highways england

European Union
European Regional Development Fund

A30 Chiverton to Carland Cross
Environmental Statement

Volume 6 Document Ref 6.4 ES Appendix 2.1
Traffic Management Plan

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22/08/18

Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended)
APFP Regulation 5(2)(a)

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Glossary of Terms

AMOR	Asset Maintenance Operational Requirements
ANPR	Automatic Number Plate Recognition
CCC	Cornwall County Council
CCTV	Closed Circuit Television
DCO	Development Consent Order
PD	Principal Designer
DMRB	Design Manual for Roads and Bridges
HETO	Highways England Traffic Officer
HGV	Heavy Goods Vehicle
IRP	Incident Recovery Plan
LRN	Local Road Network
MCDHW	Manual of Contract Documents for Highways Work
PCF	Project Control Framework
RCC	Regional Control Centre
SRW	Scheduled Road Works
TO	Traffic Officer
TM	Traffic Management
TTRO	Temporary Traffic Regulation Order
TSCO	Traffic Safety Control Officer
24/7	Twenty Four Hours a Day, Seven Days a Week

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Executive Summary

The project is currently in PCF stage 3. A preferred route was announced in July 2017. Submission of the DCO is programmed for the third quarter of 2018. Start of construction is planned for March 2020.

Statutory consultations on the preferred route will be held between the 29th of January 2018 and the 12th March 2018.

In September 2017 Skanska Civil Engineering were appointed to provide buildability support to the development of the A30 Chiverton to Carland Cross project for PCF stage 3. As part of this contract a traffic management plan has been developed.

The A30 between Chiverton and Carland Cross is a strategic corridor for local traffic and national trade traffic. It experiences high volumes of seasonal traffic during the spring and summer months when large numbers of tourists visit the region.

The traffic management plan has identified the key areas where the works impact on the existing A30 traffic flow and solutions have been derived to phase the construction works in such a way as to minimise the disruption and impact on the travelling public.

During the continued planning and development of the scheme the overall objective will be ensuring the safety of the travelling public and the workforce whilst minimising disruption to the public.

1 Introduction

1.1 Purpose and Objectives

1.1.1 The A30 is the main link between West Cornwall and the Isles of Scilly, and the national motorway network. The route is particularly popular during the holidays when traffic flows are typically 25% higher than average; the resulting congestion, delays and rat running through local villages is hazardous, and poses serious problems for the local community, tourists and businesses in the region. For locals, particularly during the summer season, the simple act of getting to a neighbouring village can lead to unacceptably long and unreliable journeys, whilst opportunistic rat runners pose increased risk of accidents in their villages. But the impact of the conditions on this road spans far beyond that of the local community; it has implications for the entire region. When journeys on this stretch of road can take four times longer than they should, the disruption it causes can harm the entire region, which is currently under-performing economically.

1.1.2 The objectives of the scheme are to:

- reduce congestion
- unlock growth
- connect communities
- improve safety, operation and efficiency
- protect the environment
- minimise disruption during construction

1.1.3 In developing this Traffic Management Plan consideration has been given to the following five key areas outlined in the major projects dynamic roadworks vision statement;

- Varying the speed limits so they are appropriate for the work taking place. Section 3.6 of the plan provides two options for delivering the scheme.
- Shortening the length of road works. The design has been developed so that the majority of the scheme is offline, with traffic management confined to the junctions and tie-ins.
- Appropriate use of full road closures and associated diversions.
- Delivering road works quicker
- Explaining clearly what activities are, or are not, taking place

1.1.4 The dynamic road works overview and template is included in Appendix E.

1.1.5 The Traffic Management Plan will be refined during PCF Stage 5 (construction preparation) and Stage 6 (construction, commissioning and handover).

1.2 Details of Scheme

1.2.1 The proposal included the creation of a new dual carriageway running to the north of the existing A30 between Chiverton and Chybucca and to the south between Chybucca and Carland Cross. The existing A30 would be retained as a local route.

1.2.2 The scheme presented also included:

- new junctions at Chiverton and Carland Cross built on 2 levels to allow traffic to flow freely
- a new bridge at Chybucca taking the B3284 over the new dual carriageway, with west facing slip roads connecting to the new dual carriageway
- 6 crossing points where local roads cross the new road using under/over-bridges
- environmental mitigation including planting, habitat creation and species protection
- new road drainage discharging into local watercourses with ponds to control water quality and flow rates

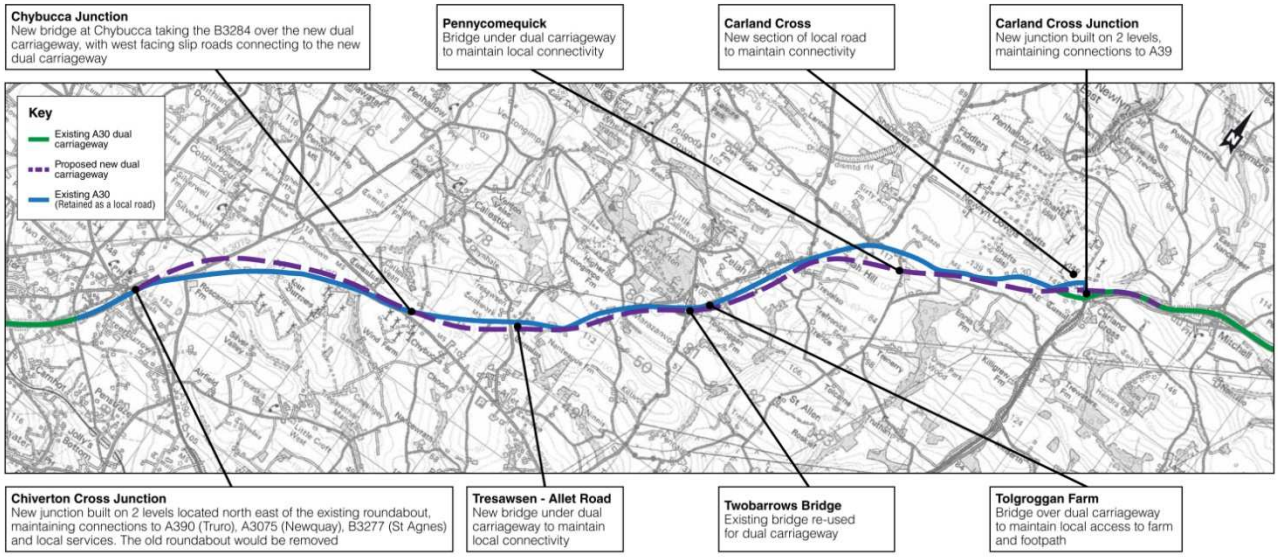


Figure 1: Overview of proposed scheme.

2 Challenges and Considerations

2.1.1 The project has a number of challenges and considerations including:

- Peak seasonal flow from tourist traffic.
- Multiple phasing at new junction locations
- Construction site access's and movement of site vehicles on and off the A30
- Minimising full road closures
- Access to residence and businesses during construction
- Interface with cyclists, pedestrians and equestrians
- Poor weather conditions in winter months

3 Traffic Management Plan

3.1 Customer Requirements

3.1.1 Key customers and stakeholders include the following.

- Highways England
- Travelling public
- Cornwall Council
- Local residence
- Local business
- National freight services
- Abnormal Loads Officer

3.1.2 Refer to table 1 in section 3.1.3 for customer requirements.

3.1.3 All will expect the works to be delivered safely and efficiently. The phasing of the improvement works and the many changes required to the road layout during construction will require accurate and timely communication between all customer groups as part of the Integrated traffic management meetings.

Table 1: Customer Requirements

Customer Group	Who is affected by this scheme?	What are their requirements?	How has the TMP taken these requirements into account?
Stakeholder	Western Power Distribution Roscarnick Solar Farm Garvinack Solar Farm Causilgey Solar Farm Nanteague Solar Farm	• 24hr access for maintenance and emergency repair to the solar farm sites.	• Temporary access routes to be constructed or suitable diversion routes agreed with the wind farm maintenance teams. • In advance of closures on the A30, consult with Western Power Distribution to agree emergency access provisions through the closure.
	Cornwall Council Cormac	• Early notification of closures / diversions that may impact on the highway maintenance activities such as winter maintenance. • Clash management of closures and diversion routes with the local highway authority. • Early engagement to establish the frequency and level of liaison. Identify points of contact in the organisation	• Cormac representative to be invited to traffic management meetings to share upcoming closures details. • Advance notification of closures/diversions. • Emergency Plan to include call in process between the contractor's TSCO and the Cormac duty manager.
	Parish and City Councils. There are 218 parishes in Cornwall with 8 located along the route of the new A30 scheme. Link to interactive map.	• Closures / diversions and traffic management that may impact on journey time reliability. • Advanced notification of disruptive works • Early engagement to establish the frequency and level of liaison. Identify points of contact in the organisation and agree format of information provided for presentation to customers.	• Sufficient notification of closures on the project website, • Provide link to project website
	Cornwall Tourist Board Visit Cornwall	• Advanced notification of closures / diversions and progress on the works so that they can inform visitors to their website.	• Sufficient notification of closures on the project website, • Provide link to project website
	Local and National bus companies - National Express - First Group - Western Greyhound - Travelines	• Journey time reliability to provide accurate timetables to their customers • Advance warning of closures and / or diversions • Appropriate diversion routes to suit coaches. • Accurate assessments of diversion route times • Temporary bus stops provided	• Notification of closures on project website. Closure schedule to detail planned closures for the scheme duration. • Communications plan to identify point of contact with each bus company to understand the notice period which they require and to provided information on impacts to their routes. • The closure programme to be updated weekly to reflect progress on the scheme. • Closure clashes – not having closures on alternative routes that are not subject to diversions • Diversion routes avoid narrow roads and low bridges with no (or adequate) weight limits.

