

Appendix 2 of the Sustainable Growth and Environment Capital Scrutiny Committee Report dated 15th September 2015 - Review of A1139 Fletton Parkway J17 A1(M) – J2 Scheme Delivery Stages

Scheme Identification

Identification of the need for a particular transportation scheme is based on many information sources. High level planning documentation such as the Local Development Framework, Peterborough Core Strategy, Integrated Development Plan and the City Centre Area Action Plan would dictate future land use policy and hence supporting transportation requirements. This high level policy guidance informed the production of the Long Term Transport Strategy 2011-2026 (LTTS) and the Peterborough Local Transport Plan 3 2011-2016 (LTP3). The LTTS indicates the transport interventions required over a 15 year period to support planned growth and keep the highway network running efficiently. The LTP3 details the short term transport interventions required over a five year period.

Clearly there are many possible options to resolve transportation problems, but only finite resources to deliver them, so a selection process is employed. Information on transportation needs is gathered from numerous sources and via consultation with key stakeholders. All options are assessed to judge their relative merits and are checked against the following criteria:

- Policy fit – to ensure that they contribute to meeting the needs of Delivering a Sustainable Transport System (DaSTS)
- Cost Benefit Ratio – assessed against the core objectives of Practicality, Acceptability, Opportunity for Funding and Affordability to ensure value for money
- Network Improvement Impact Assessment – Using the Peterborough Transportation Model (software tool) to check scheme contributes towards reducing congestion and journey times
- Strategic Environmental Assessment – broad high level check to see if scheme has any detrimental effect on environment
- Habitat Regulation Assessment – checks to demonstrate scheme has no adverse effect on sites of European or International importance
- Equality Impact Assessment – to ensure no negative impacts on groups or individuals

Schemes that pass the requirements of the selection process are then allocated to a delivery time frame based on the growth outlined in the Core Strategy and the likely date the intervention is needed. Short term requirements were allocated to the LTP3 (2011 – 2016) period, medium term requirements to the 2016 – 2021 period and long term requirements to the 2021 – 2026 period. The Fletton Parkway Widening Scheme was initially allocated in the LTTS to the medium term requirement period of 2016 – 2021 and a budget pressure was placed in the Councils Medium Term Financial Plan. The timing was based on likely development trigger points for the Great Haddon site. An opportunity arose however, to bid for Government funding from the Local Enterprise Partnership and the Department for Transport (DfT) Pinch Point fund. The Council was successful in securing £6m in grant money and a further £3m in an interest free loan, allowing the scheme to be bought forward early.

Early Scheme Development and Corporate Approval

Options Selection

Initially the Peterborough Transportation Model was used to run various scenarios for potential widening solutions and junction improvements for the Fletton Parkway widening Scheme. Based on these results and the views of the Highways Agency (Highways England) a preferred option was selected. This included the following:

- Widening of the road between Junction 1 and Junction 2
- Link capacity improvements between Junction 17 A1(M) and Junction 2 Fletton Parkway
- Introduction of a new merge junction where the A1(M) link joins Fletton Parkway
- Complete reconstruction of the eastbound carriageway between Junction 1 and 2
- Replacement Street lighting between Junction 17 and 2
- Road resurfacing between Junction 17 and 2
- Replacement of signage as required
- Installation of Average Speed Cameras between Junction 17 and 3 to enforce the proposed 60 MPH speed limit
- Installation of Closed Circuit Television Cameras (CCTV)
- Installation of maintenance bays as required

Business Case

Outline drawings were produced and a rough estimate of scheme costs were calculated based on a similar widening scheme between Junction 2 and 3 of the Fletton Parkway. Costs were factored up to account for inflation and any differences in scheme requirements. The Business Case was produced which detailed the project aims, provided a background history to the scheme and outlined the project proposal, - the negative implications of not implementing the scheme were also highlighted.

Furthermore, the scope of the scheme was listed, along with delivery options, likely impacts and the cashable and non-cashable benefits, proposed procurement method of holding a Mini Competition among contractors from the Midlands Highway Alliance (MHA), details of available funding for delivery of the scheme and potential risks were also detailed.

