable household to remain housed in areas close to where they work, etc. therefore no increase in the distance travelled. Should reduce the generalised cost of travel.
	Value for money	1	
	WEB	0	Should reduce the need to travel and so may have a secondary impact upon wider accessibility; however this is not considered to be a significant impact.
Accessibility	Option values	0	Would not significantly improve travel options as it is primarily a housing measure.
	Severance	0	Not able to quantify an impact upon severance. Very small change in overall trips expected.
	Access to Transport	1	Would not improve access across the GDA in itself, but may assist in retaining and enhancing the population of areas with existing accessibility.
Social Inclusion	Vulnerable Groups	1	Would assist vulnerable groups in living in their preferred location. Of limited assistance in terms of `transport' benefits.
	Deprived Groups	1	Would assist deprived groups in living in their preferred location. Of limited assistance in terms of `transport' benefits.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	As a planning policy measure it is assumed that it supports wider aspirations at a national level. It would serve to balance provision of social infrastructure between Dublin and other towns in the GDA, and could help address congestion in urban areas.
	Other Govt. Policies	2	Would support social inclusion policy and generally support a number of others, including access to work, education and health care.
Environment	Biodiversity	0	Increasing the availability of a wider variation in housing type would reduce travel demand, potentially resulting in minor positive impacts on noise and air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	1	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	

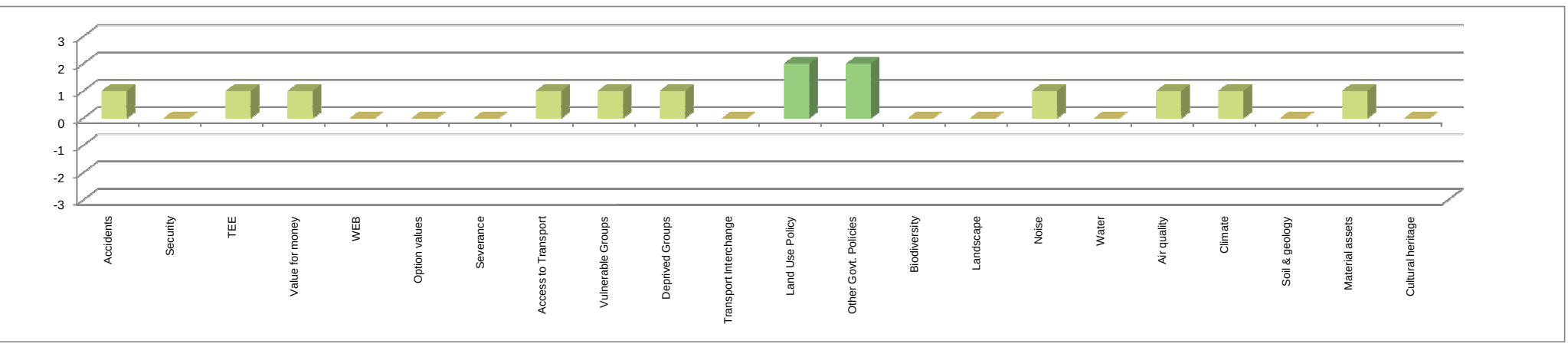
Measure Description & Supporting Information:

Measure will reduce need to relocate elsewhere if household size goes up or down; enabling more upsizing and downsizing and retaining younger/larger economically-active households in more accessible areas.
Includes: mixed housing types in new developments; fiscal measures that increase turnover (e.g. lower residential property transactional costs [Stamp duty], incentives for retirees to free up family-sized properties close to city); better planning for housing mix to meet demographic/market requirements etc.; greater control over balance in development and ability to procure or require a mix of 'affordable housing' alongside new developments.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Measure could reduce the need to travel by facilitating local house moves. Could encourage people to live closer to where they work due to lower property transactional costs which increases potential for sustainable travel options. Could benefit disadvantaged people who may face particular access barriers to key facilities. Possible disbenefit if measure encourages first time buyers (i.e. move out of rented market and therefore less mobile). Overall benefits small number of people across the GDA (i.e. not everyone will use measure).
Improve Economic Competitiveness	0	Measure should reduce journey times for those affected and congestion for other road users. Not considered to be significant enough to impact on business travel and therefore a neutral score has been given.
Improve the Built Environment	1	Measure encourages permeability and people movement on foot and to access public transport through maximising the number of people working/living in accessible locations. Moderate benefit for a small number of people across the GDA.
Respect and Sustain the Natural Environment	1	Reduces car use and encourages sustainable travel, particularly on shorter journeys. This is beneficial for air quality, noise and greenhouse gases. The measure will therefore have a small benefit across the GDA.
Reduce Personal Stress	1	Measure makes it easier for people to use alternatives to the car through reducing the need to travel. Facilitates shorter journeys and hence shorter journey times. Overall, a moderate benefit to a small number of people across the GDA.







Measure Name:	Improve permeability and connectivity
Measure Category:	Planning measures which reduce the need to travel
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	Increased levels of sustainable transport usage.
Cost band	Very low cost

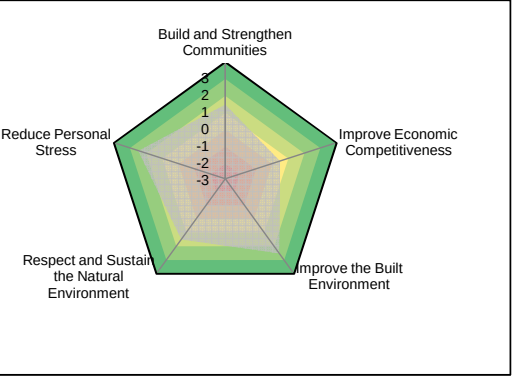
Stage 1a	**Appraisal**	**Notes**
Political		Requires new planning guidance.
Technological		
Legal		

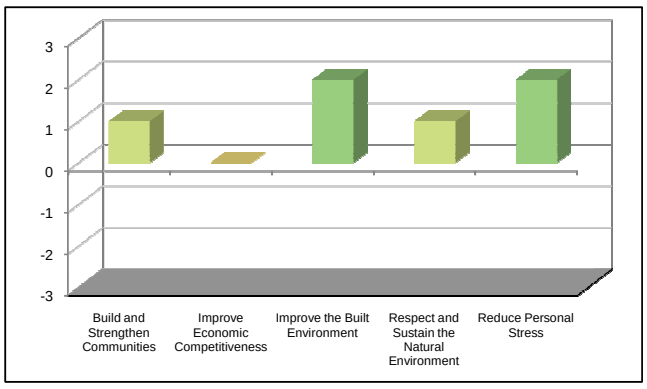
Measure Description & Supporting Information:

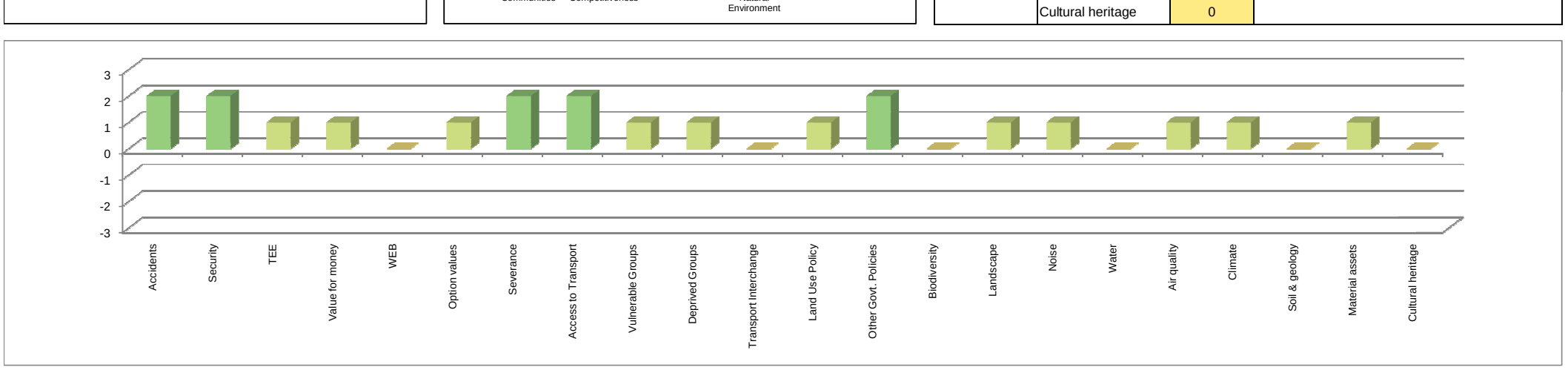
New development to provide direct walking and cycling links to surrounding area and public transport network. Improve walking and cycling permeability in existing developments. Assume would need national/regional design guidance and/or policy guidance on walking and cycling in new housing developments. Assume would write such policies into development plans and implement through development control.
Also assume local authorities to undertake accessibility audits in existing developments to identify improvements to walking and cycling (especially between housing and key facilities) - implement where practical.
Would initiate improved accessibility to facilities, reduced need to travel by car and more walking and cycling.
However, may be difficult/expensive/ impractical to implement in existing developments. Likely to be implemented in an incremental way over a number of years, but will assume that it is implemented across all GDA planning authorities.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Measure would improve walking and cycling access to key facilities and reduce the need to travel by car. It would particularly benefit disadvantaged people who do not have access to a car. This will help promote stronger communities. Assume will be rolled out across the GDA but will benefit new developments more so than existing ones.
Improve Economic Competitiveness	0	Measure will reduce the need to travel by car and improve pedestrian and cycle access at developments. Could initiate some reduction in business travel journey times and reliability. Very small benefits to businesses and therefore a neutral score.
Improve the Built Environment	2	Measure encourages permeability and people movement by walk and cycle and improves the quality of the walk and cycle environment. Supports greater human interaction, improves sense of place and minimises the visual and physical intrusion of transport vehicles. Large benefit in a small number of areas.
Respect and Sustain the Natural Environment	1	Reduces need to travel by car, particularly for shorter journeys. Benefits for air quality, noise and greenhouse gases. Measure will initiate a moderate benefit in a small number of areas.
Reduce Personal Stress	2	Measure promotes healthier forms of travel and makes it easier to use alternatives to the car. Encourages walking and cycling. Large benefit for a small number of people.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	2	Improved permeability may serve to reduce accidents amongst non-motorised users (i.e. provision of safer routes).
	Security	2	An improved level of permeability within new and existing developments would increase surveillance and improve perceptions of safety.
Economy	TEE	1	Would promote improvements to local travel and potentially reduced generalised travel costs for local travel that could be undertaken on foot or cycle. This mode shift would also reduce congestion on the roads.
	Value for money	1	
	WEB	0	Some positive impact on the wider economy, though scale of measure is not considered to be significant.
Accessibility	Option values	1	Would potentially improve options with regard to walking, cycling and onward access to public transport.
	Severance	2	Would facilitate improved movement for pedestrians and cyclists. Theoretically would reduce the impact of potential obstacles if implemented correctly .
	Access to Transport	2	Potential to significantly improve the 1st point of access to the transport system for pedestrians and cyclists if located close to high frequency public transport corridors. However, benefits to the whole trip are limited.
Social Inclusion	Vulnerable Groups	1	The promotion of improved permeability within new and existing developments would benefit vulnerable users; especially those without access to a car; if implemented in areas where they could benefit.
	Deprived Groups	1	The promotion of improved permeability within new and existing developments would benefit deprived groups; assuming implementation in such areas.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	1	As a planning policy measure it is assumed that it would be in accordance with aspirations at a national level. Measure supports policies to reduce congestion in major urban areas and improve the environmental performance of the transport sector.
	Other Govt. Policies	2	Would contribute to a number of policy aspirations including social and community and public health.
Environment	Biodiversity	0	Improving permeability and connectivity would reduce the need to travel by car and encourage sustainable travel modes, potentially resulting in minor positive impacts on landscape, noise and air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	1	
	Noise	1	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	







Measure Name:	Measures to mitigate adverse transport impacts of new development
Measure Category:	Planning measures which reduce the need to travel
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	More sustainable developments i.e. that reduce the need to travel by car and with good access to key services & facilities. Increased levels of sustainable transport usage to developments.
Cost band	None

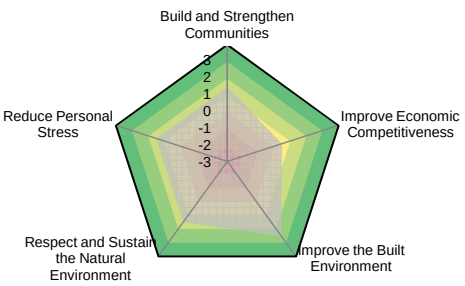
Stage 1a	**Appraisal**	**Notes**
Political		Requires new planning guidance and closer working between planning and transport.
Technological		
Legal		Required legislation in DTA Act part V. Developer contributions covered in S49

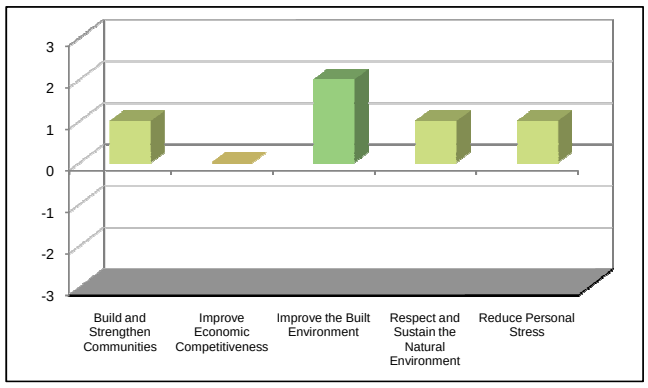
Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Improved evaluation of impacts may serve to address specific safety issues within context of new development for the benefit of all users.
	Security	2	The process should ensure that active travel and public transport modes are encouraged from new developments through appropriate design to enhance safety and security.
Economy	TEE	1	Difficult to quantify the extent to which developer contributions would accrue generalised cost benefits to users. Benefits would be associated with the provision of new transport links to encourage sustainable travel and it is assumed that this new option would represent a reduced generalised journey cost to users. Small positive benefits.
	Value for money	2	
	WEB	0	There may be secondary benefits associated from this measure that result in reduced congestion and improved accessibility for businesses. However, these are not likely to be significant.
Accessibility	Option values	1	Unlikely to improve option values over the length of a journey unless related to a specific scheme. However, may assist the ease of which an existing travel option can be used as an alternative to a regular mode.
	Severance	1	Contributions could theoretically be used to address issues of severance in association with development for the benefit of all users of an existing corridor.
	Access to Transport	2	Would potentially facilitate enhanced access to the transport systems in association with significant new development.
Social Inclusion	Vulnerable Groups	0	Limited specific benefits expected for vulnerable groups. May accrue incidental benefits associated with development.
	Deprived Groups	0	Limited specific benefits expected for deprived groups. May accrue incidental benefits associated with development
Integration	Transport Interchange	2	Contributions from significant developments may serve to benefit transport interchange significantly. More modest sites may provide localised improvements.
	Land Use Policy	1	Measure supports policies to improve the environmental performance of the transport sector and reduce congestion in urban areas.
	Other Govt. Policies	2	Measure supports a number of other government policies, including social inclusion, improving access to work, education and health care.
Environment	Biodiversity	0	Implementing measures to mitigate adverse transport impacts of new developments would support sustainable travel modes, potentially resulting in minor positive impacts on landscape and air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	1	
	Noise	0	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	

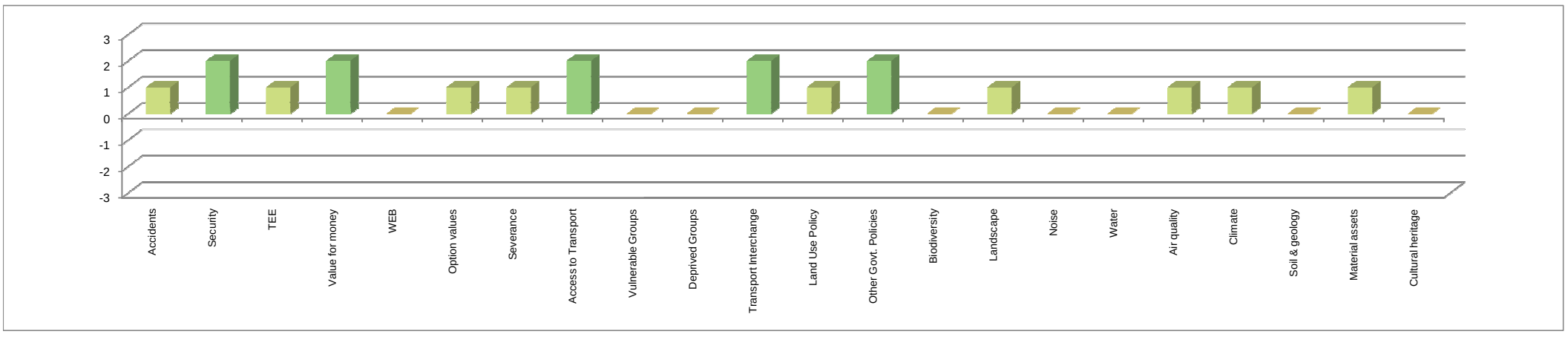
Measure Description & Supporting Information:

Wider and more systematic process to evaluate impacts and secure developer contributions to enhance transport by sustainable modes in all new development. Ireland has a similar scheme to the UK in terms of developer contributions and they appear to be common. The actual amounts of contribution are usually calculated at the planning application stage and are listed as conditions on the consent issues. The contributions are dealt with under Section 48 of the Planning and Development Act 2000. Assume will require development of national, regional and/or local guidance/legislation on developer contributions to transport. Contributions likely to be linked to traffic impacts and/or accessibility. The measure will facilitate reduced traffic impacts from new developments, improved accessibility ad sustainability and improved investment in transport system. However, it may discourage new development. Assume the measure will be implemented across all GDA development plan areas.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Measure would ensure that negative impacts on transport and accessibility resulting from new development are mitigated. Ensures improved access to transport systems at new developments. Moderate benefit to a relatively small number of people across the GDA.
Improve Economic Competitiveness	0	Measure will reduce the traffic impacts from new developments which may have some benefit for business travel journey time and reliability. Not considered to be significant enough to warrant more than neutral.
Improve the Built Environment	2	Measure is likely to ensure that the environment at new developments is improved and maintained for people movement. Assists in minimising the visual and physical intrusion of motor vehicles. A moderate benefit at specific areas of new development across the GDA.
Respect and Sustain the Natural Environment	1	Measure will assist in preventing disbenefits to air quality, noise and greenhouse gases. May have a large benefit for a number of new developments across the GDA.
Reduce Personal Stress	1	Measure will make it easier for people to use alternatives to the car at new developments, including walk and cycle. May improve safety through the required design of the built environment to accommodate sustainable modes in order to mitigate negative impacts. Benefits a small number of people at new developments across the GDA.







Measure Name:	Measures that encourage and/or direct high-density commercial development in accessible locations.
Measure Category:	Planning measures which reduce the need to travel
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	Increased levels of sustainable transport usage to developments.
Cost band	None

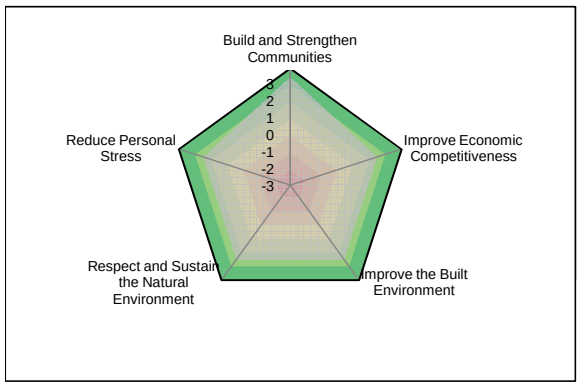
Stage 1a	**Appraisal**	**Notes**
Political		Need clear guidance in NSS/RPG to ensure it filters down into development plans & development control. Therefore may be some governance barriers.
Technological		
Legal		

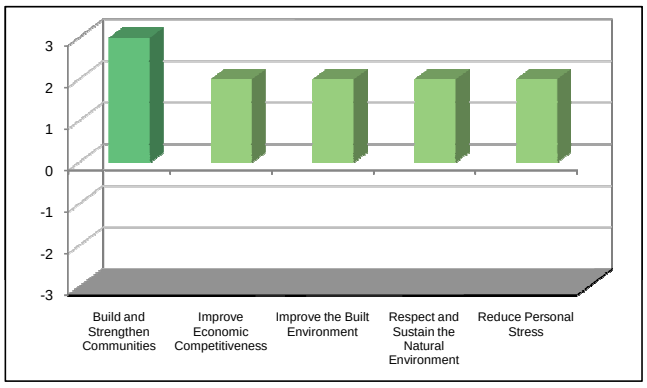
Measure Description & Supporting Information:

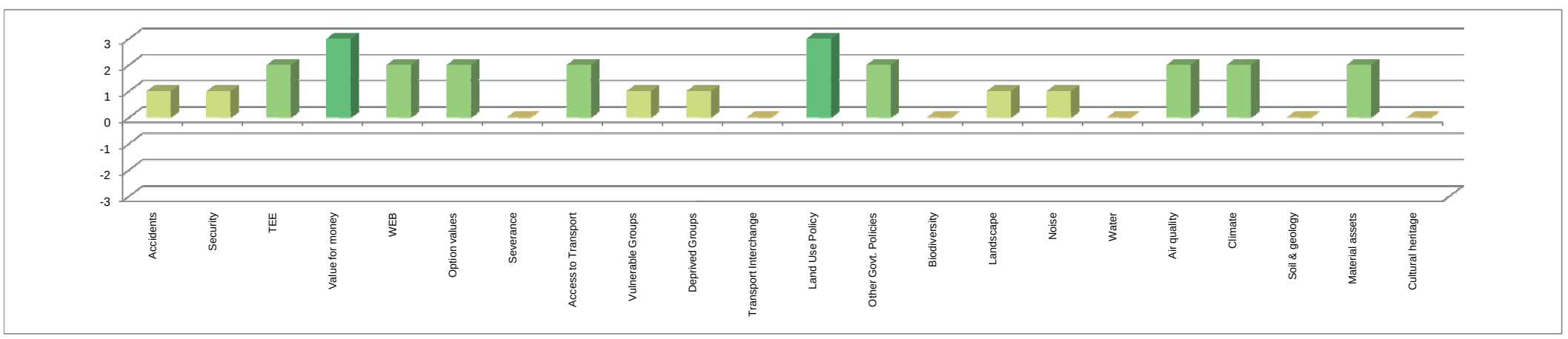
Use development plans and development control to locate new developments that are likely to attract large numbers of people (commercial, retail, health, education, leisure) in areas that are highly accessible by public transport and/or in larger urban centres (where walking and cycling is most viable) and limit parking therein.
Reduce the need to travel by car through location of developments and encourage permeability of walking and cycling.
Likely to include maximum parking standards - linkages to Maximum Parking Standard measure.
High density development could also be linked to some of the fiscal measures in terms of developing land value taxes.
Assume would be implemented across all GDA development plan areas.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	3	Measure would ensure new major developments are highly accessible with limited parking provision. Would reduce the need to travel by car and improve access to public transport. This will promote stronger communities. Particular benefits to deprived and vulnerable groups. Large benefit for a significant number of people (so long as there is no over-provision of development in inappropriate, more rural locations where there is a rail station).
Improve Economic Competitiveness	2	Measure could initiate some reduction in congestion and journey times for business travel across parts of the GDA. Overall, small benefit across the GDA.
Improve the Built Environment	2	Measure encourages permeability and people movement by walk, cycle and public transport. Supports greater human interaction, improves sense of place and minimises visual and physical intrusion of motor vehicles. Improves street design for non car modes. Moderate benefit for a considerable number of people across the GDA. Large benefit in new major development across the GDA.
Respect and Sustain the Natural Environment	2	Reduces the need to travel by car and encourages access to key facilities by sustainable modes. Benefits for air quality, noise and greenhouse gases. Measure may initiate a large benefit across specific areas of the GDA.
Reduce Personal Stress	2	Measure promotes healthier forms of travel and makes it easier to use alternatives to the car. May increase journey times for those using public transport instead of car use, but will decrease car journey times on routes which become less congested. Potentially large benefit at specific areas across the GDA.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Reduces the need for vehicular travel and hence potential for associated accidents. Potentially medium/large benefit at specific sites across the GDA, i.e. where the measure is put into place.
	Security	1	May facilitate improvements to public realm with potential to improve security through increased pedestrian circulation and surveillance.
Economy	TEE	2	Could greatly reduce journey times, vehicle operating costs and travel costs whilst also improving journey time reliability for individuals and freight movements on the wider network.
	Value for money	3	
	WEB	2	Potentially significant benefits to business through high concentration of commercial development, including agglomeration benefits.
Accessibility	Option values	2	Clustering of development around public transport hubs would increase travel options and promote walking between developments.
	Severance	0	Improvements in severance associated with development clustering would be difficult to quantify. Clustering of services would reduce severance associated with movement between them.
	Access to Transport	2	Concentration of development would significantly improve direct access to the transport system from development.
Social Inclusion	Vulnerable Groups	1	Would generally improve opportunities for vulnerable groups to access developments and services.
	Deprived Groups	1	Would generally improve opportunities for deprived groups to access developments and services.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	3	As a planning policy measure it is assumed that it would be in accordance with aspirations at a national level. Measure supports policies relating to the enhancement of Dublin City as an international gateway with a `world city' economic role; it could help to balance spatial development between the GDA and other cities / regions of Ireland. It could also serve to balance the provision of social infrastructure between Dublin and other towns in the GDA. As a consequence it may also assist policies regarding congestion and sustainability.
	Other Govt. Policies	2	Would contribute to a number of policy aspirations including social & community, and public health.
Environment	Biodiversity	0	Measures that encourage or direct high density person trip intensive development in locations accessible by public transport would facilitate modal shift, potentially resulting in minor positive impacts on landscape and noise, a moderate positive impact on air quality, a moderate reduction of greenhouse gas emission and a moderate reduction of the fossil fuel demand.
	Landscape	1	
	Noise	1	
	Water	0	
	Air quality	2	
	Climate	2	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	0	





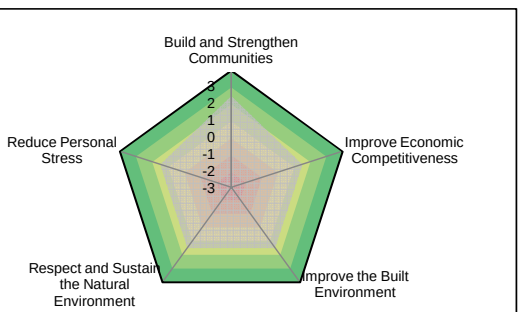


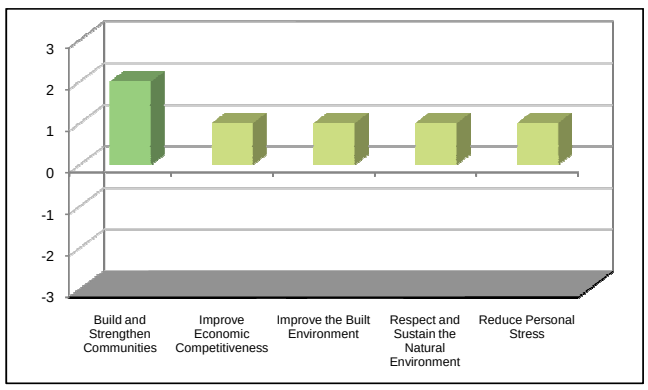
Measure Name:	Measures that encourage and/or direct high-density residential development in accessible locations.
Measure Category:	Planning measures which reduce the need to travel
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	Increased levels of sustainable transport usage to developments.
Cost band	None

Stage 1a	**Appraisal**	**Notes**
Political		Need clear guidance in NSS/RPG to ensure it filters down into development plans & development control. Therefore may be some governance barriers.
Technological		
Legal		

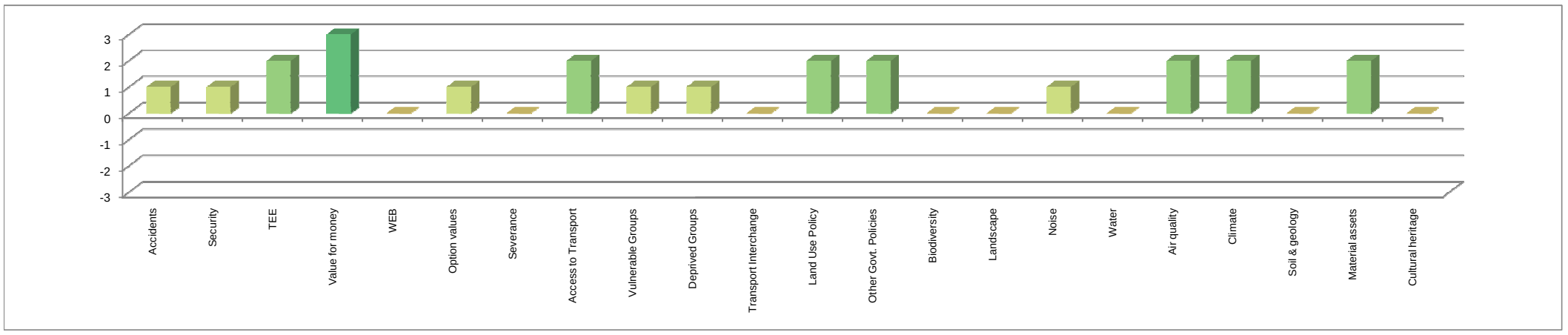
Measure Description & Supporting Information:
Concentrating denser residential development in those areas where public transport is readily available. Stronger development restrictions away from public transport access points, and away from larger urban areas. Development density not as high as is assumed in the commercial planning measure (PM9) as it is assumed that there is a greater reluctance to live in high density residential areas compared with visiting high density commercial areas. National rollout assumed.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Measure reduces the need to travel by car and the distance to be travelled and would improve access to public transport and key facilities. This will promote stronger communities. Large benefit for a number of people who live in the accessible places.
Improve Economic Competitiveness	1	Measure reduces the need to travel by car and promote travel by sustainable modes. This should result in a reduction in congestion and journey times across the GDA. Small benefit for a number of businesses across the GDA.
Improve the Built Environment	1	Measure encourages permeability and people movement on foot and to access public transport. Minimises the visual and physical intrusion of transport vehicles. Moderate benefit at specific new residential developments across the GDA.
Respect and Sustain the Natural Environment	1	Encourages an increase in sustainable modes and a reduction in car use. Benefits for air quality, noise and greenhouse gases. Moderate benefit at new residential development locations across the GDA.
Reduce Personal Stress	1	Promotes healthier forms of travel and makes it easier for more people to use alternatives to the car. Moderate benefit at new residential developments across GDA.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Reduces the need for vehicular travel and hence potential for associated accidents. Potentially medium/large benefit at specific sites across the GDA i.e. where the measure is put into place.
	Security	1	May facilitate improvements to public realm with the potential to improve security through increased pedestrian circulation and surveillance.
Economy	TEE	2	Clustering of residential development around public transport hubs would serve to reduce journey times and cost, and enable direct access to the public transport network.
	Value for money	3	
	WEB	0	Since the measure relates to residential development the WEB will be minimal.
Accessibility	Option values	1	Clustering of residential development around transport hubs would increase occasional transport options.
	Severance	0	No discernable impact upon issues of severance. Difficult to quantify from a policy measure.
	Access to Transport	2	Concentration of residential development would significantly widen catchment of viable access to the public transport system, i.e. dense development round nodes.
Social Inclusion	Vulnerable Groups	1	Public transport viability is enhanced by the increased catchment density, which would assist some vulnerable groups such as non-car owners.
	Deprived Groups	1	Public transport viability is enhanced by the increased catchment density, which would assist some deprived groups such as non-car owners.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	As a planning policy measure it is assumed that it would be in accordance with aspirations at a national level. Measure supports policies relating to sustainable travel associated with development and the balance the provision of social infrastructure between Dublin and other towns in the GDA .
	Other Govt. Policies	2	Measure supports social policies, and those related to opportunities to access healthcare and education.
Environment	Biodiversity	0	Measures that encourage or direct high density residential development in locations accessible by public transport would facilitate modal shift, potentially resulting in a minor positive reduction on noise, a moderate positive impact on air quality, a moderate reduction of greenhouse gas emissions and a moderate reduction of the fossil fuel demand.
	Landscape	0	
	Noise	1	
	Water	0	
	Air quality	2	
	Climate	2	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	0	

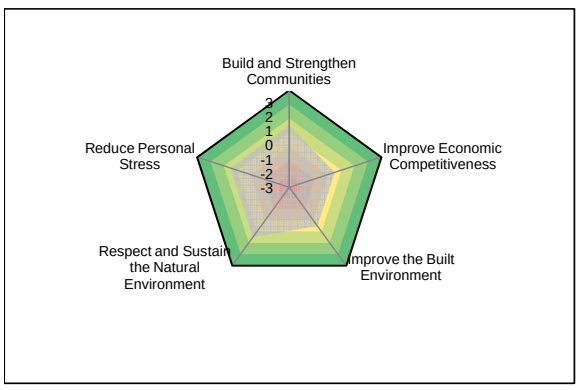


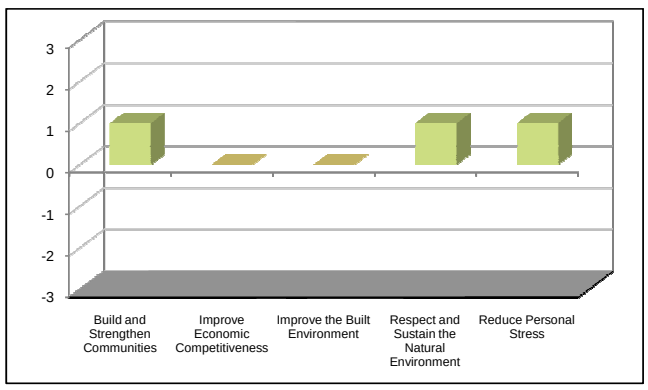
Measure Name:	Individualised travel planning/marketing measures
Measure Category:	Smarter Choices
Potential Delivery Agents:	Local Authorities
How would we measure a successful transport outcome?	Before and after surveys of modal split of target population.
Cost band	Low cost

Stage 1a	**Appraisal**	**Notes**
Political		
Technological		
Legal		

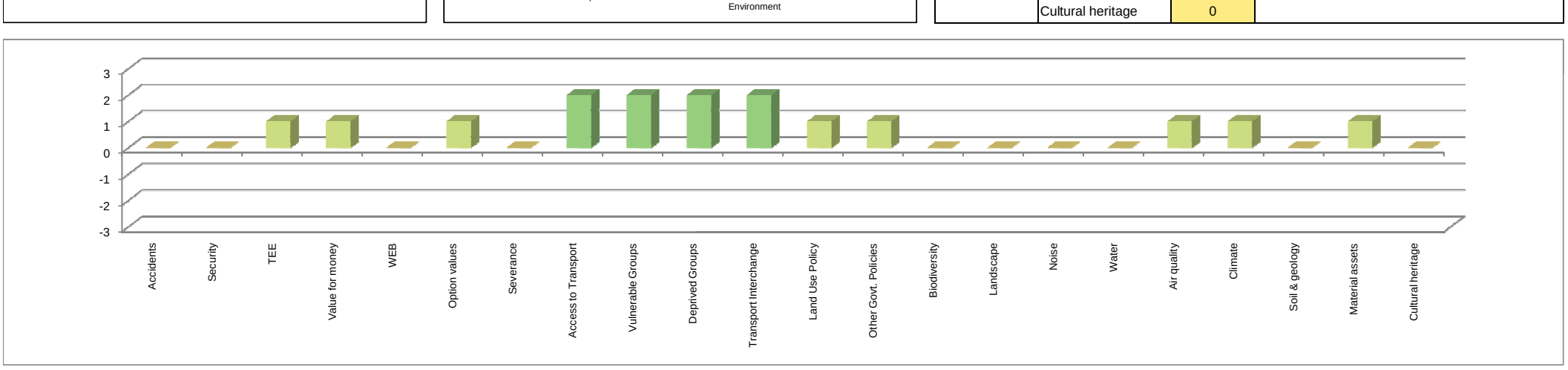
Measure Description & Supporting Information:
Personalised travel planning/'mobility management plans' incorporating targeted marketing techniques, providing travel advice to people based on an understanding of their personal trip patterns. Includes residentially-based measures and schemes targeting new movers into an area. Could be targeted at particular population profiles e.g. high car ownership and usage areas and/or areas with good public transport/cycling network Assumes not GDA wide but across large number of residential areas.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Measure can increase awareness of travel options and benefits of sustainable travel behaviour. This can improve access to key facilities. Small benefit to a small number of people in targeted areas.
Improve Economic Competitiveness	0	Measure can reduce the number of single-occupancy vehicles on the road network and therefore reduce congestion and journey times. This is likely to be in targeted areas only and therefore a very small benefit on a small number of key corridors.
Improve the Built Environment	0	Measure encourages people movement by walk, cycle and public transport and supports greater human interaction. However, as no physical improvements will occur as a result of the measure a neutral score has been given.
Respect and Sustain the Natural Environment	1	Measure would initiate a reduction in congestion and have a positive impact on air quality and greenhouse gases. Can also have benefits in terms of natural resources. Small benefit to a small number of people in targeted areas.
Reduce Personal Stress	1	Encourages healthier forms of travel and provides better travel information which encourages people to use alternatives to the car. Modal shift can reduce congestion, improve journey times and enhance travel comfort. Therefore assumed a significant benefit to a small number of people.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Whilst there may be a reduction in vehicle trips this may not necessarily mean a reduction in accidents as traffic speeds will be higher.
	Security	0	Increased patronage on public transport as a result of the awareness campaign may improve personal safety and security, however this is not the main aim of the measure and is not significant enough to warrant more than neutral.
Economy	TEE	1	Potential to reduce generalised cost of travel for individuals by exploring travel alternatives. Reducing the number of single occupancy trips on the network would have benefits to other road users, in terms of reduced journey times. Small benefit to a small number of travellers.
	Value for money	1	
	WEB	0	Not likely to have a wider economic benefit or disbenefit as small numbers of people on relatively small number of corridors only.
Accessibility	Option values	1	Non car modes probably already available but people may not be aware of benefits / existence until targeted marketing.
	Severance	0	There is not likely to be any change or hindrance to movement of people.
	Access to Transport	2	Improved transport information and personalised journey planning can improve access to the existing systems. Benefit for people who live in the targeted areas.
Social Inclusion	Vulnerable Groups	2	Improved transport information and awareness and personal journey planning will support vulnerable groups in terms of improved access to key facilities.
	Deprived Groups	2	Improved transport information and awareness and personalised journey planning will support deprived groups in terms of improved access to key facilities.
Integration	Transport Interchange	2	Targeted marketing and provision of personalised journey planning can enhance information on provision of interchange points for public transport routes.
	Land Use Policy	1	The measure is likely to complement two of the policies without contradicting others i.e. environment and congestion.
	Other Govt. Policies	1	The measure complements policies on public health and promoting education and employment.
Environment	Biodiversity	0	Individualised travel planning/marketing measures would facilitate modal shift, potentially resulting in a minor positive impact on air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	