Customer Group	Who is affected by this scheme?	What are their requirements?	How has the TMP taken these requirements into account?
Partner	Emergency Services Cornwall Fire and Rescue Devon and Cornwall Police South Western Ambulance Service	• Access through site during emergencies, suitable diversion routes • Advance warning of closures and/or diversions • Debriefing following incidents	• Process and procedure for allowing blue-light travel through the works. • Diversion routes avoid narrow roads and low bridges • Sufficient notification of closures • Advance planning with emergency services of Traffic management proposals • Major Projects Instruction (MPI) 58: Debriefing of all incidents within the roadworks and sharing learning with Highways England and wider supply chain.
	Asset Delivery Southern Team	• Early engagement to establish the frequency and level of liaison. Identify points of contact in the organisation and agree format of information provided for presentation to customers, • Early notification of closures/diversion routes for maintenance works and winter maintenance.	• Asset Delivery Southern Team representatives consulted in the development of this plan. • Integrated traffic management meetings to avoid clashes on the strategic network and local diversion routes. • Representative from Asset Delivery Southern Team to join TM meetings. • Compound manager to receive weekly updates of the traffic management schedule. • 24/7 contract number for compound to be included in the emergency plan. • Detailed Local Operating Agreement to include communication details between contractor and winter maintenance manager.
	Highways England Customer Call Centre	• Notified of works and diversion routes. • Receive regular updates on scheme progress	• Provided with weekly updates of the traffic management schedule. • Develop a Frequently Asked Questions Document. • Provide monthly project updates detailing scheme progress.
Community	Local residences along the route of the scheme	• Advance warning of closures and / or diversions • Sensitivity to local requirements e.g. market days • Minimal disruption due to works, including environmental factors (e.g. noise, dust, lighting) and diversion routes	• Notification and liaison with individuals and / or local group representatives • Activity curfews e.g. no piling between 22:00-06:00 • Diversion route signs and information to meet driver requirements and optimise usability to reduce opportunities for error and therefore reduce congestion • No construction traffic through the village of Zelah,
Client (as defined by S278)	None identified at this stage of the scheme.	•	• Continue to review S278 interfaces in stages 4, 5 and 6.

3.1.4 The twenty Principles detailed in the Highways England document, **Roadworks: A Customer View** will be considered when designing the traffic management for the A30 Chiverton to Carland Cross. The twenty principles are detailed in the table 2.

Table 2: Roadworks a Customer's View

Reference	Principle	Detail	Implementation on Scheme
	Planning and design of traffic management		
01	Better integration with other roadworks	Plan and integrate better with other roadworks and infrastructure projects so that the total customer impact is understood and mitigated.	• Integrated traffic management meetings with Asset Delivery Southern Team, adjacent projects and Cormac to avoid clashes and share resource. • Single point of communication with stakeholders receiving one combined set of information.
02	Find ways to deliver projects quicker	Explore ways to reduce the time roadworks take but not if this increases disruption to customers, particularly during peak times.	• Value Engineering to be undertaken during detailed design development. • Undertake scenario testing of programme to understand impacts of efficiency plans.
03	Shorten the length of "live" roadworks	Seek shorter lengths of roadworks, staggering activity to minimise disruption to any one customer journey.	• Scheme has been design with the majority of the new route off line. • Use of temporary carriageways at junction locations to maintain traffic flow.
04	Widen "narrow" lanes	Widen non-standard /temporary "narrow" lanes within roadworks	• To be reviewed in detailed traffic management design in regard to minimum road widths and available working space at site access/exit points along the existing carriageway.
05	Vary speed limits	Use variable speed limits, and update these to better reflect road conditions and the level/nature of current activity.	•
06	Improve line demarcation.	Improve demarcation of temporary lines, especially at night/in bright sunlight.	• Implement permanent lining in cases were lines are required for a duration greater than 3 months,
07	Improve varioguard visibility	Improve the visibility of the Varioguard (or similar approved), especially in narrow lanes.	• Regular cleaning of the reflectors on the barrier system. • Use white line paint to increase visibility of the barrier.
08	Explore options for temporary lighting	Consider using temporary lighting during roadworks to improve the visibility of lanes and the Varioguard (or similar approved.	• Undertake risk assessment to determine need for temporary lighting through scheme.
	Information provision		
09	Give more advance notice	Give advance notice of works – a minimum of four weeks prior to their start at the roadside.	• Weekly updates on project website. • Weekly updates via stakeholder distribution lists. • VMS signs at ports • Updates on Traffic England and Roadworks.org. • Information on electronic billboards on roadside on approach to scheme and on strategic road network.
10	Use more billboards to display reasons and timescales for the works.	For billboards to be effective they need to be located at the start of the works and repeated after each junction.	• Regular VMS signs along route providing project updates. • Major Project Instruction (MPI) 48: Use Billboard signage to communicate scheme information to customers. Undertake review to determine if duplicate signing is required at intermediate junctions along A30.
11	Use more electronic signage	Electronic signage is preferred by customers and tends to be trusted as more up-to-date.	• Travel time reports to be shown on VMS trough the scheme. • Travel time for diversion routes to be displayed.

12	Use more travel time variable message signs (TTVMS)	Make more use of TTVMS – ideally, using this repeatedly through roadworks.	• Include TTVMS to inform customers prior to the A30 works.
Reference	**Principle**	**Detail**	**Implementation on Scheme**
13	Design a progress-o-meter	Update customers about overall progress via signage within roadworks (and through other media), particularly for less tangible projects. This should be allied to updates on key milestones and what has been completed.	• Provide VMS detailing next milestone event on the scheme and countdown to completion.
	Engaging and communicating with customers		
14	Engaging local communications and outreach.	Improve communications and outreach to local residents. Widen the catchment area, going beyond those immediately impacted and reaching those living along diversion routes and at local commuter hubs.	• Include within the scheme communication plan • Engage local communities in the scheme, arrange open door weekends and request feedback on traffic management via project website/social media feed.
15	Use multiple media channels, regularly.	Provide information frequently and via multiple methods including social media and roadside.	• Project website • Project social media page • Information boards at ports, airports and service areas • Information included on travel website pages/booking pages for ports/airports/football clubs. • MPI 55: Daily checks of the details provided on Traffic England to be undertaken by the traffic management manager for the scheme. • Follow guidance in the Project Managers guide: Accurately updating NOMS and our digital channels available on the MP Customer Division Portal.
16	Adopt impactful messages	As well as the need to communicate “facts” –what is happening, the duration of the works and the complete schedule – use messages which resonate positively with customers including meeting local priorities, delivering safety benefits and reducing disruption to customers.	• Include milestone achievements on the project website including details/records of the works undertaken during closures.
17	Explain no activity	Find ways to explain why no visible activity is taking place within roadworks. This should help to reduce an important source of customer frustration.	• Detail specific activities when this may take place for instance, testing and commissioning.
18	Organise a customer reality-check of new traffic management	Organise an early drive through new traffic management to spot issues, improvements, behaviours and any unintended consequences.	• Invite stakeholders to undertake drive through and request feedback. Undertake bus drive through with TSCO, emergency services and representatives from local stakeholders. Request feedback from NMU user groups.
19	Collect and monitor customer experience	Seek and act on feedback from customers on delivery, but also to scope and evaluate changes to traffic management. Use this alongside other sources of evidence and insight.	• Develop a customer feedback tool which can be completed on line.
20	Complete the feedback loop	Seek how customer input has influenced delivery and project management. Highlight benefits to customer when these are realised.	• Monthly customer audits of the roadworks • Implement you said we did feedback page on the project website

3.2 Nature of Works

3.2.1 The works include the construction of new offline junctions at Chiverton, Chybucca and Carland. The programme has been developed so that offline sections of the new junctions are constructed with traffic switched onto new or temporary alignments to minimise disruption.

3.2.2 Local site access and egress will be installed at the bridge structure locations, utilising existing access roads off the A30 and A3075. Internal site haul roads will be formed to avoid earthworks vehicles using the existing A30.

3.2.3 Plant crossings have been avoided across the existing A30, instead the programme has been developed such that traffic is diverted onto temporary alignments such that haulage plant can utilise the main carriageway alignment and not interface with the existing A30 traffic.

3.3 Proposed traffic management measures

Chiverton Cross

3.3.1 Phasing drawings can be found in Appendix A1.

Phase 1:

- Advance street works will be required to undertake site clearance operations such as vegetation clearance and removal of existing infrastructure.
- Construct new A3075 slip roads on the north side of the new junction, including a temporary link between the two slip roads at the new junction.
- Construct site access roads from the A3075 to access the bridge sites.
- Construct site access to satellite compound from the A390.
- Stop up farm access roads from the eastbound carriageway of the A3075 and set up diversion routes.
- Construct temporary access to Trevissome business park to provide access during later phases of construction (see section 6.2).