The Business Case authorising the scheme to proceed was approved in the spring of 2013.

Parallel Actions following Corporate Approval to proceed with Scheme Development

Land Acquisition

Major highways transportation schemes often require land take to achieve capacity improvements and alleviate traffic congestion. If the land is privately owned it may be necessary to carry out Compulsory Purchase action under the Land Compensation Act. If required this process can be extremely time consuming from a legal viewpoint and expensive from a procurement perspective. Fortunately the Crown owns quite a lot of land in and around existing highway networks which is categorised as Community Related Asset (CRA) land. If a local authority can evidence that the use of CRA land is of benefit to the wider community then permission can be granted to use the land for highway use at zero

cost. The Fletton Parkway Widening Scheme gained permission to use a certain amount of CRA land at zero cost to the project.

Identification of Scheme Designer

Under normal circumstances the Councils Professional Service Provider for Highways would assume the role of Scheme Designer. At the time the design contract for the scheme needed to be awarded, the Councils Professional Services Highways Contract was up for renewal and there was no guarantee that the incumbent provider (Atkins) would win the contract. Because we were a member of the MHA we looked to the MHA Professional Service provider URS Ltd to take on the role.

Production of Design and Supervision Scoping Document

URS worked collaboratively with the Council to produce a detailed design brief listing the scope of the construction project and detailing all of the expected functions of the design service. This document also encompassed the requirements of the Supervision and Administration of the Construction Contract and any post build requirements such as the defects correction maintenance period, post scheme noise surveys and post scheme Road Safety Audits (RSA4a and RSA4b). Also included in the document was a priced design and supervision activities schedule and an indication of drawdown of fees for services provided throughout the project.

Planning Approval or General Development Permissions

Many major transportation schemes have to carry out a full Environmental Impact Assessment (EIA) to evaluate the overall effect the scheme proposals would have on the immediate surrounding area and wider afield. Issues considered would be things such as air quality, noise, vibration, water, ecology, contamination, heritage and landscape. Particular attention would be paid regarding any impacts on Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), protected species and scheduled ancient monuments. A Planning Application supported by the EIA Report would then be submitted to the Local Planning Authority requesting permission to proceed. The Planning Authority would then consider the application and either: grant permission to build; grant permission to build with conditions; or refuse permission to build stating reasons.

The Fletton Parkway Scheme red line boundary was primarily within the confines of the existing highway, although it was adjacent to a SSSI containing Great Crested Newts which are a protected species. A decision was taken to carry out a shorter environmental opinion process in accordance with The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999: Selection Criteria for Screening Schedule 2 Development Proposals. In July 2013 the Planning Authority considered the Screening Opinion Report and associated Annexes and ruled that a full EIA was not required as the scheme would not have a significant impact on the environment. The scheme therefore constituted permitted development under the Planning Acts. A Habitat Regulations Assessment was subsequently produced as a condition of the Screening Opinion Report. This concentrated primarily, but not solely, on the population of Great Crested Newts in the vicinity and how to manage and protect them before and during the construction programme.

Legal Agreement required to work on Highways Agency (Highways England) Road

One of the main objectives of the Fletton Parkway Scheme, was to increase the capacity of the Highways England eastbound A1(M) link road from one lane to two lanes and introduce a new merge junction with the eastbound Fletton Parkway. In order to be able to carry out works on the Highways England road the Council needed to enter into a Section 6

Agreement in accordance with the Highways Act 1980. The Section 6 Agreement was signed off in June 2014 and detailed the works to be carried out, the roles of the respective parties and the commuted lump sum figure that the Council would pay to Highways England for the future maintenance costs of the works.

Developer Contributions and Funding Bids

One of the primary drivers for the Fletton Parkway Widening Scheme is the development of the Great Haddon site to the east of the A1 and to the south of the Fletton Parkway. Once developed the Great Haddon site would take up all of the available road capacity, resulting in gridlock of the local road network. A condition of the Planning Approval for the Great Haddon site was a financial contribution of £3.8m towards the widening of the Fletton Parkway between Junction 17 of the A1 (M) and Junction 2 of the Fletton Parkway. This payment is due once certain build trigger points have been reached.