Measure Name:	Car Sharing
Measure Category:	Smarter Choices
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	Number of people registered on the car share database. Number of users or trips matched.
Cost band	Very low cost

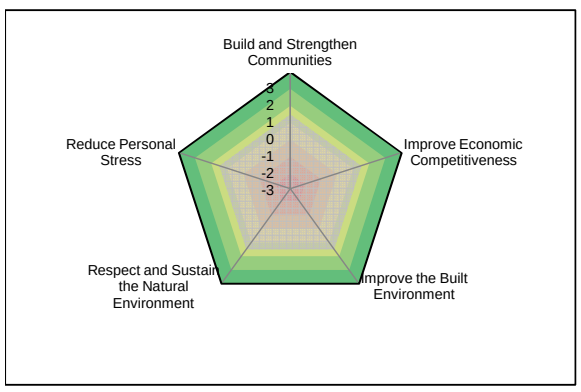
Stage 1a	Appraisal	Notes
Political		No appropriate management agency.
Technological		
Legal		

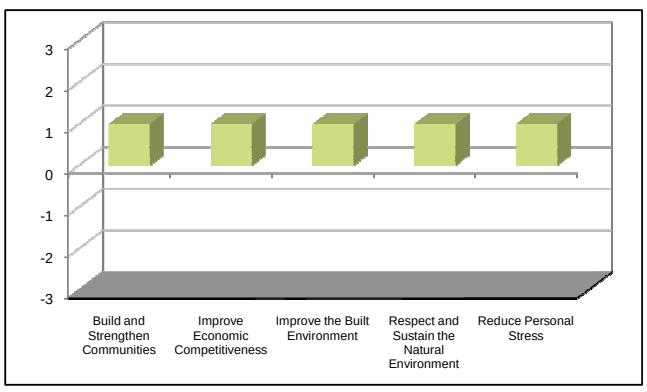
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Whilst there may be a reduction in vehicle trips this may not necessarily mean a reduction in accidents as traffic speeds will be higher.
	Security	0	Car sharing is unlikely to have a significant impact on security, although some individuals may perceive benefits when travelling at night.
Economy	TEE	1	Reduces vehicle operating costs and could reduce journey times through fewer single occupancy vehicles on the road network. Small benefit for a very small number of people. Benefits to non-users through reduced congestion.
	Value for money	1	
	WEB	0	A car share scheme across the GDA could potentially have a very small wider economic benefit to businesses across the GDA, however not significant enough to make a major impact on the economy.
Accessibility	Option values	2	Car sharing will provide a new option for people, particularly non car owners who may be able to share with car owners. Therefore potentially a high benefit to a small proportion of the population.
	Severance	0	There is not likely to be any change or hindrance to movement of people.
	Access to Transport	1	Car sharing will increase access to transport for those people who are non car owners.
Social Inclusion	Vulnerable Groups	2	Vulnerable groups such as non car owners may benefit from this measure as they may be able to access additional destinations.
	Deprived Groups	2	Deprived groups (particularly those with poor access to employment) may benefit from this measure as they may be able to access additional destinations.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	1	The measure is likely to complement two of the policies without contradicting others i.e. environment and congestion.
	Other Govt. Policies	1	The measure complements policies on public health and promoting employment and education.
Environment	Biodiversity	0	Car sharing would improve efficiencies of car usage, potentially resulting in a minor positive impact on air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	

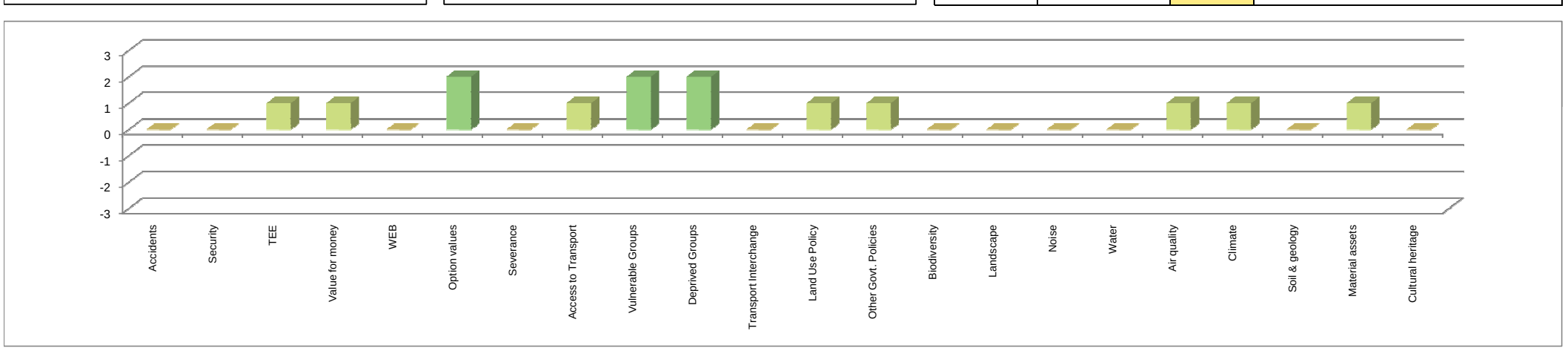
Measure Description & Supporting Information:

Set up GDA car share database.
People who register with the scheme are matched with one or more people who make the same trip. Often targeted at employers but open to public as well. Often requires some form of 'guaranteed lift home'. Assume measure is mainly aimed at users who would not otherwise know each other, with ad hoc car sharing continuing. Therefore likely to only affect limited number of journeys.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Car sharing can improve access for non drivers. This would particularly benefit vulnerable and deprived. Large benefit for limited number of people.
Improve Economic Competitiveness	1	Car sharing can improve journey times on the road network for business and freight travel and reduce congestion. This can benefit the whole of the GDA therefore small benefit for a large number of businesses.
Improve the Built Environment	1	Minimises the physical intrusion of motor traffic, particularly the number of parked vehicles.
Respect and Sustain the Natural Environment	1	Measure reduces the number of single-occupancy vehicles and therefore would initiate a reduction in congestion. Benefits for air quality, greenhouse gases and natural resources. Small benefit across the GDA to a potentially a significant number of people.
Reduce Personal Stress	1	Can reduce congestion and journey times on the road network. Reduces stress and improves travel comfort through shared responsibility for journeys. Therefore small benefit to potentially a significant number of people across the GDA.







Measure Name:	Car clubs
Measure Category:	Smarter Choices
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	Number of people registered in car club. Car ownership in scheme areas.
Cost band	Very low cost

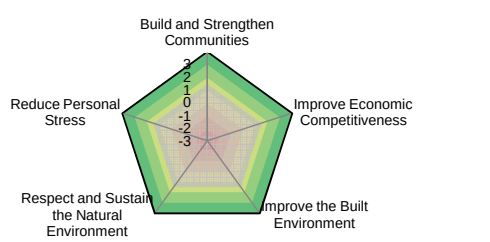
Stage 1a	Appraisal	Notes
Political		No agency responsible for initiating
Technological		
Legal		Provision of dedicated on-street car club parking spaces requires legislation.

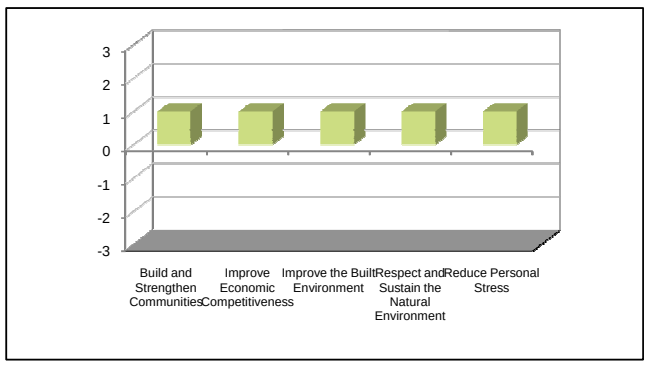
Measure Description & Supporting Information:

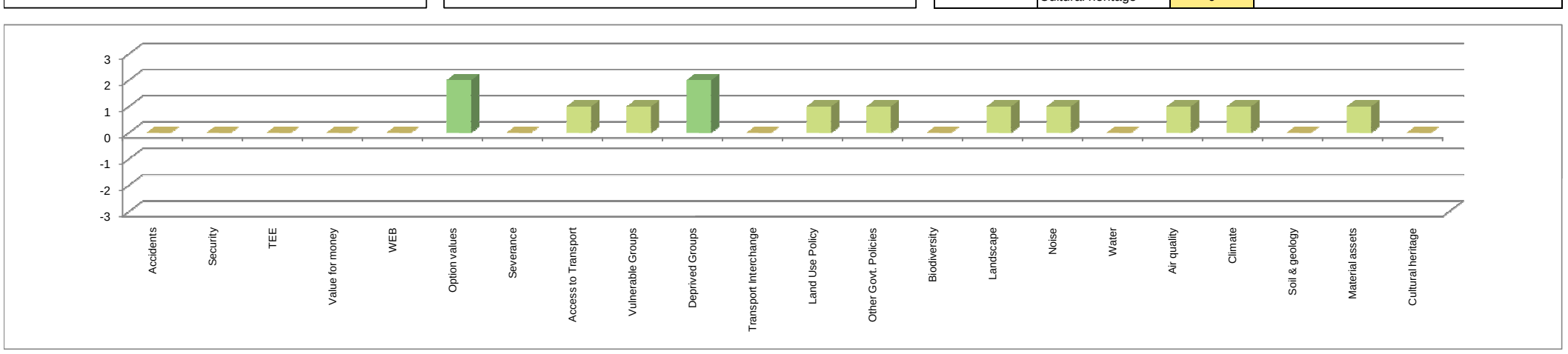
Giving people and businesses the option of a fleet vehicle which can be hired by the hour in their local neighbourhood.
Possible overlap with residential travel plans.
Assume ultimately could have comprehensive Dublin-wide car club with many cars available in every district centre/employment area.
Could be marketed particularly through residential travel plans.
Aims to encourage families to give up their car, or second car, although may create additional car trips from existing non car owners.

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Measure will particularly benefit low income groups who may not be able to afford their own car. Large benefit for moderate number of people.
Improve Economic Competitiveness	1	Measure can improve journey times on the road network for business and freight travel and reduce congestion (i.e. fewer car trips made for short journeys as some members may opt not to own a car). Small benefit potentially across the whole of the GDA.
Improve the Built Environment	1	The measure minimises the physical intrusion of motor traffic, particularly the number of parked vehicles.
Respect and Sustain the Natural Environment	1	Assists in reducing unnecessary car trips and therefore would initiate a reduction in congestion. Positive impact on air quality, greenhouse gases and natural resources. Small benefit to potentially a large area of the GDA.
Reduce Personal Stress	1	Can reduce congestion and journey times on the road network. This reduces stress and improves travel comfort. Very small benefit across the GDA.

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Whilst there may be a reduction in vehicle trips this may not necessarily mean a reduction in accidents as traffic speeds will be higher.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	0	Reduces vehicle operating costs and maintenance costs of owning a car. Very small benefit for a small number of users across the GDA.
	Value for money	0	
	WEB	0	Car club is unlikely to have any impact upon WEBs.
Accessibility	Option values	2	Provides a new option for people, particularly non car owners who may be able to significantly benefit from the scheme. High benefit to a significant proportion of the population.
	Severance	0	There is not likely to be any change or hindrance to movement of people as a result of the car club.
	Access to Transport	1	Increases access to transport for those people who are non car owners but are able to drive and utilise the club.
Social Inclusion	Vulnerable Groups	1	Vulnerable groups such as non car owners may benefit from this measure as they may be able to access additional destinations. May be of less benefit to disabled groups.
	Deprived Groups	2	Deprived groups (particularly those with poor access to employment) may benefit from this measure as they may be able to access additional destinations.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	1	The measure is likely to complement two of the policies without contradicting others i.e. environment and congestion.
	Other Govt. Policies	1	The measure complements policies on public health and promoting employment education.
Environment	Biodiversity	0	Car clubs would improve the efficiencies of car usage and reduce the need for car parking space, potentially resulting in minor positive impacts on landscape and air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	1	
	Noise	1	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	







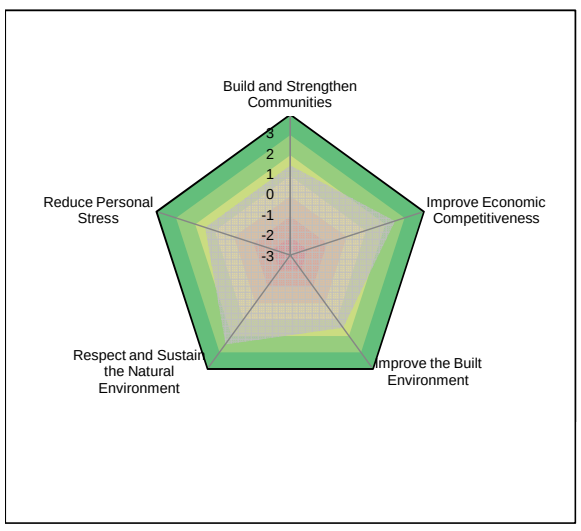
Measure Name:	Reduce the need to travel through technology
Measure Category:	Smarter Choices
Potential Delivery Agents:	Local Authorities, DTO, businesses, Operators (retailers, suppliers, couriers)
How would we measure a successful transport outcome?	Number of companies/sites offering new technology. Mode split data for employment sites and residential sites (as part of travel plans).
Cost band	Very low cost

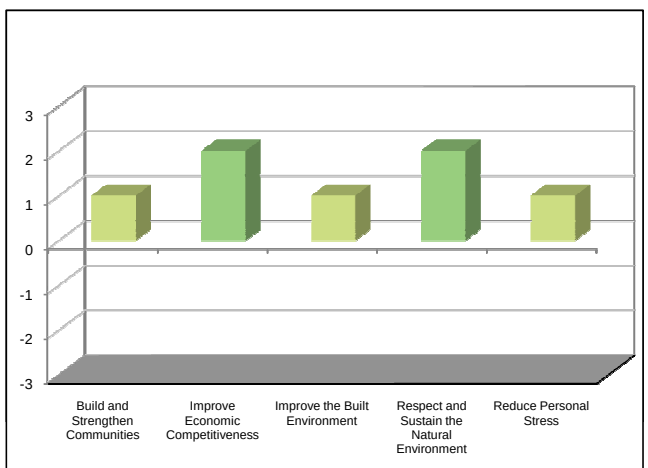
Stage 1a	**Appraisal**	**Notes**
Political		No co-ordinating agency.
Technological		
Legal		

Measure Description & Supporting Information:

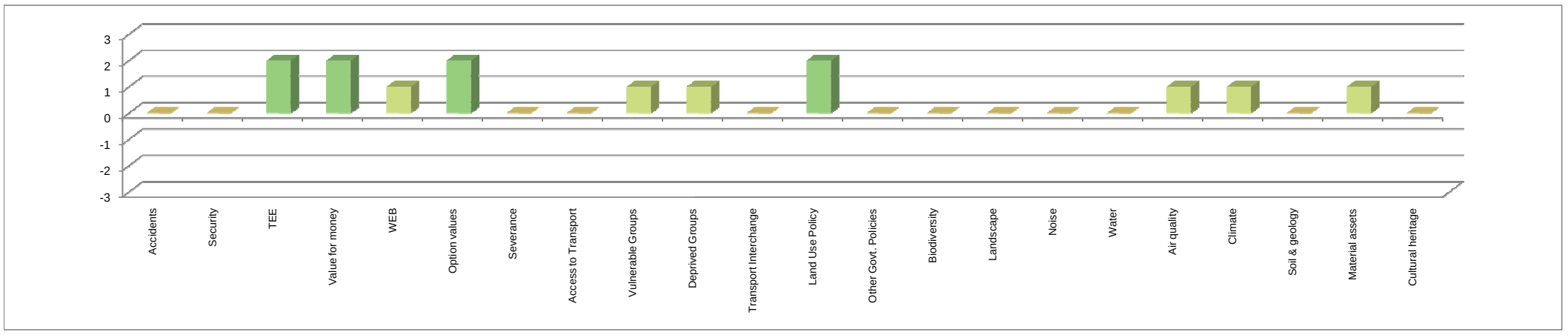
Teleconferencing, teleworking, teleshopping, accessing services remotely. Assumed most of these initiatives would come from private sector but public sector can help kick-start the initiatives e.g. DTO introduce home working. Planning authorities can specify broadband and wifi be available at new business parks and residential areas. The design of new homes could also incorporate the opportunity for home-working. New retail developments could also have conditions placed on them about home deliveries (with car park restrictions in association with it).
In terms of home shopping should consider in conjunction with locker banks and community delivery points. This assumes an overall net benefit through reducing the number of car trips to stores/retail centres and replacing these with less, more efficient van deliveries.
National rollout assumed.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Particularly beneficial for those people who may have trouble accessing potential workplaces. In addition, this measure can improve access to retail and in particular food shopping, with a specific benefit to deprived or vulnerable groups, e.g. mobility impaired. Small benefit to large number of people.
Improve Economic Competitiveness	2	Can reduce the number of single-occupancy vehicles on the road network and can hence reduce congestion and journey times for business travellers. Reduces need for business travel, though possible increases in retail business travel for home deliveries (although this is likely to be minimal in comparison to the reduction of single-occupancy vehicles). Significant benefit for a considerable number of businesses across the GDA.
Improve the Built Environment	1	The measure minimises the physical intrusion of motor traffic, particularly the number of parked vehicles in employment and potentially retail sites. This may act to increase permeability and people movement i.e. by walking and cycling.
Respect and Sustain the Natural Environment	2	Measure would initiate a reduction in congestion which would have a positive impact on air quality and greenhouse gases. Small benefit to a large number of people.
Reduce Personal Stress	1	Reduces journey times and improves reliability for those road users not included in the measure. Measure reduces stress for these people indirectly.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Although there may be a reduction in congestion not necessarily a reduction in accidents as traffic speeds will be higher.
	Security	0	Reducing the need to travel may improve people's personal safety and security fears, however overall little impact.
Economy	TEE	2	Saves on an individual's journey and vehicle maintenance costs. Reduces journey times and hence costs for other car users not directly affected by the measure. Significant impact for small number of users and very small impact on a significant number of other travellers across the GDA.
	Value for money	2	
	WEB	1	The use of technology to conduct work without the need to travel could have significant efficiency gains for businesses; however only in relation to business travel and not with deliveries of goods.
Accessibility	Option values	2	New technology provides an alternative option to travel. Large benefit for a considerable number of people across the GDA.
	Severance	0	There is not likely to be any significant change or hindrance to movement of people as a result of the reduced need to travel. It is assumed that the reduced need to travel is focussed predominantly on car users and therefore people who walk to specific destinations are unlikely to change their habits as a result of the measure.
	Access to Transport	0	Reducing the need to travel will not have any impact on accessing destinations by the wider transport network.
Social Inclusion	Vulnerable Groups	1	May bring about new employment and shopping opportunities for vulnerable groups and non car owners. Therefore, potentially a large benefit for a small number of vulnerable people (who have access to the internet).
	Deprived Groups	1	May enhance employment and shopping opportunities for socially deprived individuals, in particular those with poor access to services. Therefore, potentially a large benefit for a small number of deprived people (who have access to the internet).
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	The measure complements two policies, i.e. 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability' without contradicting significant numbers of the others. This assumes a net positive impact through reducing car trips.
	Other Govt. Policies	0	The measure complements the policies 'social, community and family policies which promote social inclusion and cohesion' and 'promoting employment' (for example, though facilitating home working). However it may contradict 'policies that promote improved public and mental health, including reducing obesity' as it may increase sedentary lifestyles. This therefore results in no overall net impact.
Environment	Biodiversity	0	Reducing the need to travel through technology would potentially result in a minor positive impact on air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	



Measure Name:	Destination based Travel Plans and national car share database
Measure Category:	Smarter Choices
Potential Delivery Agents:	Local Authorities, DTO, Businesses / Organisations
How would we measure a successful transport outcome?	Implementation of successful travel plans at a target number of schools/workplaces/new residential developments etc. Number or proportion of employees/residents/schools involved in a Travel Plan. Mode share in schools/workplaces/residential developments. Number of people registered on car share database.
Cost band	Low cost

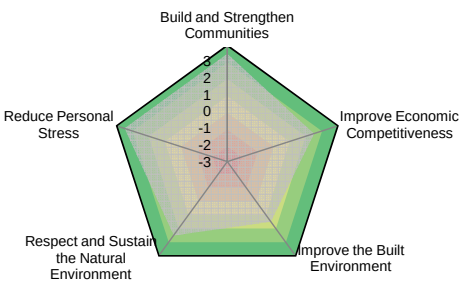
Stage 1a	**Appraisal**	**Notes**
Political		Co-ordinated action across local authorities and government departments required. Management agency would be required for the car share database.
Technological		No significant technology required.
Legal		May require changes to tax regulations to cover e.g. interest free season ticket loans.

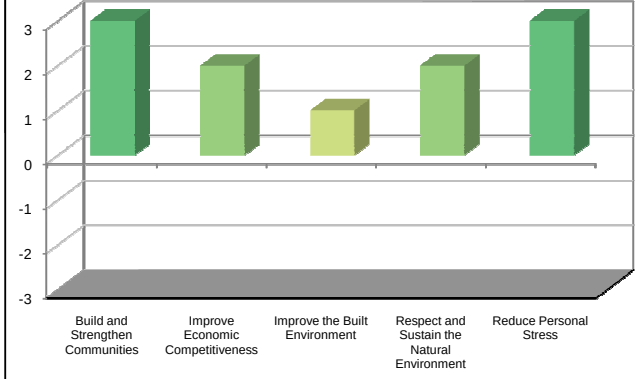
Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	May be a reduction in congestion though not necessarily a reduction in accidents as traffic speeds will be higher. However, a school travel plan for example, could assist in reducing conflicts around a school and therefore reduce the number of accidents in these locations. Medium impact for a small number of people.
	Security	1	Travel Plans can include measures to improve safety and security as a way of encouraging walking, cycling and public transport. Car sharing may increase perceptions of safety for some individuals when travelling at night.
Economy	TEE	2	Reductions in single-occupancy vehicles should lead to a reduction in travel costs, congestion and journey times on the key routes affected. Sustainable travel users may have an increase in journey time; however, overall this measure is considered to have a moderate impact on a considerable number of people.
	Value for money	2	
	WEB	1	There could be a notable reduction in congestion across the road network resulting in improvements in accessibility to customers, suppliers and labour for businesses and so could create higher productivity.
Accessibility	Option values	3	Non car modes probably already available but people may not be aware of benefits / existence. New measures could be offered (e.g. yellow buses or walking buses in school travel plans and car sharing or business travel options for workplace travel plans). Car sharing using the database will provide a new option for people, particularly non owners. Therefore new options which have a potentially large impact are offered to a considerable number of people.
	Severance	1	Where car trips are transferred to modes such as public transport as a result of Travel Plans, there may be a reduction in severance. For school Travel Plans, volumes of car traffic around schools can deter walking; measures which reduce car use may therefore reduce severance - however, benefits likely to be localised close to school entrances.
	Access to Transport	2	Improves access to the existing transport routes for a considerable number of people. Provision of new infrastructure will increase access to the transport system (e.g. yellow buses at schools). Car sharing will increase access to transport for those people who are non car owners. Medium impact on a considerable number of people.
Social Inclusion	Vulnerable Groups	2	Improved transport information and awareness and measures will support vulnerable groups in terms of improved access to key facilities. Medium benefit for a small number of vulnerable people.
	Deprived Groups	2	Improved transport information and awareness and measures will support deprived groups in terms of improved access to key facilities. Medium benefit for a small number of deprived people.
Integration	Transport Interchange	1	Improves information provision for key destinations and therefore likely to improve people's understanding of interchange between modes.
	Land Use Policy	2	The measure is likely to complement the policies to improve the environmental performance of the transport sector and address congestion in major urban areas, without contradicting others.
	Other Govt. Policies	2	The measure complements policies on social inclusion, promoting public and mental health and promoting improved education opportunities.
Environment	Biodiversity	0	No land impacts.
	Landscape	0	No land impacts.
	Noise	1	Modal shift to PT and reductions in overall car-based commuting will result in minor benefits for noise.
	Water	0	No land impacts.
	Air quality	1	Modal shift to PT and reductions in overall car-based commuting will result in minor benefits for air quality.
	Climate	1	Modal shift to PT and reductions in overall car-based commuting will result in minor benefits for climate.
	Soil & geology	0	No land impacts.
	Material assets	1	Modal shift to PT and reductions in overall car-based commuting will result in minor benefits for fossil fuel consumption.
	Cultural heritage	0	No land impacts.

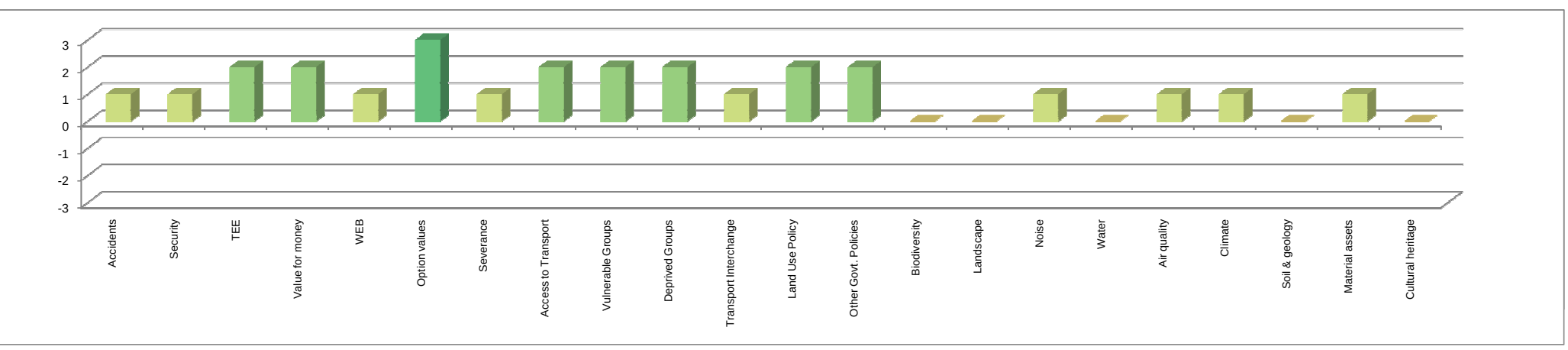
Measure Description & Supporting Information:

Would include all site travel plans e.g. workplace, school, residential, health, leisure etc. Therefore includes employees/pupils/visitors/residents.
Employment - measures to include incentives from employers to promote sustainable travel such as salary sacrifice, bike purchase scheme etc. Non-transport demand management measures (flexible working etc.)
Car share databases for employers and also nationally for all Ireland residents.
Reduce the impact of business travel and business travel management measures - fleets, carpools and use of car clubs.
Assumed that a selection process would be used to target the companies with the most potential for benefits to occur.
Assume that while some workplace Travel Plans may already exist, there is potential for expanding coverage and effectiveness.
Widespread implementation assumed.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	3	Measure improves access to key destinations through provision of information about travel options available. Car sharing and other measures have particular benefit for vulnerable and deprived groups. Potential to benefit to a large proportion of the population.
Improve Economic Competitiveness	2	Perceived improvement in journey time and congestion as measures will reduce car travel and particularly single-occupancy vehicle travel. Small improvement to economic competitiveness to large number of businesses across GDA.
Improve the Built Environment	1	Measure encourages people movement by walk, cycle and public transport and supports greater human interaction. Minimises the visual and physical intrusion of vehicle traffic, in particular the number of parked vehicles.
Respect and Sustain the Natural Environment	2	Would initiate some reduction in congestion on the key traffic routes affected through reduced single-occupancy vehicles and car use and have a positive impact on air quality and greenhouse gases. Benefits in terms of natural resources. Moderate benefit to potentially a considerable number of people.
Reduce Personal Stress	3	Improves travel information and encourages healthier forms of travel. Can increase the sense of personal security through a higher people presence on public transport, walk and cycle routes. Travel Plans and associated measures can therefore reduce congestion, improve journey times and enhance travel comfort. Large benefit to a considerable number of people across the GDA.







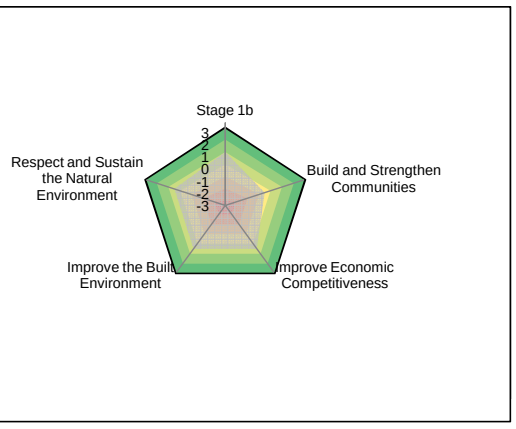
Measure Name:	Travel awareness, driver education, walking and cycling information and promotion
Measure Category:	Smarter Choices
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	Take up of specific promotions Levels of awareness Use of sustainable modes
Cost band	Very low cost

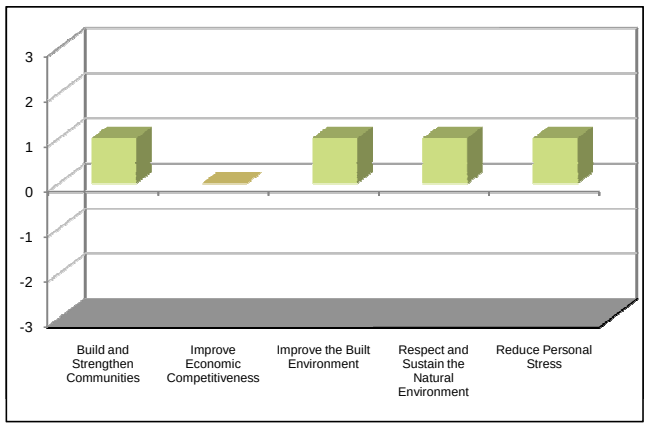
Measure Description & Supporting Information:
A mixture of area wide and targeted campaigns covering: Education - improve the understanding of problems caused by traffic growth and encourage people to think about their travel behaviour (includes Eco-driving, driver awareness campaigns and health campaigns). Identify and overcome psychological barriers to cycling. Training - ensure future generations of car/van/HGV drivers are more capable, drive more safely and are more aware of/friendly towards public transport vehicles and vulnerable road users. Links to reform of driving test system e.g. including refresher courses/tests for existing drivers, re-education of older drivers unfamiliar with modern driving conditions. Cycle training initiatives such as cycle to work training and 'Dr Bike' surgeries. Marketing - promotion of sustainable modes including walking, cycling and public tranport. Also promotion of sustainable methods e.g. Eco driving and accident reduction campaigns.

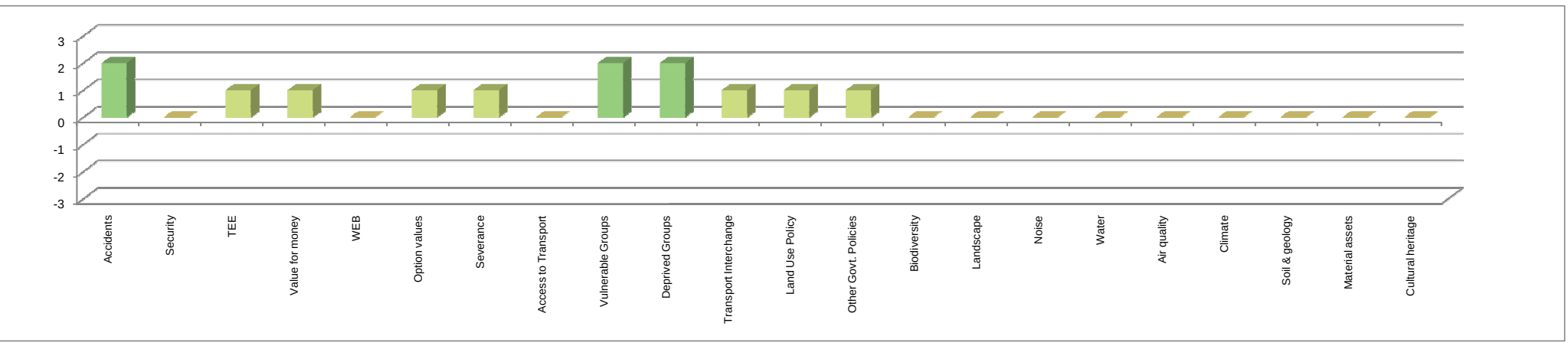
Stage 1a	**Appraisal**	**Notes**
Political		No institutional/governance changes required.
Technological		No new technology required.
Legal		No changes to legislation required.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Measure will improve understanding of the travel options available and may promote some modal shift and improve access options. Particular benefits for disadvantaged groups such as those on low incomes and non-car owners. Small benefit to a small number of people who are targeted / affected by campaign.
Improve Economic Competitiveness	0	Some modal shift due to increased awareness of travel options and their benefits. However, not significant enough to reduce journey times and congestion to an extent which would improve economic competitiveness, therefore neutral.
Improve the Built Environment	1	The measure may result in some modal shift to sustainable modes which in turn would help reduce the visual and physical intrusion of traffic.
Respect and Sustain the Natural Environment	1	A change in modal shift to sustainable modes and eco driving would initiate a reduction in congestion and would have a positive impact on air quality and greenhouse gases. Can also have benefits in terms of natural resources. Small benefit to a small number of people.
Reduce Personal Stress	1	Measure promotes healthier forms of travel, use of public transport and travel safety through appropriate training, all of which reduce personal stress. Medium benefit to a small number of people.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	2	Driver and cycle training should result in greater awareness of vulnerable road users and therefore result in fewer accidents. Possible reduction in vehicle trips through promotion of walking and cycling though likely to be very small and localised.
	Security	0	Unlikely to have any significant impact upon security.
Economy	TEE	1	Increased walking, cycling and public transport use could save on journey costs but may increase journey times. Less congestion would have benefits for car travellers. Eco driving would increase vehicle efficiency and reduce fuel consumption.
	Value for money	1	
	WEB	0	Unlikely to have any significant impact upon WEBs.
Accessibility	Option values	1	Non car modes probably already available but people may not be aware of benefits / existence. Medium impact to a relatively small number of people.
	Severance	1	Driver training likely to reduce severance as drivers more aware of vulnerable users,etc. Transfer of car trips to other modes such as public transport may also slightly reduce severance.
	Access to Transport	0	Promotion of sustainable transport modes may improve access to the existing transport system though impact is very small.
Social Inclusion	Vulnerable Groups	2	Promotion of sustainable transport modes will support vulnerable groups in terms of improved access to key facilities. Will benefit indirectly from driver training (e.g. improved safety, etc.) as more likely to be vulnerable road users. Small benefit for a large number of vulnerable people if the marketing and initiatives are GDA wide.
	Deprived Groups	2	Promotion of sustainable transport modes will support deprived groups in terms of improved access to key facilities. Will benefit indirectly from driver training (e.g. improved safety, etc.) as more likely to be vulnerable road users. Small benefit for a large number of deprived people if the initiatives and marketing are GDA wide.
Integration	Transport Interchange	1	Promotes sustainable transport modes and alternatives to car trips, hence small increase in interchange between modes. Measure does not result in physical improvements to interchange facilities.
	Land Use Policy	1	The measure complements policies to address congestion in major urban areas and improve the environmental performance of the transport sector without contradicting significant numbers of others.
	Other Govt. Policies	1	The measure complements policies to promote social inclusion and improve public and mental health without contradicting significant numbers of others.
Environment	Biodiversity	0	No land impacts.
	Landscape	0	No land impacts.
	Noise	0	Insufficient modal shift to PT and soft modes of travel to result in noise benefits.
	Water	0	No land impacts.
	Air quality	0	Insufficient modal shift to PT and soft modes of travel to result in air quality benefits.
	Climate	0	Insufficient modal shift to PT and soft modes of travel to result in climate benefits.
	Soil & geology	0	No land impacts.
	Material assets	0	Insufficient modal shift to PT and soft modes of travel to result in fossil fuel consumption benefits.
	Cultural heritage	0	No land impacts.







Measure Name:	Improve walking network
Measure Category:	Walking Strategy
Potential Delivery Agents:	Local Authorities
How would we measure a successful transport outcome?	Increased use of pedestrian routes and public transport to access key facilities. public transport patronage, user surveys of key pedestrian routes before and after improvements made.
Cost band	Low cost

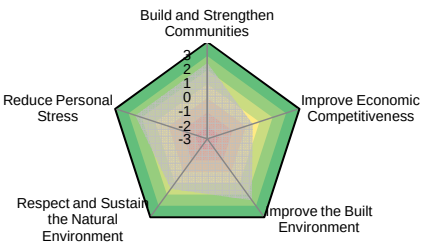
Stage 1a	**Appraisal**	**Notes**
Political		Requires co-ordination across local authorities.
Technological		
Legal		May require some reform of public rights of way legislation as local authorities unable to adopt off highway pedestrian routes such as alleyways in urban areas.