Phase 2

- A3075 traffic will be diverted onto the new slip roads. The configuration will be 1 way traffic each direction as per current alignment. The new access road to White cottage will be opened.
- The old A3075 will be stopped up with alternative access provided to Trevissome business park.
- The main earthworks and highway construction can then commence between Chiverton and Chybucca. Works will concentrated on the new westbound carriageway as this will be used as a temporary alignment for the existing A30 east and westbound carriageway in phase 3.
- To maintain traffic flows along the existing A30, a trenchless method of construction is proposed to install the new outfall between the attenuation pond and the River Kenwyn.

Phase 3

- Open new westbound carriageway between Chybucca and Chiverton junctions. Run traffic in single carriageway condition. Traffic will use the westbound off slip and westbound on slip to connect to the existing Chiverton roundabout.
- Works will commence to the new A30 to A390 slip road and junction for the old A30. Temporary access will be required for Roscarnick Farm during construction if the new access road.
- Temporary junction to be constructed to allow A390 traffic to turn right onto A30 temporary alignment. Either a temporary roundabout to be constructed or a temporary signalised junction to be provided. Due to congestion on the A390 it is advised that tie-in works are undertaken during night shifts.
- Construct widening to existing central reservation to the west of Chiverton roundabout. This will facilitate the contraflow detail required to construct the new A30 approach in phases 4 and 5. East and westbound traffic will need to be put into narrow lanes to provide working space in the central reservation (figure 2).

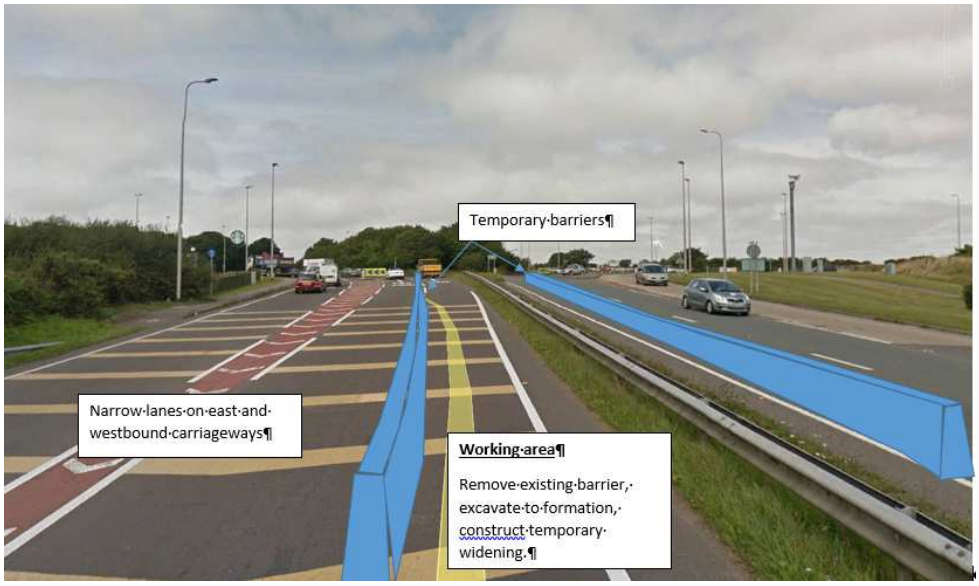


Figure 2: A30 west of Chiverton, looking east along proposed central reservation works.

Phase 4

- Open new junction slip roads and use to manage A390, B3277 and A30 traffic.
- Close existing roundabout.
- Install single lane contraflow on westbound carriageway to allow construction of the new eastbound carriageway and attenuation pond. Install new outfall using trenchless methodology. (refer to cross section in Appendix C)

Phase 5

- Switch contraflow to run on new eastbound carriageway.
- Construct new westbound carriageway.

Phase 5 Alternative Option

3.3.2 Following a meeting with Cornwall Highways and the Asset Delivery Southern Team a suggestion was made to utilise the Blackwater diversion route to remove the need for a contraflow. In Phase 4 eastbound traffic would be diverted on to the Blackwater road where it would join the new A3075 slip road. At the new junction, traffic could access either the A30, A3075 and A390. This would allow westbound traffic to remain in its current alignment, in narrow lanes during the construction of the new eastbound carriageway. In Phase 5 east bound traffic could be transferred onto the new eastbound carriageway with westbound traffic using the Blackwater Road. Refer to appendix A2 for details of proposal.

Phase 6

- Open new westbound carriageway and fully open new junction.
- Complete tie-in works to existing carriageways.

Chybucca Junction

3.3.3 Phasing drawings can be found in Appendix A3.

Phase 1:

- Construct new B3284 slip road including a temporary embankment at the north side of the new junction. This will form a temporary alignment for the A30 in phase 2.
- Construct temporary alignment for the B3284 to the south of the existing alignment on the southern side of the new junction. This will divert traffic around the southern roundabout and approach ramp construction which overlays the existing road. A temporary spur is required on the west approach ramp to connect the temporary alignment back onto the existing A30.
- Works access and exit to be created from the existing A30 to allow works to commence on the bridge structure

Phase 2:

- A30 east and westbound traffic switched onto the temporary alignment providing access for the completion of the bridge approach ramps and new slip roads. A30 traffic would have priority along the temporary alignment with a temporary junction formed for traffic wishing to merge from the B3284. Temporary widening may be required on the new B3284 to allow a temporary merge land to be formed, providing improved visibility for the B3284 merging traffic.
- B3284 traffic is switched onto its temporary alignment. Left turn onto the A30 and straight over movements can be maintained. Right turn movements onto A30 will need to be stopped up due to the temporary alignment of the A30 in this phase. The existing central island will no longer be available and introducing a new island crossing further to the west could cause conflict with the temporary slips. One possible solution would be to create a right turn at the junction formed between the existing and new B3284 alignments (see figure 3). Further assessment required as this could lead to queuing traffic on the northbound B3284 impacting the flow of the A30.

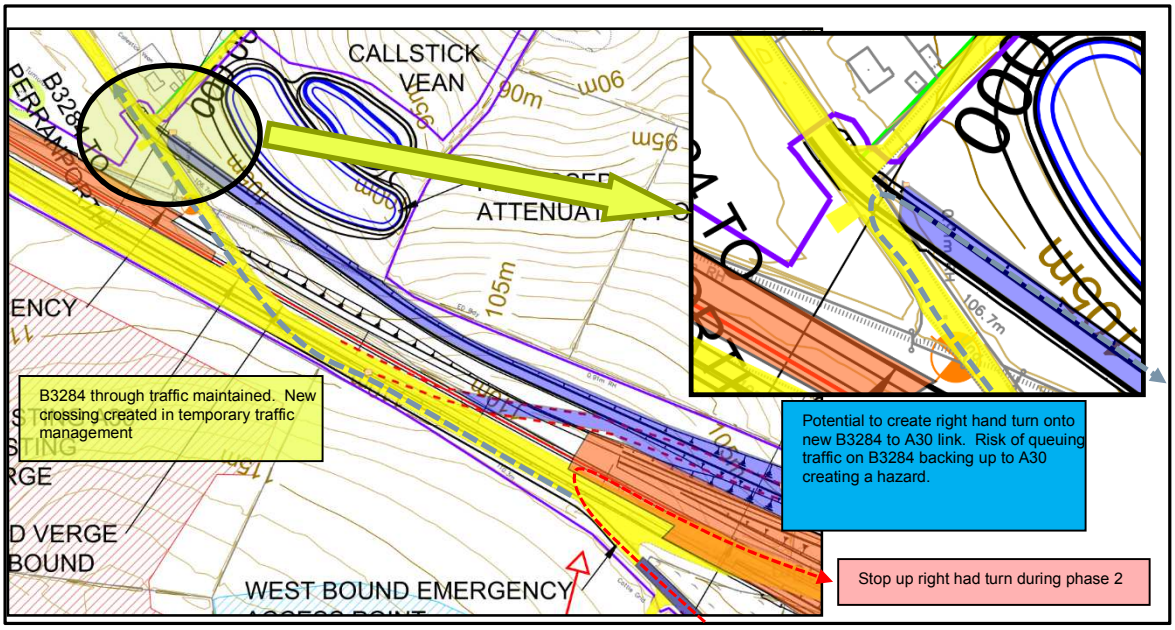


Figure 3: Stopping up of right hand turn at Chybucca

It is recommended that traffic counts are undertaken to determine the number of

- vehicles making the right turn from the B3284 onto the A30 to allow an informed decision based on the impact to the traveling public to be made. If a small number of vehicles are effected then a temporary diversion route could be utilised during phase 2. This would involve using strategic signage along the B3284 from Turo advising that alternative routes are taken. For strategic traffic this would involve using the A390 and A39 with local traffic using Ashley Road to join the A30 at Boxheater.

Phase 3:

- A30 traffic is switched onto the new bridge structure using the new slip roads. Westbound traffic will travel up the new slip, cross the bridge and use the 3rd exist on the roundabout to access the A30 westbound. A30 eastbound traffic will use the new eastbound exit slip, turn left over the new bridge and then use the third exit on the roundabout to re-join the A30.
- B3284 traffic will use the new slip roads and bridge. Temporary lane markings including give way or signals may be required to maintain priority of A30 traffic.
- The temporary road alignments will be removed and the land re-instated.
- In phase 3 a clear haul route is created between Chiverton junction and Nancarrow Fram, allowing the cut from Nancarrow to be transported directly to Chiverton using 30t wagons and removing the need for plant crossings.