Numerous opportunities have presented themselves over the past few years to bid for funding from Government for major traffic schemes that unlock growth. Developing a successful funding bid is an onerous and time consuming business, involving much research and the generation of data to provide justification for the scheme. Funding bodies need to be convinced of the relative merits of a scheme and a full cost benefit analysis is required to achieve this. The Councils Transport and Infrastructure Planning Team have been successful in harnessing the following funding for the Fletton Scheme:

- Local Pinch Point grant from the Department for Transport (DfT) £4.5m
- Local Pinch Point grant from DfT for land contamination £0.9m
- Growing Places Fund grant through the Local Enterprise Partnership (LEP) £1.5m
Growing Places Fund loan through the LEP £3.0m (to be repaid in instalments from 2018 from POIS / future CIL income).

Detailed Design Phase

Appointment of a Design Contractor

The MHA Professional Services Provider URS Limited was appointed to the role. A Directors Decision Notice was produced providing the justification for the appointment - the decision was approved on the 23rd March 2013.

Construction (Design and Management) Regulations 2007

The aim of the CDM Regulations is to integrate health and safety into the management of the project and encourage everyone involved in the project to work co-operatively to achieve the following:

- Improved planning and management of projects from the outset
- Early identification of hazards so they can be eliminated at the design or planning stage and the remaining risks can be properly managed
- Target effort where it can do the most good in terms of health and safety and discourage unnecessary bureaucracy

URS/AECOM the Scheme Designers and Site Supervisors appointed a qualified person to carry out the important role of CDM Co-ordinator. The CDM Co-ordinator has many duties including the following:

- Key advisor to the Client on safety issues including the appointment of competent staff

- Act as an interface ensuring the flow of health and safety information between clients, designers and contractors
- Notifying the Health and Safety Executive about projects lasting longer than 30 days or involving more than 500 person days
- Identification, collection and distribution of pre-construction information to appropriate parties
- Advise the client on the suitability of the construction phase plan and associated site welfare facilities
- Production and updating of a Health and Safety File for use during the project and retention at the end of the construction phase

Surveys & Studies

Numerous surveys/studies had been carried out by the Council as part of the scheme development and in support of various funding bids. Data made available to the Scheme Designer included: topographical surveys, traffic counts, accident statistics, road condition surveys, coring surveys, aerial photographs and some as built records. The designers carried out further testing in support of the design including: drainage surveys, utilities searches, trial holes, road condition surveys, signage survey and before scheme noise surveys.

Production of Preliminary Design Drawings

These scaled drawings show a broad outline of the design proposal such as highway alignment and junctions, which would be set against a back ground of local topography and existing infrastructure. Also indicated on drawings would be a red line boundary indicating the scheme extents any constraints and land take requirements.

Road Safety Audit (RSA) Stage 1

This is carried out after the Preliminary Design phase of a new road or highway improvement. The purpose of a road safety audit is to ensure that highways schemes operate as safely as possible for all users and reduce the amount and severity of road traffic accidents. A team of two auditors visit the site with the proposed scheme drawings and carry out a photographic survey to assess the local topography, site conditions, links with existing roads and any other potential operating constraints. An RSA Stage 1 Report (used to inform the detailed design) will then be produced, which will consider/address the following issues:

- Appropriate design speed
- Junction suitability
- Swept path of vehicles
- Visibility splays and stopping sight distances
- Pedestrian and cyclist safety
- Safety of visually and mobility impaired
- Operation of public transport
- Maintenance safety
- The safety impact on altered traffic patterns in the area

Detailed Design

The detailed design for the Fletton Parkway Widening Scheme was informed by the design scoping document, preliminary design drawings, RSA1 Report and numerous surveys. The design was also influenced through consultation/agreement with several external agencies including the Highways Agency (now Highways England), Natural England and the Safety Camera Partnership.

The detailed design of all major highway schemes must comply with the Design Manual for Roads and Bridges (DMRB) and infrastructure must be installed to comply with the specifications and tolerances set out in the Manual of Contract Documents for Highway Works (MCDHW). The MCDHW provides detailed guidance on all elements of highway design, including specification requirements and any allowed relaxations in standards.