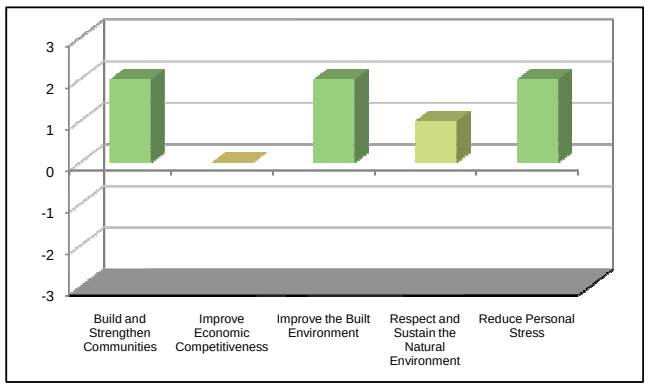
Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Giving pedestrians priority over other road users may assist in reducing accidents involving pedestrians who are the most vulnerable road users.
	Security	2	The measure is likely to result in safer walking routes across the GDA.
Economy	TEE	1	Will encourage walking, particularly for short journeys, reducing vehicle operating costs and travel charges. Walking likely to have longer journey times. Measure will initiate some reduction in congestion therefore improving journey time reliability for car users. Overall, very small benefit on the generalised cost of travel for a moderate number of people across the GDA.
	Value for money	1	
	WEB	0	Improved walking facilities are not considered likely to have any notable affect upon the wider economy.
Accessibility	Option values	1	Improved walking routes offer an alternative travel option which may have previously been unattractive or inaccessible to users. Small benefit across the GDA.
	Severance	2	The measure will address severance points, delay points and conflict points. It will therefore have a large positive impact on severance for a significant number of people across the GDA.
	Access to Transport	1	Measure will improve physical walking links which is likely to include improved links to the wider transport network such as access to bus and rail facilities. Therefore medium impact for some trips across the GDA.
Social Inclusion	Vulnerable Groups	2	Vulnerable groups are likely to benefit from this measure due to improved links to key facilities. For example, reduced severance for disabled people and improved access to services for non car owners. Large benefit for a considerable number of vulnerable people across the GDA.
	Deprived Groups	2	Deprived groups are likely to benefit from this measure due to enhanced opportunities resulting from improved walking links to key facilities. For example, reduced severance for disabled people and improved access to services for non car owners and those on low incomes. Large benefit for a considerable number of deprived people across the GDA.
Integration	Transport Interchange	2	Improved walking links may improve access to public transport nodes and so enhance interchange between modes. A small impact across the GDA.
	Land Use Policy	1	The measure is likely to complement two of the policies without contradicting others i.e. environmental performance and congestion.
	Other Govt. Policies	1	The measure complements policies on social inclusion and public health without contradicting other policies.
Environment	Biodiversity	0	Improving the walking network would lead to increased levels of walking and decreased levels of car use for short journeys, potentially resulting in minor positive impacts on landscape and air quality and a moderate reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	1	
	Noise	0	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	

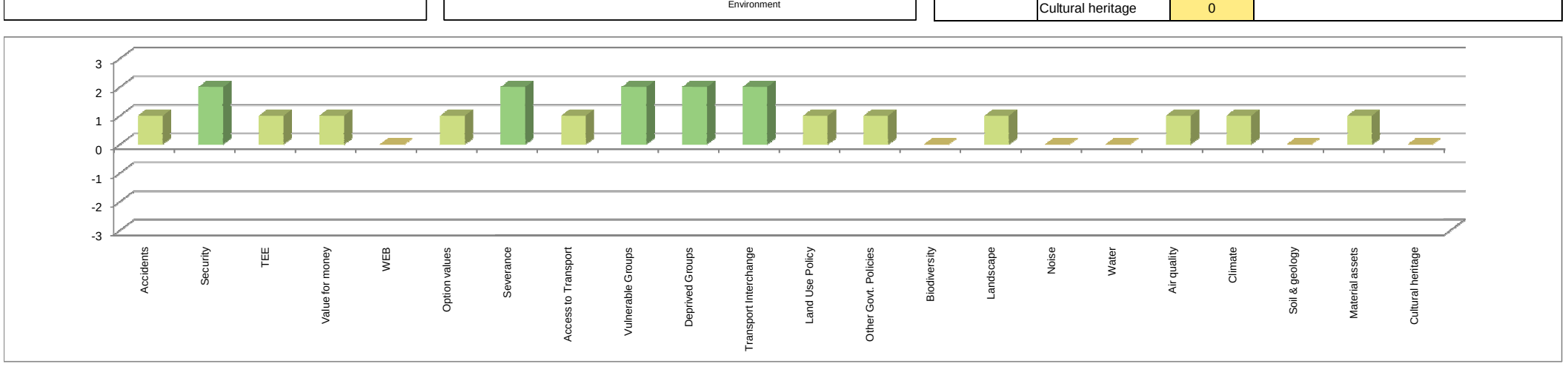
Measure Description & Supporting Information:

Including addressing severance points, delay points, conflict points and footway widening. Also covers new access routes and paths, including those in urban areas.
Improve key pedestrian routes to local facilities, public transport gateways, major commercial and leisure sites etc. Better footway capacity, signing, street furniture and priority over other road users.
Upgrade non-highway paths and alleyways in urban areas.
Assume will be rolled out across the GDA through a long term strategy.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Measure improves access to key services and promotes non car modes. Beneficial for vulnerable and deprived groups who do not have access to a car.
Improve Economic Competitiveness	0	Possible reductions in car traffic and hence benefits for reducing congestion and journey times. Small benefit to economic competitiveness for a considerable number of businesses; however not sufficient to warrant a positive score.
Improve the Built Environment	2	Measure improves the quality and design of the walking pedestrian environment, encourages permeability and people movement by foot and cycle and supports greater human interaction. Improves sense of place due to an increase in pedestrians on routes. It also improves the quality of streets and public spaces. Significant benefit, potentially for a large number of areas across the GDA.
Respect and Sustain the Natural Environment	1	Measure will encourage an increase in walking and public transport use and a reduction in car use for leisure and utilitarian journeys, particularly for shorter journeys. Small benefit across the GDA.
Reduce Personal Stress	2	Measure promotes healthier forms of travel and use of public space and makes it easier to use alternatives. Greater use of pedestrian routes and public transport will improve travel safety for all users due to a higher people presence. Moderate benefit for a small number of people across the GDA.







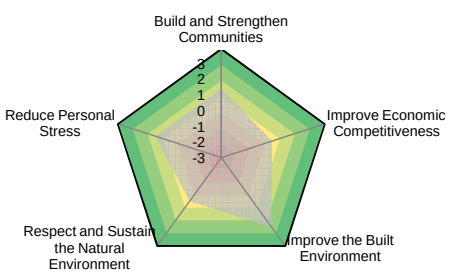
Measure Name:	Improve and maintain Streetscape
Measure Category:	Streetscape
Potential Delivery Agents:	Local Authorities, Operators
How would we measure a successful transport outcome?	Reduced claims for accidents or damage sustained.
Cost band	Low cost

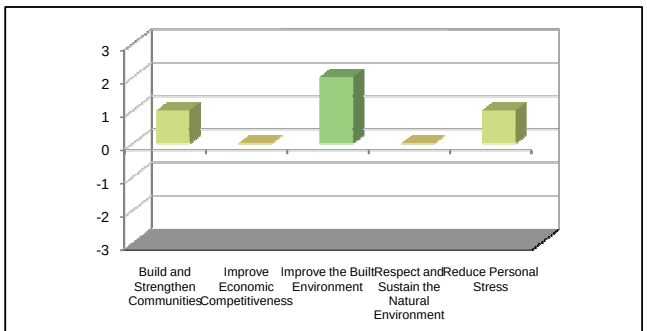
Stage 1a	**Appraisal**	**Notes**
Political		May require revised guidance on traffic and parking signage.
Technological		
Legal		

Measure Description & Supporting Information:

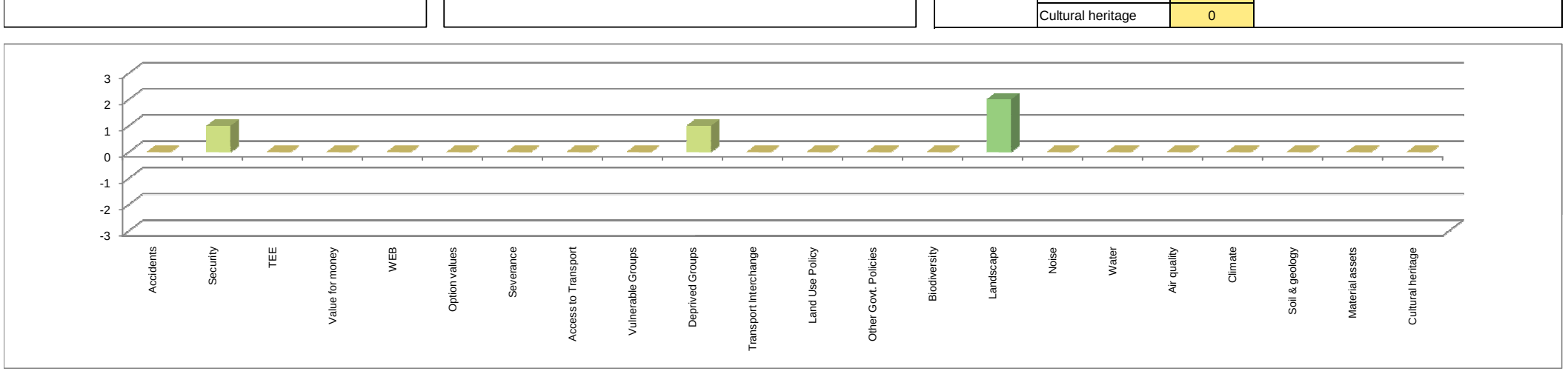
Focussing on pedestrian priority areas, footpaths, cycle facilities on-carriageway (including potholes and grids) and signals. Improve streetscape through removal of unnecessary street clutter (i.e. signage, pole clutter and abandoned bikes, etc.)

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Measure could improve access for disadvantaged groups, including physical access for mobility impaired people.
Improve Economic Competitiveness	0	Not likely to impact on this.
Improve the Built Environment	2	Measure will improve and maintain environment for people movement and improve the quality of street and public spaces. Removal of unsightly visual obstructions.
Respect and Sustain the Natural Environment	0	Minimal impacts on the natural environment are anticipated.
Reduce Personal Stress	1	Better quality paving and improvements to public spaces could encourage people to walk and cycle more. Measure will help to improve travel information (i.e. removal of confusing / out of date signage) and improve safety (e.g. abandoned bikes).





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	Unlikely to have a significant impact upon accidents.
	Security	1	Measure will incorporate improvements to the public realm and on-street walking and cycling conditions. Very small benefits to personal safety and security through removal of abandoned bikes, etc.
Economy	TEE	0	Not likely to impact on generalised journey time.
	Value for money	0	
	WEB	0	Improvements to the public realm could result in increased shop / business vitality; however not considered to be significant.
Accessibility	Option values	0	Measure will be improving existing facilities which could open up alternative options to travel, though this is likely to be for a very small number of the population.
	Severance	0	Measure is likely to result in a very small / small reduction in severance for pedestrians and cyclists.
	Access to Transport	0	Removal of confusing / out of date signage could make it easier to access / reach certain destinations. Very small impact, large number of people.
Social Inclusion	Vulnerable Groups	0	It is likely that the measure will potentially impact on a small number of vulnerable groups and that they will experience a modest benefit.
	Deprived Groups	1	The enhanced maintenance, e.g. of cycle paths, would offer a small benefit to non car owners.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	0	Does not directly support nor contradict any national land-use policy directives.
	Other Govt. Policies	0	Measure neither supports nor contradicts policies.
Environment	Biodiversity	0	Improvements and maintenance of streetscapes would potentially result in a moderate positive impact on landscape.
	Landscape	2	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	



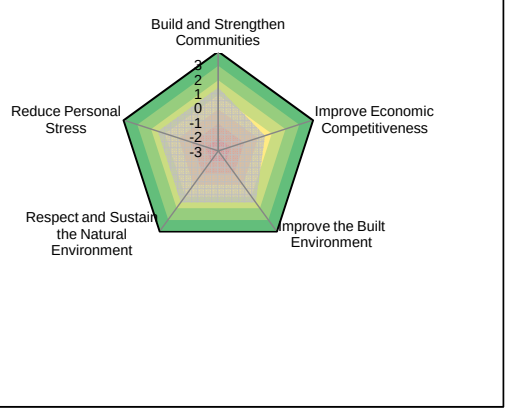
Measure Name:	Improve cycle network
Measure Category:	Cycling strategy
Potential Delivery Agents:	Local Authorities NRA
How would we measure a successful transport outcome?	Evidence of significant modal shift towards cycling. Use of facilities.
Cost band	Low cost

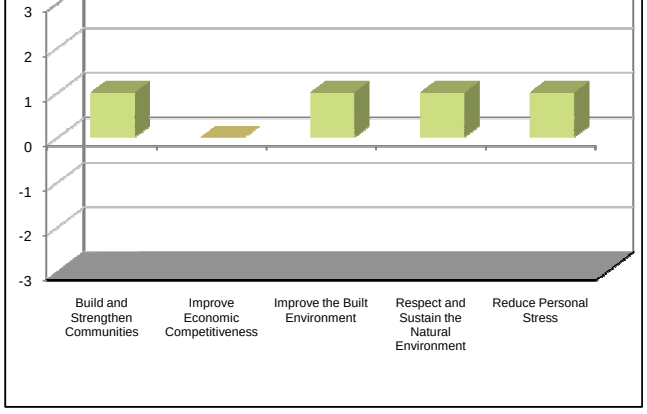
Measure Description & Supporting Information:
Extension to cycle network - provision of additional cycle lanes on and off road, to cover both commuting and leisure. Cycle bypasses and contra flows. Cycle priority measures at junctions and crossings. Enforce cycle lanes, reductions in traffic speeds or volumes where cycling potential exists. Routes to encompass leisure/tourist routes, including segregated lanes and off-road routes. Shared pedestrian/cycle facilities. Innovative design. Link to 'Transport and Tourism' category too.

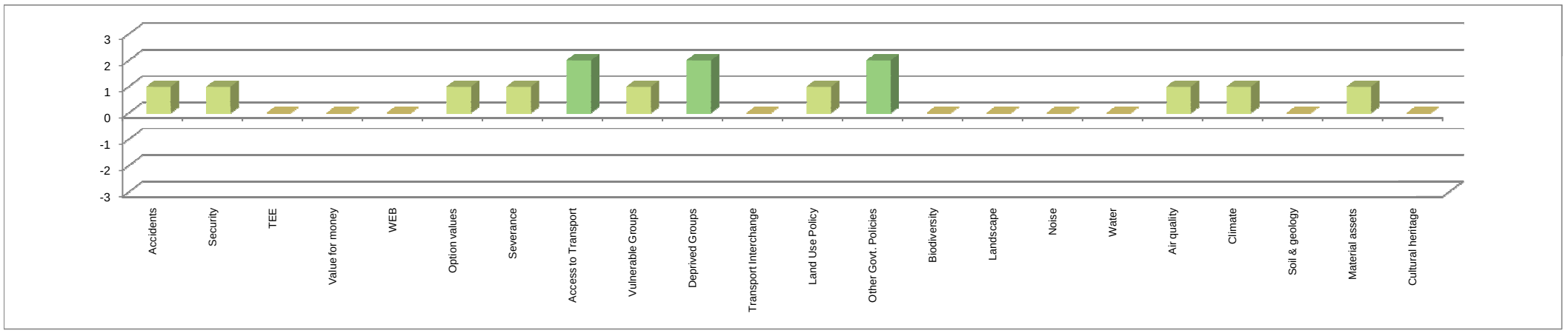
Stage 1a	**Appraisal**	**Notes**
Political		Would require increased joint working between DTO and Local Authorities.
Technological		
Legal		

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Measure could improve access to education, healthcare, shops, urban centres and employment. Particular benefit for disadvantaged people i.e. non-car owners. Improves access to and from other local and regional communities. Benefits small numbers of people (i.e. cyclists).
Improve Economic Competitiveness	0	Possible knock-on negative effects on other road users e.g. freight and commercial users; such as reduced capacity and traffic speeds. Impact on other road users not considered significant enough to warrant negative score.
Improve the Built Environment	1	Measure would encourage permeability and people movement through cycling. Would improve quality of streets in terms of cycling through innovative design features. Small benefit to a small number of people.
Respect and Sustain the Natural Environment	1	Modal shift towards cycling may occur. Would reduce emissions, improve local air quality and reduce noise and vibration associated with transport. Small benefit affecting a limited number of people/areas.
Reduce Personal Stress	1	Measure could encourage people to cycle more often and for longer journeys, including for leisure. Reducing traffic speeds and / or volumes and providing segregated facilities would help to improve safety and reduce potential accidents.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Reducing traffic speeds and / or volumes and providing segregated facilities could help to reduce serious accident levels. Would only affect a limited number of people.
	Security	1	Measure could improve people's safety whilst making a journey by bike. Would only affect a limited number of people.
Economy	TEE	0	Measure would improve journey times and improve journey time reliability for cyclists. Potential to increase journey times for other road users through reduced capacity and increased wait times at junctions. Benefits cancelled out by disbenefits.
	Value for money	0	
	WEB	0	Not likely to impact on WEBs.
Accessibility	Option values	1	Measure facilitates cycling as an option to travel. Number of people affected is limited.
	Severance	1	Measure is likely to reduce severance within a community for non-motorised modes i.e. cycling. Number of people affected is limited.
	Access to Transport	2	Measure would result in small improvement in access to destinations by the wider transport network.
Social Inclusion	Vulnerable Groups	1	Measure is likely to specifically benefit vulnerable groups, i.e. those on low incomes and non-car owners. Unlikely to benefit people with a disability. Limited benefits.
	Deprived Groups	2	This measure is likely to enhance opportunities for socially deprived individuals i.e. those on low income and with poor access to services. However the scale of the benefits are limited.
Integration	Transport Interchange	0	No net impact. (This assumes that 'entry' to the system (for cyclists) is covered in AC3).
	Land Use Policy	1	Measure complements the policy 'improve the environmental performance of the transport sector and invest in sustainability' without contradicting significant numbers of the others.
	Other Govt. Policies	2	Measure complements a number of policies, without contradicting significant numbers of others, i.e. 'social, community and family policies which promote social inclusion and cohesion', 'policies to promote tourism across the GDA, and to maintain and develop heritage' and 'policies that promote improved public and mental health, including reducing obesity'.
Environment	Biodiversity	0	Improving cycle networks would lead to increased levels of cycling and decreased levels of car use, potentially resulting in a minor positive impact on air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	







Measure Name:	Cycle parking facilities
Measure Category:	Cycling strategy
Potential Delivery Agents:	Local Authorities, DTO Operators
How would we measure a successful transport outcome?	Cycle use at destinations where facilities are provided. User safisfaction. Reduced levels of bicycle theft.
Cost band	Very low cost

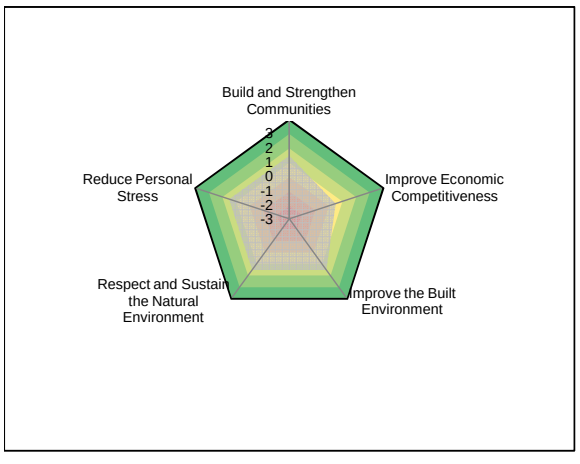
Stage 1a	**Appraisal**	**Notes**
Political		
Technological		
Legal		

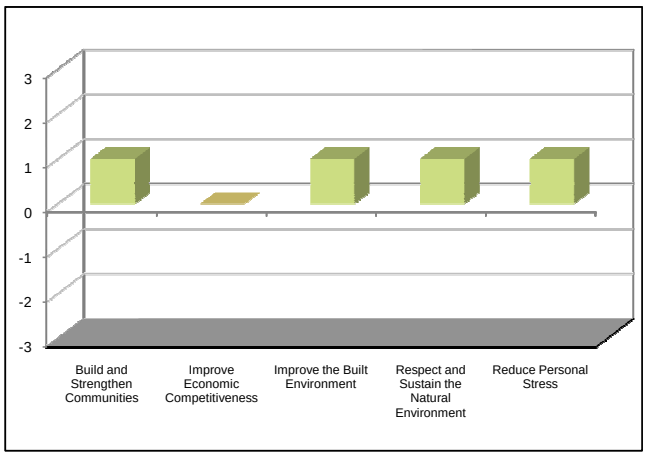
Measure Description & Supporting Information:

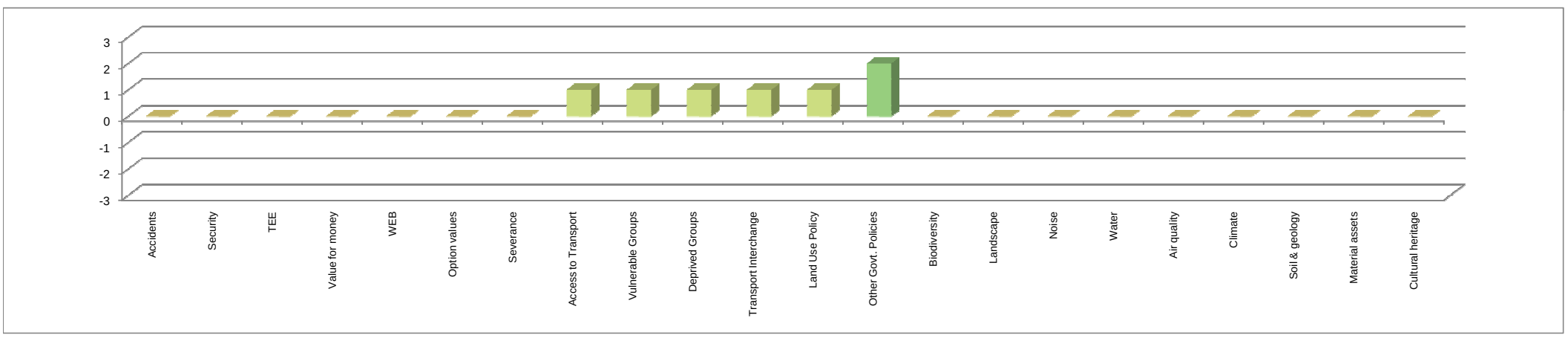
Comprehensive approach to cycle parking including secure storage facilities, provision at interchanges, on street provision and provision at new developments. Cycle parking should be conditional of new developments receiving planning permission, supporting facilities such as showers must also be considered.
Need to consider who would fund this, would it be developers/station operators or Local Authorities. Alternatively would the DTO offer funding (like Transport for London has done) for cycle parking?
These facilities should ideally be linked to, and part of, travel plans.
Measure to incorporate innovative design and use of high quality materials.
The locations of this parking should be shown on any maps produced in CY7 'cycle information, promotion and training'.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	1	Through increasing secure provision, people's access can be improved. Measure will particularly benefit disadvantaged people (i.e. non-car owners). Number of people affected (i.e. cyclists) would be small.
Improve Economic Competitiveness	0	This measure would encourage some modal shift; however not significant enough to affect business travel.
Improve the Built Environment	1	Measure could encourage permeability and people movement through cycling. Improvements through innovative design of cycle parking and use of high quality materials. Small benefit affecting a small number of people/targeted areas.
Respect and Sustain the Natural Environment	1	Small modal shift towards cycling may occur. Would reduce emissions, improve local air quality and reduce noise and vibration associated with transport. Small benefit affecting a limited number of people/specific locations.
Reduce Personal Stress	1	Measure will help to promote healthier forms of travel. Journey time reliability improvements resulting from known secure cycle parking. Small scale benefits affecting a limited number of people.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	This measure will not affect this sub-objective.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	0	Potentially reduced congestion and crowding on other modes; however, very little impact.
	Value for money	0	
	WEB	0	Not likely to impact on WEBs.
Accessibility	Option values	0	Travel options increased, i.e. people who usually drive would be able to cycle if their car was unavailable. Very small improvement affecting a small number of people.
	Severance	0	Unlikely to affect this sub-objective.
	Access to Transport	1	Small enhancements in access to destinations by the wider transport network.
Social Inclusion	Vulnerable Groups	1	Measure would benefit vulnerable groups in particular those on low incomes and non-car owners. Unlikely to benefit people with a disability and the scale of the benefits are small.
	Deprived Groups	1	Measure would enhance benefits for socially deprived individuals, i.e. improves access to employment and services. Benefits are small.
Integration	Transport Interchange	1	Measure would improve interchange between modes of transport, e.g. cycle parking at stations. Affects small number of people.
	Land Use Policy	1	Measure complements two policies, i.e. 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability' without contradicting significant numbers of the others.
	Other Govt. Policies	2	Measure complements two policies, without contradicting significant numbers of others, i.e. 'social, community and family policies which promote social inclusion and cohesion' and 'policies that promote improved public and mental health, including reducing obesity'.
Environment	Biodiversity	0	Providing cycle parking facilities would result in no notable change but may lead to some negative impacts on landscape due to the potential of increased levels of bicycle abandonment.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	







Measure Name:	Cycle rental schemes
Measure Category:	Cycling strategy
Potential Delivery Agents:	Local Authorities, DTO Operators
How would we measure a successful transport outcome?	Cycle use at destinations where facilities are provided. Usage of hire bikes and sites User satisfaction with hire scheme
Cost band	Low cost

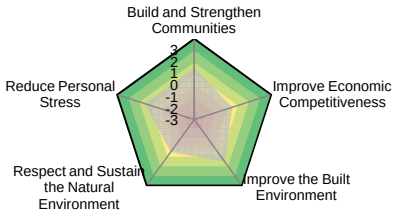
Measure Description & Supporting Information:

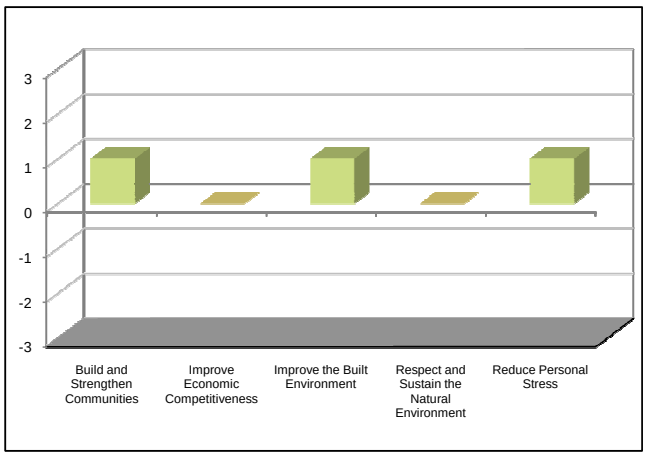
Introduction of more extensive free bike/cycle rental scheme in Dublin city centre.

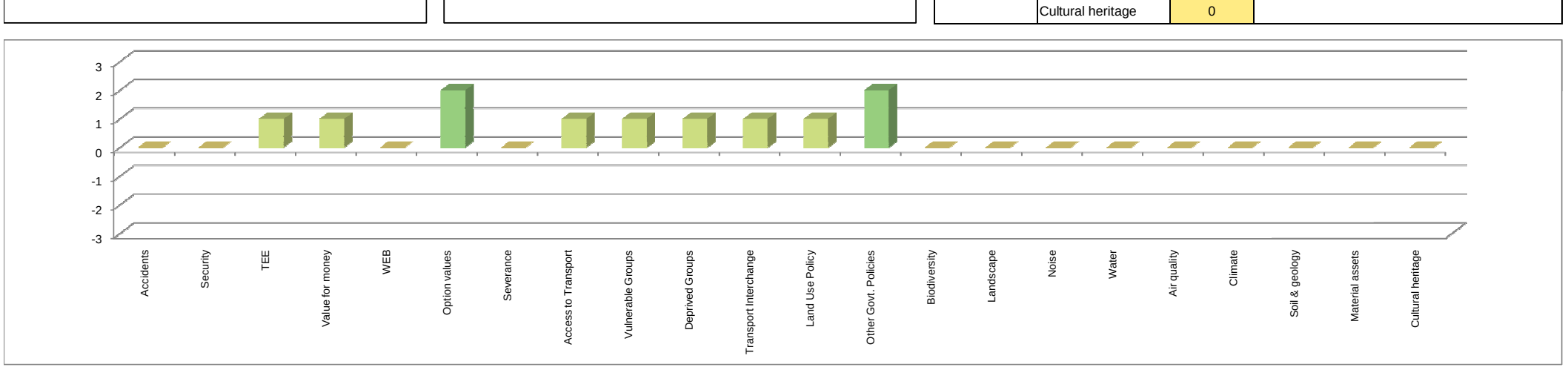
Stage 1a	Appraisal	Notes
Political		
Technological		
Legal		

Stage 1b	Score	Notes
Build and Strengthen Communities	1	Will improve access to key facilities, particularly for Dublin residents. Particularly beneficial for those on low incomes. Moderate benefit for a small proportion of the population.
Improve Economic Competitiveness	0	Will encourage modal shift. Unlikely to have any impact on business travel and economic competitiveness.
Improve the Built Environment	1	Encourages permeability and people movement. Supports greater human interaction and improves sense of place i.e. more cyclists, cycling becomes more attractive and more 'accepted' by other road users. Small benefit to small proportion of the population. Some urban realm issues from bike parks.
Respect and Sustain the Natural Environment	0	Would assist in reducing the number of short journeys made by lone drivers. May initiate reduction in congestion. Positive impact on air quality and greenhouse gases. Only City Centre based so not significant to warrant more than neutral score.
Reduce Personal Stress	1	Will encourage people to cycle more often and possibly for leisure in addition to accessing key facilities. Small benefit to small proportion of the population.

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	May assist in reducing some single occupancy car congestion in City Centre. Greater cyclist presence may reduce accidents involving cyclists. Not likely to be significant to warrant more than neutral.
	Security	0	May assist in improving safety for cyclists due to increased driver awareness. Cannot be guaranteed and so neutral score given.
Economy	TEE	1	Would reduce journey costs if cycling provides alternative that would otherwise have costs (e.g. bus / car). Small benefit across the City Centre.
	Value for money	1	
	WEB	0	Not likely to impact on WEBs.
Accessibility	Option values	2	Provides new travel option, particularly for non car owners. Potentially moderate benefit to a small proportion of the population.
	Severance	0	Not likely to be any net change to severance.
	Access to Transport	1	Will improve access to destinations by the wider transport network, e.g. cycle to station, where previously too far to walk. Small impact on small proportion of the population.
Social Inclusion	Vulnerable Groups	1	Vulnerable groups such as non car owners may benefit from this measure, i.e. ability to access previously inaccessible destinations. Unlikely to benefit people with a disability and the scale of the benefits are small.
	Deprived Groups	1	Deprived groups may benefit from this measure, i.e. ability to access previously inaccessible destinations. Scale of the benefits is limited.
Integration	Transport Interchange	1	Will improve access between modes, e.g. cycle to rail station where previously too far to walk.
	Land Use Policy	1	Measure complements two policies, i.e. 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability' without contradicting significant numbers of the others.
	Other Govt. Policies	2	Measure complements two policies, without contradicting significant numbers of others, i.e. 'social, community and family policies which promote social inclusion and cohesion' and 'policies that promote improved public and mental health, including reducing obesity'.
Environment	Biodiversity	0	Cycle rental schemes would result in no notable changes.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	







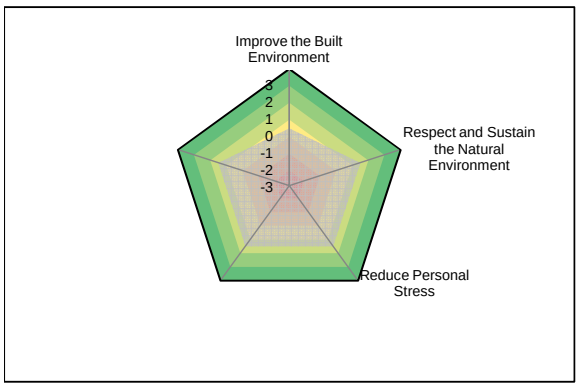
Measure Name:	Transfer of freight to rail (incl. narrow gauge), waterways, pipelines and coastal shipping
Measure Category:	Freight Strategy
Potential Delivery Agents:	Local Authorities, DTO? Freight operators Rail operators
How would we measure a successful transport outcome?	Increase in movement of goods by rail / light rail, water and pipeline - tonnes per kilometre, reduction of road freight movements.
Cost band	Medium Cost

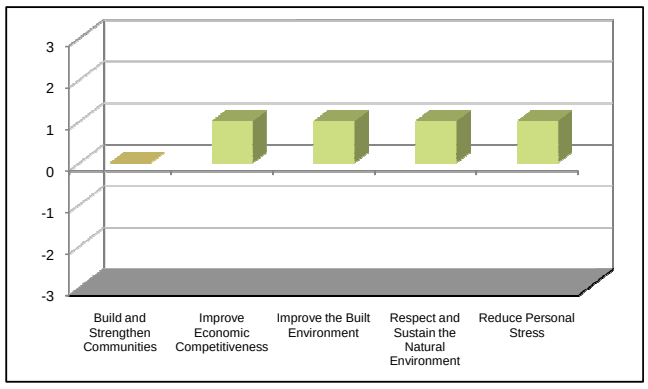
Stage 1a	Appraisal	Notes
Political		Would require increased joint working between DTO, Local Authorities and freight operators.
Technological		Restrictive loading gauges on Ireland's railways prevent carrying of road freight vehicles ('piggyback'). Technological developments may ease these difficulties in the future.
Legal		

Measure Description & Supporting Information:

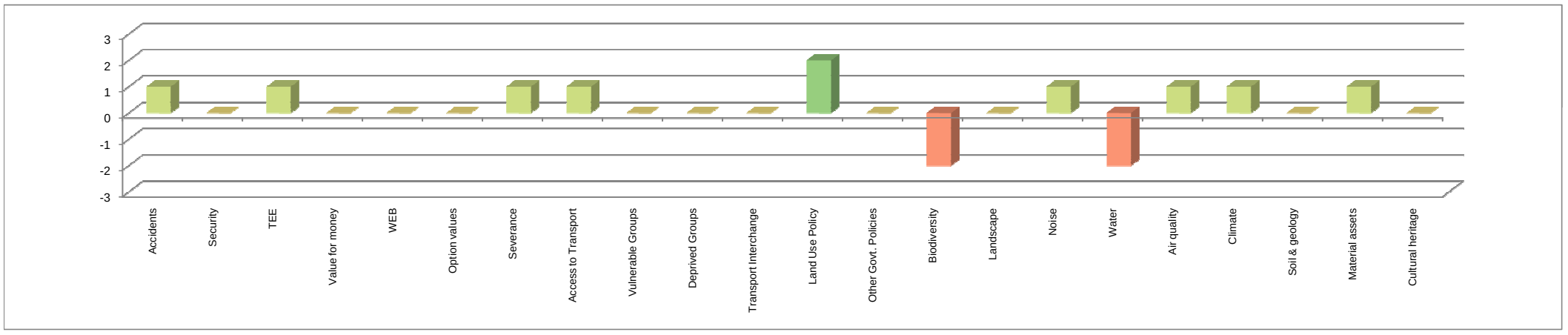
Increase in movement of goods by rail / light rail, coastal shipping and pipeline. Reduction of road freight movements.
Increase facilities for freight trains on main lines - train paths, rolling stock and subsidised provision of private sidings.
Use of freight trams on Luas lines for city centre deliveries Use of freight barges to transport freight.
Assumed that this measure is successful in transferring some freight from road to rail/water/pipeline.
For this appraisal it is assumed that, generally, rail and water are under-used and therefore that existing available capacity will be used and that road is over-used.

Stage 1b	Score	Notes
Build and Strengthen Communities	0	The measure will not affect this objective.
Improve Economic Competitiveness	1	Measure could increase freight capacity and reduce congestion on roads for commercial users. No off-setting additional costs associated with modal transfer assumed.
Improve the Built Environment	1	Will minimise visual and physical intrusion of transport vehicles within the urban environment.
Respect and Sustain the Natural Environment	1	Will improve air quality, reduce emissions, and improve efficient use of natural resources. However if a pipeline is constructed this will have a negative environmental impact. However, overall effect is positive.
Reduce Personal Stress	1	Limited positive impact on encouraging people to walk and cycle more and improve safety / reduce accidents.





Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	1	Measure would result in highway conditions that, generally, reduce the level of accidents across all modes, in particular vulnerable road users.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	1	Small positive impact on reducing journey times for other road users. Increase in rail/light rail/pipeline/water trips will utilise existing available capacity so no affect for existing users.
	Value for money	0	
	WEB	0	Not likely to impact on WEBs.
Accessibility	Option values	0	Unlikely to have any effect on providing an alternative option to travel. Would provide alternative options for freight forwarders, though unlikely to be of significant use to a potential ad-hoc user.
	Severance	1	Walking and cycling will become more attractive. Pedestrian movement improved and severance reduced (i.e. routes easier to cross) through reduced road freight.
	Access to Transport	1	Should enhance rail and water freight accessibility and potentially; if mode shift occurs; road accessibility. Benefit is limited given geographic constraints.
Social Inclusion	Vulnerable Groups	0	Little or no change in benefits for vulnerable individuals.
	Deprived Groups	0	Little or no change in benefits for people from deprived groups.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	Measure complements two policies, i.e. 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability' without contradicting significant numbers of the others.
	Other Govt. Policies	0	Overall the measure neither supports nor contradicts any of the other key government policies.
Environment	Biodiversity	-2	Transfer of freight to rail/light rail and waterways would reduce the quantity of freight on roads and would involve construction and landtake, potentially resulting in moderate negative impacts on biodiversity and water, minor positive impacts on noise and air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand. The impacts on water and biodiversity are determined to be moderate due to the potential of impacts on EU protected waterways within the GDA.
	Landscape	0	
	Noise	1	
	Water	-2	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	



Measure Name:	Reallocate or provide new HOV or freight lanes; Improve strategic network access to ports and airports; Freight quality partnership measures.
Measure Category:	Freight strategy
Potential Delivery Agents:	NRA, Local/Regional/National government. Road Freight Association (RFA - if this exists / equivalent). Local Authorities and Freight Operators. Freight generators such as supermarkets.
How would we measure a successful transport outcome?	Reduced freight flows on inappropriate routes and increased flows or strategic network. Reduced journey times and delays for freight and HOVs. Fewer single occupancy cars on the network
Cost band	Medium cost

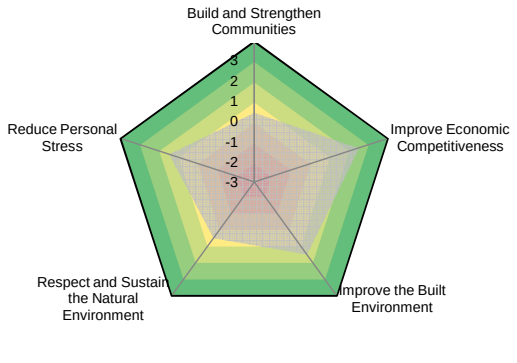
Stage 1a	Appraisal	Notes
Political		Would require increased joint working between DTO, NRA, Local Authorities, freight operators and freight generators.
Technological		
Legal		May require road traffic legislation.