Phase 4:

- Highway construction complete between Chiverton and Chybucca allowing A30 traffic to be diverted onto new westbound alignment. A temporary crossover will be required within the new central reservation to allow traffic to transfer from the eastbound carriageway to the west.

- The remaining section of westbound carriageway construction can now be completed.
- Localised temporary access roads will be required to maintain access to Garvinak during the construction of the de-trunked section of the A30.

Zelah Bypass

3.3.4 Phasing drawings can be found in Appendix A4.

Phase 1

- The construction of the new Tolgroggan accommodation bridge is adjacent to the existing structure. It is recommended that the existing structure is demolished in the first phase of the works for the following reasons:
  - Remove risk of damage to new structure from adjacent demolition works.
  - Provide increased working space for the bridge construction and beam lifts.
  - Increased working space for demolition operations
  - Removes the requirement for temporary slopes and temporary works to support existing bridge abutments during construction of A30 carriageway.
  - Reduces number of traffic management phases on the east and westbound carriageway.
- The demolition of the bridge prior to the construction of the new structure will require a temporary access road to be constructed for Tolgroggan Farm. The specification, width and details will require further development with the relevant stakeholders. The proposed route is between the new southern boundary and the top of the new A30 cutting. The track will tie-in to the existing Hill House access road. A survey of the existing access track will be required to determine its suitability for the farm traffic it would need to take.

Phase 2

- An extended overnight closure of the A30 would be required to demolish the existing Tolgroggen overbridge. The bridge is a three span in-situ concrete deck structure, support on reinforced concrete abutments and two intermediate raking piers.
- Three demolition options are available which will all require full closures of the A30.

1. Progressive fragmentation

- Timber matts will be placed in the demolition area to protect the existing road surfacing. Demolition excavators will be alignment to the north and south side of the structure and progressively break the bridge deck back to a point where a controlled collapse of the central span can be achieved. The back spans and raking columns will then be broken down. The reinforcement and concrete will be loaded onto wagons for deposition at a local stoke pile for processing into recycled crushed material for re-use in the scheme.
- The protection matting will be removed, inspections of the carriageway undertaken and the road re-opened.
- Design checks will need to be undertaken on the raking piers to determine their stability in the temporary state during the demolition of the central and back spans.

2. Explosives

- This option should be considered in the event that the temporary stability of the raking piers is in doubt. Core holes would be drilled into the piers and explosive charges placed. Assessments of the bridge deck and an AIP will be undertaken to prove that the core holes do not have a detrimental effect on the bridge structure. Protection matting and a crushed stone protection mattress will be placed over the existing road. To protect the road construction from the impact of the falling bridge deck.
- Following confirmation of clearance of the exclusion zone, the charges will be detonated, causing the central spans and deck spans to fall onto the crash matt. Demolition excavators will then move in to break the deck down and clear the arisings away to a local stock pile.

3. Segmental de-construction

- A third option is to deconstruct the bridge in sections. This option is not considered favourable as it requires heavy temporary works to support the bridge deck in its temporary state. It would also require more overnight closures than options 1 and 2.
- It is envisaged that progressive fragmentation will be the most suitable methodology used to demolish the bridge as it will provide the minimum disruption and length of closure for the public. A closure date on a Saturday to Sunday in the March/April of 2020 would be utilised, The project team will need to identify a suitable weekend with minimum traffic flow. The Chiverton to Boxheater diversion would be used during the closure, refer to diversion 1 in appendix B.

Phase 3

- The existing east facing slip road to the Zelah side road will be stopped up to allow construction of the new slip road and local road. Traffic will be diverted via Trevalso junction to access Zelah village
- Construction will commence on construction of the new local road. This will be used as a temporary alignment for the A30 in phase 3. A local plant crossing will be required across the existing side road to permit east to west movement of materials.
- Construct northern abutment for new Tolgroggan bridge.
- Works can also commence to the southern side of the A30, excavating the new cutting for the new westbound carriageway.
- Construct southern half of the new Trevalso under bridge.

Phase 4

- A30 east and west bound traffic will be diverted along the new local road, merging with the existing A30 to the west of the new Tolgroggan bridge. The westbound carriageway of the new A30 can be completed, using the space available for the construction of the new Tolgroggan bridge. To minimise closures of the A30 it would be proposed to construct the new bridge deck on the westbound carriageway and lift it into position during an overnight closure. Checks need to be undertaken on the weight of the deck structure with the permanent formwork and precast parapets included to confirm that a single lift is achievable.

Phase 5

- Traffic is diverted on a temporary alignment over the completed first half of the Trevalso Bridge. Works can then be undertaken on the second half of the structure and Heaver lane re-alignment.

Carland Cross Junction

3.3.5 Phasing drawings can be found in Appendix A5.

Phase 1

- Use existing wind farm access as site access and egress for offline construction.
- Construct realigned access roads for the wind farm to provided alternative access to western turbine.

Phase 2

- Open access track to western turbine.
- Commence works to bridge structures and earthworks to new local link road.
- Construct temporary access road to wind farm across cut/fill line on new local road alignment.
- Maintain clear access route through the works area for 24/7 access to the wind farm.

Phase 3

- Open re-aligned access road to windfarm.
- Complete earthworks and highway construction to northern roundabout
- Construct temporary right hand turn land for realigned A30 through traffic in phase 4.
- Confirmation of the available width of carriageway under the new structure needs to be made to confirm that a designated right hand turn can be formed.

Phase 4

- Switch A30 east and westbound traffic on to new local road. Eastbound traffic to have a designated lane at the roundabout to mitigate queues on realigned carriageway.
- Stop up old A30. Create haul route between Penny come Quick and Chiverton. Commence earthwork fill operations to new slip roads and mainline carriageway.

Phase 5

- Switch A30 eastbound and westbound traffic onto new A30 eastbound slip road. Width of new slip road to be checked to determine that two-way traffic can be accommodated. Construct temporary realignment in phase 4 to create a smoother route in the temporary case.
- Construct new A30 westbound off slip
- Maintain access to memorial site on the eastbound carriageway.

Phase 6

- Open new slip roads. Remove temporary alignments and complete tie-ins.

- Run traffic in single lanes along new A30 to provide access to the new central reservation to complete drainage and central barrier.

Carland Cross Junction Alternative Option

3.3.6 An alternative option at Carland Cross is to provide a temporary bridge crossing at chainage 12900 in phases 1 and 2. This bridge will be used to move the fill material from Penny Come Quick to the western slip road earlier in the programme. This solution would remove phase 4 from the original phasing plan and provide a more free flowing link for the A30 eastbound traffic.

3.4 Restrictions

3.4.1 Speed restrictions will be required as detailed in section 3.6.

3.4.2 Laybys within the construction area will need to be closed. The penultimate laybys on the A30 in advance of the works will be closed to provide a holding area for wide and abnormal loads.

3.4.3 Closures of the carriageway will be restricted to overnight closures between the hours of 20:00 and 06:00. Extended closures outside of this period (bridge demolition) will require separate approvals.

3.5 Operating Lanes

3.5.1 The current A30 is a single carriageway. There is an eastbound and west bound crawler lane on the Zelah Bypass at the location of Tolgroggan bridge.

3.5.2 There is a free flow priority lane for A30 eastbound at Carland Cross. Solutions for maintain the free flow link are described in 3.3.

3.6 Speed Limits

3.6.1 Temporary mandatory speed restrictions will be in place through the construction period. Early liaison will be established with the Devon and Cornwall police to ensure that proposed arrangements are appropriate and enforceable. Automatic Number Plate Recognition (ANPR) average speed cameras will be provided through the works to assist with driver behaviour and compliance. Two options for speed restrictions have been considered in this report;

Option 1: Full length restrictions

3.6.2 During the initial meeting with Cornwall Council and the Asset Delivery Southern Team it was advised to install a mandatory reduced speed limit along the whole length of the A30 between Carland Cross and Chiverton. This as to remove any confusion to the travelling public with the stop start nature of the restrictions. The other solution is to limit the restrictions to the four interface areas and return to national speed limits between the sites.

Option 2: Isolated restrictions

3.6.3 40 or 50mph limits would be applied through the temporary traffic management at the junction sites at Chiverton Cross to Chybucca, Zelah bypass and Carland Cross. The final selection of limit will be made following risk assessment of the temporary alignment details for the phasing at each junction. Given the poor visibility of the existing carriageway it is considered appropriate to reduce the limit to 40mph through the working areas.

3.6.4 A plan showing the lengths of traffic management and the gaps between speed restrictions for this option is shown in figure 4:

3.6.5 The 1.9km gap between the end of restrictions at Chiverton Cross and the start of restrictions at Chybucca could lead to incidents of excessive acceleration and then de-acceleration over a short distance. It is therefore recommended that the restriction is maintained between these towo work areas. This could be lifted once the new link between Chiverton and Chybucca is opened.

3.6.6 A risk assessment of driver behaviour between the work sites should be undertaken to determine the extra mitigation measures, such as advance signage, which would be required to prevent incidents occurring from the acceleration/breaking between one section of traffic management and another.

