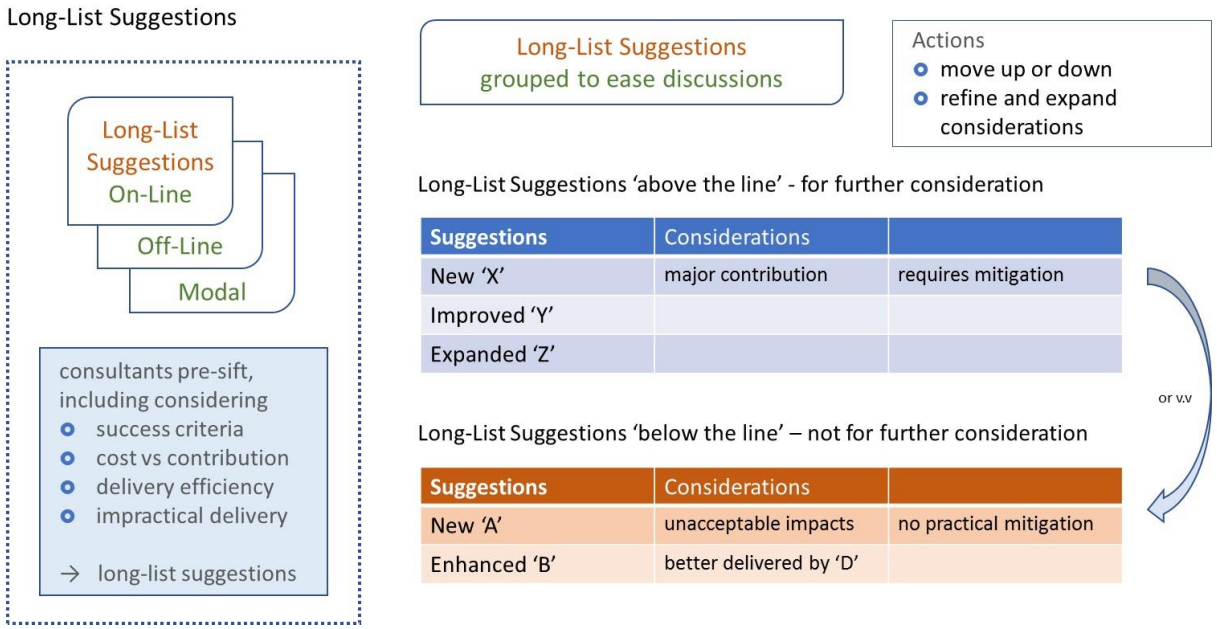
Build A Better A27 Long-List Suggestions

dc/SYSTRA to 14th March 2018. v1c

This paper introduces the approach to developing the 'long-list' of suggestions to be taken forward to sifting in the next work package. This includes an early consultants' 'pre-sifting' exercise intended to generate a more manageable number of suggestions for further assessment. Those to be considered further are placed 'above the line', with suggestions unlikely to be deliverable or with limited contribution to meeting the A27 success criteria being, at this stage, allocated 'below the line', meaning these suggestions will only be considered outline before either rejecting or reconsidering.

The key objective of BABA27 Long-List Suggestions meeting of 15th March 2018 will be to consider the long-list; moving any suggestions up 'above the line', or 'below the line' for further assessment, or adding any missing interventions. Minor 'variants' are not considered here, though it is accepted that 'detail' may be important in taking forward or rejecting specific suggestions, and it will be important to capture these. From this 'long-list' we can screen the suggestions into three groupings; those take forward for further assessment, those open to further investigation, and suggestions to reject. For those being taken forward or open for further investigation we need to consider what mitigations might be required to make the on-line and off-line suggestions acceptable, and which of modal interventions best complement any of the on-line and off-line suggestions to best meet the requirements for a better A27. The approach is illustrated in the figure below.



The following tables provide a listing of suggestions, with some of our initial considerations in allocating these 'above' or 'below the line', including technical details where appropriate, and, based on our professional judgment and experience, an assessment the likely 'A27 Transport Impacts' intended to provide an indication of how the suggestions may contribute to addressing the transport related success-criteria and the traffic and environmental impacts of congestion on the A27 and wider transport network through Chichester. This uses an indicative six-point scale of 'ticks', and intentionally these are not necessarily linear nor additive.