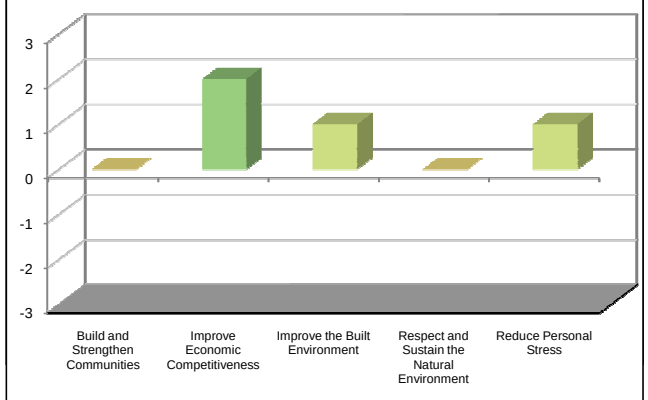
Measure Description & Supporting Information:

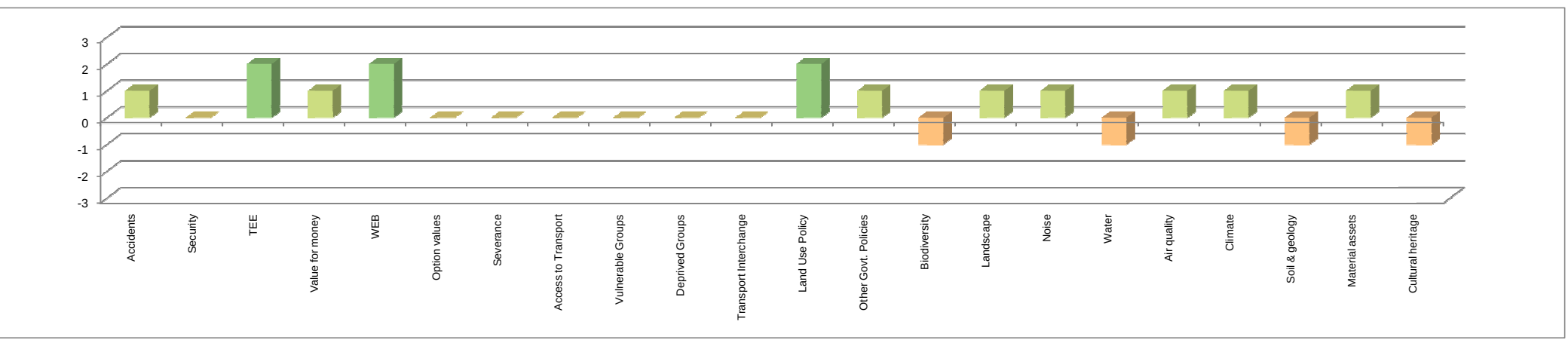
Designate a strategic freight network linking sources of materials, manufacturing and warehousing locations with ports, airports and inter-regional/international motorways. Improve lorry access and journey times to and from these routes and at ports/airports. Provide at-port consolidation centres and truck stops along routes.
Reserve lane capacity or consider localised widening to provide dedicated lanes. Agree best routes, maps etc. to reduce delays to lorry movements around the GDA and provide advance and live journey time information.

Stage 1b	Score	Notes
Build and Strengthen Communities	0	Measure will not affect this objective.
Improve Economic Competitiveness	2	The measure will improve journey time reliability for the movement of goods and reduce journey times for the movement of goods. Access to GDA ports and Dublin airport will also be improved. The measure will also provide for efficient goods distribution.
Improve the Built Environment	1	Through increasing the use of freight and HOV lanes and the strategic network HGVs can be diverted away from populated areas. This will minimise the physical intrusion of this motor traffic.
Respect and Sustain the Natural Environment	0	Increasing the flow of freight on the strategic network or freight lanes would increase emissions. However, recuing congestion, encouraging HOV use and FQPs would aim to mitigate this effect.
Reduce Personal Stress	1	Through encouraging HGVs to use freight lanes or the strategic network personal travel times and journey time reliability can be improved. In addition through reducing HGVs on inappropriate routes travel safety for other users in the targeted areas can be increased.

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	1	Small positive impact on reducing accident levels across a range of modes. Decreasing freight movements in urban areas and reducing conflict with other road users, specifically vulnerable users (walkers and cyclists).
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	2	Measure would reduce 'Generalised Cost' of travel. Would help to reduce journey times, vehicle operating costs (decreased fuel costs) and improve journey time reliability for freight movements and personal travel. All road users are likely to benefit from this measure.
	Value for money	1	
	WEB	2	Measure would result in significant improvement in access to international markets and suppliers. Could impact upon GDP at a national level.
Accessibility	Option values	0	Unlikely to have any effect on providing an alternative option to travel.
	Severance	0	New strategic links could create severance problems to nearby communities. However this may also be mitigated by reduced freight flows on local roads.
	Access to Transport	0	No significant change expected in net transport accessibility.
Social Inclusion	Vulnerable Groups	0	Little or no change in benefits for vulnerable individuals.
	Deprived Groups	0	Little or no change in benefits for people from deprived groups.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	Measure complements three policies, i.e. 'enhance the role of Dublin as an international gateway with a 'world city' economic role', 'improve the national role of Dublin Airport and Dublin Port, and as local transport hubs' and 'address congestion in major urban areas' without contradicting significant numbers of the others.
	Other Govt. Policies	1	Measure complements one key policy area 'policies that promote enterprise, trade and employment' without contradicting significant numbers of others.
Environment	Biodiversity	-1	Minor land impacts from construction of distribution centres.
	Landscape	1	Reduction in large freight traffic from urban centres will be positive. There will be minor negative impacts from the distribution centres, but the overall score is positive.
	Noise	1	Diversion of freight traffic away from the general road network and reductions in general road congestion will result in noise improvements.
	Water	-1	Minor land impacts from construction of distribution centres.
	Air quality	1	Diversion of freight traffic away from the general road network and reductions in general road congestion will result in air quality improvements.
	Climate	1	Diversion of freight traffic away from the general road network and reductions in general road congestion will result in climate improvements.
	Soil & geology	-1	Minor land impacts from construction of distribution centres.
	Material assets	1	Diversion of freight traffic away from the general road network and reductions in general road congestion will result in fossil fuel improvements.
	Cultural heritage	-1	Minor land impacts from construction of distribution centres.







Measure Name:	Freight quality partnership working including permit systems, distribution transhipment plus local marshalling facilities
Measure Category:	Freight strategy
Potential Delivery Agents:	Local Authorities and Freight Operators. Freight generators such as supermarkets.
How would we measure a successful transport outcome?	Extent of permit system introduced. Reduced volume of freight vehicles in urban areas (particularly at peak times). Reduced carbon emissions from freight, improved local air quality
Cost band	Low cost

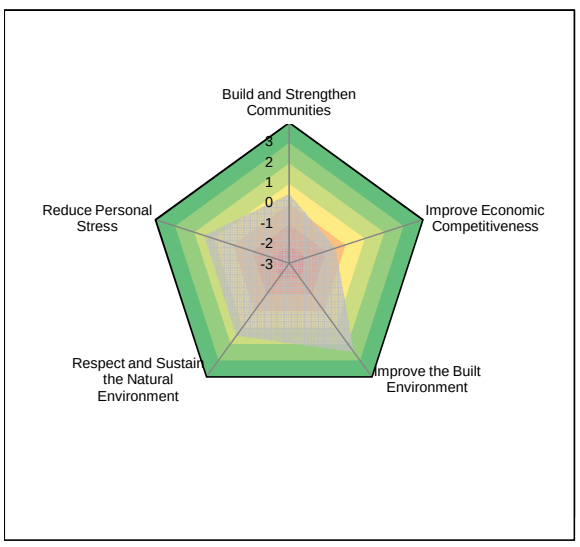
Measure Description & Supporting Information:

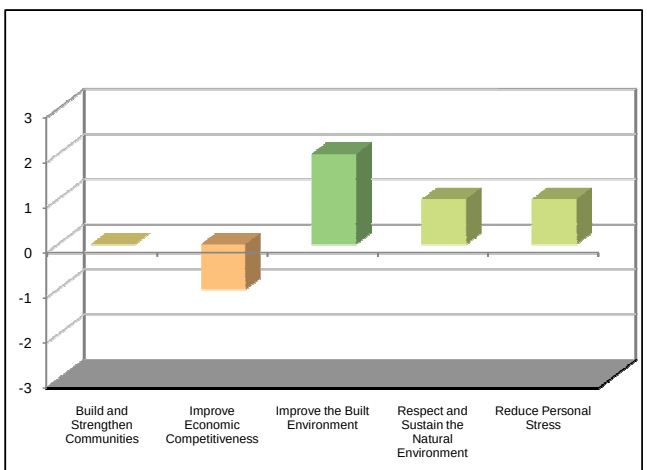
Restrict where and when lorries can enter city and town centres by using permits and enforcement of waiting/loading restrictions. Provide facilities to transfer goods from HGVs to smaller environmentally-friendly vehicles at edge of towns for onward transfer (potentially including using light rail). Ensure that large out-of-town shopping centres have marshalling facilities and internal distribution networks. Support use of electric vehicles and clean fuels for town servicing and operational users.

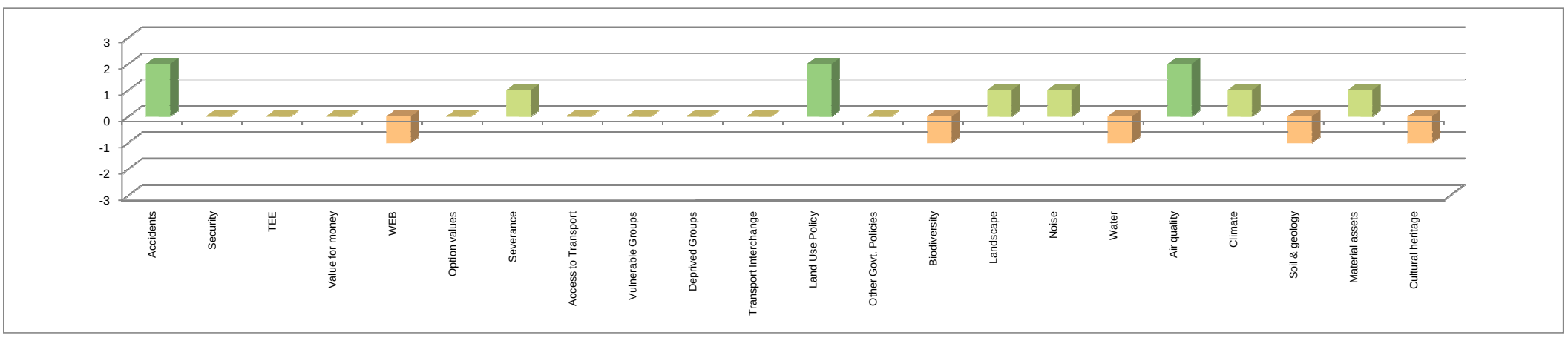
Stage 1a	Appraisal	Notes
Political		Would require increased joint working between Local Authorities and freight operators and freight generators.
Technological		
Legal		Enforcement of permits could require changes in legislation.

Stage 1b	Score	Notes
Build and Strengthen Communities	0	The measure will not significantly affect this objective.
Improve Economic Competitiveness	-1	Removal of HGVs on roads at certain times of day could reduce congestion and therefore improve reliability and journey times for business travel; however the movement of goods, servicing and access will be restricted in certain locations and at certain times of the day. Overall this could be a slight negative.
Improve the Built Environment	2	Fewer freight movements and use of smaller vehicles, in urban areas should encourage people movement. Visual and physical intrusion of transport vehicles within urban environment minimised. Benefits likely to be limited to parts of GDA (town centres and retail centres).
Respect and Sustain the Natural Environment	1	Measure would reduce number of trips that large HGVs make and improve efficiency in freight delivery. Reduced emissions and improved air quality. Noise and vibration could also be reduced. Benefits limited number of people / areas.
Reduce Personal Stress	1	Limited positive impact on encouraging people to walk and cycle more and improves safety / reduce accidents through removal of freight trips and larger freight vehicles.

Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	2	Significantly decreases potential conflicts with other users in urban areas; in particular vulnerable road users (e.g. pedestrians and cyclists).
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	0	Potentially slight disbenefit for HGVs through diminished and restricted access, but improved access for other road users through reduced congestion. Assumed that the overall impact is neutral.
	Value for money	0	
	WEB	-1	Potentially small disbenefit to businesses affected by the restricted access.
Accessibility	Option values	0	Unlikely to have any effect on providing an alternative option to travel.
	Severance	1	Walking and cycling will become more attractive in targeted town centres and urban areas, particularly at peak times. Pedestrian movements improved and severance reduced (i.e. routes easier to cross).
	Access to Transport	0	There would be no impact on access to destinations by the wider transport network.
Social Inclusion	Vulnerable Groups	0	Little or no change in benefits for vulnerable individuals.
	Deprived Groups	0	Little or no change in benefits for people from deprived social groups.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	Measure complements two policies, i.e. 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability' without contradicting significant numbers of the others.
	Other Govt. Policies	0	Measure neither significantly supports nor contradicts any of the other key government policies.
Environment	Biodiversity	-1	Minor negative land impacts are assumed.
	Landscape	1	Reductions in the presence of freight vehicles in urban centres will be a localised and positive impact.
	Noise	1	No land impacts are assumed.
	Water	-1	Minor negative land impacts are assumed.
	Air quality	2	Reductions in the presence of freight vehicles in urban centres will be a localised a positive impact. Use of eco-friendly replacement distribution vehicles will improve urban air quality.
	Climate	1	Reductions in the presence of freight vehicles in urban centres will have a positive effect on climate.
	Soil & geology	-1	Minor negative land impacts are assumed.
	Material assets	1	Reductions in the presence of freight vehicles in urban centres and the use of eco-friendly vehicles will both have a positive effect on fossil fuel consumption.
	Cultural heritage	-1	Minor negative land impacts are assumed.







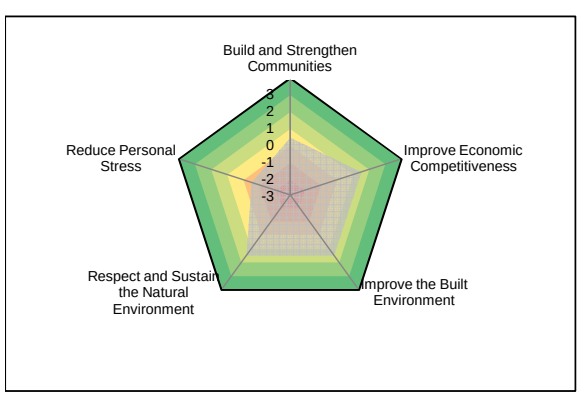
Measure Name:	Commuter focused provision
Measure Category:	Parking Strategy
Potential Delivery Agents:	Local Authorities
How would we measure a successful transport outcome?	Reduction in car trips to congested city centre locations. Reduction in congestion.
Cost band	Very low cost

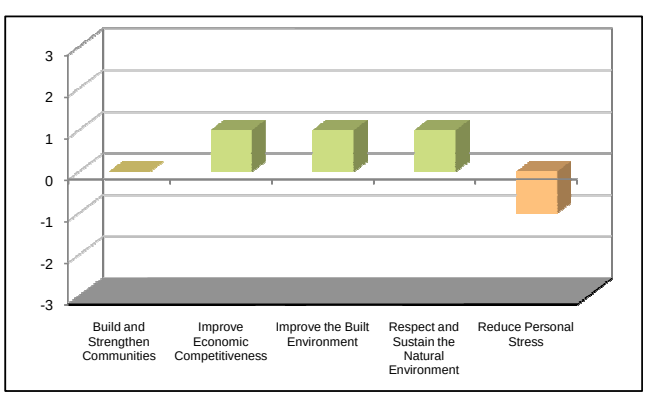
Stage 1a	Appraisal	Notes
Political		Would require increased joint working between DTO and Local Authorities.
Technological		
Legal		New legislative change required.

Measure Description & Supporting Information:

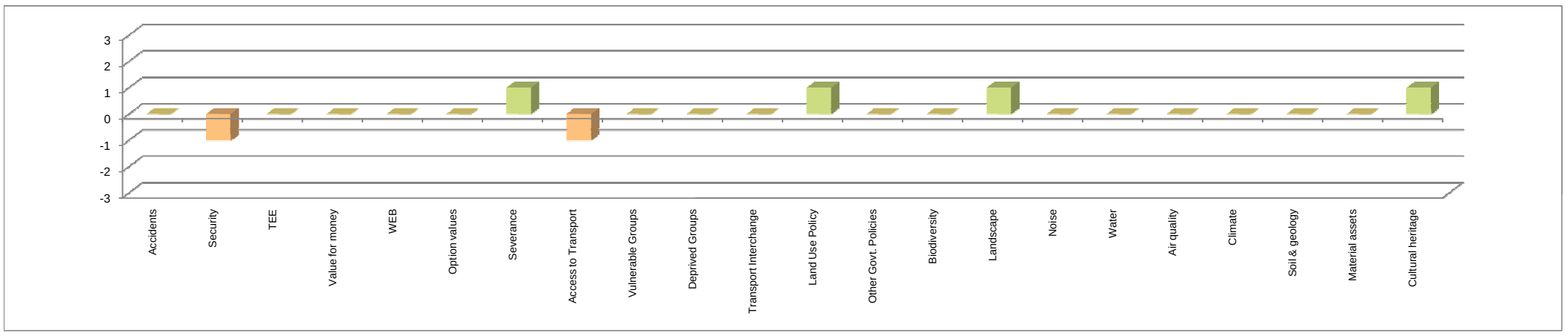
Focus off-street long stay parking at key locations on strategic routes into main centres, as alternative to at-workplace parking .
For the purpose of this appraisal it is assumed that adequate parking stock can be sourced at these key locations and would be available to support this strategy.
It is also assumed that a reduction in car trips into urban centres will result from the implementation of this measure.
It is also assumed that these commuters will walk from their cars to their workplaces.
Measure is not dealing with demand or the number of car trips just where these vehicles park.

Stage 1b	Score	Notes
Build and Strengthen Communities	0	Measure may reduce traffic in congested areas and improve access to urban centres etc., though parking locations may experience decrease in access through increased traffic. Neutral overall.
Improve Economic Competitiveness	1	Central area congestion should be reduced. Small knock -on effect in reducing congestion and improving journey times for other business/commercial/freight road users.
Improve the Built Environment	1	May encourage permeability and people movement in the town/urban centre. Helps reduce visual and physical intrusion of vehicles in areas. May shift cars from one area to another with associated disbenefits.
Respect and Sustain the Natural Environment	1	Through reducing journey length and encouraging walking as a final mode possible small positive benefit.
Reduce Personal Stress	-1	May increase employee's journey times (i.e. parking further away). Perceptions of personal security may decrease (i.e. parking away from workplace).





Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	This measure is unlikely to affect this sub-objective.
	Security	-1	Personal security slightly decreased due to parking off-site.
Economy	TEE	0	May reduce congestion in urban areas and improve journey times / reliability for other users. Journey times for employees likely to increase. Neutral overall.
	Value for money	0	
	WEB	0	Not likely to impact on WEBs.
Accessibility	Option values	0	Unlikely to provide an alternative option to travel. (Unless there is currently a shortage of parking capacity.)
	Severance	1	Measure may reduce traffic in congested areas and reduce severance for non-motorised modes. Parking locations may experience increased severance. Small benefit due to small net reduction in vehicle mileage.
	Access to Transport	-1	Additional walk time from parking locations is likely to adversely affect overall journey times.
Social Inclusion	Vulnerable Groups	0	Little or no change in benefits for vulnerable individuals.
	Deprived Groups	0	Little or no change in benefits for people from deprived groups.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	1	Measure supports the policy to 'address congestion in major urban areas'.
	Other Govt. Policies	0	Overall the measure neither supports nor contradicts any of the other key government policies.
Environment	Biodiversity	0	Commuter focused provision would lead to a reduction of car trips within core urban centres and reduce the demand for car parking, potentially resulting in minor positive impacts on landscape and cultural heritage.
	Landscape	1	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	1	

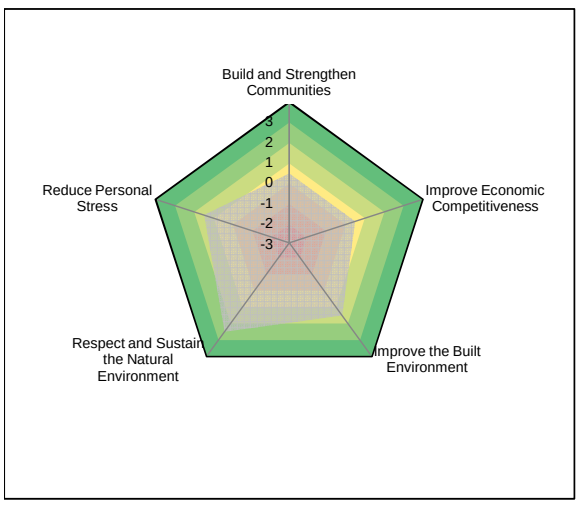


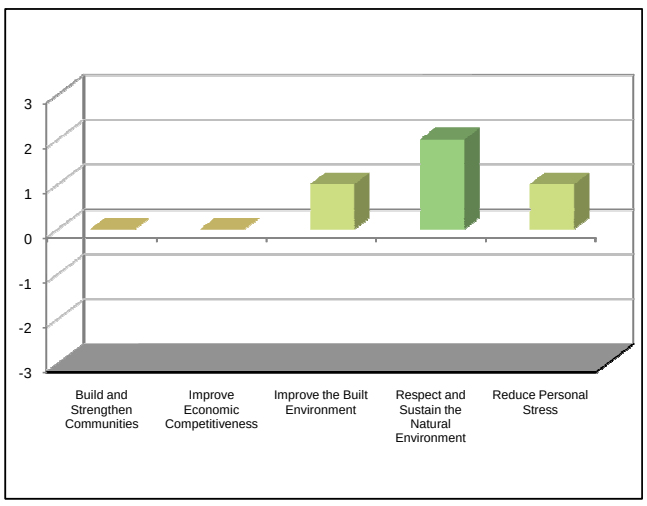
Measure Name:	Control parking for retail, other short stay uses
Measure Category:	Parking strategy
Potential Delivery Agents:	Local Authorities
How would we measure a successful transport outcome?	Decrease in car trips to retail centres. Modal shift to more sustainable modes
Cost band	Small Saving

Stage 1a	**Appraisal**	**Notes**
Political		Would require increased joint working between DTO, Local Authorities and retailers.
Technological		
Legal		New legislation may be required to implement parking levy.

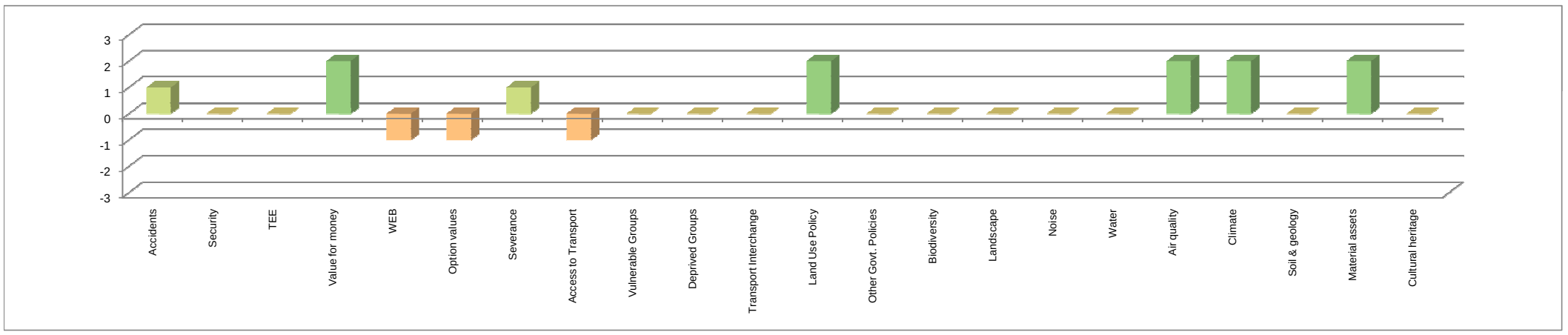
Measure Description & Supporting Information:
On street charges, with a retail parking levy or similar for off-street parking (e.g. in shopping centre car parks) to discourage unnecessary car based shopping. Balanced parking tariffs for all parking stock. Assumes that on-street charges do not currently exist or are too low to discourage unnecessary car trips. Also assumed that charges at shopping centres do not currently exist. Would affect a large number of car parking spaces.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	0	Measure could result in decreased level of access to shops and retail centres for road users (i.e. deterred through charges). Access for other users e.g. pedestrians/cyclists, improved. Possible shift to public transport and therefore reduction in congestion. Neutral overall.
Improve Economic Competitiveness	0	May impact on retail though does not significantly affect any sub-objectives of this objective.
Improve the Built Environment	1	Permeability and people movement (i.e. walking and cycling) could be encouraged. Potential to reduce visual and physical intrusion of transport vehicles in urban environment.
Respect and Sustain the Natural Environment	2	Potentially significant reduction in car trips. Reduced emissions, noise and vibration and improved air quality.
Reduce Personal Stress	1	May encourage more frequent walking and cycling. Potential to reduce conflicts with other road users and therefore accidents.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Could reduce conflicts with other road users; particularly pedestrians and cyclists; and therefore accidents.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	0	Possible reductions in congestion and improvements to journey times reduce / reliability. Charging would have negative effect on 'Generalised Cost' of travel, depending on scale. Neutral or marginally negative overall.
	Value for money	2	
	WEB	-1	Businesses access to customers may decrease. Businesses may relocate to towns/areas without charges. Impact can be mitigated, though measure by itself could have this effect.
Accessibility	Option values	-1	Higher cost of parking may reduce travel options. Reduced congestion will benefit some.
	Severance	1	Roads in urban areas could become quieter and therefore easier / safer to cross. Slightly reduces severance.
	Access to Transport	-1	Reduces car accessibility though some benefits for car and bus users may be accrued from reduced congestion.
Social Inclusion	Vulnerable Groups	0	May negatively affect this group (i.e. increases costs for travel) particularly those on low incomes. May also benefit non-car owners (i.e. walk / cycle more easily). Neutral overall.
	Deprived Groups	0	May negatively affect this group (i.e. increases costs for travel) charges for travelling particularly those on low incomes. Neutral overall.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	Measure supports two policies, i.e. 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability'.
	Other Govt. Policies	0	This measure complements policies that 'promote improved public and mental health, including reducing obesity' through encouraging modal shift away from the car. However it may contradict 'social, community and family policies which promote social inclusion and cohesion' through increasing the cost of travel. Neutral overall.
Environment	Biodiversity	0	Control of parking for retail and other short stay users would lead to a reduction in of car trips for shopping purposes, potentially resulting in a moderate positive impact on air quality, a moderate reduction of greenhouse gas emissions and a moderate reduction of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	2	
	Climate	2	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	0	



Measure Name:	Park and ride (bus based)
Measure Category:	Parking strategy
Potential Delivery Agents:	Local Authorities Bus Operators
How would we measure a successful transport outcome?	Use of the park and ride. Reduction in congestion on radial roads.
Cost band	Low cost

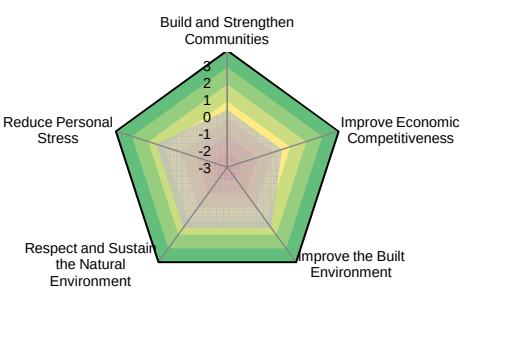
Stage 1a	Appraisal	Notes
Political		Would require increased joint working between DTO, Local Authorities and bus operators.
Technological		
Legal		

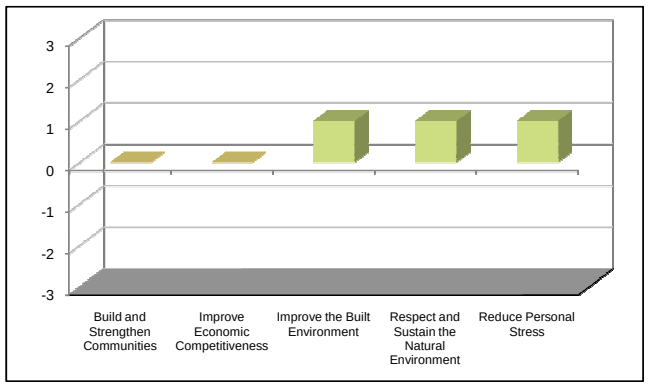
Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Could reduce conflicts with other road users and therefore accidents. Cars replaced with buses which potentially carries a higher risk of serious injury or fatality. Neutral overall.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	2	Measure can increase journey times for business and freight (i.e. reduced road capacity / bus priority). Use of park and ride may reduce congestion and therefore journey times / reliability improved. Possible reductions in vehicle operating costs (e.g. less fuel), but cost for parking. Evidence indicates that well designed schemes in previously congested areas will have a strong positive impact.
	Value for money	2	
	WEB	0	Possible small, positive impact as benefit business travel into congested areas. Potentially negative impact upon freight movement.
Accessibility	Option values	1	Provides an alternative travel option. Primarily aimed at car drivers with sites located to intercept passing traffic rather than serve local catchments. Car still required to benefit from option.
	Severance	1	Reduced traffic flows and congestion should make routes easier to use by cyclists / cross for pedestrians.
	Access to Transport	1	Can provide improved accessibility through reduced generalised cost of travel.
Social Inclusion	Vulnerable Groups	0	Primarily benefits existing car users. Little or no change in benefits for vulnerable individuals.
	Deprived Groups	0	Primarily benefits existing car users. Little or no change in benefits for people from deprived groups.
Integration	Transport Interchange	3	Specifically designed to encourage interchange between modes of transport (i.e. car to bus and vice versa).
	Land Use Policy	2	Measure supports policies to 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability'.
	Other Govt. Policies	0	Overall the measure neither supports nor contradicts any of the other key government policies.
Environment	Biodiversity	-1	Park and ride (bus based would facilitate modal shift but would involve construction and landtake, potentially resulting in a minor negative impact on biodiversity, landscape, water and cultural heritage, a minor positive impact on air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	-1	
	Noise	0	
	Water	-1	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	-1	

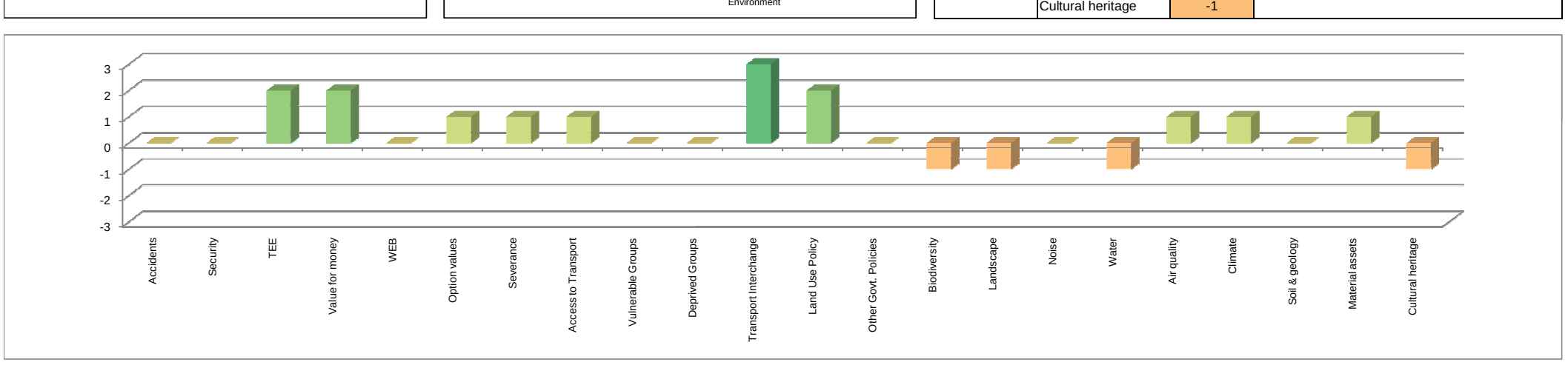
Measure Description & Supporting Information:

Expansion of bus-based park and ride to cover key radial roads, using dedicated bus infrastructure.
Potential to have park and ride as a destination as well as an origin (link to mixed use development?).
This appraisal assumes that the park and ride sites will be conveniently located on radial roads so that the overall distance driven by travellers would decrease.
Assumes that Park and Ride sites will be well lit and have CCTV surveillance.

Stage 1b	Score	Notes
Build and Strengthen Communities	0	The measure will not affect this objective.
Improve Economic Competitiveness	0	Measure can increase journey times for business and freight (i.e. reduced road capacity / bus priority). Use of park and ride may reduce congestion and therefore journey times / reliability improved. Neutral overall.
Improve the Built Environment	1	Permeability and people movement (i.e. walking and cycling) could be encouraged. Potential to reduce the visual and physical intrusion of transport vehicles in urban environment.
Respect and Sustain the Natural Environment	1	Measure would result in decreased emissions and improved air quality (i.e. shorter car journeys to reach site).
Reduce Personal Stress	1	May reduce congestion and improve journey times / reliability. Reducing vehicles in urban centres can encourage people to walk and cycle more.







Measure Name:	Maximum parking standards applied to developments
Measure Category:	Parking strategy
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	No significant displacement affecting surrounding areas. Modal shift to/uptake of more sustainable modes.
Cost band	None

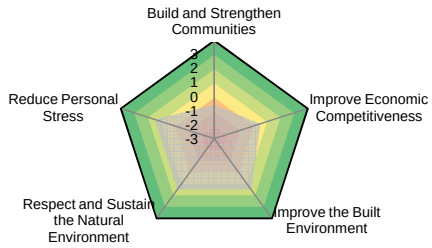
Stage 1a	**Appraisal**	**Notes**
Political		Would require increased joint working between Local Planning Authorities.
Technological		
Legal		

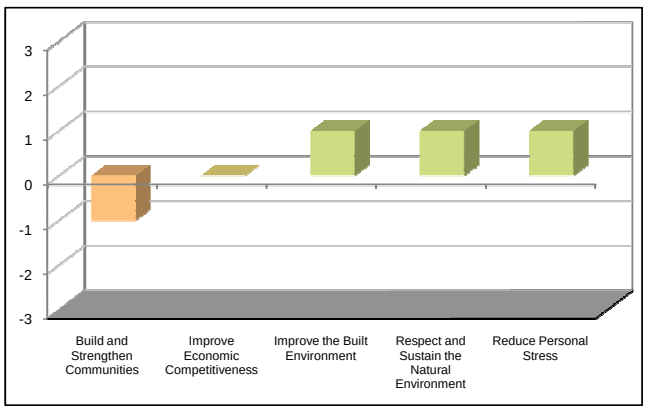
Measure Description & Supporting Information:

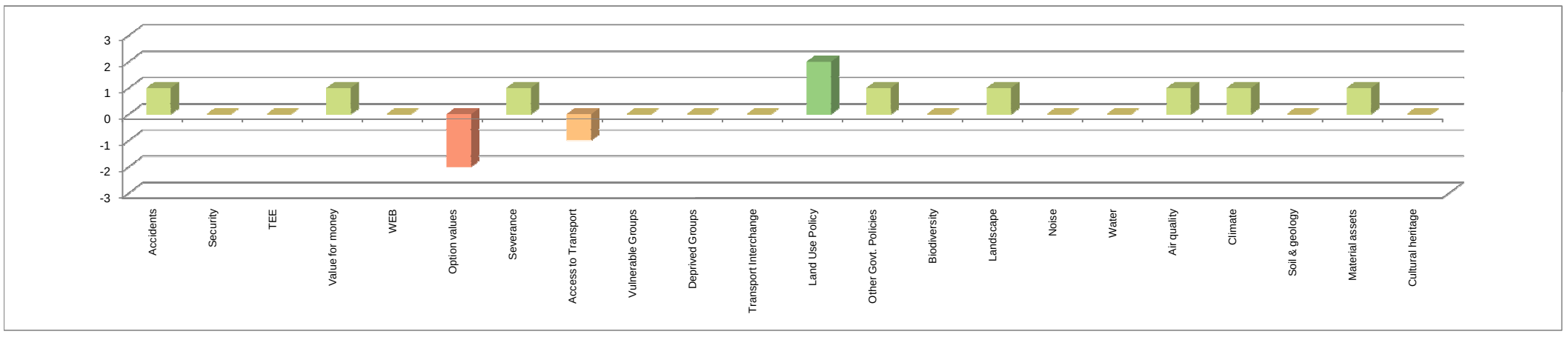
Parking standards developed for new developments across the GDA (imposing maximum parking provision relevant to accessibility of development site). Prescribe the amount of parking by land use/location. Parking standards could also take account of proximity to public transport.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	-1	May reduce accessibility to work, depending on provision of alternatives.
Improve Economic Competitiveness	0	The measure is unlikely to affect this objective.
Improve the Built Environment	1	Measure could encourage permeability and people movement. Will improve quality of streets / developments and minimise visual and physical intrusion of transport vehicles. Only applies to new developments so benefits will take many years to show.
Respect and Sustain the Natural Environment	1	Limiting on site parking should make people consider alternative travel options and potentially switch to more sustainable modes. Would reduce emissions, noise and vibration and in turn improve local air quality. Only applies to new developments so benefits will take many years to show.
Reduce Personal Stress	1	Healthier forms of travel and use of public space can be promoted. Potential to improve site safety through reduced vehicle movements.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Potential to improve site safety through reduced vehicle movements. Risk of accidents decreased.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	0	Will result in some modal shift / parking elsewhere. Potentially increases 'Generalised Cost' of travel. Reduced congestion would provide benefits to other road users. Neutral overall.
	Value for money	1	
	WEB	0	Potentially less attractive for businesses, though should reduce congestion in urban areas. Overall impact depends on level of standards. Assumed neutral overall, though could be marginally negative.
Accessibility	Option values	-2	Measure could reduce alternative options to travel. For example, cyclists who occasionally drives when bicycle is unavailable, may be unable to due to limited parking.
	Severance	1	Could reduce traffic flows to developments and therefore make roads easier and safer to cross.
	Access to Transport	-1	Reduced car based accessibility. Though reduced congestion may benefit some users.
Social Inclusion	Vulnerable Groups	0	Little or no change in benefits for vulnerable individuals.
	Deprived Groups	0	Little or no change in benefits for people from deprived groups.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	Measure supports two policies 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability'.
	Other Govt. Policies	1	Measure supports policies that 'promote improved public and mental health, including reducing obesity through encouraging modal shift away from, and reliance upon, the car'.
Environment	Biodiversity	0	Maximum parking standards applied to developments would lead to a reduction in land necessary for car parking and discourage car ownership, potentially resulting in minor positive impacts on landscape and air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	1	
	Noise	0	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	





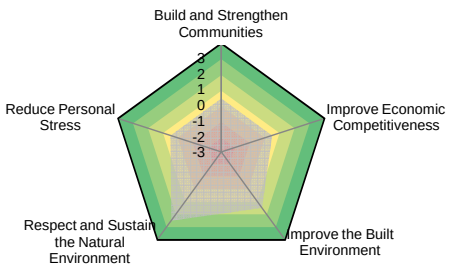


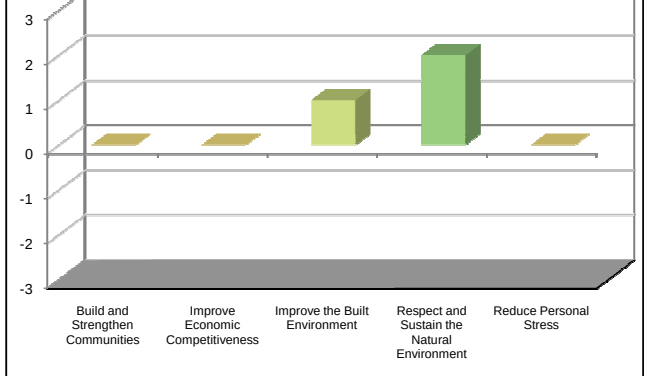
Measure Name:	Control of commuter parking
Measure Category:	Parking strategy
Potential Delivery Agents:	Local Authorities, DTO
How would we measure a successful transport outcome?	More parking for residents and the local community. Shift towards sustainable modes for commuting trips.
Cost band	Very low cost

Stage 1a	**Appraisal**	**Notes**
Political		Would require increased joint working between DTO, Local Authorities.
Technological		
Legal		New legislation may be required.