3.6.7 On completion of new links and carriageways, risk assessments will be undertaken to determine the earliest opportunity to lift temporary speed restrictions.

3.6.8 Traffic speeds can be monitored through the scheme using real time monitoring systems available through third party suppliers. Data can be used to identify potential performance issues and allow mitigation strategies to be implemented.

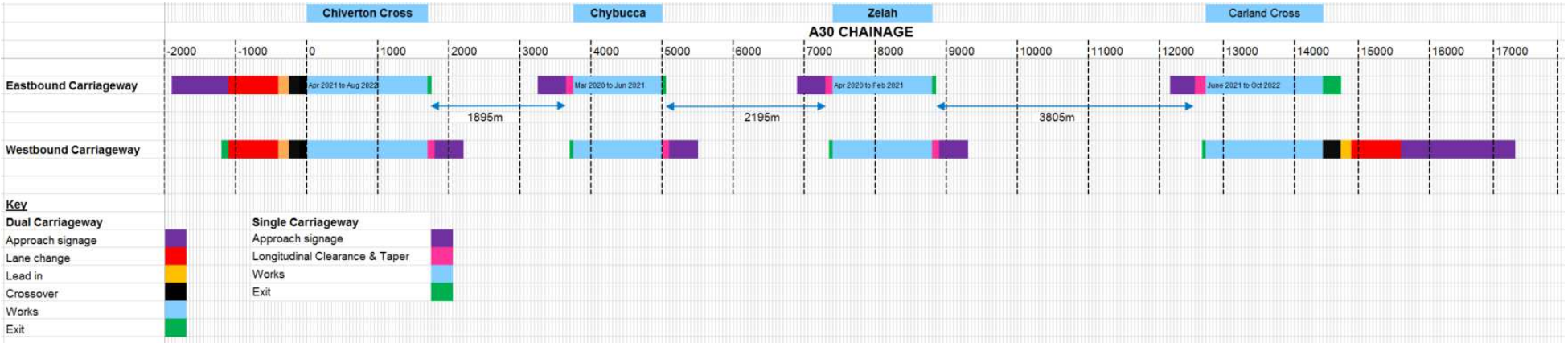


Figure 4: Isolated traffic management and speed restrictions at junction locations

3.7 Length of the traffic management

3.7.1 Option 1: Full length restrictions

Carriageway	Works Location	Traffic management restrictions	Length of traffic management (km)
A30 eastbound	Chiverton Roundabout to Chybucca junction	Narrow lanes and 40mph speed restrictions.	6.2
A30 westbound	Chybucca junction to Chiverton junction	Narrow lanes and 40mph speed restrictions	6.2
A30 eastbound	Chiverton to Carland Cross	40mph speed restrictions	15.4
A30 westbound	Carland Cross to Chiverton	40mph speed restrictions	15.4
A3075 eastbound	Chiverton Roundabout	Narrow lanes and 40mph speed restrictions	2.2
A3075 westbound	Chiverton Roundabout	Narrow lanes and 40mph speed restrictions	1.6
A390 northbound	Chiverton Roundabout	Narrow lanes and 40mph speed restrictions	0.4
A390 southbound	Chiverton Roundabout	Narrow lanes and 40mph speed restrictions	0.4
B3277 north and southbound	Chiverton Roundabout	Narrow lanes	0.2
B3284 north and southbound	Chybucca junction	Narrow lanes	1.6
A30 Zelah Bypass eastbound	Zelah	Narrow lanes and 40mph speed restrictions	1.6
A30 Zelah Bypass westbound	Zelah	Narrow lanes and 40mph speed restrictions	1.6
A30 Eastbound Carland	Carland Cross Rbout	Narrow lanes and 40mph speed restrictions	2.0
A30 Westbound Carland	Carland Cross Rbout	Narrow lanes and 40mph speed restrictions	2.9
A39 northbound	Carland Cross Rbout	Narrow lanes and 40mph speed restrictions	0.25

A39 southbound	Carland Cross Rbout	Narrow lanes and 40mph speed restrictions	0.25

3.7.2 Option 2: Isolated restrictions

Carriageway	Works Location	Traffic management restrictions	Length of traffic management (km)
A30 eastbound	Chiverton Roundabout to Chybucca junction	Narrow lanes and 40mph speed restrictions.	6.2
A30 westbound	Chybucca junction to Chiverton Roundabout	Narrow lanes and 40mph speed restrictions	6.2
A30 eastbound	Zelah Bypass	40mph speed restrictions	1.6
A30 westbound	Zelah Bypass	40mph speed restrictions	1.6
A30 eastbound	Carland Cross	Narrow lanes and 40mph speed restrictions	2.0
A30 westbound	Carland Cross	Narrow lanes and 40mph speed restrictions	2.9

3.8 Carriageway and slip road closures

3.8.1 The scheme will attempt to limit the number of full carriageway closures to minimise impact and disruption to the traveling public. Existing diversion routes currently used by the Asset Delivery Southern Team and Cornwall County Council will be utilised for the scheme. Details of the diversion routes can be found in Appendix B.

3.8.2 The table below lists the operations currently identified which will require full closures due to the proximity to the running lanes or works on/over the carriageway.

Operation	Number of closures	Reason for closure	Mitigation measures to minimise number of closures
Troglogan bridge demolition	1: Extended closure of A30 east and west bound carriageways	Demolition plant and equipment on carriageway	Identify period of low traffic volume to undertake works. Staged demolition operations to minimise closure times.
Troglogan bridge beam installation	2 nights A30 east and west bound carriageways	Lifting beams over carriageway	Pre-assemble bridge beams off site to minimise lifts

Trogloggan bridge deck construction	2 nights A30 east and west bound carriageways	Installation of cantilevered formwork for parapet construction	Install majority of formwork onto beams prior to lift. Review design and construction options to prefabricate bridge deck (including parapets) off site and lift into position using one night closure.
Trogloggan bridge deck construction	4 nights A30 east and west bound carriageways	Concrete pours to bridge deck and parapets	Work north to south along bridge deck to minimise length of closures.
Trogloggan bridge deck construction	4 nights A30 east and west bound carriageways	Removal of parapet cantilevered formwork	Utilise two cranes to work on north and south parapets during closure.
Chiverton Cross Traffic switches	7 nights A30 east and west bound carriageways	Traffic management switches between phases	Investigate use of rolling blocks to maintain traffic flow. Limit closure times to pinch point works at tie-ins.
Chybucca	5 nights A30 east and west bound carriageways	Traffic management switches between phases	Investigate use of rolling blocks to maintain traffic flow. Limit closure times to pinch point works at tie-ins.
Zelah	4 nights A30 east and west bound carriageways	Traffic management switches between phases	Investigate use of rolling blocks to maintain traffic flow. Limit closure times to pinch point works at tie-ins.
Carland	8 nights A30 east and west bound carriageways	Traffic management switches between phases	Investigate use of rolling blocks to maintain traffic flow. Limit closure times to pinch point works at tie-ins.

3.8.3 Overnight carriageway closures will be between 20:00 to 06:00. These times may be revised due to increase or decrease in traffic flow and will be dependent on regional events (refer to section 6.1).

3.8.4 It is advised that carriageway closures on Friday nights are avoided due to the large increase in traffic flow.

3.8.5 An extended weekend closure will be required for the Trolgroggan Bridge demolition operation. This will require further detailed planning and approvals from the network occupancy team.

3.9 Hard shoulder running

3.9.1 Not applicable to this scheme

4 Adjacent roadworks and other traffic management

4.1 Highways England Schemes

4.1.1 Figure 4 is taken from the Highways England Delivery Plan Update 2017-2018. It shows the proposed schemes to commence in 2019 and 2020. There are no adjacent scheme identified at present. The scheme will continue to track the development of the RIS 2 schemes to identify future interface.

4.1.2 Liaison will take place between the scheme and the Asset Delivery Southern Team to identify future maintenance schemes along the A30 so that the interface can be successfully managed. During the regular liaison meetings opportunities will be identified in which plan closures can be shared by all parties for maintenance and construction operations.