'On-Line' Suggestions -

'Above the Line'

Marginal network gains through small on-line improvements in network operation

Packages of individual junction improvements on the existing A27 between Fishbourne and Portfield junctions to handle increasing traffic volumes, smooth traffic speeds and flows and better manage or reduce conflicting movements

'Smart A/B-road' concept and/or dynamic variable message signing to improve network efficiency

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'Below the Line'

On-line fully tunnelled/'cut and cover' route for all/most of the current A27 from Fishbourne junction to A259 Bognor Road or Portfield junctions, with or without out intermediate junctions

On-line fully elevated route for all/most of the current A27 from Fishbourne junction to A259 Bognor Road or Portfield, with or without out intermediate junctions

'Off-Line' Suggestions

'Above the Line'

New local road to segregate traffic accessing the Manhood Peninsula from A27 'through' traffic from A27 'through' traffic with a new link from the Fishbourne junction, to A286, B2201, or B2145/B2166

New full southern route between Fishbourne junction & A259 Bognor Road east of the A27

- ***Multi-purpose road*** with local junctions to access to the Manhood Peninsula
- ***Strategic road*** with no local junctions to segregate 'through' Bognor traffic

New *strategic* northern route between A27 west of Fishbourne junction and near to Tangmere, with a junction at the A286 to give access to Midhurst and north Chichester, or no intermediate junction

New *local* northern route between A27 west of Fishbourne junction and Temple Bar utilising and improving some existing local roads to limit new construction

New *multi-purpose* northern route between A27 west of Fishbourne and near to the A27 at Portfield providing a stronger local functionality than route variants above, including junctions on B2178 and A286

‘Below the Line’

New full southern route between Fishbourne via A259 to the east to near Temple Bar/Tangmere (with/without junctions)

Upgrading of existing minor routes on the Manhood Peninsula to provide alternative ’east-west’ assess/egress routes onto the A27 east avoiding Stockbridge/Whyke junctions

New *local* road to the north to A286 from the A27 west of Fishbourne to segregate traffic accessing the A286 Lavant/Midhurst and north Chichester from A27 ‘through’ traffic

Fully or largely tunnelled route under Chichester between west of Fishbourne junction and east of Portfield without any intermediate junctions

Use of city centre road capacity for ‘through’ traffic by not discouraging routeings via Avenue de Chartres, Market Avenue and St.Pancras or via Orchard Street and Oaklands Way

‘Modal’ Suggestions

- Parking and Traffic Management
- Walking and Cycling (Active Travel Modes)
- Behaviour Change
- Land-Use Planning
- Technology
- Public Transport Modes
- Freight

Build A Better A27 Long-List Suggestions – Session 1

'On-Line' Suggestions - Consultants' Initial Considerations – 'Above the Line' – for further consideration and sifting

These suggestions are primarily configured to reduce the impacts of traffic volumes on the existing A27 and associated traffic in Chichester city centre and the surrounding district by improving the efficiency and operation of the existing network and/or providing additional highway capacity 'on-line' using the current alignment of the A27

Suggestion - Description	Considerations			A27 Transport Impacts
Marginal network gains through small on-line improvements in network operation	Measures can include revised signal settings, dynamic signal management, white-lining changes and marginal widening	Some interventions will be delivered over time linked directly with new residential and commercial developments	Some interventions will be delivered over time linked directly with further deterioration of network operation driven by HE and/or WSCC	√√
Packages of individual junction improvements on the existing A27 between Fishbourne and Portfield junctions to handle increasing traffic volumes, smooth traffic speeds and flows and better manage or reduce conflicting movements	A range of approaches to improving junction operation, with and without additional land-take - enhanced roundabout, inc 'hamburgers', signalisation - signalised junctions - grade separation (using flyovers or underpasses) - turning restrictions - selective widening on the approaches to junctions - other carriageway widening	Combinations of different arrangements may perform differently in transport terms from others. Opportunities may exist to 'downgrade' some junctions, but this may need 'upgrades' elsewhere. Full signalisation of junctions may allow more active or dynamic management of flows, including 'platooning' traffic flows	Range of transport benefits possible, as well as some adverse impacts if restricting turning movements. Some environmental impacts, especially where grade separation is used. Land take issues. Construction works along the existing A27 alignment could be very challenging, both in extent and duration, and on potential diversionary routes	√√√
'Smart A/B road' concept and/or dynamic variable message signing to improve network efficiency - considered further under the Modal Suggestions: Technology	Range of interventions for messaging users on tactical traffic routeings and to actively manage traffic flows to 'platoon' vehicle flows and adjust junction and signal timings	Likely to deliver efficiency and traffic related environmental benefits.		√√√
On-line and approach road HGV and goods vehicle priority to minimise the impacts of congestion for local business in the city, on the Manhood and to east of Chichester	Delivering priority measures to improved goods vehicle access to the A27	With limited road space availability technology-based priority using selective vehicle detection may provide an opportunity to focused benefits on local freight users	Opportunities may be maximised when sitting alongside the 'Smart A/B Road' concept considered above	√

Suggestion - Description	Considerations			A27 Transport Impacts
On-line fully tunnelled/'cut and cover' route for all/most of the current A27 from the Fishbourne junction to A259 Bognor Road or Portfield junctions, with or without out intermediate junctions	Engineering feasibility and costs for a fully/largely tunnelled route likely to rule this out, but selected provision may be possible. Ongoing additional maintenance and pumping due to being below water table on flood plain land.	Provision of intermediate junction may require significant land-take and/or very challenging engineering works	Delivery feasibility of construction works along the existing A27 alignment would be exceptionally challenging	√√√√
On-line fully elevated route for all/most of the current A27 from the Fishbourne junction to A259 Bognor Road or Portfield, with or without out intermediate junctions	Environmental impacts for a fully/largely elevated route may be significant, although some mitigation may be possible. More limited grade-separation may be possible in some current locations as considered above	Provision of intermediate junction may require significant land-take and/or very challenging engineering works	Delivery feasibility of construction works along the existing A27 alignment would be exceptionally challenging	√√√√