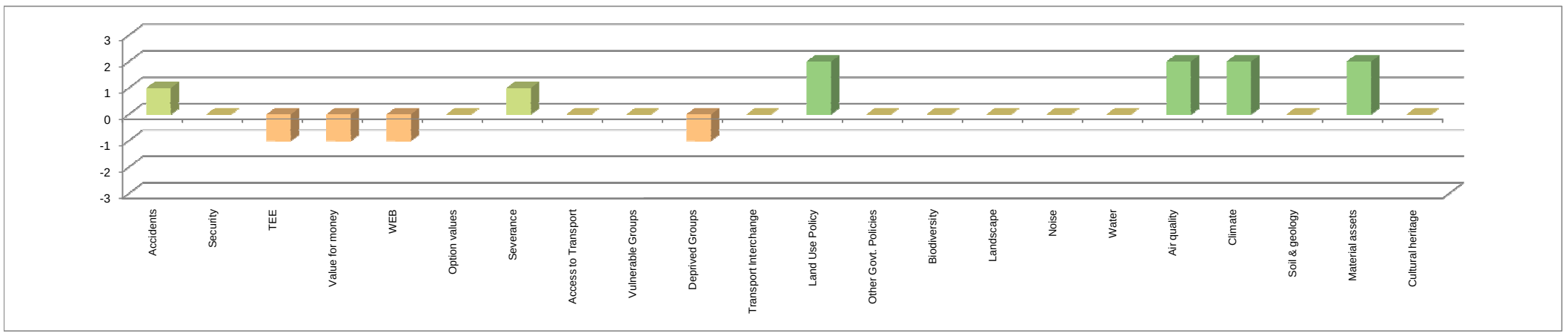
Measure Description & Supporting Information:
On street long stay parking restrictions with priority given to residents and short stay users. Short-stay time limits on off-street car parks. Workplace parking levy for off-street parking (or benefit in kind taxation). Residents parking permit schemes. It is assumed for the purpose of this appraisal that displacement will be minimised through careful design. It is also assumed that an aim of this measure is to encourage a modal shift towards more sustainable modes (i.e. banning non-resident parking in spaces and allowing discounted or free parking for residents is likely to encourage lower car-based commuter trips). Part of this measure would also be to encourage redevelopment of existing car park land to more intensive uses in public transport-accessible locations. This reduces availability of parking for existing users and ensures additional trips by sustainable modes. Increases development potential at accessible locations. Assume would use development plans to identify accessible car parking locations which would be favoured for more intensive redevelopment. The measure discourages unnecessary car travel by reducing car parking availability. Encourages accessible/sustainable development in prime locations. Potential problems may be public opposition due to loss of car parking. Assume would implement across all GDA development plan areas.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	0	Access by car for commuters likely to be adversely affected, but access for other purposes enhanced. Some benefit for mobility impaired (i.e. park closer to home). Overall access to services / other communities will not change significantly.
Improve Economic Competitiveness	0	May increase journey times for business travellers and commercial users. May encourage travel by other modes and therefore reduce congestion. Neutral overall.
Improve the Built Environment	1	Discouraging driving and banning non-resident parking could reduce volumes of traffic in designated streets. Helps to encourage permeability and people movement. Likely to help minimise visual and physical intrusion of vehicles.
Respect and Sustain the Natural Environment	2	Measure could create significant modal shift to more sustainable modes. Will help to minimise impact of transport on air quality, emissions, noise and vibration.
Reduce Personal Stress	0	Measure may increase journey times for people who can no longer park in convenient locations. May encourage more walking or cycling. Potentially reduces accidents by discouraging parking in residential areas. Neutral overall.





Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	1	Level of accidents across all modes could be slightly reduced. Reduced inconsiderate parking may benefit residents parking schemes and increase road safety. Will only affect targeted areas.
	Security	0	Measure unlikely to affect safety and security for people during journey. Would allow residents to park closer to home and potentially increase perceived safety.
Economy	TEE	-1	Likely to result in longer journey times for those continuing to drive to work. Parking charges and workplace parking levy will either cost businesses or individual employees and increase 'generalised cost' of travel. Possibly reduced congestion for other road users. Overall measure may be negative.
	Value for money	-1	
	WEB	-1	Firms access to labour markets may be decreased. Businesses in affected areas may have decreased access from customers who can no longer park. Businesses may relocate outside affected areas.
Accessibility	Option values	0	Disbenefits for commuters, but benefits for others. Neutral overall.
	Severance	1	May become easier and safer to cross and use roads. Reduced inconsiderate parking may benefit of a residents parking scheme which would also enable people to cross roads more easily.
	Access to Transport	0	There are disbenefits for commuters, but benefits for others. Neutral overall.
Social Inclusion	Vulnerable Groups	0	May negatively affect this group through potentially increased costs for travel. Particularly effects those on low incomes. May positively affect non-car owners who can walk / cycle more easily through reduced vehicle traffic and parking. Disabled / mobility impaired people should be able to park outside / nearer to homes. Neutral overall.
	Deprived Groups	-1	May negatively affect group through potentially increased costs for travel. Particularly effects those on low incomes.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	Measure supports policies to 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability'.
	Other Govt. Policies	0	Measure complements policies that 'promote improved public and mental health, including reducing obesity' through encouraging modal shift away from the car, however it may contradict 'social, community and family policies which promote social inclusion and cohesion' through increasing the cost of travel. This results in no overall net impact.
Environment	Biodiversity	0	Control of commuter parking would encourage modal shift and discourages car based commuting, potentially resulting in a moderate positive impact on air quality, a moderate reduction of greenhouse gas emissions and a moderate reduction of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	2	
	Climate	2	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	0	



Measure Name:	Strategy to improve access to the transport system for mobility impaired people
Measure Category:	Transport and Social Inclusion
Potential Delivery Agents:	DTO, Local authority, public transport operators, taxi providers.
How would we measure a successful transport outcome?	Number of mobility impaired people using public transport services. Take up rate for concessionary fare entitlements. User satisfaction.
Cost band	Low cost

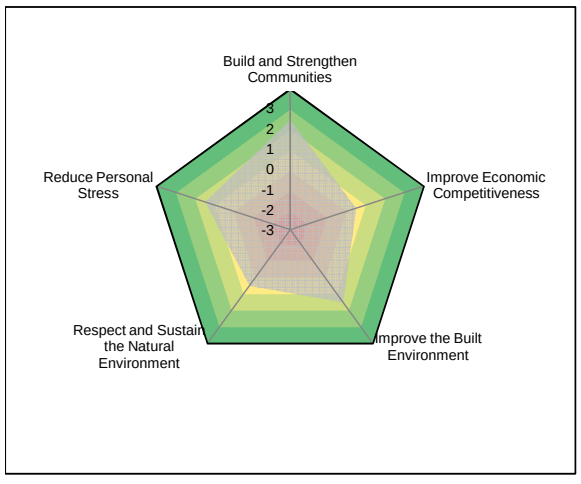
Stage 1a	**Appraisal**	**Notes**
Political		Would require increased joint working between DTO, Local Authorities, disability groups and operators.
Technological		
Legal		Extension of concessionary fares to taxis etc.

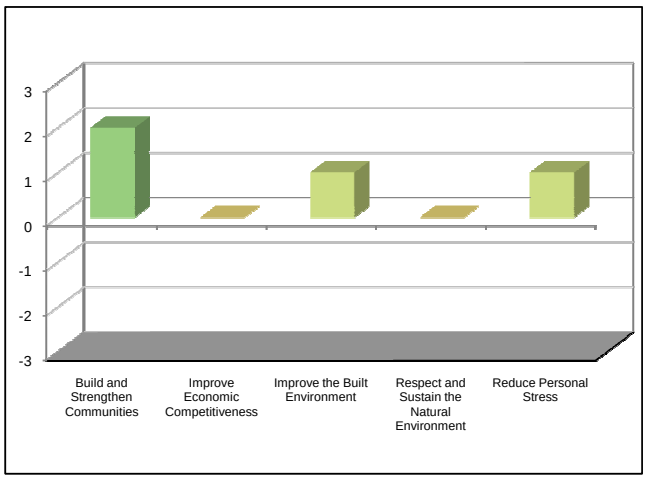
Measure Description & Supporting Information:

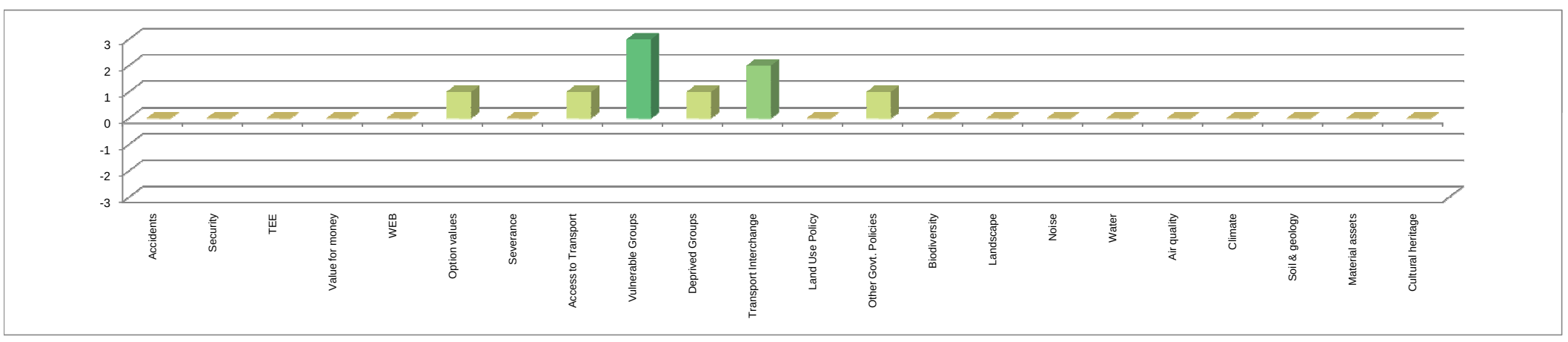
Physical measures for transport interchanges and stops/facilities to improve accessibility. More accessible public transport vehicles.
Taxi token/permit system.
Assumed that not all public transport vehicles and facilities, e.g. interchanges, are fully accessible at present.

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	2	Would greatly improve access to education, healthcare, shops, urban centres and employment for mobility impaired and other local or regional communities. Limited numbers affected.
Improve Economic Competitiveness	0	Unlikely to affect economic competitiveness.. Possible small positive impact on reducing congestion / improving journey time reliability. Very small impact affecting very small numbers.
Improve the Built Environment	1	Would improve design of public transport infrastructure / vehicles (e.g. high quality accessible vehicles). Secondary benefit to limited numbers.
Respect and Sustain the Natural Environment	0	Could decrease use of personal transport and dial a ride services. Therefore minor modal shift to public transport. Small benefits to air quality and emissions. Limited benefits to very small numbers.
Reduce Personal Stress	1	Measure would help improve ease of use of public transport for significant numbers. No real impact on other sub objectives.

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	No net impact.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	0	No net impact.
	Value for money	0	
	WEB	0	Not likely to impact on WEBs.
Accessibility	Option values	1	Significant accessibility benefit for very small numbers (i.e. mobility impaired non-regular users). Would enable mobility impaired to use public transport if regular transport unavailable.
	Severance	0	Little or no change in hindrance to movement or severance. (Only considers impacts on pedestrian movements.)
	Access to Transport	1	Small numbers likely to experience improvement in accessibility of transport facilities.
Social Inclusion	Vulnerable Groups	3	Significant number of vulnerable individuals (e.g. those with disability/mobility impairment), likely to experience large benefit.
	Deprived Groups	1	Benefit to number of people from deprived groups (e.g. poor access to services such as public transport). Smaller benefit as disability not included in definition of deprived groups.
Integration	Transport Interchange	2	Measure would focus on physical measures that significantly improve accessibility and potential interchange. Targeted users small, though benefits available for all.
	Land Use Policy	0	Measure neither supports nor contradicts these policies.
	Other Govt. Policies	1	Measure complements a limited number of policies, without contradicting significant numbers of the others. The key policy complemented is 'social, community and family policies which promote social inclusion and cohesion'.
Environment	Biodiversity	0	Targeted measures for mobility impaired people to access the transport system would result in no notable change.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	0	
	Climate	0	
	Soil & geology	0	
	Material assets	0	
	Cultural heritage	0	







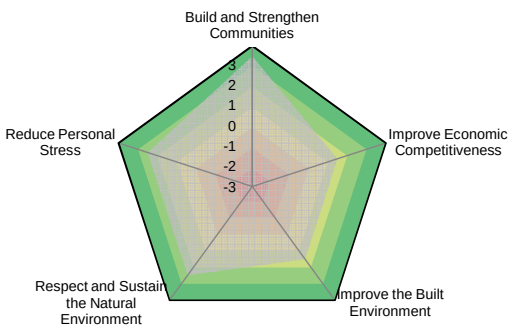
Measure Name:	Better access to key facilities
Measure Category:	Transport and Social Inclusion
Potential Delivery Agents:	DTO, National Government, Local Authorities, Operators, Key service providers.
How would we measure a successful transport outcome?	Proportion of population who can access employment / education / food centres. Decrease in unemployment and benefit claimants. Reduced number of transport related missed health care appointments.
Cost band	Low cost

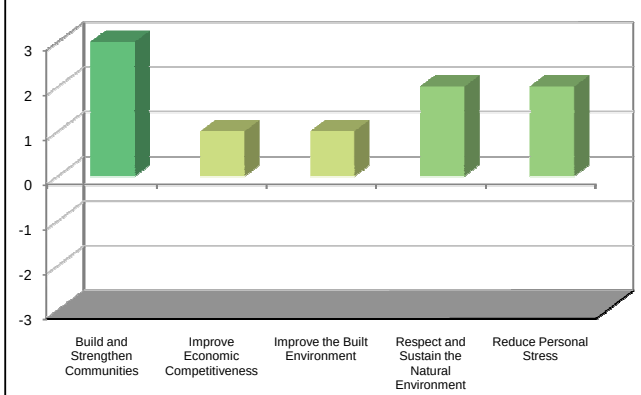
Measure Description & Supporting Information:
Planning for key local facilities (work, learning, healthcare, healthy and affordable food) to be located so as to maximise accessibility by non-car modes. This policy will affect existing communities as well as new developments. This policy includes these specific aspects: • Measures for job seekers e.g. wheels to work, travel vouchers, car club access or moped hire for unemployed people to access or if they take up work opportunities. • Measures for mobility impaired and those on low incomes e.g. fare concessions, travel vouchers, car club access, cycle hire etc. • Demand-responsive services e.g. community transport type mini bus services, taxi buses and shared taxis.

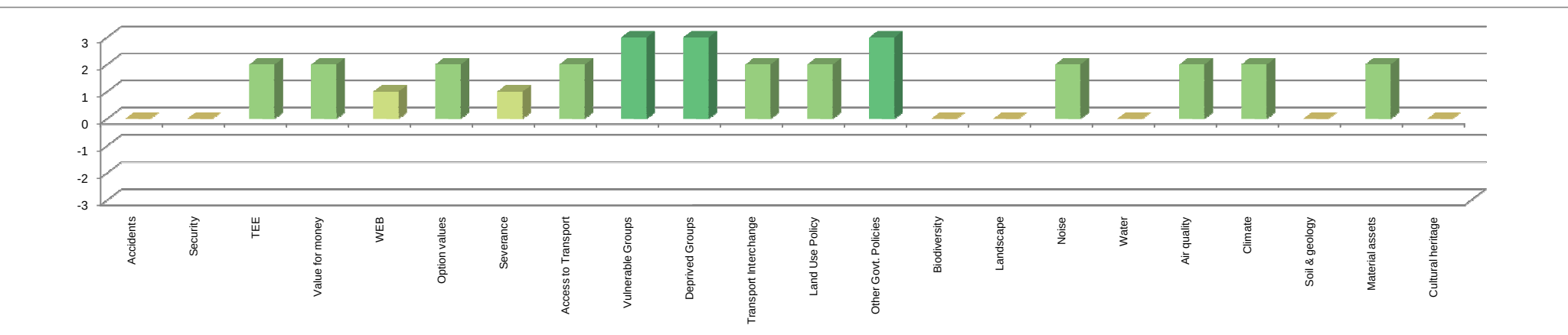
Stage 1a	**Appraisal**	**Notes**
Political		Would require increased joint working between DTO, Local Authorities and operators.
Technological		
Legal		

Stage 1b	**Score**	**Notes**
Build and Strengthen Communities	3	Would cover all people within DTO regions and wide range of sustainable modes. Would improve access to education, healthcare, shops, urban centres and employment. Particularly benefits disadvantaged groups (e.g. low incomes or non-car owners). Would improve access to / from other communities, locally and nationally.
Improve Economic Competitiveness	1	Would extend travel to work catchment and support mobility and flexibility of potential labour market.
Improve the Built Environment	1	Would encourage permeability and people movement (i.e. walking and cycling), and access to public transport for large numbers. No impact on other sub objectives so limited benefit.
Respect and Sustain the Natural Environment	2	Would promote shift to sustainable transport and therefore reduce traffic volumes. Benefits through reduced emissions, noise and vibration and improved air quality.
Reduce Personal Stress	2	Would make it easier for people to use alternatives to car (e.g. reduced journey times, easier access to public transport). Healthier forms of travel likely to be used more. Demand responsive services can improve sense of personal security (i.e. designated pick up / drop off points).

Stage 1c	**Sub-objective**	**Score**	**Notes**
Safety	Accidents	0	No net impact.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	2	Should reduce journey times and improve journey time reliability (i.e. improves access to public transport and routes/frequencies). Travel vouchers and concessionary fares schemes would reduce 'Generalised Cost' for some users. Impacts upon large number.
	Value for money	2	
	WEB	1	Would benefit a number of businesses across GDA (e.g. increased access to labour market and for customers. Likely to be fairly small benefit. Unlikely to change business operations.
Accessibility	Option values	2	Would result in increase in alternative options to travel for whole of GDA for many journeys.
	Severance	1	Reduced journey lengths, particularly by car, would result in lower traffic volumes. Helps to reduce severance.
	Access to Transport	2	Positive impact on access to destinations by wider transport network. Improves walking / cycling access to rail / bus stations and speed / frequency of transport. Would cover whole of GDA.
Social Inclusion	Vulnerable Groups	3	Would specifically benefit vulnerable groups, in particular non-car owners and those with disability.
	Deprived Groups	3	Would greatly enhance opportunities for socially deprived groups, in particular those with poor access to employment and services.
Integration	Transport Interchange	2	Medium impact on medium number to improve interchange between modes of transport.
	Land Use Policy	2	Measure complements a number of policies, i.e. 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability' without contradicting significant numbers of the others. Impact may be achieved by encouraging better land use planning (i.e. more accessible locations) for future developments.
	Other Govt. Policies	3	Measure complements most of the policies and actively supports some of them i.e. 'social, community and family policies which promote social inclusion and cohesion'; 'policies that promote improved education opportunities for all groups in the population'; 'policies that promote improved public and mental health, including reducing obesity'; and 'policies that promote enterprise, trade and employment (including inward investment)'. The measure does not contradict other policies.
Environment	Biodiversity	0	Better access to key facilities would facilitate modal shift, potentially resulting in moderate positive impacts on noise and air quality, a moderate reduction of greenhouse gas emissions and a moderate reduction of the fossil fuel demand.
	Landscape	0	
	Noise	2	
	Water	0	
	Air quality	2	
	Climate	2	
	Soil & geology	0	
	Material assets	2	
	Cultural heritage	0	







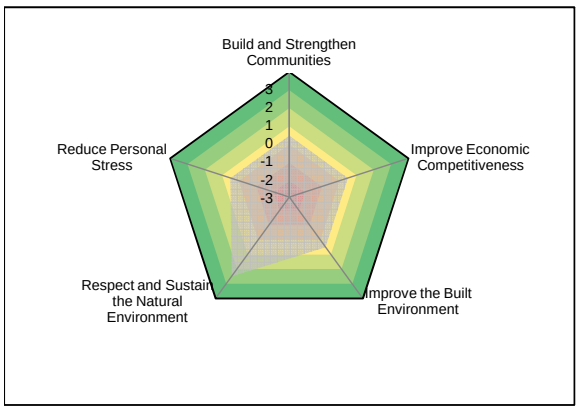
Measure Name:	Eco-vehicle measures
Measure Category:	Transport and Environment
Potential Delivery Agents:	Government Local Authorities DTO, DoT, Vehicle manufacturers
How would we measure a successful transport outcome?	Uptake and use of eco-vehicles. Improved local air quality.
Cost band	Low cost

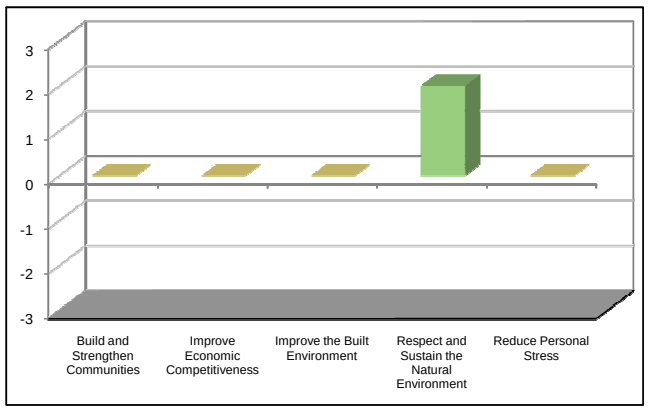
Stage 1a	Appraisal	Notes
Political		Would require increased joint working between DTO and Local Authorities.
Technological		Technology exists but requires significant development.
Legal		

Measure Description & Supporting Information:

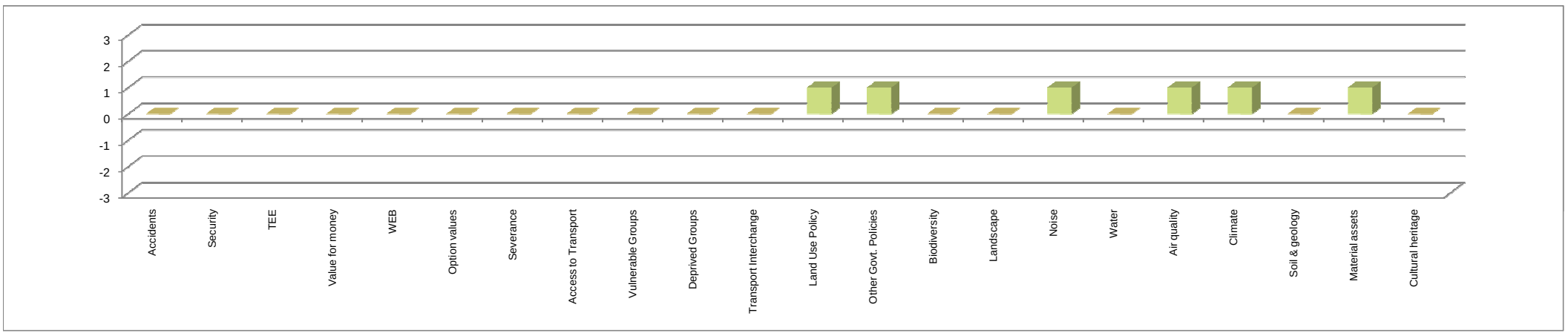
Measures to incentivise the take up of Eco vehicles such as match funding for businesses for the installation of charging points, priority parking for Eco vehicles exemption from any road charging.
Eco vehicles include electrically powered vehicles, as well as hybrid and hydrogen powered vehicles.
Note that if the vehicles are electric then the electricity still needs to be generated and, unless from nuclear or renewable sources, this will still produce carbon. In addition, the supply needs to be checked to ensure that there is enough capacity for this measure.
For the purpose of this is appraisal it is assumed that these vehicles would still be greener than petrol/diesel vehicles and that adequate energy supply exists for their successful implementation.
Aim of measure would be to minimise the impact of transport on air quality, reduce associated greenhouse gases and improve efficiency in the use of natural resources (e.g. oil).

Stage 1b	Score	Notes
Build and Strengthen Communities	0	Unlikely to affect this objective.
Improve Economic Competitiveness	0	Unlikely to affect this objective.
Improve the Built Environment	0	Unlikely to affect this objective.
Respect and Sustain the Natural Environment	2	Measure could have large effect (e.g. reduced emissions, improved air quality, etc.). Would only affect small numbers (i.e. those with access to or ownership of an eco-vehicle).
Reduce Personal Stress	0	Unlikely to affect this objective.





Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Unlikely to affect this sub-objective.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	0	Vehicle operating costs (i.e. fuel) reduced, although vehicle charging required. Exempt from road charging schemes, therefore reduced 'Generalised Cost' of travel. Small benefit to small numbers, therefore neutral.
	Value for money	0	
	WEB	0	Not likely to impact on WEBs.
Accessibility	Option values	0	May make it easier for people with eco vehicles to use them but will not affect non-regular users (i.e. no access to eco vehicle).
	Severance	0	Unlikely to affect this sub-objective.
	Access to Transport	0	Unlikely to affect this sub-objective.
Social Inclusion	Vulnerable Groups	0	Few specific benefits for vulnerable groups.
	Deprived Groups	0	Few specific benefits for deprived groups.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	1	The measure would support one policy which is 'improve the environmental performance of the transport sector and invest in sustainability'.
	Other Govt. Policies	1	The measure would support one policy which is 'policies that promote improved public and mental health, including reducing obesity' through improving local air quality.
Environment	Biodiversity	0	Eco-vehicle measures would produce lower emissions and use fuel more efficiently, potentially resulting in minor positive impacts on noise and air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	1	
	Water	0	
	Air quality	1	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	



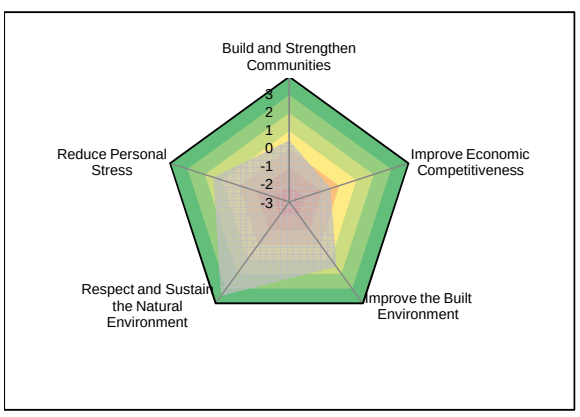
Measure Name:	Low emissions zone (LEZ)
Measure Category:	Transport and Environment
Potential Delivery Agents:	Local Authorities DTO
How would we measure a successful transport outcome?	Significant improvements in local air quality. Reduced HGVs / high polluting vehicles in city centre.
Cost band	Low cost

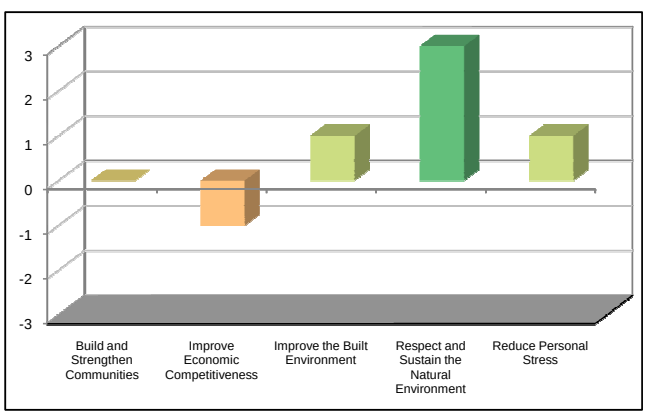
Stage 1a	Appraisal	Notes
Political		Would require increased joint working between DTO, Local Authorities, bus operators and freight operators.
Technological		Technology (number plate recognition cameras etc) exists but requires development
Legal		Would require new supporting legislation.

Measure Description & Supporting Information:

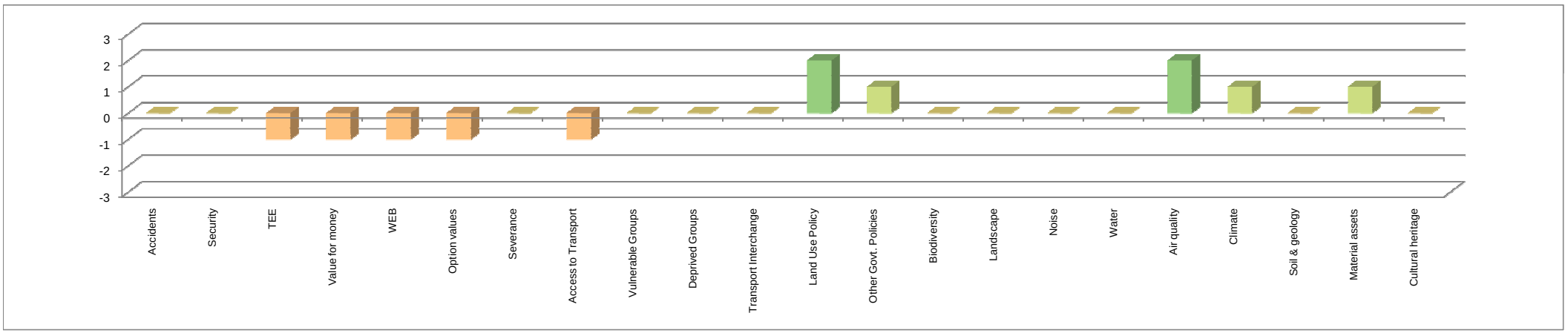
The aim of the scheme is to improve air quality in the city by deterring the most polluting vehicles from driving in the area.
The vehicles affected by the LEZ are older diesel-engine lorries, buses, coaches, large vans, minibuses and other heavy vehicles that are derived from lorries and vans, such as motor caravans and motorised horse boxes.
Overlap with freight strategy.
In terms of cost-benefits need to carefully determine how high the HGV flow into the city centre is and therefore what savings; in terms of emissions; could be produced. Particularly as this is an expensive measure to implement.
For the purpose of this appraisal it is assumed that the implementation of the measure would result in a reduction of large, polluting vehicles entering the city.

Stage 1b	Score	Notes
Build and Strengthen Communities	0	Accessibility by affected modes (e.g. buses, HGVs, etc.) may be decreased. Accessibility via other modes, such as walking and cycling may improve. Neutral overall.
Improve Economic Competitiveness	-1	Journey times into City Centre for freight vehicles likely to increase. Therefore does not support efficient freight distribution.
Improve the Built Environment	1	Permeability and people movement (i.e. walking and cycling) could be encouraged. Reduced visual and physical intrusion of affected vehicles. In majority of cases, number of vehicles will not be reduced as most polluting vehicles will be substituted.
Respect and Sustain the Natural Environment	3	Significant impact on local air quality. Would affect large number of people if implemented.
Reduce Personal Stress	1	Personal journey times and journey time reliability could be improved. Likely to encourage more walking and cycling and potentially reduce accidents (e.g. fewer large vehicles and potential conflicts). In the majority of cases, number of vehicles will not be reduced as most polluting vehicles will be substituted.





Stage 1c	Sub-objective	Score	Notes
Safety	Accidents	0	Could have secondary impact in reducing level of accidents across all modes. Potentially particular benefit for vulnerable road users (e.g. fewer HGVs on roads), though number of vehicles may not be reduced as most polluting vehicles will be substituted. Neutral overall.
	Security	0	Unlikely to result in any improvements to personal safety and security.
Economy	TEE	-1	Potentially increased journey times for some freight vehicles (i.e. divert round LEZ). Non-compliant vehicles entering LEZ will be charged. Increase in 'Generalised Cost' of travel. Small number of trips affected.
	Value for money	-1	
	WEB	-1	May decrease access to customers / suppliers. May make Dublin City Centre less attractive for businesses.
Accessibility	Option values	-1	May reduce options for individuals and transport operators (e.g. bus operator unable to use older vehicle during peak period due to restrictions).
	Severance	0	Unlikely to affect this sub-objective.
	Access to Transport	-1	May make it harder for older vehicles to access destinations via road network.
Social Inclusion	Vulnerable Groups	0	Few specific benefits for vulnerable groups.
	Deprived Groups	0	Few specific benefits for deprived groups.
Integration	Transport Interchange	0	No net impact.
	Land Use Policy	2	Measure complements two policies, i.e. 'address congestion in major urban areas' and 'improve the environmental performance of the transport sector and invest in sustainability' without contradicting significant numbers of the others.
	Other Govt. Policies	1	Measure supports one policy, i.e. 'policies that promote improved public and mental health, including reducing obesity' through improving local air quality.
Environment	Biodiversity	0	Low emissions zones would lead to a reduction of the most polluting vehicles from the zones designated, potentially resulting in a moderate positive impact on air quality, a minor reduction of greenhouse gas emissions and a minor reduction of the fossil fuel demand.
	Landscape	0	
	Noise	0	
	Water	0	
	Air quality	2	
	Climate	1	
	Soil & geology	0	
	Material assets	1	
	Cultural heritage	0	



Dublin Transportation Office

Greater Dublin Area Transport Strategy 2010-2030

Feasibility assessment of potential strategy measures

Final Report

Greater Dublin Area Transport Strategy 2010-2030

Feasibility assessment of potential strategy measures

Final Report

Contents amendments record

This document has been issued and amended as follows:

Status/Revision	Revision description	Issue Number	Approved By	Date
Working draft	Internal	1	BA	15/06/2009
Draft for comments	For issue to DTO	1b	BA	21/07/2009
Final Draft for approval	For issue to SSG	1c	BA	23/07/2009
Publication version	Issued to client	1d	BA	08/09/2009

Contents

Appendices

Glossary of terms

A Platform for Change (also 'AP4C')	Current DTO Strategy, covering 2000-2016
Agencies	Collective term for transport network managers and service providers within the GDA, including County highway authorities, the National Roads Authority and various public transport operators
Appraisal	Process of estimating or measuring a fixed set of positive/negative impacts of doing something
Appraisal Framework (also Draft')	The DTO's version of the Government "CAF"
AST	Appraisal Summary Table – records the various positive/negative effects of doing something
BCR	Benefit-to-Cost Ratio – how far benefits of doing something outweigh, or fall short of, the cost of it
CAF	'Common Appraisal Framework' – the Irish Department of Transport's appraisal 'handbook'
DART	Dublin Area Rapid Transit, commuter rail system
DoT	The Irish Government Department of Transport
DTA	Dublin Transport Authority (not yet in existence)
DTI	Dublin Transport Initiative, undertaken in 1991
DTO	Dublin Transportation Office
Dublin Region (also 'County Dublin')	Area of the City of Dublin and Dun Laoghaire-Rathdown; Fingal and South Dublin counties
ERM	Environmental Resources Management Ireland Ltd. (SEA consultants)
GDA	Greater Dublin Area (comprising the Dublin and Mid-East Regions)
'Long-list'	The pool of possible measures for the strategy, with descriptions, compiled to undergo appraisal
Luas	Dublin's tram system
MCA	Multi Criteria Appraisal
Mid East Region	Area name for the counties of Kildare, Meath and Wicklow
NATA	New Approach to Transport Appraisal (transport appraisal guidance for England)
PESTLE	'Political, Environmental, Social, Technical, Legal' – a framework for assessment of policies
SEA	Strategic Environmental Assessment
SSG	DTO Strategy Steering Group, comprising senior representatives from the GDA local authorities, transport agencies & Government departments
Smarter Choices	Collective name for measures that seek to encourage either greater use of more sustainable modes, or reduce the need to travel
Soft measures	Earlier name for 'Smarter Choices'
STAG	Scottish Transport Appraisal Guidance
'Strategy Alternatives'	Sets of potential feasible measures, organised around one of three themes to illustrate impact
SWOT	'Strengths, weaknesses, opportunities, threats' – another framework for assessment of policies
TEE	Transport Economic Efficiency
Transport 21	Central Government investment programme for 2006-2015

1 Introduction

1.1 JMP Consultants Ltd. (JMP) and partners, MRC McLean Hazel (MRCMH), were appointed by the Dublin Transportation Office (DTO) in July 2008 to provide assistance in developing the '2030 vision' transport strategy for the Greater Dublin Area.

1.2 The project is split into five phases, beginning with a review of work undertaken to date. JMP's review of the draft Appraisal Framework was part of this stage. This is described in Chapter 2, which also explains how the feasibility assessment and appraisal results inform the future stages of the project.

1.3 The remainder of the report outlines in detail the main steps taken in supporting the second phase of the process – the 'Identification and Stage 1 Assessment of Transport Measures' that might deliver the strategy objectives. In both cases, the report records options assessed at different stages and reports decisions on alternative approaches which were considered but not undertaken.

Background to the commission

1.4 The DTO is required to review and update the Dublin Transport Initiative (DTI) Strategy (1995) at least once every five years. The current review is to develop a strategy for the Greater Dublin Area (GDA) for the period up to 2030, and looking beyond this period to 2050 to ensure robustness. This current review will be informed by analysis of shifting economic, land-use and demographic patterns in the region. It will need to be integrated with land use principles and practice, and to reflect the public and stakeholders' objectives in order to support the delivery of the region's wider aspirations.

1.5 The DTO commissioned strategy support consultants JMP, to help with the identification, feasibility assessment and appraisal of individual measures under several themes, and their combination into a number of 'strategy alternative' packages. These packages will in turn be assessed against objectives, modelled and appraised. The final strategy will be published in 2010.