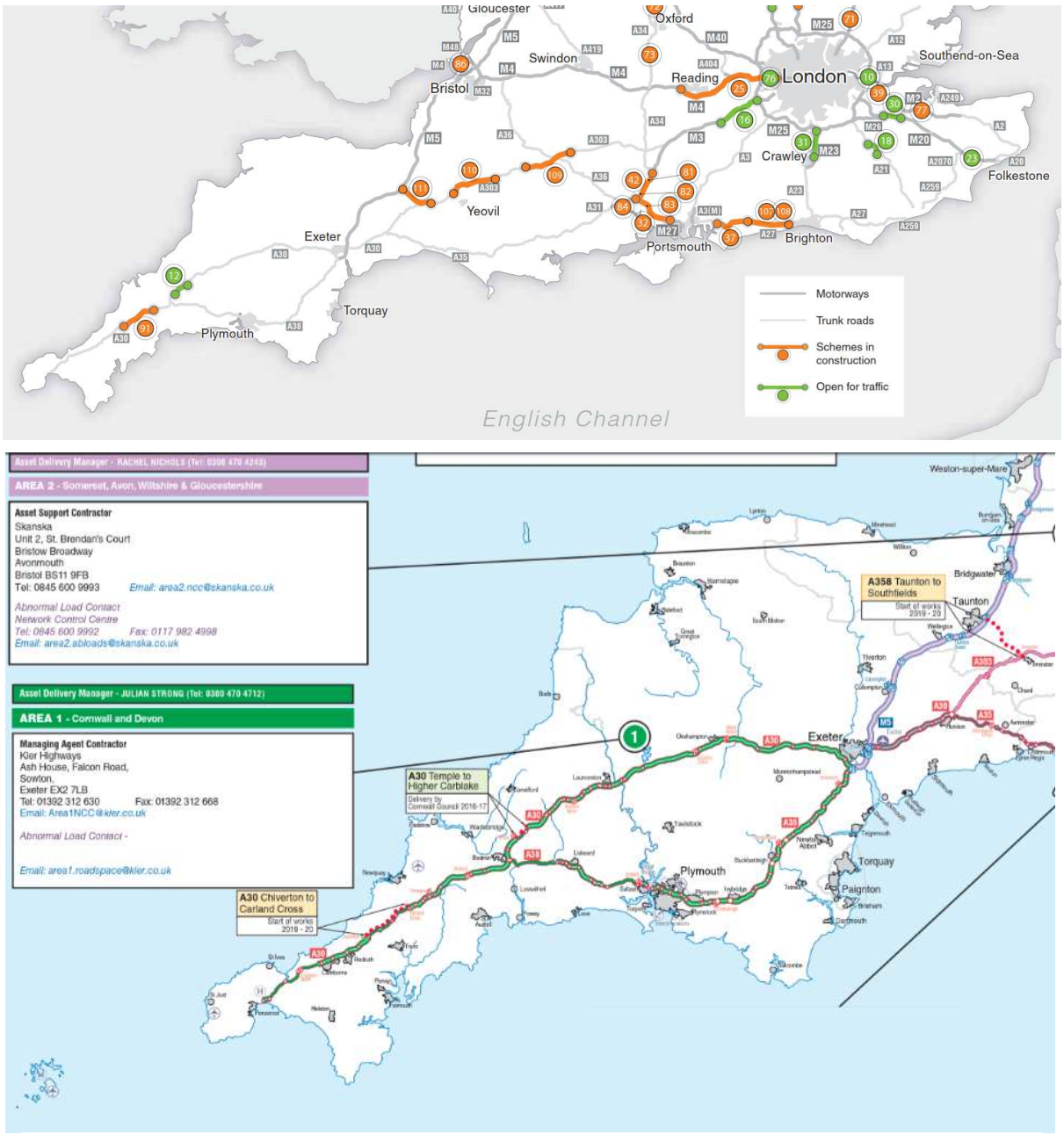


Figure 5: Location of planned HE works

4.2 Cornwall County Council and CORMAC

4.2.1 The Cornwall County Council Highways website **https://www.cornwall.gov.uk/transport-and-streets/roads-highways-and-pavements/major-highway-schemes/** does not currently identify future schemes between 2019 and 2023. Liaison with the Council and CORMAC will identify schemes that may impact proposed diversion routes or interface directly with the scheme.

4.3 Traffic Management Meetings

4.3.1 Integrated traffic management meetings will be held on monthly intervals during the delivery of the scheme. Attendees will include representatives from:

- Principal contractor
- HE Major Projects
- Traffic management manager
- Traffic management contractor
- TSCO (Traffic Safety Control Officer)
- Recovery team leader
- Emergency Services
- Cornwall County Council Highways representative
- Cormac
- Highways England Asset Delivery Southern Team
- Traffic officers
- Community relations manager
- Winter maintenance team
- Other key stakeholders as identified

4.3.2 The purpose of the meeting will be to inform all parties of current and future traffic management and construction operations, the opportunity to share road space for adjacent operations, review of incidents within the roadworks, impact on traffic flow, review feedback from stakeholders and notification of upcoming events.

4.3.3 An initial presentation of the proposals for the traffic management solutions for the scheme was made to representatives of the Asset Delivery Southern Team and Cornwall Council on the 18th January 2018 with a follow up meeting to discuss specific junction detailing on the 28th February 2018.

5 Bank Holidays

5.1.1 Carriageway closures will not take place during bank holiday embargo dates. A report will be prepared detailing what traffic management restrictions will be in place and the reasons for it remaining prior to each embargo date.

5.1.2 Cornwall Council undertakes twice yearly maintenance operations on their road network which utilises the existing A30 as a diversion route. Close liaison with Cornwall County Council will take place during the development phase and construction phase to identify these periods and manage any potential conflicts of diversion route which may arise.

5.1.3 During the planned construction period for the scheme, the following Bank Holidays will be applicable:

Holiday	2020	2021	2022
New Year's Day	Wednesday January 1st	Friday January 1st	Saturday January 1st
Substitute Day (for New Year's Day)	N/A	N/A	Monday January 3rd
Good Friday	Friday April 10th	Friday April 2nd	Friday April 15th
Easter Monday	Monday April 13th	Monday April 5th	Monday April 18th
Early May Bank Holiday	Monday May 4th	Monday May 3rd	Monday May 2nd
Spring Bank Holiday	Monday May 25th	Monday May 31st	Monday May 30th
Summer Bank Holiday	Monday August 31st	Monday August 30th	Monday August 29th
Christmas Day	Friday December 25th	Saturday December 25th	Sunday December 25th
Boxing Day	Saturday December 26th	Sunday December 26th	Monday December 26th
Substitute Day (for Christmas Day)	N/A	Monday December 27th	Tuesday December 27th
Substitute Day (for Boxing Day)	Monday December 28th	Tuesday December 28th	N/A

5.1.4 The definition of bank holiday embargoes is 06:00 Friday to 00:01 Tuesday with the exception of Easter which is 06:00 Thursday to 00:01 Tuesday.

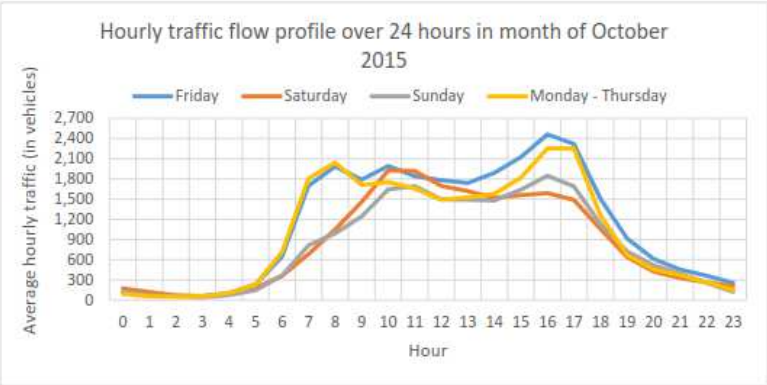
6 Significant events and seasonal traffic

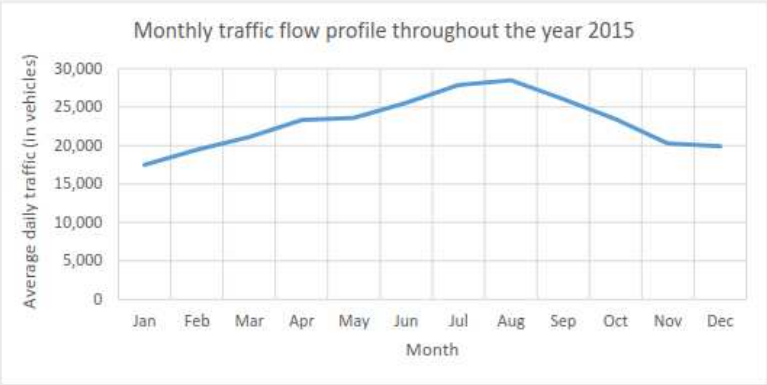
6.1 Seasonal Traffic

6.1.1 The A30 between Chiverton and Carland Cross sees a considerable increase in traffic volumes during the spring and summer months from the tourist traffic.

6.1.2 The graphs below details the traffic volumes throughout a typical year, and a typical daily traffic flow over a 24 hour period.

A30 Carland Cross to Chiverton – traffic data for buildability workstream





6.1.3 The contraflow solution at Chiverton Cross junction is programmed to take place in the summer of 2022. This is to meet the requirements to open the scheme to traffic by late 2022. This traffic management phase will impact the flow of traffic at the existing junction as there will be a requirement for lane reduction and narrow lanes. However, by this phase the A39 and B3277 traffic will have been diverted onto the new junction, reducing the congestion in this area.

6.1.4 Moving the start date of these works to non-peak periods of traffic result in the opening date moving into the first quarter of 2023.

6.1.5 Other options for this sections of work have been investigated including;

- Widening the existing A30 on the approach to the roundabout to maintain lane availability. This was not possible due to the world heritage site to the south of the westbound carriageway and the filling station to the north of the east bound carriageway.
- Split traffic for the B3277 at the Blackwater Bypass junction, 2 miles to the west of Chiverton Cross, reducing lane requirements at Chiverton junction.

Further assessment of this solution is required as it would increase traffic through the village of Blackwater. It would also lead to congestion at the B3277 roundabout. There is also a risk of driver confusion.