Departure from Standards

The DMRB sets out the standards and criteria that should in normal circumstances be met in the design and implementation of highway schemes. There are numerous topics that are covered in the various Advice Notes and Technical Design documents such as Highway Link Design, Junction Design, Highways Structures, Drainage Design, Pavement Design, Traffic Signs and Lighting. .

The Fletton Parkway was built in the mid 1970's when the design standards were far less stringent than those recommended today in documents such as the DMRB. Because of this, when the review of existing highway links and junctions was carried numerous Departures from Standard were raised. This was because of the physical constraints of the topography and existing infrastructure - in many cases it was impossible to achieve the modern recommended standards. A typical example of this is the weaving distances required between junctions. For rural all-purpose roads the desirable minimum weaving length should be 1 kilometre. At almost all locations within the Fletton Scheme red line boundary this was unachievable due to existing geometric constraints. The only solution (which was not viable) would have been to close one of the roundabout junctions vital to the Peterborough road network.

In mitigation a reduced speed limit of 60 MPH has been introduced which will regulate traffic, improve safety and provide increased merge and diverge opportunities. Moreover, increasing the number of lanes from two to three on the approach at several merge points should spread the traffic, once again making merging easier. Numerous Departures have been approved based on the fact that all mitigation measures that are reasonably practicable have been included in the design and that this is the best outcome achievable. The Departure from Standard were considered as part of the design Road Safety Audit (RSA Stage 2) and the audit team did not have any concerns.

Design Road Safety Audit (RSA Stage 2)

A road safety audit was carried out on completion of the detailed design phase. The Auditors reviewed the RSA Stage 1 Report recommendations to ensure they had been addressed in the detailed design. Further they considered the Departures from Standard submitted as part of the detailed design package to ensure that there were no safety concerns. The Audit comprised of a review of the design drawings for the various deliverables and a site visit on the 2nd December 2013.

The RSA2 raised several issues with the design which impacted on safety including: adequate provision of maintenance laybys, visibility issues with existing signage and

vegetation, changes to road markings to improve lane discipline and safety issues with the position and type of proposed lighting columns. Changes were made to the design to address the issues raised in the RSA2 Report.

Detailed Design Works Order Package

The detailed design works order package consists of a series of documents as follows:

Volume 1: Task Order

Lists the different parties involved in the project like the Client (PCC), Designer (URS Ltd), Principle Contractor (Balfour Beatty), Site Supervisor (URS Ltd) and Construction Design Management Co-ordinator (URS Ltd). Details the conditions of contract and the various clauses – the Fletton Scheme opted for the NEC3 Engineering and Construction Contract Option C June 2005 (with amendments June 2006), which is a target cost contract with activities schedule and a shared pain/gain agreement. Includes contract details like the start and completion dates, defects correction period, payment percentages, payment retentions compensation event data, risks and insurance and a summary of costs.

Volume 2: Specification and Appendices

These provide a written description of all of the applicable MCDHW categories as they apply to the Fletton Parkway Scheme. An individual document say Series 1100 Kerbs, footways and paved areas might describe the parameters under which a kerb would need to be laid. This would refer to different types of kerbs, materials to be used to lay the kerb, setting out and measuring equipment to be used, acceptable tolerances in height and alignment.

Volume 3: Activity Schedule

A list of all the activities required plus associated costs to physically deliver the constructed project.

Volume 4A: Drawings: Roadworks

This section would provide a suite of scaled drawings which would be referenced to the particular MCDHW series i.e. 1300 series for street lighting. In this instance there would be about ten scaled drawings showing where lamp columns were to be installed along the scheme alignment. There would be annotations on the drawing referring to written specifications giving details like column height and lantern type. There would also be references to standard drawings showing the various types of configuration with installation details.

Volume 4B: Drawings: Standard Details

With highway schemes like Fletton Parkway we quite often have to install large quantities of the same item. Examples of this would be road signs, drain covers, street lights, safety barriers etc. Producing a standard detail drawing saves time on the overall design, as items can just be given a global symbol on a drawing and referred to in a key on the side of the drawing.