1.6 A number of key principles underpinning the methodology for the work were agreed with the DTO:

- **Setting transport in its widest context.** Understanding how transport measures can help remove barriers to growth, and help deliver wider economic, environmental and social benefits.
- **Delivering a sustainable, integrated and inclusive transport strategy.** This will support a high and environmentally-sustainable quality of life for the people of the Greater Dublin area.
- **Developing an objectives-led approach.** The identification of measures must ensure that the emerging transport strategy alternatives focus on future outcomes, rather than past problems.
- **Engaging effectively with partners and communities**. Ensuring comprehensive input to option generation, understanding of measures and packages and support for the final strategy.
- **Applying technical skills and experience.** Ensuring that identified measures and strategy alternatives are properly developed, fully checked for feasibility and are good value for money.
- **Developing innovative user-focused approaches to investment and integration issues**. Reflecting Greater Dublin's position as a world city, requiring of world-class transport networks.

1.7 In undertaking the strategy development work, it is a priority to ensure that a clear and objectives-led process is followed. This should be founded in widespread consultation and stakeholder involvement, and informed by a broad evidence base, linking transport issues back to key drivers in the economy, social integration and spatial planning. This approach is essential not only to

generating the best solutions, but also to ensuring their widespread acceptance, and therefore facilitating delivery – a view increasingly accepted at European and at individual Government levels. The following section outlines the approach developed for the first Stage of the work, reported here.

The approach to strategy development

1.8 JMP developed an approach that closely followed the DTO principles, especially in respect of an 'objectives-led' approach. Together with 'political, technological and legal' feasibility assessment, this aimed to identify early on the measures that, if implemented, would do the most to deliver the agreed strategy objectives. In this way, the best scoring 'generic' measures will become a 'toolkit' to be used by the DTO and agencies in the process of developing Strategy Alternatives, taking account of known problems and constraints in specific transport networks and locations in the GDA.

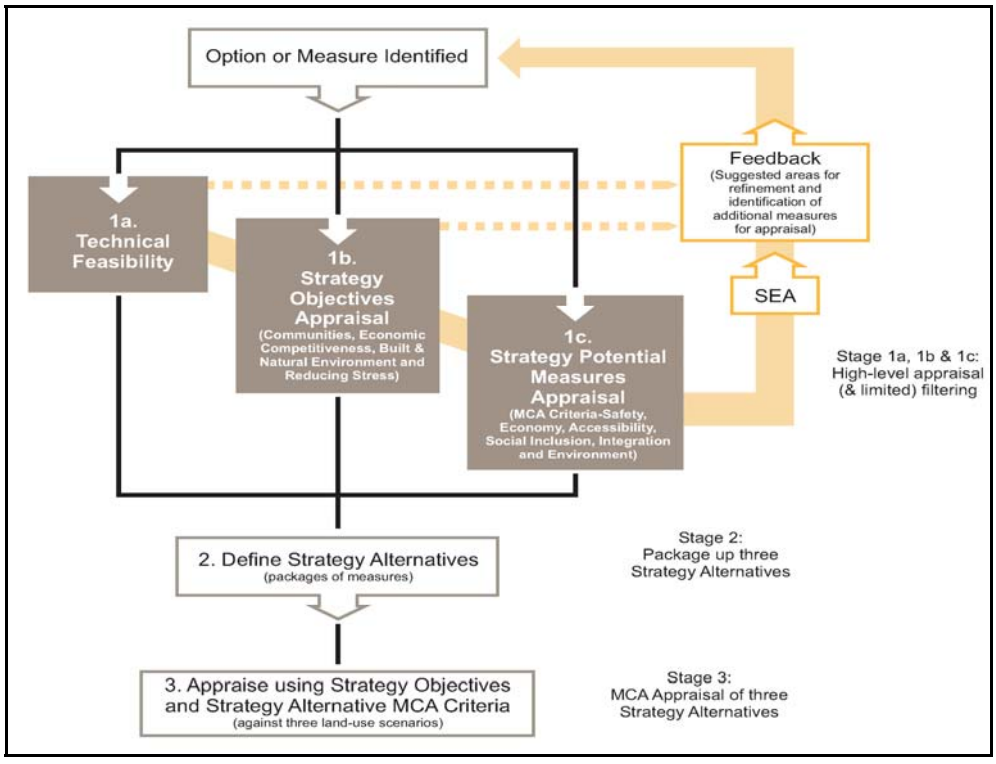
1.9 This involved assessing all potential strategy measures on a 'generic' basis – i.e. not linked to any location, nor to other potential elements in a 'package'. This ensured that: a) the most beneficial measures were highlighted early on; and b) positive and negative characteristics associated with each measure were recorded, to inform the assembly of measures into three 'Strategy Alternatives'.

1.10 The results of the Stage 1 exercise – contained in Appendices B and C – have informed an assessment of 'feasible measures' to go forward into Strategy Alternative packages. Although the measures described remain 'typical' or 'generic', this process has highlighted a number of issues regarding the potential for different solutions, and these are described more fully in Chapter 2.

1.11 Such an objectives-led approach steers the GDA strategy away from a mode- or solution-driven approach to investment, often focused on historic proposals. This will enable far greater integration of transport with the over-arching economic, social and environmental aspirations expressed by the public support for the objectives. It is designed to take strategy development beyond a focus on past and current problems and allow a 'vision-led' approach to the challenges forecast in the future.

1.12 Figure 1 shows the current understanding of the process – although this is subject to constant refinement and review. The rest of this report describes the measure identification and Stage 1 feasibility assessment and appraisal stages in more detail, and the results of the Stage 1 appraisal.

Figure 1: The overall strategy development process



2 Review of the DTO draft Appraisal Framework

2.1 Early on in the process, JMP undertook a review of the draft *Framework for DTO Strategy Appraisal* (May 2008). This highlighted areas where the appraisal process and criteria could be improved in the light of the principles underlying the strategy, and suggested how issues might be resolved. The JMP proposals were agreed by the DTO Strategy Steering Group (SSG[1]) in September 2008.

2.2 The main issue focused on using high-level strategy objectives and sub-objectives within a multi-criteria appraisal (MCA) framework, against which measures and 'strategy alternative' packages could be appraised. Drawing on experience in developing regional transport strategies and programmes elsewhere, JMP suggested making more direct use of the high-level objectives that emerged from stakeholder group and public consultations, in November 2007 and April-June 2008.

2.3 The draft DTO Framework included a tabulation of the original seven 'high-level strategy objectives' and 29 associated sub-objectives derived from consultation (later reduced to five groups after the results of the second consultation round), mapped against the five 'MCA appraisal' criteria from the Department of Transport Common Appraisal Framework (CAF, May 2007)[2] – Economy, Safety, Environment, Accessibility and Integration. The intention was that measures would be appraised against each of the MCA criteria, broadly in line with the CAF's approach, and that this would give an indication of their likely impacts on the strategy-specific high-level objectives and sub-objectives.

2.4 JMP subjected this approach to a 'SWOT' analysis, and concluded that, while this approach rationalised the number of criteria that need to be scored against, it would not be immediately apparent what role the strategy objectives and sub-objectives had played in the process, as the objectives did not appear directly within the framework – nor were any results to be directly provided in relation to them. JMP therefore proposed using high-level strategy objectives (and associated sub-objectives) directly to score each measure, as an individual Stage (1b) in the appraisal process.

2.5 An additional advantage of introducing this 'Policy Fit assessment' (or 'appraisal against objectives') is that it retains a focus on the impact of the measure on society in general, whereas MCA appraisal focuses far more on the benefits and disbenefits of the measures in transport terms. Having both together allows a much fuller picture of the contribution the measure might make within the strategy.

2.6 This assessment against policy objectives was complemented by two other stages in the appraisal process, designed to allow decision makers to understand a measure's performance in the round:

- **Stage 1A** – 'technical feasibility' assessment. This was undertaken first, to identify any major barriers to implementation at an early stage, and provide an indication of likely future difficulties.
- **Stage 1C** – the MCA appraisal, considering each measure against the five national CAF criteria and 18 associated sub-criteria, broadly as anticipated in the DTO's draft Appraisal Framework. This was undertaken alongside, but slightly behind, the

[1] This includes representatives of the GDA local authorities, transport agencies and Government departments.

[2] This can be viewed at: www.tcd.ie/civileng/Staff/Brian.Caulfield/4A8/DoT%20Apprasial%20Guide%20Lines.pdf

Objectives Assessment so that any changes to measure scope or descriptions that arose could be accommodated into the scoring.

2.7 For the feasibility assessment an abbreviated version of a PESTLE analysis was proposed. This normally covers: **P**olitical, **E**conomic, **S**ociological, **T**echnological, **L**egal, and **E**nvironmental issues. However, only the political, technological and legal aspects were actually examined – economic, sociological and environmental aspects being fully covered, by both the complementary objectives and the MCA criteria covering these areas' issues. Unnecessary duplication was therefore avoided.

2.8 Results from the technical feasibility assessment are presented using the colours green, amber and red to indicate whether there were none, some or major obstacles to future delivery of the measure.

2.9 Results from the objectives and MCA stages are presented using a scoring system from -3 to +3. This seven-point scale clearly identifies 'disbenefits' (negative scores) and benefits (positive scores) with measures having a minimal impact on a criterion (or whose benefits are cancelled out by disbenefits) scoring a '0'. Scores are both presented in summary tables and displayed on charts.

Revised approach to the assessment and appraisal process

2.10 At the time of JMP's draft appraisal framework review in September 2008, neither the strategy objectives and sub-objectives nor the final long-list of measures had been agreed. In consequence, certain assumptions have been revisited since. These are explained in the following paragraphs.

2.11 Firstly, the strategy objectives and sub-objectives were revised in the light of public and stakeholder responses from the April to July 2008 consultation period. The appraisal templates were updated following final agreement on strategy objectives and sub-objectives in October 2008. This revision also took account of JMP's recommendation that further sub-objectives be included in support of key elements of national Government policy, specifically access to other regions, ports and airports. The final set of high-level strategy objectives and their sub-objectives is shown in Table 2.1 below.

Table 2.1 – High-level strategy objectives and sub-objectives

Final high-level objective	No.	Final related sub-objectives
Objective 1 – Build and strengthen communities	1.1	Improve accessibility to work, education, retail, leisure and other activities
	1.2	Improve access for disadvantaged people (including physical access for mobility impaired people)
	1.3	Improve links between communities within the region
	1.4	Improve links to the rest of the island of Ireland
Objective 2 – Improve economic competitiveness	2.1	Improve journey time reliability for business travel and movement of goods
	2.2	Reduce overall journey times for business travel and movement of goods
	2.3	Ensure value for money of transport expenditure
	2.4	Support business agglomeration and competition
	2.5	Improve access to GDA ports and Dublin airport
	2.6	Provide for efficient goods distribution, servicing and access to materials
Objective 3 – Improve the built environment	3.1	Improve and maintain the environment for people movement (e.g. better quality design of streets and open spaces)
	3.2	Improve the quality of design and maintenance of transport infrastructure and vehicles
	3.3	Minimise physical intrusion of motor traffic

Final high-level objective	No.	Final related sub-objectives
Objective 4 – Respect and sustain the natural environment	4.1	Minimise the impact of transport on air quality
	4.2	Minimise the impact of transport on water quality
	4.3	Reduce greenhouse gases associated with transport
	4.4	Improve efficiency in the use of natural resources, especially non-renewable ones (e.g. land, materials, fuels)
	4.5	Minimise the impact of noise and vibration
	4.6	Minimise adverse impact of transport on biodiversity and natural amenities
Objective 5 - Reduce personal stress	5.1	Improve journey time reliability for personal travel
	5.2	Reduce overall journey times for personal travel
	5.3	Improve travel information
	5.4	Improve ease of use of public transport system
	5.5	Promote healthier forms of travel and use of public space
	5.6	Improve travel safety
	5.7	Improve travel comfort and the sense of personal security

2.12 Scoring notes were produced for undertaking the Stage 1 appraisal to explain the use of objectives and sub-objectives. No weighting between the five objectives was applied. Although results from the public consultation had seemed to suggest differing preferences between them, it was felt that:

- the results so far might not be robust, and further data should be collected; and
- weighting might be premature until the means of evaluating the 'Strategy Alternative' packages had been decided, since weightings might be more useful at this stage instead.

2.13 Secondly, JMP updated elements of its approach to technical feasibility and the scoring of the 'Policy Fit' stages of appraisal, through presentations and discussions with the DTO. The reduction down to five objectives removed earlier specific reference to 'governance' issues, although these clearly remained of public concern. Such issues were therefore flagged up as 'Political' in the Stage 1a feasibility appraisal, with the usual 'PESTLE' meaning of 'Political' as 'publicly acceptable' disregarded as the results of appraisal will ultimately be tested through a public consultation.

2.14 Third, the relationship between the appraisal process and the parallel Strategic Environmental Assessment (SEA) process was discussed with the DTO. The environment sub-criteria within the MCA framework were expanded and amended to bring them into line with those used for the SEA. This involved the addition of 'climate change', 'soil and geology' and 'material assets' sub-criteria to the six originally proposed and some slight changes of definition (though compatibility with the CAF set is maintained). The SEA process is no longer expected to give rise to any additional measures.

2.15 Fourth, the MCA criteria scoring, and the SEA scoring, were amended to also use JMP's proposed seven-point scale, so that every aspect of any given measure's performance could be displayed consistently. The Environment scores in Stage 1c were aligned with those in the Stage 1 SEA report (this was undertaken by ERM Ltd[3], the consultants engaged by the DTO to undertake the SEA process) and were extensively discussed and refined between the two consultants' teams.

[3] ERM is Environmental Resource Management Ireland Ltd.; further details available at http://www.erm.com

2.16 Lastly, in the original framework, it was expected that some measures would drop out of consideration, or be revised or recombined at each sub-stage of the appraisal (hence the 'feedback loops' shown between the three Stage 1 phases and the 'Option identification' phase in the diagram shown in Figure 1). However, it became clear whilst assembling and refining the 'long-list' of measures (see Chapter 3), that few, if any, of the measures proposed could be really considered totally unfeasible, given the 22-year horizon to 2030 for implementation envisaged for the strategy.

2.17 Thus, agreement was reached that no 'filtering-out' of measures would happen within Stages 1a, b, or c, and that a full set of scores would be reported – and taken forward to the public consultation on potential measures, scheduled for early 2009 – for all of the measures in the 'long list'. Some recombining of measures had already been undertaken during Stage 1 (reported in Chapter 3 and shown in Appendix A), and further revision of the list of measures has since been undertaken to finalise Stage 1. This was both in response to the scores (e.g. where a number of measures had little impact) and to incorporate suggestions returned from public consultation.

2.18 The scores from the final Stage 1 assessments and appraisal are all appended to this report. Each measure is described in broad terms, specified with respect to scope and scale assumptions and an outline assessment of costs given. Technical feasibility is shown as Red, Amber or Green for each of the three categories; while seven-point scale scores and supporting explanations are provided for both the Stage 1b 'policy fit' assessment and the Stage 1c appraisal, in 'Appraisal Summary Table' format. These are supported by a 'radar chart' and bar chart for Stage 1b and a bar chart only for Stage 1c scores. A summary of all the Stage 1 scores for every measure can be found in Appendix B, with the full detailed Stage 1 Scores, and additional information on the measures, in Appendix C.

Stages 2 and 3 – 'Strategy Alternatives' assembly and appraisal

2.19 JMP and DTO have discussed several possible approaches to combining feasible measures into three Strategy Alternative 'packages'. The approach is currently being refined and agreed internally. It will be particularly important to decide whether the high-level objectives ought to be combined or weighted, and how the outputs of the forthcoming public consultation might assist with this – when proposals will be included that seek feedback on both the acceptability of measures, and the relative weight of preferences that stakeholders and the public might have for high-level objectives.

2.20 As well as determining which measures might contribute to which strategy alternatives, this stage of work will also need to analyse evidence and interrogate local knowledge on how effective different types of measures might be in different situations or locations. This may lead to some assumptions from Stage 1 needing revision – for example, about how applicable a measure might be in terms of scale, scope, location and inter-dependency – and how this shift will be fed into scheme definitions.

2.21 As proposals emerge, DTO and JMP technical advisors will 'screen' strategy alternative packages to ensure there are no barriers to feasibility from the interaction between measures (e.g. checking that limited road space has not been simultaneously allocated to trams, buses, parking or cyclists); to assess how different packages are from each other and identify which measures contribute most.

2.22 Although the general tendency of a measure's performance should not be fundamentally affected by such changes, to ensure that unwanted results do not occur from the interaction between measures or specific interventions, we propose to re-run both the feasibility and

policy assessment stages on each Alternative that is developed, to check their compliance with objectives.

2.23 During this period, discussions will also take place between the DTO and its Strategy Technical Group members[4] regarding the analysis and interpretation of the Stage 1 results. This will assess how measures' performance might be treated in the assembly of strategy alternative packages, as well as providing guidance on how these 'generic' measure types might generate specific schemes, prior to final agreement on how the assembly of measures into Strategy Alternatives and schemes will use the Stage 1 scoring.

2.24 It may also be helpful to map each package, and check what benefits it offers against the forecast spatial distribution of growth and expected land use change, in case significant gaps have emerged.

2.25 Following this refinement and feasibility testing process, the final stage of the appraisal process will be to fully evaluate the three 'Strategy Alternative' packages of measures, generating Benefit-Cost Ratios (BCRs) for each package using results from the DTO model for the full set of qualitative and quantitative indicators within the revised DTO Appraisal Framework, which match those in the CAF.

2.26 In undertaking appraisal of strategy alternatives, we would use the DTO model to assess outcomes against forecasting scenarios, showing the trip patterns and mode changes that result. These will inform estimates of monetised transport user benefits used to derive BCRs, which, taken alongside other costs and benefits and the policy fit, will provide a full picture of each package's performance.

[5] Deprivation is usually assessed geographically. This was not possible as individual measures were not given a spatial element. However, measures likely to assist deprived people generally would receive a positive score.

3 Identifying potential transport strategy measures

Introduction

3.1 The second phase of this commission was based around the development and assessment of a long-list of generalised types of transport and planning interventions – referred to as 'measures' throughout this document – that could potentially form part of the overall strategy. The purpose was to ensure that all the options available for measures were considered at a high level and their potential performance and contribution understood, before undertaking any more detailed appraisal.

3.2 The sections below provide a summary of the assembly process for the original 'long-list' – the initial identification and classification of measures – and then describe how it was rationalised following initial results from Stage 1a feasibility assessment and 1b 'fit against objectives' appraisal.

3.3 Initial Stage 1a /and 1b results were reported to the DTO Strategy Groups in October/November 2008. This generated extensive feedback regarding measure definitions and scoring and greatly increased understanding of the range of impacts the potential measures had. In a few cases, changes were important enough for measure definitions to be altered prior to undertaking the Stage 1c Multi-Criteria Appraisal stage of appraisal.

Initial identification of potential measures

3.4 The initial option generation was undertaken by the DTO. This was done in part using facilitated 'mind-mapping' sessions with DTO Strategy Group members in July 2008, but also informed by internal knowledge of previously-proposed transport schemes, and programmes of 'smarter choices' or 'soft measures' from earlier national, regional and local policy proposals. This knowledge was supplemented with further ideas that emerged during public and stakeholder consultation. This work led to an initial list of 161 measures.

3.5 The initial 'mind-maps' were subdivided into a number of themes to aid the generation of a wide ranging list of measures:

- Information, marketing/promotion and education
- Managing demand
- Land use measures
- Integration of policy measures
- Provide and manage infrastructure
- Operate public transport services

3.6 JMP reviewed this list, added further measures and prepared it for appraisal.

3.7 To address elements of duplication, overlap and gaps in the list of measures JMP worked with officers at DTO to refine the list of measures and provide a framework for them. The refinement of the list included grouping up measures into higher level policy categories. As part of this process, the list was revised, to show each measure's contribution to more than one theme. Detailed measure descriptions were added to clarify the potential scope of measures, and the potential delivery agencies identified. These were refined throughout the remainder of Stage 1.

3.8 Several ideas contained within the original long list seemed more to 'facilitate' other measures rather than achieve outcomes of their own, e.g. practitioner guidance and technical advice. These would therefore have been difficult to give a score to directly, so these suggestions were incorporated within the definition of the measures that they best supported, within the rationalised list.

3.9 Extensive discussion and feedback from within the DTO led to a number of further revised measure definitions and additional suggestions coming forward, and a revised list of 119 measures.

Measure descriptions for feasibility and 'policy fit' assessment

3.10 The initial feasibility assessment and appraisal against objectives, described in detail in the following two chapters, was then undertaken. This followed a consistent process for all measures..

3.11 For this interim stage, information and results were recorded in a 'pro-forma' template consisting of:

- A measure description, including the broad definition, and assumptions about scale and scope;
- Stage 1a: the feasibility assessment, shown as 'Red, Amber or Green' and with an explanation;
- Stage 1b: the appraisal against the five strategy objectives, scored from -3 to +3 (with brief explanations of how each score was derived in relation to the sub-objectives), with charts.

3.12 For each measure a short description was provided, detailing what the measure would encompass and how widely it might be applied. These descriptions were derived through the engagement of JMP technical experts within specific fields.

3.13 The description section also includes a short list of potential delivery agents within Ireland and the GDA, and guidance on how a successful outcome of the measure might be measured. This often takes two distinct parts – a supply side measurement, such as 'quantity of extra services provided' and a demand side measurement, such as 'extra passengers carried' or 'reductions in journey time'.

Rationalisation of long list of measures

3.14 Once measures had been scored, it was apparent that some overlap and duplication still existed within some of the definitions. Moreover, a large number of measures within some categories failed to register any significant impacts. Accordingly, the list of measures was modified: measures with obvious synergies but very low individual scores were combined together and rationalised where possible.

3.15 This work resulted in a 'long-list' of 94 measures. These were used in the public consultation on potential measures, undertaken in February and March 2009 and described in Chapter 7.

3.16 Following the public consultation, some additional suggestions for measures were added; while others were combined further as it was clear that some distinctions made were confusing to consultees, and that some individual measures' impacts remained low. An index of changes made at this stage of the process is attached at Appendix A.

4 Approach to Stage 1 assessment and appraisal scoring

4.1 This section provides an overview of JMP's approach to scoring measures in the Stage 1 appraisal.

The 'assessment team' approach

4.2 JMP assembled an experienced team of **assessors** to undertake the Stage 1 scoring of measures. Due to the size of the long-list of measures, four assessors undertook the initial scoring of the measures, splitting the measures roughly equally between themselves. They were given a thorough briefing on the approach to scoring at an internal workshop - to ensure that they fully understood the assessment process and what assumptions needed to be made - and were provided with detailed "scoring notes" for every assessment criterion, to ensure a consistent and transparent approach.

4.3 Assessors were chosen for their broad transport planning expertise, and were not given measures representative of their specialisms, to avoid 'preferential treatment'. Instead, for each category of measures, a senior JMP **technical expert** with specialist knowledge in the relevant field of transport planning was identified. The experts' role was to assist the assessor in scoping each measure, specifying the likely limits of its application, and understanding the level of impact that would arise from implementing such a measure in the context of a large and diverse region like the GDA.

4.4 Following each round of scoring, two independent and senior JMP **moderators** – with significant experience in transport appraisal and assessment and a broad, non mode-specific transport planning background – reviewed the scores to ensure that the assumptions made and the scores allocated were consistent, both between the assessors and across the different assessment criteria.

4.5 The moderators' key role was to look at scores longitudinally, by objective rather than measure and:

- Provide a check and second opinion on the scores and commentary provided by the assessors;
- Ensure a continuity of approach across the range of measures by the full assessors team; and
- Moderate all the scores assigned, to ensure that the full scoring range was used appropriately.

4.6 Each moderator considered the scores and commentary provided for all of the measures across a selection of objectives, and compared each other's results. This process ensured that all scores were considered by at least three JMP staff, in addition to the input that was provided by the technical experts and the internal quality management procedure for overseeing reporting of results.

4.7 As a final stage of this moderation process, a meeting was held between moderators and the core JMP project team, where the scores for all measures were compared across each objective. Specific emphasis was applied to those measures that scored at the extremes of the range, those that were expected to score at the extremes, and the overall distribution of scores that had resulted.

4.8 Following the Stage 1a and 1b scoring and moderating, a second internal workshop was held – with all the assessors, moderators and members of the project management team present – to discuss scoring queries, inconsistencies or assumptions made and to review the long-list of measures. A number of suggestions were made for combining, deleting, rationalising, adding to or re-defining measures on the long-list in the light of issues identified during the scoring process. In many cases, it was found similar or complementary measures would perform better in the assessment process if combined. In other cases, duplication or inconsistency between measures was identified, and changes were made to deal with these issues (the resulting changes are reported in Appendix A).

4.9 Following completion of Stages 1a and 1b scoring, the DTO and other stakeholders were asked to provide feedback on the assumptions made on each measure, to ensure that scoring fully reflected the GDA context. This provided invaluable information on the baseline transport and planning situation in Dublin, and potential issues or barriers in relation to implementation of some measures.

Scoring notes

4.10 It was crucial that all scoring was undertaken in a consistent and transparent manner. Hence, detailed scoring notes were produced to set out how measures should be scored against each criteria within Stages 1a, b and c of the assessment process. Where appropriate, some worked examples were also included to help show how the scoring notes should be used in practice. Some examples of our approach and how the scoring notes were used are given in Chapters 5 and 6.

4.11 The JMP assessor team were asked to try to record all the assumptions made, both in terms of the scope and scale of each measure and the rationale behind scores allocated under every criterion.

Underlying assessment assumptions

4.12 Due to the generic nature of many of the measures, it was necessary for a number of overarching assumptions to be agreed with our scoring assessors. Understanding these assumptions is helpful when reviewing the scores, to enable clearer understanding of the value of the results and analysis:

- Measures were all scored as if acting alone. Whether they would work better combined with others was not taken into account, as this would have pre-empted the later, 'packaging' stage.
- Assessors were asked to only score direct (or 'first order') **transport** effects for every measure in relation to the transport sub-objective in question – including trip reduction from better planning, diversion from restricted access measures, and 'modal, shift' from 'smarter choices' measures. 'Knock-on' effects, such as new trips which are generated by new road links, were not counted. This was done so as not to pre-empt the packaging stage, by reducing opportunities to combine measures that might prove valuable within the 'theme' or organising principles of each package. This approach may appear artificial, but it reduces the level of subjectivity – as, once the 'knock-on impacts' of a measure have been second-guessed, a much wider range of scores could then be justified – giving, e.g. very different scores for the effect of road user charging depending on what the revenues might be spent on, or where it is assumed that displaced car trips might go.

- Policy and regulatory measures were assumed to be applied consistently across the entire GDA during the full strategy period up to 2030. This sometimes leads to a higher score than might be expected if such measures were implemented less comprehensively. In particular, measures that seek to deliver change through the planning system will only have large impacts over a long period, due to the small proportion of development which changes use of land in any given year.
- No specific locations for measures were assumed, although any that may perform differently – or would be appropriate solely in – an urban or 'hinterland' context should be noted as being such.
- Although no specific baseline situation was assumed, the DTO and stakeholders' feedback on assumptions made that were not wholly relevant to the GDA, led to some scores being revised.
- The scale of impact of all the measures was scored on the basis of the JMP technical experts' understanding of what such measures would be likely to achieve, in a typical urban or hinterland situation as appropriate. JMP did not use any explicit 'comparator city 'approach in the scoring, to avoid introducing assumptions that might be inappropriate or irrelevant in the GDA context.
- The scoring is based primarily on professional judgement, as the 'generic' nature of the measure definitions – as well as the lack of a comprehensive baseline and limited transport evidence data – meant that a quantitative analysis was not possible (nor necessarily desirable) at this stage.
- Where assessors felt that a measure might have equal degrees of positive and negative impact in relation to a single criterion, a neutral "0" score was allocated. It was subsequently agreed with the DTO that all such incidences should be explicitly noted as such, to differentiate them from other 'zero' scores which simply indicated that that measure had no effect on that objective.

5 Stages 1a & b: Feasibility assessment and 'fit' against strategy objectives

Stage 1a – Feasibility assessment

5.1 This stage was included to ensure that any major potential obstacles to delivery were flagged up early in the assessment process. Hence, this stage of work considered the potential political/institutional, technological and legal 'barriers to deliverability' aspects of each measure:

- **Political/Institutional feasibility:** are there any significant governance issues or institutional arrangements which constitute barriers or pre-requisites affecting delivery of a measure?
- **Technological feasibility:** would significant technological developments be required to deliver the measure, and how likely are these to be overcome within the life of the strategy?
- **Legal feasibility:** would legislative change be required to permit delivery of the measure?

5.2 This stage of assessment is not meant to result in measures being dropped from the strategy – to do so would hinder innovation – but to highlight barriers and risks to implementation needing to be accounted for when refining measures, and in the development of alternative packages in Stage 2.

5.3 Red/Amber/Green colour coding was used to flag up different scales of implementation barrier for each criteria, and the definitions implied are shown in the scoring notes for Stage 1a assessment, in Table 5.1 below:

Table 5.1 – Stage 1a assessment criteria and scoring guidance

Criteria	Green	Amber	Red
Political/ Institutional	No institutional/ governance changes required before measure can be implemented	Minor institutional/ governance changes required	Major institutional/ governance changes required
Technological	No significant new technology required before measure can be implemented	Technology exists but requires significant development prior to implementation in Greater Dublin context.	Major technological advances required before measure can be implemented (unlikely to be possible within next 10-15yrs)
Legal	No changes to legislation required before measure can be implemented	Minor changes to existing legislation required	New legislation or major changes to existing legislation required

5.4 As mentioned in Chapter 2, the 'political' criterion has been defined here to relate to any potential institutional and governance issues, and not to barriers of 'political will' or public acceptability, even though that is the normal interpretation in 'PESTLE' analysis. This is an important distinction, as the public consultation on potential strategy measures in early 2009 will help to test wider acceptability of measures, and their relationship with the

objectives. JMP therefore did not feel it appropriate to second-guess the results of this consultation exercise, which will inform emerging strategy options.

5.5 Any 'Red' or 'Amber 'flags against this assessment will be carried forward as the measure proceeds though the packaging stages. It will be for the DTO and stakeholders to later determine how far an emerging strategy might be able to rely on measures which will require changes in governance, national legislation, delivery structures or guidance, which are not within the gift of strategy partners.

Stage 1b – assessment against strategy objectives

5.6 The scoring of measures against strategy objectives was based upon consideration of the potential contribution of a measure towards the final set of strategy sub-objectives that had been developed and refined through earlier public and stakeholder consultation (these are shown in Table 2.1).

5.7 For each objective, an assessment was made of how the individual measure would impact upon the constituent sub-objectives, and a single score assigned to the measure for that objective (ranging from -3 to +3). Thus, while the assessment takes direct account of all the sub-objectives, the score provided is against each high-level objective. The commentary included alongside individual scores on objectives may refer to one or more sub-objectives that the measure might be especially likely to contribute to. Table 5.2 below shows the issues that were considered when scoring each objective.

Table 5.2 – Stage 1b assessment summary scoring notes outline

Strategy objective	Summary scoring notes (directly linked to strategy sub-objectives)
Build and strengthen communities	Does it improve access to employment and/or services? Does it improve access for disadvantaged groups (including mobility-impaired)? Does it improve links with other communities, and the rest of the island of Ireland?
Improve economic competitiveness	Does it tackle congestion and/or improve journey time reliability (but only for business travel and goods)? Does it improve access to gateways, national and international markets (only for business travel and goods)? Does it support efficient distribution, servicing and/or access to raw materials? Does it support business competition and co-location? Does it provide value for money?
Improve the built environment	Does it help improve or maintain the physical environment for pedestrians, cyclists and users of public transport? Does it improve design quality and upkeep of public transport stations and vehicles? Does it help to minimise the physical intrusion or impact of motor vehicles (all types)?
Respect and sustain the natural environment	Does the measure help to reduce or minimise transport CO_2 emissions? Does it minimise direct impact on the natural environment (air, water, noise, nature and biodiversity)? Does it assist efficient resource use?
Reduce stress	Does it make personal travel faster, more reliable and/or more efficient? Does it make it easier to use healthier forms of travel (walking and cycling)? Does it improve the overall journey experience for public transport users? Does it improve safety/cut accidents? Does it improve transport users' sense of personal security, and/or comfort?

5.8 The scoring of objectives by consideration of the sub-objectives can, on occasion, lead to results that are not always intuitive. This is a function of the grouping of sub-objectives under the headline title assigned to each objective. For example, whilst intuitively a new road between two settlements does not seem to 'strengthen communities', it would score

positively against the DTO strategy “build and strengthen communities” objective because it would help to deliver the ‘Improve access to other communities within the region’ and ‘links to the rest of the island of Ireland’ sub-objectives – i.e. two of the four sub-objectives under this heading. By contrast, note that the “economic competiveness” sub-objectives do not in fact directly include the enhancement of economic outputs, only ‘efficiency’.

5.9 However, this is offset by the benefit of using the sub-objectives to add specificity to the scoring considerations – reducing the danger of subjectivity arising from an assessor’s own interpretation of categories as broad as ‘community’ or ‘stress’. It also has the added benefit of encapsulating “what people said they wanted” in previous rounds of consultation. Other sets of sub-objectives could have been substituted which related to issues that directly followed on from high level objectives – though this already happens in Stage 1C MCA – but this would have been a more artificial exercise.

6 Stage 1c –Multi-criteria appraisal of measures

Multi-criteria appraisal using revised DTO appraisal framework

6.1 Alongside assessment of strategy objective compatibility, a more detailed multi-criteria appraisal (MCA) process was undertaken to assess the overall benefits and value for money of individual measures. Each measure was assessed against the appraisal framework sub-criteria, under the headings (safety, economy, accessibility, social inclusion, integration and environment) commonly used within transport economic appraisals. The full assessment matrix is shown in Table 6.1 below.

Table 6.1 – Stage 1c Appraisal criteria and sub-criteria

Stage 1c criteria	Sub-objective
Safety	Accidents
	Security
Economy	Transport Economic Efficiency (TEE)
	Value for money
	Wider economic benefits
Accessibility	Option values
	Severance
	Access to transport
Social Inclusion	Vulnerable groups
	Deprived groups
Integration	Transport interchange
	Land-use policy
	Other Government policies
Environment	Biodiversity
	Landscape
	Noise
	Water
	Air quality
	Climate
	Soil and geology
	Material assets
	Cultural heritage

6.2 The MCA criteria used here display very close compatibility with the Department of Transport's 'Common Appraisal Framework for Transport Projects and Programmes', which was under review during 2008. Modifications were made to the process to reflect the very high level at which measures had been defined – i.e. with no specific spatial locations in mind – and, in the case of the environment criteria, to bring them in line with the criteria that were being used within the SEA.

6.3 Some elements of this assessment may already have been touched upon within the earlier 'strategy objectives' appraisal; however they were developed further within the MCA. Data limitations (i.e. the analysis was undertaken without the availability of the strategic model outputs) mean that the appraisal was qualitative and each measure was assessed based upon the underlying generic level of performance expected from the type of measure concerned, at the expected scale of application.

6.4 Although the requirements and focus of the MCA process differ from that of an assessment against high-level objectives (due to the closer focus of MCA on performance within the transport system), many of the techniques used were similar to those employed within Stage 1b. In particular:

- Sub-lists of measures to be appraised were allocated to the individual members of the appraisal team, with assessors scoring the same measures as in Stages 1a and b to ensure continuity;
- Scoring notes were produced to assist with a consistent approach to undertaking the task; and
- The process of checking and moderating the resulting scores was repeated for the MCA results.

6.5 However, refinements were required to the process to capture the difference between what is being measured by the MCA relative to the 'policy objectives' scores. Details of these are provided below.

Sub-criteria scoring

6.6 For the MCA, the individual sub-criteria under each of the five core headings were scored and noted separately – this was possible because outcomes for each sub-criterion are defined. Assessors and moderators agreed on the issues to be considered within each of the sub-criteria, as follows:

- **SF1 – Accidents**: Will the measure result in highway conditions that, generally, reduce the level of accidents across all modes?
- **SF2 – Personal safety and security**: Will the measure result in conditions that, generally, improve safety and security for people when making their journey.
- **EC1 – Transport Economic Efficiency (TEE)**: Will the measure result in conditions that, generally reduce journey times, vehicle operating costs, charges for travelling or improve journey time reliability?
- **EC2 – Wider Economic Benefits (WEB)**: Will the measure result in conditions that, generally, improve productivity for firms in the vicinity of the measures?
- **Ac1 – Option values**: Does the measure provide an alternative option to travel?
- **Ac2 – Severance**: Is the measure likely to cause severance within a community for non-motorised modes e.g. walking and cycling?
- **Ac3 – Access to transport system**: Is the measure likely to, generally, improve access to destinations by the wider transport network?
- **SI1 – Vulnerable groups**: Will the measure support vulnerable groups?
- **SI2 – Deprived groups**[5]: Will the measure enhance opportunities for socially deprived individuals?
- **In1 – Transport interchange**: Is the measure likely to improve interchange between modes of transport?

[5] Deprivation is usually assessed geographically. This was not possible as individual measures were not given a spatial element. However, measures likely to assist deprived people generally would receive a positive score.

- **In2 – Land-use policy**: Is the measure in line with current national land-use and development policy?
- **In3 – Other government policy**: Is the measure likely to support delivery of other key government policies (including social, education, health, trade, tourism and 'innovation')?
- **Environment**: scoring was undertaken by the Strategic Environmental Assessment (SEA) consultants, ERM, alongside their own environmental assessment of the potential measures.

6.7 A very wide set of environmental sub-criteria were appraised by ERM. Their assessment for the Stage 1c scores was agreed with JMP and included within the presentation of the results. Further details are given below; however the full details of the process used are available in the ERM report on the SEA of the potential measures stage, which will be published on the '2030 Vision' website.

MCA guidance notes

6.8 As with the objective scoring process, guidance notes were produced for the assessors. These provided additional explanations on each of the sub-criteria, along with a table that set out the conditions required for specific scores, ensuring consistent assumptions about impact of measures.

6.9 To enable comparison between measures that may have a very different scope, a scoring matrix was developed that explicitly controlled how the assessment was made. This included both the scale of the impact – which can be either positive or negative – and the size of population affected.

6.10 Thus, for example, measures that only have an impact on one little-used mode are unlikely to score highly, even if the benefits/disbenefits are great – while the same scale of benefits/disbenefits across a heavily-used mode or number of modes may score more highly. (In the case of a measure which attracts new users to a mode, a greater impact was assumed, though there are likely to be practical limits to numbers transferring from, e.g. car driving to cycling). Note also that a score of zero result even where there is an impact, if both the scale and population affected are quite small.