Build A Better A27 Long-List Suggestions – Session 2

'Off-Line' Suggestions - Consultants' Initial Considerations – 'Above the Line' – for further consideration and sifting

These suggestions are primarily configured to reduce the impacts of traffic volumes on the existing A27 and associated traffic in Chichester city centre and the surrounding district by providing additional highway capacity 'off-line' away from the current alignment of the A27

Suggestion – Description	Considerations			A27 Transport Impacts
New *local* road to segregate traffic accessing the Manhood Peninsula from A27 'through' traffic with a new link from the Fishbourne junction, to A286, B2201, or B2145/B2166	Strategically similar scheme was considered previously as the Stockbridge link road. Variants to provide this route in full or in part	Potentially large environmental impacts. Route should only progress with strong mitigation, including landscaping and limited or no lighting.	Strong transport benefits: congestion relief, network resilience. Likely traffic volumes suggest this route could be configured as a single carriageway	√√√
New full southern route between Fishbourne junction & A259 Bognor Road east of the A27 - ***Multi-purpose road*** with local junctions to access to the Manhood Peninsula - ***Strategic road*** *with no local junctions* to segregate 'through' Bognor traffic	Potentially significant environmental impacts. Route should only progress with strong mitigation, including landscaping and limited or no lighting.	Additional environmental impacts possible with a strategic road due to 'grade separation' when crossing radial routes. Potential differences in land requirements (junctions/or elevation).	Significant transport benefits: congestion relief, network resilience, released capacity and mitigation of 'induced traffic'. Traffic volumes may allow these route variants to be configured as a single carriageway	√√√√
New *strategic* northern route between A27 west of Fishbourne junction and near to Tangmere, with a junction at the A286 to give access to Midhurst and north Chichester, or no intermediate junction	Potentially significant environmental impacts, including on the National Park. Route should only progress with strong mitigation, including landscaping and limited or no lighting.	'Tie-in' to existing A27 both east and west of Chichester may be challenging, although opportunities may exist to use the existing Temple Bar junction. Provides 'northern' access to city centre from the A27	Significant transport benefits: congestion relief, network resilience, released capacity and mitigation of 'induced traffic'. Traffic volumes may allow this route to be configured as a single carriageway	√√√√√
New *local* northern route between A27 west of Fishbourne junction and Temple Bar utilising and improving some existing local roads to limit new construction	Potentially large environmental impacts in places. Route should only progress with strong mitigation, including landscaping and limited or no lighting	'Tie-in' to existing A27 west may be challenging. Existing roads/junctions will need significant upgrading to meet design standards and capacity requirements. Provides 'northern' access to city centre from the A27	Strong transport benefits: congestion relief, network resilience. Likely traffic volumes suggest this route could be configured as a single carriageway	√√√√
New *multi-purpose* road northern route between A27 west of Fishbourne and near to the A27 at Portfield providing a stronger local functionality than route variants above, including junctions on B2178 and A286	Potentially significant environmental impacts. Route should only progress with strong mitigation, including landscaping and limited or no lighting.	'Tie-in' to existing A27 west may be challenging. Access at Portfield may be also challenging. Provides 'northern' access to city centre from the A27 and to/from A259 Bognor Road	Significant transport benefits: congestion relief, network resilience, released capacity and mitigation of 'induced traffic'. Traffic volumes may allow this route to be configured as a single carriageway	√√√√√