Volume 5: Site Information

This contained information such as existing 'as constructed records' including lighting, drainage, and signage. Other information provided included previous pavement surveys, topographical survey, environmental scoping report, habitat regulations assessment, aerial photography survey and utilities information.

Volume 6: Works Information

Details on noise surveys, base plans, departures from standard, road safety audits, non-motorised user survey, risk register, traffic management proposals, traffic count data and road space booking information.

Volume 7: Pre-Construction Information

Health and Safety Information relating to main construction risks and development of the Scheme Health and Safety File.

Scheme Consultation

The scheme was included in the Peterborough Long Term Transport Strategy (2011-2026). Extensive consultation was carried out before publication to obtain the views of interested parties, from stakeholders to members of the public. The specific scheme has been widely consulted on within the Council and is included in the Medium Term Financial Strategy, has an approved Business Case and Environmental Screening Approval. Consultation with external stakeholders includes the Highways Agency, LEP, DfT, MHA and utility service providers. Once the design was sufficiently developed, two public engagement events were held in the autumn of 2013 - one in the Bushfields Centre Public Library and another in the Serpentine Green Shopping Centre at Hampton.

Identification and Appointment of a Construction Contractor

General

There are numerous procurement routes and contract options open to Council to buy goods and services; these are outlined in the Scrutiny Report's Appendix 1 'Procurement Options for Highway Scheme Delivery'. The Peterborough City Council Contract Rules document contains detailed information on the mandatory consultation and approvals process required for differing levels of expenditure

Construction Contractor Procurement Options and Midlands Highway Alliance

The project team briefly considered holding an open tender competition to secure a contractor to build the scheme, but discounted this due to the tight delivery timetable required by DfT. Peterborough City Council (PCC) however is a member of the Midlands Highway Alliance (MHA); a formal collaboration of seventeen local authorities which has established and developed procurement frameworks in order to secure the delivery of major highway capital schemes, medium sized highway schemes and professional services. The Highways Agency (HA) is also a member and Leicestershire County Council is the 'host' authority.

MHA Framework Contractors:

- Balfour Beatty/Birse Civils Limited;
- BAM Nuttall;
- Ringway Infrastructure Services Limited; and
- Tarmac/Carillion Joint Venture Limited.

The premise of the framework is to achieve efficiencies by working collaboratively. It is the expectation that all parties, clients and contractors alike, will share experiences and innovation for the mutual benefit of the whole Framework Community, thereby providing continuous improvement.

Construction Contractor Selection Process for the Fletton Parkway Widening Scheme

The MSF 1 Contract has four contractors pre-qualified for selection, based on six model schemes. Selection of a specific contractor is usually carried out based on their submission scores against one or more of these example schemes, although there is an option to undertake a competitive mini-tender approach. Past experience suggests that the mini-tender approach, whilst offering some value, can result in an unacceptable time delay. In this instance PCC selected the short call off process and used Model Scheme E as a basis for selection of the contractor, the scheme with most similarities to J17- J2.

The MSF 1 Contract assessment suggests a 70/30 quality/price split, but allows for variation. In this instance a 50/50 quality/price split was used due to the high financial cost of the project. Having completed the price assessment the quality scores for each contractor were added to produce a final assessment score. The quality assessment scores are calculated by the MHA. They are based upon the original submission of each contractor at tender stage and periodic adjustments based upon current performance received via feedback from MHA member authorities.

The assessment suggested that Balfour Beatty/Birse Civils Limited would offer the best value of the available contractors, based upon the combined price and quality scores. The decision giving permission to engage with the single contractor was subsequently approved by the MHA Framework Board. As a Commissioning Authority PCC were then in a position, at the appropriate time, to issue a contract to the preferred contractor for the delivery of a Package of Works based upon a negotiated Target Cost.

Early Contractor Involvement

Following the MHA Short Call Off selection process, a decision was taken on the 28th August 2013 to enter into early contractor involvement with Balfour Beatty/Birse Civils Limited. Subsequently, Balfour Beatty attended Designer Progress Meetings and worked with URS (design and supervision contractors) and other parties, to inform on scheme design issues and establish the most effective delivery solution to provide best value and minimise disruption to the road network during construction.