Table 6.2 – Scale of impacts matrix

		Population group size			
		Very small	Small	Medium	Large
Scale of impact	Very small	0	0	1	1
	Small	0	1	2	2
	Medium	1	2	2	3
	Large	1	2	3	3

6.11 A different approach was used for the two policy-based sub-criteria under "Integration" (Land-use policy and Other Government policy) as scale of impact and population criteria were inappropriate. Alternative scoring statements were developed, based around the number of policies the measure agreed with, and any conflicting impacts 'netted-off'. This sample of statements shows the process:

- **Score +3 –** The measure actively supports at least four of the policies under consideration.
- **Score +2 –** The measure actively complements two or three of the policies (perhaps four if the level of support is relatively weak) and may strongly support one, without contradicting others.
- **Score +1 –** The measure complements only a single policy (perhaps two if the level of support is relatively weak), but does not contradict significant numbers of the others.
- **Score 0 –** Overall the measure neither supports nor contradicts the policies. This may mean that it complements some policies while conflicting with others, thus cancelling out any benefits.

Value for money (VFM) calculation

6.12 Included within the output from the MCA stage is a 'Value for Money' ('VFM') score. Unlike the other scores in the MCA, this is not assessed qualitatively, but calculated mathematically from the estimated measure cost and the Stage 1c Transport Economic Efficiency sub-objective score. The approach taken to calculating this score is necessarily rather technical, but is explained briefly in the following paragraphs.

6.13 Estimated cost was derived from an assessment of both the capital and operating cost impacts on the public exchequer. It was necessary to consider both elements, as the wide range of measures being appraised meant cost profiles were likely to differ markedly – with some requiring 'capital' or initial investment funds, others creating ongoing service provision or 'revenue' cost, and some both.

6.14 Capital cost was estimated on a scale from 0 to five. However, operating costs had to be estimated on a scale between +5 and -5 – as some measures could lead to net operating cost savings, or create extra income (i.e. a negative cost), whereas capital cost is always a net public expenditure.

6.15 The combined capital and operating cost scores were added up to output a single figure for each measure, with a theoretical range of 10 to -5. The range of individual numerical positive scores was then combined into bands, to compensate for the fact that positive scores arise from two scores added together (capital and operating cost), whereas negative scores relate to operating cost savings alone, as shown in Table 6.3. This results in a combined cost scoring scale from -5 to +5.

Table 6.3 – Scale of cost bandings

Combined capital and operating numerical cost	Cost band
10 or 9	Very large cost
8 or 7	Large cost
6 or 5	Medium Cost
4 or 3	Low cost
2 or 1	Very low cost
0	None or net cost of zero
-1	Very Small Saving
-2	Small Saving
-3	Medium Saving
-4	Large Saving
-5	Very Large Saving

6.16 This then feeds into Table 6.4, which provides the value for money scores for each measure, by comparing the ten cost bands with the 'TEE' scores, which broadly reflects the economic benefits of implementing the measure. Again, adjacent scores are combined into bands, thus reducing this ten point scale down to the seven point one, compatible with all other scores in this feasibility appraisal.

Table 6.4 – Stage 1b assessment objectives and sub-objectives

Net capital and operating cost	Economic impacts						
	-3	-2	-1	0	1	2	3
Very Large Saving	0	1	2	3	3	3	3
Large Saving	0	1	2	3	3	3	3
Medium Saving	-1	0	1	2	3	3	3
Small Saving	-1	0	1	2	3	3	3
Very Small Saving	-2	-1	0	1	2	3	3
None	-2	-1	0	1	2	3	3
Very low cost	-3	-2	-1	0	1	2	3
Low cost	-3	-2	-1	0	1	2	3
Medium Cost	-3	-3	-2	-1	0	1	2
Large cost	-3	-3	-2	-1	0	1	2
Very large cost	-3	-3	-3	-2	-1	0	1

6.17 This Value for Money score is solely calculated from cost band and TEE score, and so does not reflect all the aspects of a measure – including those that might be quantified in a full transport economic appraisal, such as savings from reduced road accidents etc. Nonetheless, this score does provide a very broad indication of the level of Benefit to Cost Ratio (BCR) that might be expected from a measure in practice. It can be seen from Table 6.4 that where costs and benefits are 'equal', the resulting Value for Money score is '1' – the same result that would be seen with a BCR value. Given the 'generic' nature of the measures, however, these results are only indicative.

Integration with the SEA process

6.18 A process for integrating the SEA and Stage 1c MCA Appraisal has been developed to ensure that environmental considerations remain at the heart of the decision making process. The environment sub-criteria within the original MCA framework were expanded and amended, to bring them in line with those used in the SEA. This involved the addition of 'climate change', 'soil and geology' and 'material assets' sub-criteria to the six originally proposed, with some slight changes of definitions.

6.19 Assessment against SEA objectives was carried out by ERM, using the scheme descriptions provided from the long-list and informed by JMP's Stage 1b results which included some environmental aspects. ERM then provided Stage 1c scoring under their environmental headings.

6.20 In doing this, ERM used the definitions of Environment sub-objectives set out in Table 6.5 – taken from the Strategy Potential Measures report, copies of which are available at: http://www.2030vision.ie/background_reading.php.

Table 6.5 – SEA Objectives and sub-objectives underlying Stage 1c environment criteria

SEA Category	No.	SEA Objective
Biodiversity Flora & fauna	1	To avoid impacts on the integrity of European Conservation Sites (SACs and SPAs) and nationally designated sites (NHAs).

SEA Category	No.	SEA Objective
	2	To support the overall goal of the National Biodiversity Plan.
	3	To minimise impacts on locally-important biodiversity in the Greater Dublin Area.
Landscape	4	To avoid or, where infeasible, minimise impacts on designated and protected landscapes and conservation areas.
	5	To minimise impacts on undesignated landscape resources (townscapes, seascapes, riverscapes, general landscapes).
Population	6	To increase accessibility to economic and employment opportunities, in particular for those who are physically, economically or socially disadvantaged within the GDA.
	7	To increase accessibility to quality public, cultural and community services, in particular, for those who are physically, economically or socially disadvantaged within the GDA.
Human Health	8	To contribute to improvements to transport-related aspects of quality of life for residents, workers and visitors to the GDA.
	9	To support the objectives of the Environmental Noise Directive in relation to transport-related noise.
	10	To minimise safety risks to human health arising from transport related activity.
	11	To support health improvements and benefits from transport-related activities.
Water	12	To support the forthcoming River Basin Management Plans (RBMP) and Programme of Measures (POM). Where these are not available, the objective is to support the aims and objectives of the Water Framework Directive (WFD).
	13	To minimise impacts to surfacewater systems and resources.
	14	To minimise impacts to groundwater systems and resources.
	15	To minimise impacts to coastal systems and resources.
	16	To minimise impacts to transitional systems and resources.
	17	To minimise the risk of flooding.
Air	18	To reduce negative air quality impacts arising from transport-related emissions.
	19	To ensure compliance with the Air Framework Directive and associated daughter Directives (and the transposing Regulations in Ireland).
Climatic Factors and Climate Change	20	To contribute to the reduction of greenhouse gas emissions arising from transport-related activities.
Soils & geology	21	To minimise negative impacts on important and vulnerable soils resources used for agricultural purposes.
	22	To reduce consumption of construction material and generation of construction waste as part of transport infrastructure projects.
	23	To avoid or, where infeasible, minimise impacts to protected and designated geological and geomorphological sites.
Material assets	24	To protect public assets and infrastructure.
	25	To reduce the fossil fuel demand by the transport sector.
	26	To assist with the reuse and regeneration of brownfield sites.
Cultural heritage (including architectural and archaeological heritage)	27	To avoid or, where infeasible, minimise impacts to designated cultural, architectural and archaeological resources.

6.21 As there are 27 SEA sub-objectives, at a very detailed level, there was some aggregation of scores. The MCA Environment sub-criteria of Biodiversity, Landscape, Water, Air, Climate, Soil and geology and Cultural heritage covered several underlying SEA sub-objective scores, which were aggregated up into one rating for each of the MCA Environment sub-criteria. Where SEA sub-objective scores under a single criterion had

equal degrees of positive and negative impacts, a neutral “0” score was allocated in the MCA. Where the SEA Objective scores under a single component had varying degrees of positive or negative scores, the highest of these scores was then allocated in the MCA.

6.22 The MCA score in relation to ‘Noise’ was represented by the score against SEA sub-objective 9 ‘To support the objectives of the Environmental Noise Directive in relation to transport-related noise.’

6.23 There are areas of overlap between further SEA sub-objectives under population and human health and the remaining MCA criteria for safety, accessibility and social inclusion and integration. These were moderated by ERM commenting on JMP scoring in these areas from an SEA perspective.

6.24 Not all of the SEA sub-objectives are represented in the MCA under the ‘Environment’ criteria. In regard to ‘Human Health’, SEA Objective 8 focusing on ‘Quality of Life’ is a broad objective, which is represented in many of the elements of the MCA and is also reflected in the Stage 1b assessment in relation to ‘Stress’. Similarly SEA Objective 10 (relating to safety) is represented by SF1 in the MCA. These scores have also been reviewed in order to ensure that they are similar in outcomes.

6.25 As a result of this thorough review process, a number of scores were changed to achieve greater compatibility, including several of the Stage 1b scores against the ‘natural environment’ objective. This has resulted in appraisal results that are fully ‘SEA-proofed’ and compatible with that process.

7 Appraisal of additional or amended measures

Introduction

7.1 This chapter outlines the changes made to the long-list of measures for packaging and appraisal following the public consultation phase in February/March 2009, which has completed and finalised the Stage 1 assessment process. The changes described, resulted from a combination of feedback from the public consultation exercise, suggestions received from Technical Groups, SSG and DTO, and significant changes in groups of measures, held over from the pre-consultation phase of Stage 1.

Identification of additional or amended measures

7.2 The changes made were restricted to those that required changing the definitions of a number of measures and suggested possible re-combinations. Some of these had been flagged up in DTO and stakeholder comments on the original 'interim' report (December 2008) but not actioned in order to see what response arose from the public consultation.

7.3 A number of themes defined the types of changes made to the long-list of measures:

- Some potential measures had been missed from the original list but raised in consultation.
- Some measures had been too narrowly defined, resulting in very low levels of impact within the appraisal.
- Certain measures did not best reflect the local context within Dublin or were creating a barrier to the clear definition of scheme proposals, and thus needed redefining.
- Certain measures were deemed to be only enabling tools that would, in themselves, have minimal impact and were thus combined with their complementary measures.

Changed measures

7.4 Four wholly new measures emerged from the public consultation as follows:

- NI7 - Lower public transport fares at all times. Previously the only fare based measure was NI6, concerned with off peak fare reductions that could be achieved through better yield management.
- RL8 - Rail station parking expansion. Previously only bus based P&R (PS4) had been considered.
- MC1 - Motorcycle measures. These were not included anywhere in the original list of measures.
- TM1 - (part) Traffic and parking enforcement. These issues had not been considered previously.

7.5 In addition to the four new measures, a number of existing measures were re-grouped and redefined. For the most part, these fall into the following five categories, where there had been some previous difficulty experienced in attaching schemes to measures:

- **Information and marketing (MM):** these measures were originally defined by individual mode (bus - BS, rail - RL, cycling - CY etc.) or multi-modal (MM). It was felt that this resulted in too great a dilution of the impacts and that practical implementation

would be multi-modal in any case. The new definitions group all public transport information measures into one new measure, with a separate measure for promotion of sustainable modes, within the 'Smarter Choices' category below. As a result of these changes it was also necessary to redefine certain highway information measures previously under the driver information (DI) category – including a highway direction signing measure and a live traffic information measure – and the signing and information aspects of managing travel for tourism, (previously within TT3). These measures are all now included in category MM.

- **Smarter choices (SC):** travel awareness campaigns were originally included under SC and in the mode-specific information and promotion measures (see category above). These are now merged into a new measure for awareness-raising and promotion of sustainable transport. The specific travel plan measure was expanded to include car sharing measures – such as a national car share database – as this had a low level of impact on its own, and could be a scheme under this measure.

- **Rail and Luas (RL):** as previously defined these measures made distinctions between types of enhancements that would be difficult to replicate in terms of deliverable schemes. The redefinition therefore included all types of main line rail capacity enhancement – signalling, longer vehicles, and more frequent trains – with a separate measure for Luas capacity upgrades. There was also a clarification in redefining former RL5, that Bus Rapid Transit schemes all sit within bus measure BS1.

- **Traffic management (TM):** the options to enhance traffic management were spread over a large number of measures – primarily Access Control (AC) and Best Use (BU) categories – and were redefined into a core of three possible enhancements under a new Traffic Management (TM) category. The measures now cover: traffic management planning and enforcement, signal control and capacity enhancement. This redefinition aligned the measures better with the actual schemes that might apply in each case, consolidating a disparate range of interventions to maximise impact.

- **Freight and distribution (FS):** originally, a range of intervention types affected freight – including Access (AC), Road Construction (RC), traffic management (BU) and user charging (DC) measures – while only those with low levels of impact were classified as freight measures. The redefinition was therefore based on bringing together most of these elements of measures into two categories – one related to strategic level freight movement and the other aimed at localised access and distribution. The suggestions for area wide or strategic route lorry charging, however, remained in measure DC6.

7.6 This final process of redefinition resulted in the reduction of the long-list from 94 to 76 types of measures. The revisions made are detailed in Appendix A.

Revised measures' Stage 1 appraisal

7.7 JMP took the revised measures through the Stage 1 appraisal process, using the same approach of assessors and moderators for all the revised measures. The outcome of the final Stage 1b assessment of the list of 76 measures is shown in the tables attached as Appendix B and in detail in Appendix C.

7.8 These scores were derived by, firstly, treating each new measure as a fresh proposal and using the original scoring notes and guidance. Second, those measures that were combined from existing ones had these scores cross-checked with those originally allocated to their 'component' measures. Lastly, all scores were then moderated for scale of impact against their own and other categories.

7.9 Stage 1c ‘multi-criteria appraisal’ scoring was carried out using the same approach. For completion, the environment criteria scores were revised by consultants ERM to take account of the new and redefined measures.JMP and ERM agreed the scores to be included within the MCA tables and these will also be reflected in the final Strategic Environmental Assessment report for Stage 1.

8 Analysis of the results of Stage 1 appraisal

Stage 1a: Results of Political, Technical and Legal assessment

8.1 These scores represent the impact of governance issues and factors external to the DTO and the transport agencies, which would critically affect strategy delivery if the right supporting actions were not taken by others. It should be noted, however, that issues of public and political acceptability were not counted here, as this would have pre-empted forthcoming stakeholder/public consultation.

- **Political/institutional –** the primary issues that arose repeatedly here, related to the following:
  - Co-ordination between local authorities to deliver programmes of measures or policies across the GDA, especially in relation to highway or traffic management-related measures;
  - Similar co-ordination issues arose between transport agencies covering different modes, on issues like interchange, ticketing etc. – but also on the options for planning new provision;
  - There was a lack of any obvious delivery agencies for several new kinds of measures; and
  - Government decisions would be needed on issues such as planning guidance and subsidy.
- **Technical:** Only area-wide road user charging raised major technical issues. However, this was based on the example of other countries, and it was felt this could in reality be a political issue. Lesser issues related to cycles on trams and trains, and some traffic and freight technologies.
- **Legal:** This primarily related to areas where legislation was needed, especially on charging and fiscal matters, but also reforms of traffic or parking rules. However, some of the public transport expansion and co-ordination measures may require the DTO and agencies to be mindful of European competition and 'state aid' legislation, due to the public ownership agency structures.

Stage 1b: Results of high-level policy objectives assessment

8.2 A relatively restricted number of measures proved to be 'high performers' against each of the five high-level strategy objectives (i.e. scoring +2 or +3). Those that scored a +2 or +3, and any that scored negatively against any objectives, are shown in Tables 8.1 to 8.5 at the end of this Chapter.

8.3 The main patterns emerging from the scores against objectives include the following::

- **'Strengthen communities'** objective
  - Both planning and travel planning measures and public transport service or infrastructure enhancements generally accrued the highest impacts. This was based on the expectation that comprehensive application of these measures across the GDA over more than 20 years would significantly change accessibility to facilities and travel behaviour.
  - Improvements to bus and rail networks and operations also tended to deliver high impacts, in the case of buses, this is largely due to their predominant role in delivering local access to jobs and services; while in the case of rail, the lower level of contribution to access at the local level is offset by the provision of a greater set of inter-regional and all-Ireland links.
  - Overall, 21 measures had a significant positive impact, but a further seven scored negatively. These were primarily measures which restrict or deter car use – including road user charging, parking limitations and higher car taxes – which were deemed to act against the sub-objectives on 'links between communities' and 'links to the rest of the island of Ireland', due to the fact that large numbers of potential such trips would only be feasible by

car, and thus would impact on the mobility of large numbers of people at this level. However, in the course of packaging measures, other modes could potentially be included to fill the gap.

- **'Economic competitiveness'** objective
  - There were twelve major positives, with large benefits from new road capacity – but also heavy and light rail investment – due to the sub-objectives' stress on business travel and freight movement. However, such new road capacity measures tend to score negatively on the environment 'in principle', though in practise issues would be assessed locally for every proposed scheme.
  - Technology measures which would support productive activity while reducing the need to travel, e.g. though homeworking and 'telecommuting' also scored positively.
  - Charging freight carriers had the only large disbenefit. Permit restrictions on distribution and access restrictions in town centres (to benefit pedestrians, etc.) had small negative scores on the economic competitiveness sub-objectives due to loss of access to markets at a strategic level and greater difficulties with deliveries at local level. In practice, the negative effects could be mitigated by better logistics and traffic measures.
- **Improving the built environment objective**
  - Thirteen measures produced large benefits, including both measures with a direct positive impact on the streetscape – e.g. Home Zones and pedestrianisation – and those measures which reduce traffic in towns generally, either through access restriction or fiscal measures.
  - Better public transport interchanges could potentially make a positive design contribution, as well as encouraging modal shift through making public transport easier to access and use in towns. High quality walking and cycling environments in new developments also scored well, as such measures would accumulate a significant expected impact over time.
  - Similarly, negative effects in this area arise primarily from traffic measures which would potentially divert more traffic into towns. Measures to improve driver conditions in urban areas – such as traffic/car park information and more green time for cars at traffic signals – could negatively impact on walking, and potentially add to street clutter..
  - Local road improvements and more light rail services also scored small negatives, due to the impact of more vehicles creating additional intrusion within the urban environment.
- **Natural environment objective**
  - 21 measures scored well, including those likely to directly restrict car use, such as increasing motoring costs, road user charging and telecommuting. New public transport capacity – which would generate modal shift away from cars – also scored well, on the assumption that and negative construction impacts would be capable of mitigation for individual schemes.
  - Planning measures and parking controls, including 'densification' and better location of development (i.e. close to public transport) also contribute well to this objective, due to the likelihood that they would reduce need to travel, as well as making more efficient use of available land for development. Travel planning measures also showed positive benefits.
  - As might be expected, providing new road transport infrastructure – especially in rural areas – gives the highest environmental disbenefit of all measures, almost directly mirroring the positive 'economy' scores for such measures. 'Active traffic management' measures on strategic roads have a small negative impact due to the extra signage and gantries used;

while additional Off-peak bus services also score poorly, due to their emissions increases (though these may be offset by fewer cars in practice).

- **Reducing stress objective**
  - A wide range of 23 measures scored averagely positive, with only 'Travel planning' gaining +3, because of the assumption that over time it could address the personal travel issues of large numbers of people in schools, workplaces and residential areas across the GDA.
  - Due to concerns over the travel experience picked up in the sub-objectives, measures which improve public transport journey times and the passenger experience all scored well – both in terms of the reduced overcrowding etc. benefits of fewer delays and additional capacity, and the travel opportunity benefits of enhanced services and upgraded corridors (though not new routes)..
  - Planning measures to enhance access to facilities – through better location close to public transport or more targeted service planning –score well for access and reducing car use. A number of these measures overlap with those for 'improve the built environment' and 'build communities', partly due to their meeting the sub-objective here to promote walking and cycling.
  - Only one measure actively scored negatively against this objective – providing additional, peripherally-located commuter parking. In the absence of any mitigating measures to improve conditions for car drivers the relocation of workplace parking spaces to sites on strategic links is likely to increase the journey times of commuters, with the additional walking also likely to increase perceptions of personal security issues.

8.4 Overall, the results of the Stage 1b appraisal show useful information in respect of the likely ability of different types of measures to meet the diverse objectives. This will be beneficial when creating 'strategy alternative' packages which focus on achieving one, or a combination of, these objectives.

Stage 1c: Results of the Multi-Criteria Appraisal

8.5 In broad terms, the way in which measures performed against the Stage 1b objectives was reflected in the scores against similar criteria in Stage 1c – with, e.g., measures gaining high Stage 1b 'communities' scores also showing good Stage 1c Social Inclusion and Accessibility scores; and the same measures generally scoring negatively against Stage 1b Economy and Stage 1c TEE criteria.

8.6 Overall, the use of a 'generic' assessment of measures has limited the Stage 1c results to within a narrower scale – there are fewer +3 and very few -2 and -3 scores. This reflects the fact that MCA appraisal processes are designed to be data driven and to quantify the benefits of a scheme against an established 'baseline' position. Without specific scheme locations and quantifiable impacts, it is hard to estimate what the outcomes might be, and wrong to assume that the impacts will be very large.

8.7 This issue particularly affects the Accidents, Security, Wider Economic Benefits and Severance sub-criteria scores, all of which would be derived primarily from the difference the measure would make to the conditions currently experienced at the specific locations where they would be implemented.

8.8 Another effect of this 'generic' scoring is that the 'target populations' for those measures designed to generate modal shift or travel behaviour change are assumed to be broadly comparable with the percentage of existing travellers using the mode. Thus, bus measures will tend to score higher than cycling measures due to the larger population affected (this

effect occurs in all transport appraisal). It is only` at the level of assessing specific interventions that their relative likely success of measures that might attract new users to sustainable modes (or away from cars) can be accurately estimated.

8.9 Because of the number of criteria and the small number of large positive or negative impacts, there is less that can be learned from 'league tables' such as those provided for the Stage 1b scores. In general, the MCA scores at this stage provide some very useful additional information about the effects of measures in certain areas – some of which, like accessibility, are close to issues that were covered in Stage 1b sub-objectives, whereas other (like deprivation) are more explicit here.

8.10 The **Safety** criterion is supported well by planning, parking restrictions and public transport capacity improvement measures, all of which reduce car trips – as performance is driven by reducing road accidents. Security for public transport users also contributes. Road building and capacity schemes have a negative effect, due to generating more car trips.

8.11 **Economy** scores are much more focused on personal travel time, and so tend to reflect what was scored for 'Stress' rather than 'economic competiveness' in Stage 1b. However, freight measures still score well, and disbenefit to car users from access and parking restrictions does still show up.

8.12 Value for money is a new aspect, not previously taken into account and shows a disparate pattern with, for example, negative scores for parking limitations (due to lost revenue), and high-cost for streetscape. Planning measures score well due to having little or no cost; while public transport improvements gain small positive scores, on the assumption that new users will boost fare revenue.

8.13 Stage 1c scores for **accessibility** have some links to the 'community' objective in Stage 1b. Public transport and planning measures all support the 'Option values' aspect; while, again, limitations on car access and parking create small disbenefits under this and 'Access to the transport system'. This is due to the large number of existing car users affected, and the working assumption that this measure on its own would not provide the ability to shift to other modes, and would need mitigation by being packaged together with measures to provide alternatives for those who no longer drive.

8.14 **Integration** benefits also largely arise from public transport schemes and planning measures, whilst **Social inclusion** is heavily linked to public transport enhancement and planning measures which make access to public transport easier, as the assumption is that the groups affected largely do not drive. Measures which may bring traffic into towns (e.g. parking, ramp metering) score negatively.

8.15 **Natural environment** scores were supplied by ERM and will be explained in their report on the SEA assessment of potential measures. Comparisons with ERM results suggest that, with one or two exceptions, their Stage 1c scores broadly accord with those allocated by JMP for the Stage 1b 'Built and Natural environment' objectives, as the two sets of scoring criteria have many similarities.

Conclusions

8.16 As with Stage 1b, the information gleaned will be useful in determining how measures will interact with each other in packages, also flagging up (with negative scores) those impacts that may need mitigation – either through the inclusion of complementary measures, or on a scheme-specific basis.

8.17 Other key information, such as the value for money calculations, will assist in the assessment of the overall characteristics of the different ‘Strategy Alternative’ packages prior to full appraisal, as well as with planning for the implementation of a measure, at an appropriate scale and set of locations.

Table 8.1 – Top-scoring and negative scoring measures: Build and strengthen communities

Code	Page no.	Measure Name	Stage 1a			Stage 1b				
			Political	Technological	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
BS2	2	Optimise 'strategic bus network' performance				3	1	1	2	2
FM1	46	Land Value Taxes				3	1	1	1	1
PM9	54	Measures that encourage or direct high density person trip intensive development in locations accessible by public transport				3	2	2	2	2
SC11	60	Destination based Travel Plans and national car share database				3	2	1	2	3
SI4	75	Better access to key facilities				3	1	1	2	2
BS1	1	Enhance bus priority and segregation				2	0	0	2	2
BS4	4	Reducing bus delays from boarding and ticketing issues				2	1	0	1	2
BS5	5	Enhancement of off-peak networks				2	0	0	-1	1
BS6	6	Expansion of network (spatially)				2	1	0	1	1
NI4	16	Integrated Ticketing				2	0	0	0	2
NI5	17	Integrated Fares				2	0	0	0	2
RL5	24	New rail and tram corridors				2	2	0	2	1
RL9	27	Improve rail services and capacity				2	2	0	2	2
RL10	28	Improve light rail services and capacity				2	2	-1	2	2
RC4	40	Widening of strategic roads				2	2	0	-2	1
RC5	41	New strategic links/bypasses				2	3	0	-3	2
IG1	49	Location and design of Health Facilities, Education Facilities and Industrial/Employment Facilities (especially those promoted by Development Agency IDA)				2	1	1	2	2
PM2	50	Mixed use development				2	1	2	2	2
PM10	55	Measures that encourage or direct high density residential development in locations accessible by public transport				2	1	1	1	1
WS5	62	Improve walking network				2	0	2	1	2
SI3	74	Targeted measures for mobility impaired people to access the transport system				2	0	1	0	1

Code	Page no.	Measure Name	Stage 1a			Stage 1b				
			Political	Technological	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
DC1	7	Region-wide road pricing ('pay-per-km')				-2	1	1	3	2
DC2	8	Cordon (or area) based 12 hour congestion charge				-2	0	1	3	2
FM3	47	Car taxes				-2	0	1	2	0
FM4	48	Fuel taxes				-2	0	2	3	1
DC3	9	Cordon (or area) based peak only congestion charge				-1	1	0	2	1
DC5	11	Tolling of existing strategic roads (or toll on existing lane on strategic roads)				-1	1	-1	0	2
PS7	72	Maximum parking standards applied to developments				-1	0	1	1	1

Table 8.2 – Top-scoring and negative scoring measures: Improve economic competitiveness

Code	Page no.	Measure Name	Stage 1a			Stage 1b				
			Political	Technological	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
RC5	41	New strategic links/bypasses				2	3	0	-3	2
FS5	67	Reallocate or provide new HOV or freight lanes; Improve strategic network access to ports and airports; Freight quality partnership measures.				0	2	1	0	1
PM9	54	Measures that encourage or direct high density person trip intensive development in locations accessible by public transport				3	2	2	2	2
RC2	39	New local road links				1	2	-1	-2	0
RC4	40	Widening of strategic roads				2	2	0	-2	1
RC6	42	New River/Canal Crossings				1	2	0	-2	2
RL10	28	Improve light rail services and capacity				2	2	-1	2	2
RL5	24	New rail and tram corridors				2	2	0	2	1
RL9	27	Improve rail services and capacity				2	2	0	2	2
SC10	59	Reduce the need to travel through technology				1	2	1	2	1
SC11	60	Destination based Travel Plans and national car share database				3	2	1	2	3
TM3	33	Capacity enhancements on strategic and local road networks using 'active traffic management' measures and ramp metering.				1	2	-2	-1	0

Code	Page no.	Measure Name	Stage 1a			Stage 1b				
			Political	Technological	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
DC6	12	Freight charging				0	-2	1	2	1
FS6	68	Freight quality partnership working including permit systems, distribution transhipment plus local marshalling facilities				0	-1	2	1	1
SS6	44	Priority for pedestrians & vulnerable users in key centres				1	-1	2	1	1
TE2	77	Low emissions zone				0	-1	1	3	1
TM1	31	Traffic management plans and road user hierarchy				1	-1	2	1	1

Table 8.3 – Top-scoring and negative scoring measures: Improve the built environment

Code	Page no.	Measure Name	Stage 1a			Stage 1b				
			Political	Technological	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
PE2	21	High quality interchanges				1	0	3	0	1
SS3	43	Home Zones				0	0	3	1	2
FM4	48	Fuel taxes				-2	0	2	3	1
FS6	68	Freight quality partnership working including permit systems, distribution transhipment plus local marshalling facilities				0	-1	2	1	1
PM2	50	Mixed use development				2	1	2	2	2
PM4	52	Improve permeability and connectivity				1	0	2	1	2
PM6	53	Measures to mitigate adverse transport impacts of new development				1	0	2	1	1
PM9	54	Measures that encourage or direct high density person trip intensive development in locations accessible by public transport				3	2	2	2	2
SS6	44	Priority for pedestrians & vulnerable users in key centres				1	-1	2	1	1
SS7	45	Improve & maintain Streetscape				1	0	2	0	1
TM1	31	Traffic management plans and road user hierarchy				1	-1	2	1	1
TM2	32	Traffic signal control and co-ordination				1	1	2	0	1
WS5	62	Improve walking network				2	0	2	1	2

Code	Page no.	Measure Name	Stage 1a			Stage 1b				
			Political	Technological	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
TM3	33	Capacity enhancements on strategic and local road networks using 'active traffic management' measures and ramp metering.				1	2	-2	-1	0
DC5	11	Tolling of existing strategic roads (or toll on existing lane on strategic roads)				-1	1	-1	0	2
MM7	37	Live traffic condition information; Live parking Information				1	1	-1	0	1
RC1	38	Local road and junction improvements				1	1	-1	-1	1
RC2	39	New local road links				1	2	-1	-2	0
RL10	28	Improve light rail services and capacity				2	2	-1	2	2

Table 8.4 – Top-scoring and negative scoring measures: Respect and sustain the natural environment

Code	Page no.	Measure Name	Stage 1a			Stage 1b				
			Political	Technological	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
DC1	7	Region-wide road pricing ('pay-per-km')				-2	1	1	3	2
DC2	8	Cordon (or area) based 12 hour congestion charge				-2	0	1	3	2
FM4	48	Fuel taxes				-2	0	2	3	1
TE2	77	Low emissions zone				0	-1	1	3	1
BS1	1	Enhance bus priority and segregation				2	0	0	2	2
BS2	2	Optimise 'strategic bus network' performance				3	1	1	2	2
DC3	9	Cordon (or area) based peak only congestion charge				-1	1	0	2	1
DC6	12	Freight charging				0	-2	1	2	1
FM3	47	Car taxes				-2	0	1	2	0
IG1	49	Location and design of Health Facilities, Education Facilities and Industrial/Employment Facilities (especially those promoted by Development Agency IDA)				2	1	1	2	2
PM2	50	Mixed use development				2	1	2	2	2
PM9	54	Measures that encourage or direct high density person trip intensive development in locations accessible by public transport				3	2	2	2	2
PS3	70	Control parking for retail, other short stay uses				0	0	1	2	1
PS9	73	Control of commuter parking				0	0	1	2	0
RL10	28	Improve light rail services and capacity				2	2	-1	2	2
RL5	24	New rail and tram corridors				2	2	0	2	1
RL9	27	Improve rail services and capacity				2	2	0	2	2
SC10	59	Reduce the need to travel through technology				1	2	1	2	1
SC11	60	Destination based Travel Plans and national car share database				3	2	1	2	3
SI4	75	Better access to key facilities				3	1	1	2	2
TE1	76	Eco-vehicle measures				0	0	0	2	0

Code	Page no.	Measure Name	Stage 1a			Stage 1b				
			Political	Technological	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
RC5	41	New strategic links/bypasses				2	3	0	-3	2
DC4	10	Provide new tolled roads or toll lanes				1	1	0	-2	1
RC2	39	New local road links				1	2	-1	-2	0
RC4	40	Widening of strategic roads				2	2	0	-2	1
RC6	42	New River/Canal Crossings				1	2	0	-2	2
BS5	5	Enhancement of off-peak networks				2	0	0	-1	1
RC1	38	Local road and junction improvements				1	1	-1	-1	1
TM3	33	Capacity enhancements on strategic and local road networks using 'active traffic management' measures and ramp metering.				1	2	-2	-1	0

Table 8.5 – Top-scoring and negative scoring measures: Reduce personal stress

Code	Page no.	Measure Name	Stage 1a			Stage 1b				
			Political	Technological	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
SC11	60	Destination based Travel Plans and national car share database				3	2	1	2	3
BS1	1	Enhance bus priority and segregation				2	0	0	2	2
BS2	2	Optimise 'strategic bus network' performance				3	1	1	2	2
BS4	4	Reducing bus delays from boarding and ticketing issues				2	1	0	1	2
DC1	7	Region-wide road pricing ('pay-per-km')				-2	1	1	3	2
DC2	8	Cordon (or area) based 12 hour congestion charge				-2	0	1	3	2
DC5	11	Tolling of existing strategic roads (or toll on existing lane on strategic roads)				-1	1	-1	0	2
IG1	49	Location and design of Health Facilities, Education Facilities and Industrial/Employment Facilities (especially those promoted by Development Agency IDA)				2	1	1	2	2
MM3	34	Real Time Passenger Information (RTPI - at bus stops, rail stations, by internet/mobile, on board)				1	1	0	0	2
MM5	35	Better public transport information plus internet journey planner				1	0	1	1	2
NI4	16	Integrated Ticketing				2	0	0	0	2
NI5	17	Integrated Fares				2	0	0	0	2
NI7	19	Lower public transport fares overall				1	1	1	1	2
PE1	20	Enhance quality of public transport vehicles				1	0	1	0	2
PM2	50	Mixed use development				2	1	2	2	2
PM4	52	Improve permeability and connectivity				1	0	2	1	2
PM9	54	Measures that encourage or direct high density person trip intensive development in locations accessible by public transport				3	2	2	2	2
RC5	41	New strategic links/bypasses				2	3	0	-3	2
RC6	42	New River/Canal Crossings				1	2	0	-2	2
RL10	28	Improve light rail services and capacity				2	2	-1	2	2
RL9	27	Improve rail services and capacity				2	2	0	2	2
SI4	75	Better access to key facilities				3	1	1	2	2
SS3	43	Home Zones				0	0	3	1	2
WS5	62	Improve walking network				2	0	2	1	2

Code	Page no.	Measure Name	Stage 1a			Stage 1b				
			Political	Technological	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
PS1	69	Commuter focused provision				0	1	1	1	-1

Appendix A

Revisions to long-list of possible measures

Category	Code	Measure Name	What's changed?	Change description	Now in/previously in	
					Code	Description
Bus Strategy	BS1	Enhance bus priority and segregation	No change	- - -	- - -	- - -
	BS2	Optimise bus network performance	Amended	Name and description referred to 'strategic' bus network - amended to include the whole network.	- - -	- - -
	BS3	Improve carrying capacity of fleet	No change	- - -	- - -	- - -
	BS4	Reducing bus delays from boarding and ticketing issues	No change	- - -	- - -	- - -
	BS5	Enhancement of off-peak networks	No change	- - -	- - -	- - -
	BS6	Expansion of network (spatially)	No change	- - -	- - -	- - -
	BS8	Bus information & promotion	Removed	Public transport information measures moved to new wider measure MM5 'Better public transport information plus internet journey planner'	MM5	Better public transport information plus internet journey planner
Direct charges on road users	DC1	Region-wide road pricing ('pay-per-km')	No change	- - -	- - -	- - -
	DC2	Cordon (or area) based 12 hour congestion charge	No change	- - -	- - -	- - -
	DC3	Cordon (or area) based peak only congestion charge	No change	- - -	- - -	- - -
	DC4	Provide new tolled roads or toll lanes	No change	- - -	- - -	- - -
	DC5	Tolling of existing strategic roads (or toll on existing lane on strategic roads)	No change	- - -	- - -	- - -
	DC6	Freight charging	No change	- - -	- - -	- - -
Network integration and development	NI1	improved interchange between modes	No change	- - -	- - -	- - -
	NI2	demand responsive services, taxi bus and community transport	No change	- - -	- - -	- - -
	NI3	Permit cycles on bus or rail	No change	- - -	- - -	- - -
	NI4	Integrated Ticketing	No change	- - -	- - -	- - -
	NI5	Integrated Fares	No change	- - -	- - -	- - -
	NI6	Public Transport fares reductions (off-peak 'yield management')	No change	- - -	- - -	- - -
	NI7	Lower public transport fares overall	New	'Across the board' fare reductions not previously considered.	- - -	- - -
Improved passenger environment	PE1	Enhance quality of public transport vehicles	No change	- - -	- - -	- - -
	PE2	High quality interchanges	No change	- - -	- - -	- - -
	PE4	Bus stop improvements	No change	- - -	- - -	- - -
Rail and light rail strategy	RL1	More and longer trains on existing lines	Removed	All forms of capacity enhancements now included in new measures RL9 and RL10	RL9 RL10	Improve rail services and capacity Improve light rail services and capacity
	RL2	Upgrade public transport corridors to meet demand	Removed	All forms of capacity enhancements now included in new measures RL9 and RL10	RL9 RL10	Improve rail services and capacity Improve light rail services and capacity
	RL3	Improve off-peak service levels	No change	- - -	- - -	- - -
	RL4	Improve reliability on existing rail/tram corridors	Removed	All forms of capacity enhancements now included in new measures RL9 and RL10	RL9 RL10	Improve rail services and capacity Improve light rail services and capacity
	RL5	New rail and tram corridors	Amended	Description amended for compatibility with changes to other rail measures	- - -	- - -
	RL6	Additional rail and Metro stops/stations	No change	- - -	- - -	- - -
	RL7	Rail information & marketing	Removed	Public transport information measures moved to new wider measure MM5 'Better public transport information plus internet journey planner'	MM5	Better public transport information plus internet journey planner
	RL8	Station parking expansion	New	Rail station parking not previoulsy considered.	- - -	- - -
	RL9	Improve rail services and capacity	New	All heavy rail capacity enhancements combined and scope increased. Enhancements separated from light rail.	RL1 RL2 RL4	More and longer trains on existing lines Upgrade public transport corridors to meet demand Improve reliability on existing rail/tram corridors
	RL10	Improve light rail services and capacity	New	All light rail capacity enhancements combined and scope increased. Enhancements separated from heavy rail.	RL1 RL2 RL4	More and longer trains on existing lines Upgrade public transport corridors to meet demand Improve reliability on existing rail/tram corridors
Motorcycle strategy	MC1	Support use of motorcycles and mopeds	New	Measures specific to motorcycles not previously considered	- - -	- - -
Water network	WN4	Water taxis and new river ferries	No change	- - -	- - -	- - -
Physical access control	AC1	Managed restrictions for car traffic in urban centres (e.g. traffic cells, no through car traffic)	Removed	All forms of traffic management moved to new wider measure TM1 'Traffic management plans and road user hierarchy'	TM1	Traffic management plans and road user hierarchy
	AC2	Permit system for HGVs	Removed	New FS6 sustainable distribution and servicing strategy includes all forms of control over freight movements	FS6	Freight quality partnership working including permit systems, distribution transhipment plus local marshalling facilities
	AC3	Ramp metering	Removed	Traffic management on strategic roads included in the new broader measure TM3 Active traffic management on strategic and major roads	TM3	Capacity enhancements on strategic and local road networks using 'active traffic management' measures and ramp metering.
Making best use of existing roads and streets	BU1	Traffic management plans	Removed	All forms of traffic management moved to new wider measure TM1 'Traffic management plans and road user hierarchy'	TM1	Traffic management plans and road user hierarchy
	BU2	Capacity enhancements on strategic and local road networks using 'active traffic management' measures	Removed	Traffic management on strategic roads included in the new broader measure TM3 'Active traffic management on strategic and major roads'	TM3	Capacity enhancements on strategic and local road networks using 'active traffic management' measures and ramp metering.
	BU3	Adaptive traffic signal control	Removed	Signal control measures moved to the new broader TM2 'Traffic signal control and co-ordination' measure	TM2	Traffic signal control and co-ordination
	BU4	Reduce pedestrian delays at junctions	Removed	Signal control measures moved to the new broader TM2 'Traffic signal control and co-ordination' measure	TM2	Traffic signal control and co-ordination
	BU5	Increase driver benefit from improbved or dynamic signal cycle timings	Removed	Signal control measures moved to the new broader TM2 'Traffic signal control and co-ordination' measure	TM2	Traffic signal control and co-ordination
	BU6	Reallocate lanes to HOV or Freight Lanes	Removed	Freight lane measures now incorporated in new broader FS5 'Strategic freight network' measure.	FS5	Reallocate or provide new HOV or freight lanes; Improve strategic network access to ports and airports; Freight quality partnership measures.
	BU7	Establish a road user hierarchy (by road type, user type and time period) and reallocate roadspace in accordance with new priorities	Removed	All forms of traffic management moved to new wider measure TM1 'Traffic management plans and road user hierarchy'	TM1	Traffic management plans and road user hierarchy
	BU8	Enforcement of traffic and parking regulations	Added & removed	It was a recommendation of the public consultation that this should be added as a measure. It was subsequently incorporated within the new measure TM1	TM1	Traffic management plans and road user hierarchy