Suggestion – Description	Considerations			A27 Transport Impacts
New 'off line' full southern route between Fishbourne via A259 to the east to Temple Bar/Tangmere (with/without junctions)	Extended version of the full southern route variants considered above to provide an outer bypass for A27 east-west movements and vice versa	Not to be taken forward due to expected marginal benefits over the Fishbourne-A259 route relative to expected environmental impacts and costs		√√√√
Upgrading of existing minor routes on the Manhood Peninsula to provide alternative 'east-west' assess/egress routes onto the A27 east avoiding Stockbridge/Whyke junctions	Use if existing roads to provide a more formal route for access to the A27 east, including alignment and junction works and safety mitigation	Upgrading routes and junctions through Hunston, North Mundham and Runcton, and on Vinnetrow Road may be challenging, especially to handle increased HGV flows	Acceptability issues of increased traffic flows, including HGVs, through village communities. Potential junction capacity issues on the A27, A259 Bognor Road junction	√√
New 'off line' *local* road to the north to A286 from the A27 west of Fishbourne to segregate traffic accessing the A286 Lavant/Midhurst and north Chichester from A27 'through' traffic	Potentially major environmental impacts. 'Tie-in' to existing A27 east and west of Chichester may be challenging	Access to Chichester city centre via B2178 and A286 from the north, but could generate undesirable 'through' routes east of the A286/onto A286 towards/from Bognor	Limited transport contribution relative to potential environmental impacts suggest insufficient value to take forward relative to the full route from A27 west to A27 east	√√
'Off-line' fully or largely tunnelled route under Chichester between west of Fishbourne junction and east of Portfield without any intermediate junctions	Engineering feasibility and costs for a fully/largely tunnelled route across part of Chichester urban area and likely to rule this out. NB selected 'on-line' provision of a tunnelled/ 'cut and cover' route may be possible as considered above	Delivery feasibility of largely tunnelled route under Chichester and the River Lavant would be exceptionally challenging. Ongoing maintenance and pumping cost likely due to being below the water table. Archaeology under historic City is also a likely significant constraint.	'Tie-in' to existing A27 both east and west of Chichester may be challenging and disruptive during construction	√√√√√
Active use of city centre road capacity for 'through' traffic by not discouraging routeings via Avenue de Chartres, Market Avenue and St. Pancras or via Orchard Street and Oaklands Way	At times, road capacity exists in Chichester centre that does offer an alternative route for some congested journeys on the A27.	Routes through the city centre are often shown on Google Maps and GPS systems as quicker than the A27, both at off-peak times, and especially when the A27 is heavily congested	Supporting use, or not discouraging use of city centre routes, runs counter to local policy and objectives and is potentially damaging to urban environments and local residents. Would have adverse road safety impacts including for vulnerable and non-motorised road users. Would also impact reliability of local bus services.	-/=

Build A Better A27 Long-List Suggestions – Session 3

'Modal' Suggestions: Parking, Traffic Management - Consultants' Initial Considerations – 'Above the Line' – for further consideration and sifting.

These suggestions are primarily configured to assist in managing and reducing the impacts of traffic flows, both in accessing and parking in Chichester

Suggestion - Description	Considerations			A27 Transport Impacts
Parking information strategy, including enhanced signage and real-time parking space availability and routeing information	Strategy could reduce 'parking search times' and encourage access to avoid the A27 and/or congested routes	Links to the Road Space Audit proposals of August 2017	Opportunities for new technology to increase benefits; dynamic variable message signing, parking space occupancy via smartphone apps etc	√
Refined parking management strategy to further optimise short-stay vs long-stay usage and off-street and on-street provision.	Minimise impacts of on-street parking, e.g. on highway link capacity and on bus stop usage	Building on WSCC Integrated Parking Strategy. Links to the Road Space Audit proposals of August 2017	Long-term strategy could increase availability of 'short-stay' parking to support retail /leisure vitality	√
Park and ride as part of a strategy to reduce long-stay parking in central Chichester and short journeys on the A27	Requires land for parking and a reliable public transport route to serve key central area locations	Can reduce traffic flows into central area, but possibly with wider traffic impacts in accessing P&R site	Could increase availability of 'short-stay' parking to increase retail and leisure access and vitality	√
Complementary traffic management strategy configured alongside any new road infrastructure provision to manage and optimise opportunities arising from changes in traffic flows on the wider network and to mitigate 'induced' traffic	Interventions to reuse released road capacity. Development of on-going traffic management measures to make 'marginal' gains to the existing road network. Specific interventions could road space reallocation (for walk, cycle or urban realm), HGV routeing and timing restrictions and 20 mph zones	Supporting technology driven interventions, including dynamic variable message signing to divert traffic onto alternative routes depending on traffic conditions and selective vehicle detection to prioritise buses and goods vehicles.	Links to the Road Space Audit 'To, Not Through' proposals of August 2017 to reduce the attraction of the Chichester Inner Road as a way of passing through the city (itself potentially conflicting with reducing local traffic on the A27)	√√
Safety management measures focused on reducing accident exposure and severity for motorists and other road users	Opportunities through a range of measures, including design changes, visibility and lighting, drainage improvements and improvements in maintenance	Accidents/incidents on the A27 currently reduce network capacity considerably due to lack of alternative routes. Reducing these incidents would improve network performance.		√