Setting of Target Cost

The use of a target cost contract is common in the construction industry. It provides a genuine estimate of all costs including, materials, labour, plant equipment, traffic management and site overheads. Further, it identifies a value for risk items that are to some extent unknown at the point of agreeing the target cost. There can be unforeseen items that occur during the construction of a scheme that change the scope of the original works. These items are referred to as 'compensation events' and are discussed, costed and if agreed change the value of the

project target cost. The use of a target cost contract facilitates a 'pain gain' mechanism and encourages both parties to actively manage the contract due to the potential benefits and risks of delivering a project below or over the agreed target cost. The pain or gain is shared between both contractor and client and is calculated by comparing the actual costs with the most recently revised and agreed target cost.

Establishing an initial target cost is a time consuming and complex task and is based on numerous factors such as: scheme design, required deliverables in the Works Package, risks to successful delivery of the project on the ground and any constraints placed on method of delivery. The design package was delivered in stages over several weeks in November 2013; as and when the various design elements were received they were passed to Balfour's to enable the target costing exercise to begin. The target cost was agreed in February 2014.

Appointment of Construction Contractor

Due to time constraints a second CMDN was produced under Special Urgency measures to appoint Balfour Beatty as the scheme Construction Contractor – this was approved and came into effect on 12 February 2014. Balfour's were subsequently awarded a contract through the Midlands Highway Alliance's (MHA) Medium Schemes Framework 1 Contract under NEC3 Option C. Contractor mobilisation commenced during the third week of February 2014.

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Contractor Mobilisation

In February 2014 the contractor Balfour Beatty set up a Site Office/Compound near Serpentine Green in Hampton, in close proximity to the scheme location. . A contingent of four URS/AECOM staff were based at the Site Office throughout the scheme build phase whilst carrying out the Site Supervisory role. Balfour Beatty staff carrying out key roles such as Project Manager, Quantity Surveyor, Traffic Management, Programme Managers and Sub-contractor Supervisors were also based here.

After being awarded the contract as the schemes Prime Contractor, Balfour Beatty set about appointing staff either from within their own organisation or externally to fulfil the key supervisory, technical and admin roles. Following this they entered into negotiations with numerous specialist sub-contractors to address key works such as Traffic Management, Ecology, Average Speed Cameras, Street Lighting, Earthworks, Drainage, Safety Fencing, Concrete Barrier, Surfacing, Lining and Traffic Counters. On appointment sub-contractors would be responsible for ensuring they had access to appropriate resources such as materials, vehicles, safety equipment, machinery and suitably qualified staff.

Construction Programme

The first programme issued with the contract package order in February 2014 was the Clause 31 Programme dated the 30th January 2014. This programme, in the form of a Gantt Chart, gave a high level overview of key milestones such as task order date, contract start date and planned completion date. It also details project constraints, enabling works, statutory undertaker works, traffic management requirements and the various phases and timings of the construction works. As the construction project moved forward the programme would be updated and re-issued to reflect any changes to activities and timings. An example might be re-sequencing of works to avoid a road space conflict with another agencies works such as Highways England. It is not uncommon for the final programme to

vary considerably from the original one, if a project has numerous constraints or experiences significant problems.

Enabling Works

Prior to the commencement of construction activities on site certain enabling works have to be carried out to allow access to work areas and make the area safe for construction operatives. An initial concern was the clearance of vegetation from the central reserve between Junction 1 and Junction 2 before the start of the birds nesting season – this was achieved in the last two weeks of February 2014. During March 2014 temporary lighting was installed in the eastbound and westbound verges and a temporary 50 MPH average speed camera system was installed for the safety of the workforce. Following this a varioguard system was installed to protect workers in the central reserve and two narrow carriageway lanes established in each direction to allow a steady flow of traffic during the works. Information boards were placed on the approaches to the scheme to advise the travelling public of the duration of the works.