6.2 Regional Events

6.2.1 The following regional events have been identified:

Event	Location	Date	
Royal Cornwall Show	Wadebridge	June	
Golowan (Mazey Day Parade)	Penzance	23rd June	Includes following weekend
St Ives September Festival	St Ives	3 weeks in September	
Obby Oss	Padstow	1st May	
Mummers Day	Padstow	26th December, 1st January	
Helston Flora Day	Helston	Early May	
Run to the Sun	Newquay	May bank holiday	3 day event
Newlyn Fish Festival	Newlyn	August bank holiday	
Fowey Royal Regatta	Fowey	August	Weeklong event
Stithians Agricultural Show	Turo	13th July 2020	Monday mid July
Camborne Show	Cambourne	July	
The Great Estate	Redruth	June	3 day event
Boardmasters	Newquay	August	5 day event in August

6.2.2 The Communication Plan will be developed with consultation with event organisers to determine the signed routes for the events and potential impact from the scheme.

6.3 Local Businesses

Trevissome Park

6.3.1 Business Park adjacent to A3075 at Chiverton. The park is currently accessed from the A3075; however, this becomes stopped up during the construction of the new A30. A temporary access is currently proposed from the A30 however further investigation is required to determine its suitability. Further engagement required with owners and businesses at the park to understand traffic flow and type of vehicles used to access the park. If the A30 access is not suitable then access will need to be maintained along the existing A3075 during construction. In phase 2 a plant crossing could be constructed over the A3075. here would be minimal impact as the traffic would be limited to the workers and customers to Trevissome Park. The new road is almost at grade with the existing at this location therefore the access could be set on a temporary alignment, across the new carriageway. In phase 3 a temporary left turn on and right turn out access and exit could be provided from the new westbound carriageway. The new permanent access would be opened in phase 4.

Callestick Farm Cornish Ice Cream

6.3.2 A traditional ice cream business located outside Callestick between the A3075 and A30. No direct interface by the scheme however updates on revised junction arrangements will be made available to the business to inform deliveries and visitors.

Truro Saw Mills

6.3.3 A saw mills off the B3284. No direct interface by the scheme however updates on revised junction arrangements will be made available to the business to inform deliveries and visitors.

Allstore Storage

6.3.4 A professional storage company off the A3075. No direct interface by the scheme however updates on revised junction arrangements will be made available to the business to inform deliveries and visitors.

Healeys cider farm

6.3.5 A traditional cider brewery popular with tourist. Located outside Callestick off the A3075. No direct interface by the scheme however updates on revised junction arrangements will be made available to the business to inform deliveries and visitors.

Nancarrow Farm

6.3.6 A farm, restaurant and events venue located to the west of Zelah. Offline A30 carriageway works are located directly to the north and west of the venue. Traffic management phasing will impact on access routes for visitors and deliveries, a detailed phasing plan for signage to the venue will be developed with the stakeholder and council.

Town and County Motors

6.3.7 Family owned Nissan franchise located on the A30 between Chybucca junction and Marazanvose. The offline A30 carriageway works are located directly to the south of the existing A30 at this location. No direct interface with access to the business, however as a result of the scheme the business will no longer be on the strategic road network. Owners to be regularly updated with phasing programme so that they can inform their customers of changes to directions from the new Chybucca junction.

7 Incident Management

7.1.1 The contractor will be responsible for incident management on the A30 between the extents of the traffic management. This will be measured from the 1 mile boards at each end of the scheme.

7.1.2 An Incident management plan will be developed in conjunction with the Asset Delivery Southern Team, Devon and Cornwall Police Constabulary, Southwest Ambulance Service, Cornwall Fire and Rescue Service and Highways England Traffic Officers.

7.1.3 The plan will include provisions including:

- Free Recovery within the roadworks, including details of recovery vehicles, welfare facilities and procedures.
- Procedures for recording incidents and identifying any unexpected levels or categories of traffic related incidents
- A formal reporting procedure
- An operational structure
- Outline contingency plan
- Undertaking desktop incident management scenarios.

7.1.4 24/7 incident management teams will be located at Chiverton and Carland Cross compounds. These teams will include traffic management operatives and recovery teams. An emergency response store will be maintained including plant and equipment such as, emergency spill kits, mobile lighting towers, pumps. A 24/7 TSCO presence will be available on site and this individual will be the first point of contact in the event of an incident.

7.1.5 24/7 free roadwork recovery will be in place through the roadworks with recovery teams based at Chiverton and Carland Cross compounds. Welfare facilities for drivers and passengers will be provided as will a secure area for the short term storage of damaged vehicles.

7.1.6 In the event of an incident which requires closures or requires the closure of the existing A30, the current off network diversion routes will be utilised. These routes will be pre-signed to minimise disruption in the event of an incident.

7.1.7 24/7 CCTV will be in operation across the scheme with a central control room located at the Chiverton compound. The Regional Operations Center will be provided access to the scheme CCTV.

7.1.8 As per the Major Project Instructions, debriefs will be held with emergency services and the Asset Delivery Southern Team teams following incidents within the road works.

8 Incursion risk management

8.1.1 An incursion risk assessment is located in Appendix D

9 Driver compliance

9.1.1 A number of different tools are available to assist with driver compliance through the roadworks. These include:

- Use of PVMS mobile message signs to provide accurate, up to date information on travel times through the works.
- Vehicle activated signs on approach to risk areas such as works accesses and exists
- Implementation of local stakeholder driving groups for bus, taxi and warehouse distribution companies to share updates on the traffic management and advise on correct behaviours through roadworks.
- Enforcement of speed restrictions
- Use of “Ignore Satellite Navigation signs” during road closures and phasing works

10 Communication Plan

10.1.1 The communication plan will be developed as per the requirements of the PCF. The Project Communication Manager and Traffic Manager will interface on a regular basis to ensure that accurate and timely information is provided on upcoming traffic management phases, changes to layouts and closures.

10.1.2 Changes to traffic management layouts will be notified in advance via multiple media outlets including:

- Traffic England
- Roadworks.org
- Cornwall Council website
- Project website and social media (format to be agreed with Highways England and Cornwall Council).
- Local and national media
- Individual letter/email notifications.

10.1.3 The following stakeholders will be consulted in regards to the format of the customer communication:

- Major Projects Customer Service Division
- OD Senior User
- Service Delivery Operations Manager
- Asset Delivery Southern Team
- Control Room Operations Manager
- National Intelligence Unit
- Customer Care Centre
- Highways England National and Regional Intelligence Units

11 Diversion route selection

11.1.1 Diversion routes will be agreed with the Asset Delivery Southern Team and Cornwall Council

11.1.2 Diversion routes will be included within the clash management checks between stakeholders to avoid confusion and disruption on the local network.

11.1.3 It is proposed that the existing diversion routes used by the Asset Delivery Southern Team and Cornwall Highways team are utilised by the scheme. A list of proposed diversions is detailed in the table below with diversion plans within appendix B.

Diversion	Ref	Overnight (ON) or Long Term (LT)	Normal distance (miles)	Normal JT (mins)	Diversion distance (miles)	Diversion time (min)	Increase in miles	Increase in time (mins)	Class of road	Reason for Diversion
A30 Chiverton to Boxhetaer	1	ON	6.2	8	7.5	13	1.3	5	A and B	Works between Chiverton Cross and Zelah
A30 Chiverton to Summercourt	2	ON	10.9	14	15.4	26	4.5	12	A	Works on A30 east of Carland. Extended closure required for bridge demolition operation
A30 Blackwater bypass	3	ON	2.2	2	2.2	5	0	3		Installation of TM west of Chiverton
B3284 Higher Penwartha to Sorthlanesend	4	ON	3.3	6	10.1	32	6.8	26	A and B	Closure at Cyhbucca diversion to south
A39 Buckshead to Carland	5	ON	8.6	13	10.6	18	2	5	A and B	Works at Carland Cross junction
Zelah side road (A30 to Tolgroggan)	6	LT	0.7	2	2	3	1.3	1	A	Construction of new Zelah link road and new A30
Heaver Lane (residences to A30)	7	LT	0.8	2	1.2	3	0.4	1	B	Construction of new Trevalso Lane bridge and access road
White cottage, Chiverton	8	LT	0.2	1	1.6	4	1.4	3		Tempoary stopping up of road for construction of junction

Distances and journey times from Google maps

12 Safety measures

12.1.1 The safety of the travelling public and the workforce will be the first priority of the scheme.

12.1.2 All temporary traffic management will be subject to a road safety 3 audit prior to opening.

12.1.3 Where there is works adjacent to the running carriageway the workforce will be protected wherever practical with varioguard type barrier (or similar). The safety zone inside the working width will be signed on the barrier with accompanying cones and safety line as required.

Customer Group	Safety Measures
Customer	• Free recovery within roadworks • Speed limit in narrow lanes • Barrier to separate workforce and travelling public with improved visibility measures
Stakeholder	• Clear, well signed diversion routes risk assessed to ensure suitability for vehicles. • Barrier to separate workforce and travelling public with improved visibility measures. • Closures during bridge listing and demolition operations • Integrated traffic management plans with Cormac and the Asset Delivery Southern Team to avoid clashes and conflicting signage.
Partner including workforce	• Airlock systems used for closure entry points to prevent unauthorised access • Suitable and sufficient temporary barrier systems • Enforced temporary speed limit through roadworks • Closures during lifting operations
Community	• Risk assess diversion routes to identify local hazards such as on road parking, bus stops, 24/7 business's. • Noise assessments for construction work on neighbouring communities.