Suggestion - Description	Considerations			A27 Transport Impacts
Charging: Road User Changing or Workplace Parking Levy to provide a funding stream and a direct or indirect encouragement for modal switch from car to public transport and walking/cycling/active modes	Both charging mechanisms provide a 'carrot' by way of a funding stream for improved local transport delivery, and a 'stick' by encouraging, through a cost mechanism, direct modal shift from car. Developing	Road charging would need to be focused on the access into the city centre, and although modal shift could be useful in reducing the reliance on the car, road user changing could result in increased use of the A27 adding t congestion and associated problems		-/√√
'High Occupancy' lanes on the A27 and approach routes to prioritise vehicles with more than one occupant and to encourage multiple occupancy and car sharing	High occupancy lanes can work well to 'reward' drivers with passenger, but they can impact on bus services if shared with bus lanes,	In the Chichester context, there is insufficient road-space to deliver any meaningful high occupancy lanes without adverse impacts on general traffic flows and congestion	See also HGV lanes (considered under 'Freight')	=
Vehicle fleet management to encourage take up of low emission vehicles to reduce emission on A27, in Chichester and wider area	Additional measures to those emerging at a national level to support move to low emission vehicles, including supplementary local scrappage scheme, electric vehicle charging point availability etc	Locally driven regulatory measures linked to encourage a move to low emission vehicles, for example, Air Quality Management area restrictions, parking enforcement, taxi licensing	Although this would contribute to air quality objectives, it won't tackle congestion issues	√

‘Modal’ Suggestions: Walking and Cycling (Active Travel Modes) - Consultants’ Initial Considerations – ‘Above the Line’ – for further consideration and sifting

These suggestions are primarily configured to increase walking and cycling for relatively short journeys to, from and around Chichester and, where possible, reduce the number of short-distance car journeys in the city and specifically crossing or using the A27

Suggestion - Description	Considerations			A27 Transport Impacts
‘Cycle Super-Highways’ - full corridor high-quality routes - E-W and N-S into Chichester to create direct largely segregated routes, including transferring road space and introducing cycle signal phases	Transformational change to significantly expand on the existing inconsistent provision in some corridors,	Wider benefits beyond transport into health and economy/tourism		√
Improved pedestrian and cycle crossings of the A27. This intervention could also be extended to other junctions and road crossings	Would be a key component of any north-south ‘Cycle Super-Highways’ cycle routes, but also as stand-alone provision	Could conflict with A27 highway capacity if provided at grade, but will be unattractive if grade separated	Design will be critical to success… waiting times, gradients, safety etc. Links should be at grade and direct	√
Major improvements in pedestrian and cycle routes where possible - high quality attributes, including standards or widths, surfaces, signage, lighting, ramps and cycle parking and pedestrian seating	Review opportunities for new links and/or creation of traffic free or low-traffic routes	‘Active’/bike hubs and improved facilities at destinations (lockers, showers, cycle parking) could be part of these infrastructure improvements.		√
Improved use of public space for pedestrian circulation, improved bus stops, improved signing and wayfinding, urban realm	General opportunities to enhance use of public space	Doesn’t really address congestion issues although indirectly encourages more walking and contributes to maintaining Chichester’s architectural, heritage and landscape qualities		=

'Modal' Suggestions: Walking and Cycling (Active Travel Modes) – Consultants' Initial Considerations – 'Below the Line' – not to be taken forward for further sifting

Suggestion - Description	Considerations			A27 Transport Impacts
Cycle hire scheme in Chichester primarily to target on short-distance urban usage	Could provide some marginal gains, especially following delivery of wider infrastructure improvements	Limited commercial potential in a Chichester context with small scale transport benefits, although there may be some leisure potential, as identified in the Manhood Peninsula Destination Management Plan		=
Moving walkways or travellators to improve pedestrian circulation between key city centre locations	Possible short link from railway station to bus-station	Minimal transport benefit and challenging delivery		=

‘Modal’ Suggestions: Behaviour Change Initiatives - Consultants’ Initial Considerations – ‘Above the Line’ – for further consideration and sifting

These suggestions are primarily configured to encourage travellers, especially those ordinarily using cars, to consider changing their travel patterns – to change mode to public transport or walking/cycling/active modes, to delay their journeys to less busy periods or to make shorter journeys to local facilities

Suggestion - Description	Considerations			A27 Transport Impacts
Travel Planning Programmes through schools, colleges, the University and workplaces and potential for personalised travel planning	Focus on peak-spreading and mode shift to reduce demand on A27, particularly at busiest times. Link in with taxi and school travel services (and potentially other social service providers)	Potential to link with Access Fund and other sources of funding available to support these measures	Most effective when considered alongside associated infrastructure improvements as part of a package of measures	√
Travel Demand Management Marketing campaigns linked to Travel Plans, to include traditional and new media	Important to link with technology e.g. journey planning apps, opportunities for ‘gamification’ e.g. active travel challenges and ‘Better Points’ rewards and sustainable travel incentives	Most effective when considered alongside associated infrastructure improvements as part of a package of measures		√

‘Modal’ Suggestions: Behaviour Change Initiatives – Consultants’ Initial Considerations – ‘Below the Line’ – not to be taken forward for further sifting

Suggestion - Description	Considerations			A27 Transport Impacts
Home/remote working – support for remote working to reduce need to travel, particularly in peak periods	Requires supporting infrastructure e.g. fibre optic broadband, VPN connections etc. Could also include local office hub and co-working locations	Challenging delivery for local authority partners. Also requires culture shift in some organisations that might not be supportive of remote working		=
Car clubs and car sharing (car pooling) schemes – extend scheme usage through increase availability and promotion	Current car club scheme operates from four sites in Chichester (operated by Co-Wheels)	Car sharing (operated by LiftShare) via WestSussexCarShare.com includes local employer groups such as Rolls Royce, the University, Manor Royal Industry Estate, Sussex Fire and Rescue, and County Council	Both schemes have some part to play in trying to manage the growth of car ownership and usage, but with limited impact likely on the A27	=