Traffic Regulation Orders (TRO)

Legal orders in the form of TRO's and Temporary Traffic Regulation Orders (TTRO's) were required to enable the works to be carried out. TTRO's were required to allow the legal enforcement of the temporary 50MPH speed limit monitored by the average speed camera system. Because the speed limit enforcement affected both the Highways England road and a PCC road it was necessary to produce two separate TTRO's. Similarly it was necessary to produce two permanent TRO's in support of the new 60MPH speed limit on the A1(M) link road and the Fletton Parkway. All TRO/TTRO's are published in the Peterborough Telegraph, firstly advising the general public and other stakeholders of the intention to introduce new measures and again to inform them that the new measures have been implemented. This process allows the public and stakeholders to comment or object on proposals.

Construction Phases

Following the enabling works detailed above, construction works commenced in early April 2014. The scheme programme deliverables were as follows:

- Widening of the road between Junction 1 and Junction 2
- Link capacity improvements between Junction 17 A1(M) and Junction 2 Fletton Parkway
- A new merge junction where the Fletton Parkway joins the A1(M) link road
- Installation of Average Speed Cameras to enforce the 60 MPH speed limit past the new junction where the Fletton Parkway merges with traffic from the A1(M) slip road
- Replacement Street lighting between Junction 17 and 2
- Road resurfacing and repairs between Junction 17 and 2
- Replacement of signage as required
- Survey of drainage – repair/replacement and capacity upgrades as required
- Installation of Closed Circuit Television Cameras (CCTV)
- Installation of maintenance bays as required

Delivery of the Fletton Parkway Widening Scheme was broken down into three phases as follows:

Phase 1: Central Reservation

Work on the central carriageway widening started on 7th April 2014 following the placement of narrow lane varioguard barriers and other traffic management. The works involved the excavation of large amounts of soil and the construction of two lanes of new carriageway. Associated with this was site clearance of vegetation and the removal of old street lighting and signage from the central reserve. In addition there was significant work carried out to improve drainage systems, upgrade safety barriers and the provision of new kerbing and signage. Works in the central reserve were substantially complete on the 31st October 2014.

Phase 2: Verge Works

Verge works commenced on the 3rd November 2014 following the switch of varioguard barriers and traffic management from the central reserve to the verges over two weekends. The verge work basically involved the upgrade of junction merge and diverge facilities and the provision of an average speed camera system to enforce the new 60MPH speed limit. These works involved site clearance of vegetation, the removal of a significant amount of soil and localised full depth carriageway construction for junction upgrades. Associated with these works was a significant capacity improvement upgrade to the drainage system, a new street lighting system, localised road restraint barrier upgrades, kerbing refurbishment, new road signs and the installation of average speed cameras to monitor the A1 (M) link road merge with the Fletton Parkway.

Phase 3: Resurfacing and Crack Repair Works + Lining

These works were all carried out at night under road closure and diversion. The works involved the removal of the existing top layer of the road surface, inspection and repair of cracks, the laying of a grid asphalt reinforcing layer, road resurfacing and finally thermoplastic lining. Night resurfacing works on the westbound carriageway commenced on 27th April 2015 and took about a month to complete. Work on the eastbound resurfacing commenced on the 28th May 2015 and completed on the 2nd July 2015.

Defects Correction/Maintenance Period

The defects correction period is for a year after the works completion date. This is an opportunity for the contractor to make adjustments to the delivered infrastructure to correct work classed as defective and bring it back within acceptable tolerances. The Site Supervisors URS/AECOM would be responsible for identifying defects and ensuring that they get corrected within the defects correction period. If the contractor failed in any aspect to resolve issues then the Client could withhold some of the retention money to correct the issue themselves.

Handover to PCC

The scheme designers/supervisors URS/AECOM are responsible for ensuring that construction drawings are updated to reflect what was eventually installed. These are called 'As Built' drawings and form part of the Health and Safety File which is presented to the Client to assist with future scheme maintenance. The H&S File will also include test records, material specifications, maintenance agreements, Departures from Standard and RSA Reports.

Road Safety Audit (RSA Stage 4) – Accident Analysis

The fourth stage of the road safety audit process involves a study of the accident history over a one year period after opening. A comparison is made with the three year accident history prior to opening, to see if any new accident patterns have emerged and also to see if

the scheme has improved the safety situation generally. If any patterns do emerge the design solution may be revisited to see if improvements can be made to resolve issues.

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