Category	Code	Measure Name	What's changed?	Change description	Now in/previously in	
					Code	Description
Traffic management	TM1	Traffic management plans and road user hierarchy	New	Local traffic management and safety measures combined in to a single broader scope measure.	AC1 BU1 BU7 BU8 PS10 RS1 RS2	Managed restrictions for car traffic in urban centres Traffic management plans Establish a road user hierarchy Enforcement of traffic and parking regulations Strategy for on street waiting, loading & parking enforcement Road and junction accident remedial measures Physical speed limiting and traffic calming
	TM2	Traffic signal control and co-ordination	New	All traffic signal measures incorporated into new single measure	BU3 BU4 BU5	Adaptive traffic signal control Reduce pedestrian delays at junctions Increase driver benefit from improved or dynamic signal cycle timings
	TM3	Capacity enhancements on strategic and local road networks using 'active traffic management' measures and ramp metering.	New	Strategic traffic management measures combined in to a single broader scope measure	AC3 BU2	Ramp metering Capacity enhancements on strategic and local road networks using 'active traffic management' measures
Driver Information	DI1	Co-ordinated and simplified advanced direction signing on national, strategic and local roads	Removed	Signing measures moved to new signing strategy measure - incorporating signing elements previously split between individual modes.	MM6	Co-ordinated and simplified advanced direction signing on national, strategic and local roads
	DI2	Real Time (Roadside (VMS), In Vehicle (SatNav), Radio)	Removed	All types of real time highway information measures moved to new broader measure: MM7 'Live traffic condition information; Live parking Information'	MM7	Live traffic condition information; Live parking Information
	DI3	Real Time Parking Information	Removed	All types of real time highway information measures moved to new broader measure: MM7 'Live traffic condition information; Live parking Information'	MM7	Live traffic condition information; Live parking Information
Multi modal Information	MM3	Real Time Passenger Information (RTPI - at bus stops, rail stations, by internet/mobile, on board)	No change	- - -	- - -	- - -
	MM4	Multi-modal information	Removed	Public transport information measures moved to new wider measure MM5 'Better public transport information plus internet journey planner'	MM5	Better public transport information plus internet journey planner
	MM5	Better public transport information plus internet journey planner	New	All public transport information measures combined in to single measure.	BS8 RL7 MM4 WS4 CY7	Bus information & promotion Rail information & marketing Multi-modal information Walking information & promotion Cycle information, promotion & training
	MM6	Co-ordinated and simplified advanced direction signing on national, strategic and local roads, including freight routes and local cycling/walking signage.	New	Direction signing elements of mode specific measures combined in to a single measure.	DI1 TT3 WS4 CY7	Co-ordinated and simplified advanced direction signing on national, strategic and local roads Improve access to tourist facilities by all modes Walking information & promotion Cycle information, promotion & training
	MM7	Live traffic condition information; Live parking Information	New	Live traffic information combined with live parking information.	DI2 DI3	Real Time (Roadside (VMS), In Vehicle (SatNav), Radio) Real Time Parking Information
New Road Capacity	RC1	Local road and junction improvements	No change	- - -	- - -	- - -
	RC2	New local road links	No change	- - -	- - -	- - -
	RC3	Provide new HOV or freight lanes	Removed	Freight lane measures now incorporated in new broader FS5 Strategic freight network measure.	FS5	Reallocate or provide new HOV or freight lanes; Improve strategic network access to ports and airports; Freight quality partnership measures.
	RC4	Widening of strategic roads	No change	- - -	- - -	- - -
	RC5	New strategic links/bypasses	No change	- - -	- - -	- - -
	RC6	New River/Canal Crossings	No change	- - -	- - -	- - -
Streetscape	SS3	Home Zones	No change	- - -	- - -	- - -
	SS6	Priority for pedestrians & vulnerable users in key centres	No change	- - -	- - -	- - -
	SS7	Improve & maintain Streetscape	No change	- - -	- - -	- - -
Fiscal Measures to encourage transport and land use integration	FM1	Land Value Taxes	No change	- - -	- - -	- - -
	FM3	Car taxes	No change	- - -	- - -	- - -
	FM4	Fuel taxes	No change	- - -	- - -	- - -
Integration with Other Government Sectors	IG1	Location and design of Health Facilities, Education Facilities and Industrial/Employment Facilities (especially those promoted by Development Agency IDA)	No change	- - -	- - -	- - -
Planning measures which reduce the need to travel	PM2	Mixed use development	No change	- - -	- - -	- - -
	PM3	Increase availability of wider variation in housing type (reducing need to relocate elsewhere if household size goes up or down)	No change	- - -	- - -	- - -
	PM4	Improve permeability and connectivity	No change	- - -	- - -	- - -
	PM6	Measures to mitigate adverse transport impacts of new development	No change	- - -	- - -	- - -
	PM9	Measures that encourage or direct high density person trip intensive development in locations accessible by public transport	No change	- - -	- - -	- - -
	PM10	Measures that encourage or direct high density residential development in locations accessible by public transport	No change	- - -	- - -	- - -
Smarter Choices	SC3	Travel Awareness campaigns	Removed	Promotion, training and awareness campaign measures moved to new broader SC12 Promotion of sustainable travel measure.	SC12	Travel awareness, driver education, walking and cycling information and promotion
	SC6	Individualised travel planning/marketing measures	No change	- - -	- - -	- - -
	SC7	Car sharing	Removed	Car sharing measure included in the redefined Travel Plan measure SC11	SC11	Destination based Travel Plans and national car share database
	SC8	Car clubs	No change	- - -	- - -	- - -
	SC10	Reduce the need to travel through technology	No change	- - -	- - -	- - -
	SC11	Destination based Travel Plans and national car share database	Amended	Focus on all forms of destination based travel plans - including car sharing	SC11 SC7	Destination based Travel Plans Car sharing
	SC12	Travel awareness, driver education, walking and cycling information and promotion	New	Training and promotion of sustainable transport modes combined in to a single measure.	SC3 TT3 WS4 CY7 RS3	Travel Awareness campaigns Improve access to tourist facilities by all modes Walking information & promotion Cycle information, promotion & training Driver education

Category	Code	Measure Name	What's changed?	Change description	Now in/previously in	
					Code	Description
Transport and Tourism	TT3	Improve access to tourist facilities by all modes	Removed	Sustainable travel elements moved to new SC12 Promotion of sustainable travel measure. Signing and direction elements included within new broader MM6 'Better signing and wayfaring' measure.	SC12 MM6	Travel awareness, driver education, walking and cycling information and promotion Co-ordinated and simplified advanced direction signing on national, strategic and local roads, including freight routes and local cycling/walking signage.
Walking strategy	WS4	Walking information & promotion	Removed	Promotion of walking elements moved to new SC12 Promotion of sustainable travel measure. Information on walking included in MM5 Public transport Information. Signing and direction elements included within new broader MM6 Better signing and wayfaring measure.	SC12 MM5 MM6	Travel awareness, driver education, walking and cycling information and promotion Better public transport information plus internet journey planner Co-ordinated and simplified advanced direction signing on national, strategic and local roads, including freight routes and local cycling/walking signage.
	WS5	Improve walking network	No change	- - -	- - -	- - -
Cycling	CY7	Cycle information, promotion & training	Removed	Promotion of cycling elements moved to new SC12 Promotion of sustainable travel measure. Information on cycling included in MM5 Public transport Information. Signing and direction elements included within new broader MM6 Better signing and wayfaring measure.	SC12 MM5 MM6	Travel awareness, driver education, walking and cycling information and promotion Better public transport information plus internet journey planner Co-ordinated and simplified advanced direction signing on national, strategic and local roads, including freight routes and local cycling/walking signage.
	CY8	Improve cycle network	No change	- - -	- - -	- - -
	CY9	Cycle parking facilities	No change	- - -	- - -	- - -
	CY10	Cycle rental schemes	No change	- - -	- - -	- - -
Freight Strategy	FS1	Improve strategic network access to ports and airports	Removed	Freight network measures now incorporated in new broader FS5 'Strategic freight network' measure.	FS5	Reallocate or provide new HOV or freight lanes; Improve strategic network access to ports and airports; Freight quality partnership measures.
	FS2	Freight quality partnership measures	Removed	FQPs become enabling elements within freight measures FS5 Strategic freight network and FS6 Sustainable distribution and servicing strategy	FS5 FS6	Reallocate or provide new HOV or freight lanes; Improve strategic network access to ports and airports; Freight quality partnership measures Freight quality partnership working including permit systems, distribution transhipment plus local marshalling facilities
	FS3	Distribution/transhipment depots for town centrs and marshalling facilities in large developments	Removed	New FS6 'Sustainable distribution and servicing strategy' includes all forms of control over freight movements	FS6	Freight quality partnership working including permit systems, distribution transhipment plus local marshalling facilities
	FS4	Transfer of freight to rail (incl. narrow gauge), waterways, pipelines and coastal shipping	Amended	Description amended to encompass freight movements by coastal shipping and pipeline.	- - -	- - -
	FS5	Reallocate or provide new HOV or freight lanes; Improve strategic network access to ports and airports; Freight quality partnership measures.	New	Freight network measures combined in to single broader measure	BU6 RC3 FS1 FS2	Reallocate lanes to HOV or Freight Lanes Provide new HOV or freight lanes Improve strategic network access to ports and airports Freight quality partnership measures
	FS6	Freight quality partnership working including permit systems, distribution transhipment plus local marshalling facilities	New	A sustainable distribution and servicing strategy measure created to include all forms of control over freight movements	AC2 FS2 FS3	Permit system for HGVs Freight quality partnership measures Distribution/transhipment depots for town centres and marshalling facilities in large developments
Parking strategy	PS1	Commuter focused provision	No change	- - -	- - -	- - -
	PS3	Control parking for retail, other short stay uses	No change	- - -	- - -	- - -
	PS4	Park and ride (bus based)	No change	- - -	- - -	- - -
	PS7	Maximum parking standards applied to developments	No change	- - -	- - -	- - -
	PS9	Control of commuter parking	No change	- - -	- - -	- - -
	PS10	Strategy for on street waiting, loading & parking enforcement	Removed	All forms of traffic management moved to new wider measure TM1 'Traffic management plans and road user hierarchy'	TM1	Traffic management plans and road user hierarchy
Road safety	RS1	Road and junction accident remedial measures	Removed	All forms of traffic management moved to new wider measure TM1 'Traffic management plans and road user hierarchy'	TM1	Traffic management plans and road user hierarchy
	RS2	Physical speed limiting and traffic calming	Removed	All forms of traffic management moved to new wider measure TM1 'Traffic management plans and road user hierarchy'	TM1	Traffic management plans and road user hierarchy
	RS3	Driver education	Removed	Promotion, training and awareness campaign measures moved to new broader SC12 Promotion of sustainable travel measure.	SC12	Travel awareness, driver education, walking and cycling information and promotion
Transport and Social Inclusion	SI3	Targeted measures for mobility impaired people to access the transport system	No change	- - -	- - -	- - -
	SI4	Better access to key facilities	No change	- - -	- - -	- - -
Transport and Environment	TE1	Eco-vehicle measures	No change	- - -	- - -	- - -
	TE2	Low emissions zone	No change	- - -	- - -	- - -

What's changed?	Number
New	14
Removed	32
Amended	4
No change	58
Added & removed	1

Appendix B

Summary and index of final Stage 1 appraisal scores

Category	Code	Page no.	Measure Name	Stage 1a			Stage 1b				
				Political	Techno-logical	Legal	Build and Strengthen Communities	Improve Economic Competitiveness	Improve the Built Environment	Respect and Sustain the Natural Environment	Reduce Personal Stress
Bus Strategy	BS1	1	Enhance bus priority and segregation				2	0	0	2	2
	BS2	2	Optimise 'strategic bus network' performance				3	1	1	2	2
	BS3	3	Improve carrying capacity of fleet				1	0	0	1	1
	BS4	4	Reducing bus delays from boarding and ticketing issues				2	1	0	1	2
	BS5	5	Enhancement of off-peak networks				2	0	0	-1	1
	BS6	6	Expansion of network (spatially)				2	1	0	1	1
Direct charges on road users	DC1	7	Region-wide road pricing ('pay-per-km')				-2	1	1	3	2
	DC2	8	Cordon (or area) based 12 hour congestion charge				-2	0	1	3	2
	DC3	9	Cordon (or area) based peak only congestion charge				-1	1	0	2	1
	DC4	10	Provide new tolled roads or toll lanes				1	1	0	-2	1
	DC5	11	Tolling of existing strategic roads (or toll on existing lane on strategic roads)				-1	1	-1	0	2
	DC6	12	Freight charging				0	-2	1	2	1
Network integration and development	NI1	13	improved interchange between modes				1	0	1	0	1
	NI2	14	demand responsive services, taxi bus and community transport				1	0	0	0	1
	NI3	15	Permit cycles on bus or rail				1	0	0	1	1
	NI4	16	Integrated Ticketing				2	0	0	0	2
	NI5	17	Integrated Fares				2	0	0	0	2
	NI6	18	Public Transport fares reductions (off -peak 'yield management')				1	1	1	0	1
	NI7	19	Lower public transport fares overall				1	1	1	1	2
Improved passenger environment	PE1	20	Enhance quality of public transport vehicles				1	0	1	0	2
	PE2	21	High quality interchanges				1	0	3	0	1
	PE4	22	Bus stop improvements				1	0	1	0	1
Rail and light rail strategy	RL3	23	Improve off-peak service levels				1	0	0	1	1
	RL5	24	New rail and tram corridors				2	2	0	2	1
	RL6	25	Additional rail and Metro stops/stations				1	1	1	1	0
	RL8	26	Station parking expansion				1	1	0	1	1
	RL9	27	Improve rail services and capacity				2	2	0	2	2
	RL10	28	Improve light rail services and capacity				2	2	-1	2	2
Motorcycle strategy	MC1	29	Support use of motorcycles and mopeds				1	0	0	1	0
Water network	WN4	30	Water taxis and new river ferries				1	0	0	0	1
Traffic management	TM1	31	Traffic management plans and road user hierarchy				1	-1	2	1	1
	TM2	32	Traffic signal control and co-ordination				1	1	2	0	1
	TM3	33	Capacity enhancements on strategic and local road networks using 'active traffic management' measures and ramp metering.				1	2	-2	-1	0
Multi modal Information	MM3	34	Real Time Passenger Information (RTPI - at bus stops, rail stations, by internet/mobile, on board)				1	1	0	0	2
	MM5	35	Better public transport information plus internet journey planner				1	0	1	1	2
	MM6	36	Co-ordinated and simplified advanced direction signing on national, strategic and local roads, including freight routes and local cycling/walking signage.				1	0	1	0	1
	MM7	37	Live traffic condition information; Live parking Information				1	1	-1	0	1
New Road Capacity	RC1	38	Local road and junction improvements				1	1	-1	-1	1
	RC2	39	New local road links				1	2	-1	-2	0
	RC4	40	Widening of strategic roads				2	2	0	-2	1
	RC5	41	New strategic links/bypasses				2	3	0	-3	2
	RC6	42	New River/Canal Crossings				1	2	0	-2	2
Streetscape	SS3	43	Home Zones				0	0	3	1	2
	SS6	44	Priority for pedestrians & vulnerable users in key centres				1	-1	2	1	1
	SS7	45	Improve & maintain Streetscape				1	0	2	0	1
Fiscal Measures to encourage	FM1	46	Land Value Taxes				3	1	1	1	1
	FM3	47	Car taxes				-2	0	1	2	0
	FM4	48	Fuel taxes				-2	0	2	3	1
Integration with Other Government Sectors	IG1	49	Location and design of Health Facilities, Education Facilities and Industrial/Employment Facilities (especially those promoted by Development Agency IDA)				2	1	1	2	2
Planning measures which reduce the need to travel	PM2	50	Mixed use development				2	1	2	2	2
	PM3	51	Increase availability of wider variation in housing type (reducing need to relocate elsewhere if household size goes up or down)				1	0	1	1	1
	PM4	52	Improve permeability and connectivity				1	0	2	1	2
	PM6	53	Measures to mitigate adverse transport impacts of new development				1	0	2	1	1
	PM9	54	Measures that encourage or direct high density person trip intensive development in locations accessible by public transport				3	2	2	2	2
	PM10	55	Measures that encourage or direct high density residential development in locations accessible by public transport				2	1	1	1	1
Smarter Choices	SC6	56	Individualised travel planning/marketing measures				1	0	0	1	1
	SC8	58	Car clubs				1	1	1	1	1
	SC10	59	Reduce the need to travel through technology				1	2	1	2	1
	SC11	60	Destination based Travel Plans and national car share database				3	2	1	2	3
	SC12	61	Travel awareness, driver education, walking and cycling information and promotion				1	0	1	1	1
Walking strategy	WS5	62	Improve walking network				2	0	2	1	2
Cycling	CY8	63	Improve cycle network				1	0	1	1	1
	CY9	64	Cycle parking facilities				1	0	1	1	1
	CY10	65	Cycle rental schemes				1	0	1	0	1
Freight Strategy	FS4	66	Transfer of freight to rail (incl. narrow gauge), waterways, pipelines and coastal shipping				0	1	1	1	1
	FS5	67	Reallocate or provide new HOV or freight lanes; Improve strategic network access to ports and airports; Freight quality partnership measures.				0	2	1	0	1
	FS6	68	Freight quality partnership working including permit systems, distribution transhipment plus local marshalling facilities				0	-1	2	1	1
Parking strategy	PS1	69	Commuter focused provision				0	1	1	1	-1
	PS3	70	Control parking for retail, other short stay uses				0	0	1	2	1
	PS4	71	Park and ride (bus based)				0	0	1	1	1
	PS7	72	Maximum parking standards applied to developments				-1	0	1	1	1
	PS9	73	Control of commuter parking				0	0	1	2	0
Transport and Social Inclusion	SI3	74	Targeted measures for mobility impaired people to access the transport system				2	0	1	0	1
	SI4	75	Better access to key facilities				3	1	1	2	2
Transport and Environment	TE1	76	Eco-vehicle measures				0	0	0	2	0
	TE2	77	Low emissions zone				0	-1	1	3	1

Category	Code	Page no.	Measure Name	Stage 1c									
				Safety		Economy			Accessibility			Social Inclusion	
				Accidents	Security	Transport Economic Efficiency	Value for money	Wider Economic Benefits	Option values	Severance	Access to the Transport System	Vulnerable Groups	Deprived Groups
Bus Strategy	BS1	1	Enhance bus priority and segregation	1	0	1	1	0	2	0	2	2	2
	BS2	2	Optimise 'strategic bus network' performance	0	1	2	2	0	2	1	2	2	2
	BS3	3	Improve carrying capacity of fleet	0	0	2	2	0	2	0	2	2	2
	BS4	4	Reducing bus delays from boarding and ticketing issues	0	0	2	3	0	1	0	2	2	2
	BS5	5	Enhancement of off-peak networks	0	1	1	1	0	2	0	2	2	2
	BS6	6	Expansion of network (spatially)	0	0	2	1	1	2	0	2	2	2
Direct charges on road users	DC1	7	Region-wide road pricing ('pay-per-km')	0	0	0	1	1	2	3	-1	-1	-1
	DC2	8	Cordon (or area) based 12 hour congestion charge	0	0	0	1	1	1	2	0	0	-1
	DC3	9	Cordon (or area) based peak only congestion charge	0	0	0	1	1	1	1	0	0	-1
	DC4	10	Provide new tolled roads or toll lanes	-1	0	1	1	2	2	-1	2	0	0
	DC5	11	Tolling of existing strategic roads (or toll on existing lane on strategic roads)	0	0	0	1	1	-1	-1	-1	0	-1
	DC6	12	Freight charging	1	0	0	0	-1	0	1	0	0	0
Network integration and development	NI1	13	improved interchange between modes	0	1	1	1	0	0	0	1	2	1
	NI2	14	demand responsive services, taxi bus and community transport	0	1	1	1	0	0	0	1	3	2
	NI3	15	Permit cycles on bus or rail	0	0	0	0	0	1	0	1	1	1
	NI4	16	Integrated Ticketing	0	0	1	1	0	1	0	2	1	1
	NI5	17	Integrated Fares	0	0	1	1	0	1	0	2	1	1
	NI6	18	Public Transport fares reductions (off -peak 'yield management')	1	0	2	2	0	1	0	2	2	3
	NI7	19	Lower public transport fares overall	1	0	1	1	1	2	0	2	2	3
Improved passenger environment	PE1	20	Enhance quality of public transport vehicles	0	2	1	1	0	1	0	1	3	1
	PE2	21	High quality interchanges	0	2	1	1	0	1	0	2	2	1
	PE4	22	Bus stop improvements	0	2	0	0	0	1	0	1	2	1
Rail and light rail strategy	RL3	23	Improve off-peak service levels	0	0	2	2	0	1	0	2	1	1
	RL5	24	New rail and tram corridors	0	1	2	1	2	2	-1	2	2	2
	RL6	25	Additional rail and Metro stops/stations	0	1	1	1	1	2	0	1	1	1
	RL8	26	Station parking expansion	0	1	1	1	1	1	0	1	0	0
	RL9	27	Improve rail services and capacity	0	0	3	2	1	2	0	2	2	2
	RL10	28	Improve light rail services and capacity	1	0	3	2	1	2	-1	2	2	2
Motorcycle strategy	MC1	29	Support use of motorcycles and mopeds	0	0	1	1	0	1	0	0	0	1
Water network	WN4	30	Water taxis and new river ferries	0	0	0	0	0	1	0	1	1	1
Traffic management	TM1	31	Traffic management plans and road user hierarchy	2	0	0	0	-1	0	2	0	2	1
	TM2	32	Traffic signal control and co-ordination	0	0	2	2	0	0	1	1	2	1
	TM3	33	Capacity enhancements on strategic and local road networks using 'active traffic management' measures and ramp metering.	0	0	2	2	1	0	-1	1	0	0
Multi modal Information	MM3	34	Real Time Passenger Information (RTPI - at bus stops, rail stations, by internet/mobile, on board)	0	1	1	1	0	2	0	2	2	2
	MM5	35	Better public transport information plus internet journey planner	0	1	0	0	0	2	0	2	2	2
	MM6	36	Co-ordinated and simplified advanced direction signing on national, strategic and local roads, including freight routes and local cycling/walking signage.	0	0	1	1	0	1	0	1	1	1
	MM7	37	Live traffic condition information; Live parking Information	1	0	1	1	0	0	-1	1	0	0
New Road Capacity	RC1	38	Local road and junction improvements	1	1	1	1	0	1	0	1	0	0
	RC2	39	New local road links	-1	1	2	1	1	1	-1	1	0	0
	RC4	40	Widening of strategic roads	-1	0	2	1	2	1	-1	1	0	0
	RC5	41	New strategic links/bypasses	-1	0	2	1	2	1	-1	1	0	0
	RC6	42	New River/Canal Crossings	-1	0	2	1	2	1	2	1	1	1
Streetscape	SS3	43	Home Zones	2	2	0	-1	0	1	2	1	2	2
	SS6	44	Priority for pedestrians & vulnerable users in key centres	1	2	0	0	1	-1	2	-1	1	1
	SS7	45	Improve & maintain Streetscape	0	1	0	0	0	0	0	0	0	1
Fiscal Measures to encourage	FM1	46	Land Value Taxes	1	1	2	3	1	1	1	2	1	1
	FM3	47	Car taxes	0	0	-1	1	0	-2	0	-1	-1	-1
	FM4	48	Fuel taxes	0	0	-1	2	-1	-2	1	-1	-1	-1
Integration with Other Government Sectors	IG1	49	Location and design of Health Facilities, Education Facilities and Industrial/Employment Facilities (especially those promoted by Development Agency IDA)	1	1	2	2	1	1	1	2	2	2
Planning measures which reduce the need to travel	PM2	50	Mixed use development	1	1	1	2	1	2	1	2	2	2
	PM3	51	Increase availability of wider variation in housing type (reducing need to relocate elsewhere if household size goes up or down)	1	0	1	1	0	0	0	1	1	1
	PM4	52	Improve permeability and connectivity	2	2	1	1	0	1	2	2	1	1
	PM6	53	Measures to mitigate adverse transport impacts of new development	1	2	1	2	0	1	1	2	0	0
	PM9	54	Measures that encourage or direct high density person trip intensive development in locations accessible by public transport	1	1	2	3	2	2	0	2	1	1
	PM10	55	Measures that encourage or direct high density residential development in locations accessible by public transport	1	1	2	3	0	1	0	2	1	1
Smarter Choices	SC6	56	Individualised travel planning/marketing measures	0	0	1	1	0	1	0	2	2	2
	SC8	58	Car clubs	0	0	0	0	0	2	0	1	1	2
	SC10	59	Reduce the need to travel through technology	0	0	2	2	1	2	0	0	1	1
	SC11	60	Destination based Travel Plans and national car share database	1	1	2	2	1	3	1	2	2	2
	SC12	61	Travel awareness, driver education, walking and cycling information and promotion	2	0	1	1	0	1	1	0	2	2
Walking strategy	WS5	62	Improve walking network	1	2	1	1	0	1	2	1	2	2
Cycling	CY8	63	Improve cycle network	1	1	0	0	0	1	1	2	1	2
	CY9	64	Cycle parking facilities	0	0	0	0	0	0	0	1	1	1
	CY10	65	Cycle rental schemes	0	0	1	1	0	2	0	1	1	1
Freight Strategy	FS4	66	Transfer of freight to rail (incl. narrow gauge), waterways, pipelines and coastal shipping	1	0	1	0	0	0	1	1	0	0
	FS5	67	Reallocate or provide new HOV or freight lanes; Improve strategic network access to ports and airports; Freight quality partnership measures.	1	0	2	1	2	0	0	0	0	0
	FS6	68	Freight quality partnership working including permit systems, distribution transhipment plus local marshalling facilities	2	0	0	0	-1	0	1	0	0	0
Parking strategy	PS1	69	Commuter focused provision	0	-1	0	0	0	0	1	-1	0	0
	PS3	70	Control parking for retail, other short stay uses	1	0	0	2	-1	-1	1	-1	0	0
	PS4	71	Park and ride (bus based)	0	0	2	2	0	1	1	1	0	0
	PS7	72	Maximum parking standards applied to developments	1	0	0	1	0	-2	1	-1	0	0
	PS9	73	Control of commuter parking	1	0	-1	-1	-1	0	1	0	0	-1
Transport and Social Inclusion	SI3	74	Targeted measures for mobility impaired people to access the transport system	0	0	0	0	0	1	0	1	3	1
	SI4	75	Better access to key facilities	0	0	2	2	1	2	1	2	3	3
Transport and Environment	TE1	76	Eco-vehicle measures	0	0	0	0	0	0	0	0	0	0
	TE2	77	Low emissions zone	0	0	-1	-1	-1	-1	0	-1	0	0

Category	Code	Page no.	Measure Name	Stage 1c											
				Integration			Environment								
				Transport Inter-change	Land Use Policy	Other Govern-ment Policies	Bio-diversity	Land-scape	Noise	Water	Air quality	Climate	Soil & geology	Material assets	Cultural heritage
Bus Strategy	BS1	1	Enhance bus priority and segregation	1	1	2	0	0	0	0	2	2	0	2	0
	BS2	2	Optimise 'strategic bus network' performance	2	1	2	0	1	0	0	1	1	0	1	0
	BS3	3	Improve carrying capacity of fleet	0	1	0	0	0	1	0	1	1	0	1	0
	BS4	4	Reducing bus delays from boarding and ticketing issues	1	0	1	0	0	0	0	1	1	0	1	0
	BS5	5	Enhancement of off-peak networks	1	0	2	0	0	0	0	-1	-1	0	-1	0
	BS6	6	Expansion of network (spatially)	2	3	3	0	0	0	0	1	1	0	1	0
Direct charges on road users	DC1	7	Region-wide road pricing ('pay-per-km')	-1	3	-1	0	1	3	0	3	3	0	3	1
	DC2	8	Cordon (or area) based 12 hour congestion charge	0	3	-1	0	1	2	0	2	2	0	2	1
	DC3	9	Cordon (or area) based peak only congestion charge	0	3	-1	0	1	2	0	2	2	0	2	1
	DC4	10	Provide new tolled roads or toll lanes	0	2	0	-2	-2	-1	-1	-1	-1	-2	-1	-2
	DC5	11	Tolling of existing strategic roads (or toll on existing lane on strategic roads)	0	2	-1	0	-1	-1	0	-1	0	0	0	0
	DC6	12	Freight charging	0	2	-1	0	1	1	0	1	1	0	1	0
Network integration and development	NI1	13	improved interchange between modes	2	0	0	0	0	0	0	0	0	0	0	0
	NI2	14	demand responsive services, taxi bus and community transport	1	1	2	0	0	0	0	0	0	0	0	0
	NI3	15	Permit cycles on bus or rail	1	0	1	0	0	0	0	0	0	0	0	0
	NI4	16	Integrated Ticketing	3	0	3	0	0	0	0	0	0	0	0	0
	NI5	17	Integrated Fares	3	0	1	0	0	0	0	0	0	0	0	0
	NI6	18	Public Transport fares reductions (off -peak 'yield management')	0	0	1	0	0	0	0	0	0	0	0	0
	NI7	19	Lower public transport fares overall	0	0	1	0	0	1	0	1	1	0	1	0
Improved passenger environment	PE1	20	Enhance quality of public transport vehicles	0	1	1	0	0	0	0	0	0	0	0	0
	PE2	21	High quality interchanges	3	3	2	0	2	0	0	0	0	0	0	0
	PE4	22	Bus stop improvements	1	0	0	0	1	0	0	0	0	0	0	0
Rail and light rail strategy	RL3	23	Improve off-peak service levels	1	1	2	0	0	0	0	0	0	0	0	0
	RL5	24	New rail and tram corridors	2	3	3	-2	-2	1	-1	2	2	-2	1	-2
	RL6	25	Additional rail and Metro stops/stations	2	3	2	-1	-1	0	-1	1	1	-1	1	-1
	RL8	26	Station parking expansion	2	1	1	-1	-1	1	-1	1	1	-1	1	-1
	RL9	27	Improve rail services and capacity	1	3	1	-2	-2	1	-2	2	2	-2	2	-2
	RL10	28	Improve light rail services and capacity	1	3	1	0	0	2	0	2	2	0	2	0
Motorcycle strategy	MC1	29	Support use of motorcycles and mopeds	0	1	0	0	0	0	0	0	0	0	0	0
Water network	WN4	30	Water taxis and new river ferries	1	1	1	0	0	0	-1	0	0	0	0	0
Traffic management	TM1	31	Traffic management plans and road user hierarchy	0	2	2	0	1	1	0	1	1	0	1	0
	TM2	32	Traffic signal control and co-ordination	0	1	1	0	0	0	0	0	0	0	0	0
	TM3	33	Capacity enhancements on strategic and local road networks using 'active traffic management' measures and ramp metering.	0	2	1	0	-1	-1	0	-1	-1	0	-1	0
Multi modal Information	MM3	34	Real Time Passenger Information (RTPI - at bus stops, rail stations, by internet/mobile, on board)	2	0	1	0	0	0	0	0	0	0	0	0
	MM5	35	Better public transport information plus internet journey planner	3	1	2	0	0	0	0	0	0	0	0	0
	MM6	36	Co-ordinated and simplified advanced direction signing on national, strategic and local roads, including freight routes and local cycling/walking signage.	0	1	2	0	1	0	0	0	0	0	0	0
	MM7	37	Live traffic condition information; Live parking Information	0	1	2	0	0	-1	0	0	0	0	0	0
New Road Capacity	RC1	38	Local road and junction improvements	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1
	RC2	39	New local road links	0	0	1	-2	-2	-1	-1	-2	-2	-2	-2	-2
	RC4	40	Widening of strategic roads	0	1	1	-2	-2	-1	-1	-2	-2	-2	-2	-2
	RC5	41	New strategic links/bypasses	0	2	1	-3	-3	-2	-1	-2	-2	-3	-2	-3
	RC6	42	New River/Canal Crossings	0	2	1	-2	-2	-1	-2	-1	-1	-2	-1	-2
Streetscape	SS3	43	Home Zones	0	0	2	0	2	1	0	1	0	0	0	0
	SS6	44	Priority for pedestrians & vulnerable users in key centres	0	0	1	0	2	2	0	2	1	0	1	1
	SS7	45	Improve & maintain Streetscape	0	0	0	0	2	0	0	0	0	0	0	0
Fiscal Measures to encourage	FM1	46	Land Value Taxes	0	2	2	0	1	1	0	1	1	0	2	0
	FM3	47	Car taxes	0	2	-2	0	0	1	0	1	1	0	1	0
	FM4	48	Fuel taxes	0	2	-2	0	0	2	0	2	2	0	2	0
Integration with Other Government Sectors	IG1	49	Location and design of Health Facilities, Education Facilities and Industrial/Employment Facilities (especially those promoted by Development Agency IDA)	0	3	3	0	0	1	0	1	1	0	1	0
Planning measures which reduce the need to travel	PM2	50	Mixed use development	0	2	2	0	1	1	0	2	2	0	2	0
	PM3	51	Increase availability of wider variation in housing type (reducing need to relocate elsewhere if household size goes up or down)	0	2	2	0	0	1	0	1	1	0	1	0
	PM4	52	Improve permeability and connectivity	0	1	2	0	1	1	0	1	1	0	1	0
	PM6	53	Measures to mitigate adverse transport impacts of new development	2	1	2	0	1	0	0	1	1	0	1	0
	PM9	54	Measures that encourage or direct high density person trip intensive development in locations accessible by public transport	0	3	2	0	1	1	0	2	2	0	2	0
	PM10	55	Measures that encourage or direct high density residential development in locations accessible by public transport	0	2	2	0	0	1	0	2	2	0	2	0
Smarter Choices	SC6	56	Individualised travel planning/marketing measures	2	1	1	0	0	0	0	1	1	0	1	0
	SC8	58	Car clubs	0	1	1	0	1	1	0	1	1	0	1	0
	SC10	59	Reduce the need to travel through technology	0	2	0	0	0	0	0	1	1	0	1	0
	SC11	60	Destination based Travel Plans and national car share database	1	2	2	0	0	1	0	1	1	0	1	0
	SC12	61	Travel awareness, driver education, walking and cycling information and promotion	1	1	1	0	0	0	0	0	0	0	0	0
Walking strategy	WS5	62	Improve walking network	2	1	1	0	1	0	0	1	1	0	1	0
Cycling	CY8	63	Improve cycle network	0	1	2	0	0	0	0	1	1	0	1	0
	CY9	64	Cycle parking facilities	1	1	2	0	0	0	0	0	0	0	0	0
	CY10	65	Cycle rental schemes	1	1	2	0	0	0	0	0	0	0	0	0
Freight Strategy	FS4	66	Transfer of freight to rail (incl. narrow gauge), waterways, pipelines and coastal shipping	0	2	0	-2	0	1	-2	1	1	0	1	0
	FS5	67	Reallocate or provide new HOV or freight lanes; Improve strategic network access to ports and airports; Freight quality partnership measures.	0	2	1	-1	1	1	-1	1	1	-1	1	-1
	FS6	68	Freight quality partnership working including permit systems, distribution transhipment plus local marshalling facilities	0	2	0	-1	1	1	-1	2	1	-1	1	-1
Parking strategy	PS1	69	Commuter focused provision	0	1	0	0	1	0	0	0	0	0	0	1
	PS3	70	Control parking for retail, other short stay uses	0	2	0	0	0	0	0	2	2	0	2	0
	PS4	71	Park and ride (bus based)	3	2	0	-1	-1	0	-1	1	1	0	1	-1
	PS7	72	Maximum parking standards applied to developments	0	2	1	0	1	0	0	1	1	0	1	0
	PS9	73	Control of commuter parking	0	2	0	0	0	0	0	2	2	0	2	0
Transport and Social Inclusion	SI3	74	Targeted measures for mobility impaired people to access the transport system	2	0	1	0	0	0	0	0	0	0	0	0
	SI4	75	Better access to key facilities	2	2	3	0	0	2	0	2	2	0	2	0
Transport and Environment	TE1	76	Eco-vehicle measures	0	1	1	0	0	1	0	1	1	0	1	0
	TE2	77	Low emissions zone	0	2	1	0	0	0	0	2	1	0	1	0