‘Modal’ Suggestions: Land-Use Planning - Consultants’ Initial Considerations – ‘Above the Line’ – for further consideration and sifting

These suggestions are primarily offer long-term influences on travel demand through managing the availability and use of land, especially for new developments, use of ‘brown-field’ sites and in changing the use and densities of existing land uses

Suggestion - Description	Considerations			A27 Transport Impacts
Sustainable focus for land-use developments to minimise the requirement for residents or employees to travel by car/and via the A27	Focus key development sites in and around Chichester on transport corridors served by public transport and walking/ cycling/active modes and/or in locations where highway demand is less likely to use the A27 around Chichester	Limited numbers of development site are likely to mean that availability of sites will be main driver of development, although pre-existing or committed public transport and walking/cycling provision may allow earlier or more intense development at some site	Some transport network interventions will be delivered over time linked directly with new residential and commercial developments to address direct development-related travel demand	√
Planning conditions to reduce residential site car park allocations associated with new or redeveloped residential sites	Potential to introduce stricter planning conditions on car parking allocations	Stricter planning conditions could reduce site attractiveness	Could result in adverse impacts for nearby on-street residential parking, itself generating servicing and congestion challenges	√
Planning conditions to encourage or mandate reduced car access to new or redeveloped commercial sites and other trip attractors, including schools	Potential to introduce planning conditions, including stricter limits on car parking, support to sustainable travel modes (infrastructure/revenue support), limits on hours of operation.	Stricter planning conditions could reduce site attractiveness	Could result in adverse impacts of displaced workplace parking onto nearby residential locations, potentially mitigated by residents parking schemes	√

‘Modal’ Suggestions: Land-Use Planning – Consultants’ Initial Considerations – ‘Below the Line’ – not to be taken forward for further sifting

Suggestion - Description	Considerations			A27 Transport Impacts
Strong ‘containment’ strategy configured to provide full range of facilities on the Manhood Peninsula to reduce extent of travel into and beyond Chichester	Potentially useful long-term contribution to reducing traffic, but practically and financially this is likely to be undeliverable	Reduced travel demand could threaten viability of existing public transport services		√√

‘Modal’ Suggestions: Technology Initiatives - Consultants’ Initial Considerations – ‘Above the Line’ – for further consideration and sifting

These suggestions are primarily configured to reduce the impacts of car usage and increase the use of public transport and sustainable modes, both through improving the efficiency of the transport network and improving information available to residents and travellers to the area covering travel choice and availability

Suggestion - Description	Considerations			A27 Transport Impacts
‘Smart A/B-road’ concept, comprising a range of technologies currently being rolled out in the ‘Smart Motorways’ programme to deliver capacity and operational traffic flow benefits	Range of technology drivers to actively manage traffic flows to ‘platoon’ vehicle flows and adjust junction and signal timings, to deliver traffic flow priorities, maximise network efficiencies.	Interventions package could include - Queue detection - Incident detection - Routeing and journey times using ANPR/Bluetooth - Bus detection and priority	Likely to deliver efficiency and traffic related environmental benefits. Concept may work best with the availability of suitable diversionary route to handle traffic flow/delay perturbations	√√√
Dynamic variable message signing for road users, including vehicle routeings, car park availability and other messaging	Potentially valuable tool for messaging users on tactical traffic routeings under both normal and disrupted conditions	Increasing availability of in-car/ personal information could reinforce effectiveness of messaging, but needs to be fully or largely consistent		√√
Improved real time passenger information for bus and rail, including extended functionality and availability	Indirect impact on congestion through improved public transport service quality and awareness. Extend provision to all public transport stops	Provision could be extended to key central area locations away from the transport network, including shopping centres and other local attractions		√
Availability of local transport information through technology (and traditional dissemination) routes to deliver comprehensive real-time information on local transport conditions and choices	Coordination of disparate real-time and live information sources to provide a single accessibly area-wide source to assist in determining local travel choice	Various ‘push’ or ‘pull’ technologies available, but likely to require some active management to ensure credibility. Traditional marketing (radio etc) social media, mobile apps		√
Electric vehicle charging infrastructure to encourage reduced emissions	Provision of appropriate charging points - car parks (fast/slow chargers, supermarkets (fast), service stations (rapid) etc to encourage increased local take up of electric vehicles	Could be linked to developing a fleet of electric taxis and/or buses both for positive messaging and as a delivery springboard to improve local emissions	Further development likely through the Sussex Air partnership working with District and Borough Council partners to develop a network of charge points at local authority owned car parks	=

Suggestion - Description	Considerations			A27 Transport Impacts
Autonomous vehicles may provide a range of opportunities for the transport network into the longer-term in the way cities function and transport network is managed. But, whilst the technology may be developing quickly, it is not yet clear how autonomous vehicles will interact with society in general with different functions and governance models possible	The potential functions and impacts of autonomous vehicles (AVs) are not clear at present. AV's may offer increased road capacity and an ability to reduce both home and destination parking requirements by acting like taxis, but safety and other considerations may require road networks re-engineering	Early consideration would be useful by the planning and transport authorities as to whether any investment in the A27 and supporting package of interventions needs to include 'passive provision' and 'future proofing' for the large-scale take-up of autonomous vehicle, and of so what can be done and when		??