13 Human factors

13.1.1 The raising the bar 11; Influencing driver behaviour through roadworks provides guidance on how driver behaviour can be influenced to help manage a safe traffic management system. This will be provided in the PCF stage 5 revision and will detailed the principles to be used for each customer group.

14 Proposals for management of network occupancy

14.1.1 A traffic order for the scheme will be raised through the Asset Delivery Local Team. The orders are currently raised on a calendar year basis. The Order will include details of proposed restrictions including:

- Speed reductions
- Road closures
- Layby closures
- Cycle route diversions
- Contraflow and cross overs
- Extended closure requirements for the demolition operation.

14.1.2 Road Space will be booked through the SW Road Space Team. Look ahead traffic management programmes will be produced on a weekly basis and issued to all stakeholders. Programmes will be reviewed at the monthly traffic management meetings to determine potential clashes in advance of bookings being raised.

14.1.3 Clash management will be undertaken by the scheme traffic manager who will liaise with Cornwall Council and Asset Delivery Southern Team.

14.1.4 Traffic management and upcoming closures will be shown on the following websites;

- Traffic England.
- https://www.cornwall.gov.uk/transport-and-streets/roadworks/
- roadworks.org

15 Implications of traffic management measures

15.1.1 Traffic flow and queue assessments will need to be undertaken in PCF Stage 5 (Construction Preparation) to determine the impact from any proposed traffic management measures on operations and the Intelligent Transport Service.

16 Maintenance activities

16.1.1 The principal contractor for the scheme will be responsible for routine maintenance on the A30 between the extents of the traffic management. This will be measured from the 1 mile boards to the end of roadworks sign. Pre-existing defects or known maintenance issues should be identified to the scheme prior to the commencement of works so that any works can be incorporated into the traffic management plan.

16.1.2 Winter maintenance on the A30 will continue to be the responsibility of the Asset Delivery Southern Team. The Traffic Management Manager will be responsible for making regular contact with the Winter Maintenance Team. The Winter Maintenance team will be kept updated on the changing layout of the scheme and will be notified in advance of any changes to movements.

17 Other service providers

17.1.1 Abnormal loads will continue to be assessed by the Asset Delivery Southern Team. As the scheme progresses through the different construction phases, new structures will be opened. The abnormal loads team will be issued with the Approval in Principle (AIP) and Construction Certificate for the structure to allow the abnormal load assessments to be undertaken.

17.1.2 Wide load and abnormal load holding laybys will be provided prior to the traffic management on both the east and westbound carriageways.

17.1.3 Signage will be provided prior to laybys advising wide load divers and escort vehicles to pull in and contact TSCO. Information boards to be provided at the laybys with contact details for the TSCO.

17.1.4 The TSCO will be contacted by the abnormal load escort vehicle prior to travelling through the roadworks.

Appendices

A.1 Chiverton Cross Phasing Plans

A.2 Chiverton Cross Phase 4 and 5 Alternative Solution

A.3 Chybucca Phasing Plans

A.4 Appendix A4: Zelah Phasing Plans

A.5 Appendix A5: Carland Phasing Plans

Appendix B Diversion Routes

Appendix C Cross Section at Chiverton Contraflow

Appendix D Incursion Risk Assess

Appendix E Dynamic Road Works Overview and template

MAJOR PROJECTS: DYNAMIC ROAD WORKS OVERVIEW AND TEMPLATE V2.0

Based on customer feedback the Major Projects Executive recently agreed a dynamic road works vision. The full vision can be found here (https://haportal.net/way-we-work/pcf-zproduct/trafficmanagementplan.html), within the traffic management plan section of the project control framework.

The vision describes 5 key areas where we are looking to change our approach to road works.

1. Varying the speed limits so they are appropriate for the work taking place
2. Shortening the length of road works
3. Appropriate use of full road closures and associated diversions
4. Delivering road works quicker
5. Explaining clearly what activities are, or are not, taking place

Due to the content of this vision it is acknowledged that it cannot be achieved in the short-term. For this reason, each programme within Major Projects will soon begin to develop transition plans with the objective of working towards the vision in RIS1 (Road Investment Strategy) period, with a view to achieving it in RIS2

Whilst these transition plans are being developed it has been agreed that each project currently in design or construction will be benchmarked to determine how the scheme is achieving (or planning to achieve) the dynamic road works vision.

To capture this information a simple template has been developed to benchmark schemes (pages 2 and 3). The below table should be completed to record the benchmark scores allocated.

Vision	**Green/Amber/Red/NA/Not yet known**
1. Speeds	Amber
2. Length	Amber
3. Closures and diversions	Amber
4. Delivering quicker	N/A as offline scheme
5. Explaining activity	Amber

To support the benchmark scores, a form has been developed (pages 4 to 6) and any supporting evidence to justify the benchmark scoring should be provided as required.

	Green (aligned to vision)	Amber (just outside vision)	Red (well outside vision)
Speeds	Over 50% of the project (in distance and time) is at the permanent speed limit	Less than 50% is at the permanent speed limit, but there is clear evidence showing what alternative methods of construction were used.	Less than 50% is at the permanent speed limit, and there is no evidence showing what alternative methods of construction were used.
Length	The total length of TM on any one 'journey' (i.e. on 2 arms of a roundabout that could form a realistic journey) is shorter than 6km, or 1 link if on a motorway. Or, the total length of TM is more than 6km (or 1 link if a motorway) but there is evidence the increased length is proportional to a reduced delivery time. Or, the total length of TM is more than 6km (or 1 link if a motorway) but the additional length is operating at a minimum of 60mph. AND the average journey time created by the road works is not more than an additional seven minutes thirty seconds.	The total length of TM is more than 6km (or 1 link if a motorway) and there is evidence that the reduced delivery time is halfway proportional to the increased length. e.g. a fifty percent increase in length for a 25% reduction in the time taken to deliver the additional length. AND the average journey time created by the road works is not more than an additional seven minutes thirty seconds.	The total length of TM is more than 6km (or 1 link if a motorway) and there is no evidence of reduced delivery time even halfway proportional to the increased length, nor is the additional length a minimum of 60mph. AND/OR the average journey time created by the road works is more than an additional seven minutes thirty seconds.
Closures & diversions	No more than 1 full closure every 3 months And / or the diversion route has a comparable journey time, and impact on communities along the diversion route are minimal	No more than 1 full closure every month	More than 1 full closure every month
Delivering quicker	Benefits are delivered to the customer before full opening (NA if offline scheme) AND construction is undertaken at least 6 days a week	Benefits are delivered to the customer before full opening (NA if offline scheme) OR construction is undertaken at least 6 days a week	No benefits are delivered to the customer before full opening (NA if offline scheme) NOR is construction undertaken at least 6 days a week

	AND restrictions are lifted during embargo periods (unless full productivity is maintained)	OR restrictions are lifted during embargo periods (unless full productivity is maintained)	NOR are restrictions lifted during embargo periods (and full productivity isn't maintained)
Explaining activity	There is evidence of a comprehensive on-road/off-road communications approach, which updates customers as required of activities undertaken, works completed and progress made.	Evidence of an off-road only communications approach, which updates customers as required of activities undertaken, works completed and progress made.	No evidence of a communications approach which updates customers as required of activities undertaken, works completed and progress made.

NA – This part of the vision is not applicable to this scheme e.g. the scheme may be a new road so there is no need to report on speeds/length etc

Not yet known – The scheme cannot yet provide this information. If this option is chosen then scheme must provide supporting evidence on a) why it is not yet know and b) when the information is expected to be available.

Scheme	A30 Chiverton to Carland Cross
1) Varying the speed limits so they are appropriate for the work taking place (Green/Amber/Red/NA/Not yet known)	
• Proposed reduction from national speed limit to 50 or 40mph along the existing A30. Options 1 and 2 are described in section 3.6.	
2) **Shortening the length of road works** (Green/Amber/Red/NA/Not yet known)	
Total length of restrictions between the start of the speed limit at Chiverton eastbound to end of restrictions at Carland is 9.8km. This is the worst case scenario when all four site locations are operational. As the scheme progresses new links, such as the new carriageway between Chiverton and Chybucaa will become operational, reducing the lengths of carriageway under temporary speed restrictions. Average additional journey time with 40mph limit through 9.8km is 2 minutes, 40 seconds.	
3) Appropriate use of full road closures and associated diversions (Green/Amber/Red/NA/Not yet known)	
Road closures are detailed in section 3.8 of the TMP. Closures required for Tolgroggen bridge demolition and construction. Majority of scheme is offline with minimal closure requirements.	
4) Delivering road works quicker. (Green/Amber/Red/NA/Not yet known)	
N/A as offline scheme	
5) Explaining clearly what activities are, or are not, taking place (Green/Amber/Red/NA/Not yet known)	
Proposals are identified within the PCF stage 3 traffic management plan which would classify this section as green. These proposals will need to be confirmed by the delivery contractor in the PCF stage 5 update of the traffic management plan and detailed in the communications plan.	

If you need help accessing this or any other Highways England information, please call **0300 123 5000** and we will help you.

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