‘Modal’ Suggestions: Public Transport Modes - Consultants’ Initial Considerations – ‘Above the Line’ – for further consideration and sifting

These suggestions are primarily configured to increase the use of public transport and directly reduce car travel, especially for access to Chichester. All ‘above the line’ suggestions offer some potential to encourage modal shift, but this is likely to be modest even with a package of improvements measures in place

Suggestion - Description	Considerations			A27 Transport Impacts
Bus infrastructure improvements to deliver improved reliability, including bus priority, shelters and facilities at all stops etc	Network reliability may be constraining demand and increasing operating costs	Delivering improved crossing of the A27 could conflict with highway capacity. Road space limitations may suggest technology-driven priority rather than physical segregation	Improved waiting facilities, including stop facilities – cover, seating, (real time) passenger information etc	√
Bus service improvements providing enhanced frequencies and network coverage	Current network offers relatively high levels of service during core daytime hours. Improvements possible during evenings/off-peak	Opportunities to increase service levels further will be driven by demand or subsidy increases	Challenges on bus network viability are likely to continue into the medium and longer term	=
Park and ride to serve Chichester centre to avoid ‘last mile’ car access to the city	Requires land for parking and a reliable public transport route	Can reduce traffic flows into central area, but possibly with wider traffic impacts in accessing P&R site	Could increase availability of ‘short-stay’ parking to increase retail vitality	√
Demand response transport (DRT)– with opportunities for ‘town’ and/or ‘corridor’ initiatives	Consider potential for technology to drive an alternative, but enhanced, public transport network structure	A ‘total transport’ offering DRT, bus and other service providers (health and education) could improve service levels or reduce delivery costs		=
Rail and bus timetable integration including coordinated services and interchange	Not practical to divert all buses into station forecourt. Improved links to bus station useful?	Problems with impacts of congestion. High bus service frequencies limit opportunities	But potentially useful coordination at start and end of services when both rail and bus frequencies are low	=
Rail and bus ticketing integration to increase ease of use and potentially reduce fares	PlusBus available, but only in Chichester… extend coverage?	Widening smartcards or contactless payment may provide some benefits		=
Taxis – improved vehicle standards and waiting facilities	Measures could include improved waiting facilities	Consider electric taxis to deliver environmental benefit, messaging and drive local charging provision		=

Suggestion - Description	Considerations			A27 Transport Impacts
Extensive subsidy to the bus network to enhance service level or reduce fares	Maintaining current service levels may be challenging given funding constraints and industry issues	Legality of subsiding fares would need to be considered. Challenges in funding support over the short- to medium- to long-term		√
Bus rapid transit network - unguided/guided - kerb, wire or optical guidance	New network of new high quality and largely segregated network to drive modal shift	Delivery challenges in reallocating road space, and key benefits can be delivered using lower cost alternatives	But, some of guided technology could deliver benefits in selected constrained locations	√
Seasonal park and ride to the Witterings and Selsey from the A27 near Chichester to reduce traffic accessing the Manhood Peninsula from the A27 or crossing the A27	Requires land for parking and a reliable public transport route, itself a real challenge given the constraints of the road network and seasonal traffic flows	Limited viability; high operating costs due to route length and low ridership as survey work for Project STOMP suggested majority of visitors would not consider using public transport under almost any circumstance	Potential for shared park and ride and existing bus service to reduce delivery costs, but journey times and service reliability are likely to remain relatively unattractive for 'seaside' bound visitors arriving by car	=
Rail rolling stock improvements to offer enhanced quality of service	Specified through the franchise agreements, franchise timetables and consultation processes	Improvements will be made as the Coastway East trains, some of the oldest on the network, are replaced		=
Rail service frequencies and journey time improvements	Specified through the franchise agreements, franchise timetables and consultation processes	'Local' frequency changes improve journey times are unlikely to be a high priority for the rail industry	Short-term changes on Coastway East from Spring 2018	=
Tramway, light rail or ultra-light rail routes to Selsey, the Witterings, Bognor or elsewhere	Limited economic and commercial viability given potential demand flows and significant capital/operating costs	Current alternative bus services deliver relatively high frequencies but are constrained by congestion	Key benefit of segregated crossing of A27 could be delivered through high quality bus-based interventions	√
Cable car, Monorail, Personal Rapid Transit ('Heathrow Pods') or similar 'bespoke' segregated transport modes	Needs strong 'point-to point' demand to be viable. Could work with P&R, but potentially costly for this function	Cable car scheme delivery can be relatively rapid and with little disruption during construction	Environmental impacts, primarily visual	=
Hyperloop – passenger/cargo transport operating at airline speeds, and claimed to be at a fraction of the cost of air travel.	Ultra-high-speed intended for long-distance travel. Not appropriate for Chichester	Potential for significant townscape, landscape and wider environmental impacts		=

‘Modal’ Suggestions: Freight - Consultants’ Initial Considerations – ‘Above the Line’ – for further consideration and sifting

These suggestions are primarily configured to provide enhanced facilities and management of freight to mitigate the impacts of congestion on the A27

Suggestion - Description	Considerations			A27 Transport Impacts
HGV and goods vehicle priority to minimise the impacts of congestion on business dispatch and delivery on the Manhood Peninsula and to the businesses east of Chichester	Delivering physical segregation and priority measures to improved goods vehicle access to the A27 could conflict with highway capacity	With limited road space availability technology-based priority using selective vehicle detection may provide similar benefits to dedicated HGV lanes and could be focused on local freight users	Opportunities exist alongside the ‘Smart A/B Road’ concept considered under ‘Traffic Management’	√
HGV access and routeing restrictions to physically manage timing and routeings of goods vehicles	Mandating restrictions on freight operators may generate opposition, but could deliver wider traffic flow and environmental benefits	Timing and routeing restrictions may require mitigation measures, including provision of waiting areas, driver facilities etc	Provision of new off-line highway capacity allowing alternative goods vehicle routes may offer opportunities for more extensive HGV access and routeing restrictions	=/√
Delivery and serving plans for freight companies and users to encourage or manage timing and routeings of goods vehicles and to minimise freight contribution to congestion, and the impacts of congestion on operations	The freight industry is diverse with differential requirements across own account users, freight forwarders and distribution companies etc, requiring bespoke servicing plans	Mandating delivery and serving plans and consequential restrictions on freight operators may generate opposition, but could deliver wider traffic flow and environmental benefits	Timing and routeing restrictions may require mitigation measures, including provision of waiting areas, driver facilities etc	=
Electric vehicle charging infrastructure to encourage freight users to switch in part of full to electric vehicles to reduced vehicle emissions	Provision of appropriate charging points could assist local operators to consider moving to electric vehicles, at least for small servicing vehicles operating largely within local catchments	Further development in public charging points through the Sussex Air partnership. Potential to extend partnership working with commercial fleet operators to understand if any local benefits can be realised		=
Business to Customer (B2C) deliveries using home shopping/home delivery or ‘locker-box’ delivery strategies	Extensive home delivery opportunities exist from major retailers and internet suppliers potentially reducing home-based car journeys, but generating delivery vehicle trips	Development of a ‘locker box’ strategy, including central area pick-up points, such as at Chichester station, could reduce delivery vehicle circulation into residential areas, but impacts would relatively small		=

Suggestion - Description	Considerations			A27 Transport Impacts
'HGV and goods vehicle' lanes on the A27 and approach routes to prioritise freight vehicles over other vehicles	HGV or goods vehicle lanes can work well to address particular access issues where goods vehicle flows warrant any loss of road space for general traffic. Is not problematic; may be shared facilities with bus lanes where bus and HGV flows permit	Limited road space on the A27 and approach roads suggests technology-based priority may be offer more potential than physical segregation on both the A27 and approach roads		-/√
Freight hub or consolidation centres to reduce HGV flows in sensitive areas, including Chichester centre and on the narrow roads on the Manhood Peninsula	Concept may be suitable for large urban areas where there are real challenges of central area HGV servicing	Single freight hub or consolidation centre could generate additional freight movements on the A27 in accessing a single site. Increases in light goods vehicle flows are likely in handling local distribution	Freight industry does not, generally, welcome consolidation centres due to the need for 'doubling handling' of goods impacting on delivery efficiency and costs	-
Freight tramway to the Manhood Peninsula to reduce goods vehicle flows on the local road network, which itself is not well engineered to handle HGVs (linked to passenger tramway)	Concept could potentially work with strong 'origin point' to freight hub/consolidation centre goods flows, but would require 'double handling' impacting on delivery efficiency and costs	Locational diversity of the Manhood Peninsula growers' production sites likely to limit value for any fixed route freight tramway. As above, freight hub/consolidation centre viability issues	Additional tramway infrastructure, bespoke vehicles and operating costs over and above any passenger tramway are likely to be prohibitive relative to the benefits in the Chichester context	=
Drone delivery for small packages to reduce delivery van circulation	Technology still at early testing stage, and only likely to offer marginal benefit in reducing light good vehicle deliveries in city centre (cf existing multiple drop off deliveries can be 'efficient'	Visual and noise intrusion impacts may not be welcomed locally		=