Edgbaston Metro Extension

City Centre Neighbourhood Forum

9th February 2019
Introduction

• Presentation topics:
  • The End Goal
  • Update on progress
    • Utility diversions
    • Canal bridge
  • Proposed construction strategy
  • Gas and Berkley Street reversal
The End Goal

The Project in Numbers:

- 1.35km track along Broad Street
- 3 new stops at Brindley place, Five Ways and the terminus
- 3 significant road junctions
- 5 interfacing construction projects
- 60 buses an hour
- 20 pubs/bars/clubs
- 5 restaurants
- 1 national arena
- 7 hotels
- 1 international convention centre/symphony hall

Edgbaston to New Street station in approx. 8 mins
Edgbaston to HS2 or Snow Hill in approx. 12 mins
The End Goal

Why?
To improve the quality of life of the public by making their lives easier and more enjoyable. Encouraging development and regeneration.

How?
By providing a reliable, intuitive and efficient tram route to/from the west of Birmingham city centre, that seamlessly and sustainably connects with other modes and improves the urban environment.

Strategic Benefits
- Supporting economic and population growth by linking ‘jobs and people’ and ‘products and markets’
- Reduce the environmental impacts from transport
- Improve people’s health through the encouragement of more active lifestyles
- Raise the standard of living by improving access to leisure and essential services
- Improving national and regional links to boost the West Midlands’ economy
- Maximising the benefits of HS2
- Improving the accessibility and connectivity of the re-developed New Street station

Key Features
- Edgbaston to New St Station in approx. 8 mins
- Edgbaston to HS2 or Snow Hill in approx. 12 mins
- Trams every 6 minutes with a capacity of 210 people
- 1.35km of new twin track
- 3 Metro stops (Brindleyplace, Five Ways and the terminus) plus 2 already in construction (Centenary Square and Town Hall)

Local Benefits
- Improving local air quality by reducing emissions
- Reducing noise levels by reducing number of vehicles
- Connect direct with existing Birmingham train stations and future HS2 stop as well as local bus services and Digbeth Coach Station
- Enhance attractiveness of environment by renewing the urban realm from wall to wall and significantly increasing the width of footways
- Improving safety of the public
- Encouraging development e.g. New Garden Square, Broadway, Left Bank etc
- Deepen labour pools by providing better access
- Reducing congestion and challenging the car culture in the City
Current High Level Dates

• Now – Summer 2019                Advanced works
• Spring 2019 - Autumn 2020        Main works
• Autumn 2020 – Autumn 2021        Urban realm/Systems installation
• Autumn 2021 – December 2021     Testing and commissioning
• December 2021                    Operational
Update on Progress – Utility Diversions
Broad Street Canal Bridge
**Structure 1**
Form – Masonry arch
Ownership – CRT
Current loading – Full highway
Future loading – Full highway (inc. tram and accidental tram)

**Structure 2**
Form – Concrete reinforced masonry arch
Ownership – CRT
Current loading – Full highway
Future loading – Full highway (inc. tram and accidental tram)

**Structure 3**
Form – Metallic girder and concrete jack arch
Ownership – BCC
Current loading – Above structures
Future loading - Above structures

**Reason for strengthening:**
Structure 1 needs to meet requirements for highway loading including future tram loading
Photos
The Challenge

- Constrained site
- Multiple affected parties i.e. BCC, TfWM, CRT, property owners
- Budget
- Constructability
- Buried services
- Stakeholder impact
- Minimal depth to extrados
- Listed buildings
- No reduction in headroom
MARS System

Arch strengthening installation and completion

Services are avoided and all environmental regulations observed. The required number of stainless steel Helifix HeliBars are installed into the slots. At each Helibar intersection between circumferential and longitudinal bars, hooked centrics are installed anchoring the grid and providing continuity to the rings of the arch. The reinforcement is encapsulated with Marflex structural adhesive, a durable polyureide resin with high bond strength, particularly to damp substrates. The Marflex has perfect characteristics for the installation and can be colour matched or pointed over with a colour matched heritage mortar.

The arch reinforcement system
# MARS Schedule

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**START WORKS ON SITE 2.01.19**

- Mobilisation and Site security
- Pre-Condition Survey
- Installation of scaffold deck
- Remove existing lighting & install task lighting
- Setting out for MARS
- Inspect setting out
- Install chases in brickwork for MARS
- Clean out chases
- Inspect Chases
- Drill Centric Holes
- Inspect holes
- Install MARS reinforcement
- Inspect MARS installation
- Install Helifix Centrics
- Install MAREX adhesive grout
- Cosmetic finishing
- Final Inspection and sign off
- Clean down scaffolding
- Decommission Scaffolding
- Demobilise site

**COMPLETION OF BRIDGE STRENGTHENING 15.03.19**
Proposed Strategy - Lessons Learned

- Junction with Broad, Sheepcote and Granville Street suffered delays due to volume of traffic, multiple/conflicting traffic movements and unclear authorised vehicles. Marshall control and traffic signals struggled to maintain flow.

- Junction with Berkley and Broad Street caused long queues on Berkley Street due to give way arrangement and parked cars. This led to detracting visitors.

- Exiting Brindleyplace traffic causes congestion at Sheepcote/Broad Street junction

- Lack of clear and suitable drop off, loading/unloading points deterred visitors.

- Complex give way junction at Holliday/Gas/Berkley Street prevented ease of access/egress from Broad Street.

- Introduction of temporary signals at Bishopsgate Street junction as well as measures along Broad Street clogged Broad Street and restricted flow.
Construction Strategy Principles
(based on lessons learned)

Strategy Principles:
• Full width site setups whilst maintaining pedestrian access and sufficient footway widths
• Plan timings of site setups to reduce impact on peak business periods
• Localised advanced works targeted ahead of main work e.g. utilities, deep drainage, site clearance, highway alterations

Traffic Management Principles:
• Improve wider vehicular network ahead of main works i.e. Bath Row and Sheepcote Street measures
• Improve local network ahead of main works i.e. reversal of Gas and Berkley Street and junction with Holliday Street
• Simplify traffic movements and where possible avoid multiple temporary traffic signals

Reasons:
• 5 traffic management phases vs 10-12 using half width setups meaning less change for pedestrians and vehicles
• Reduction of overall schedule by minimum 6 months, more likely to be 12 months
• Less risk of schedule slipping
• Prevents multiple conflicting traffic movements and reliance on give way
• Improved rotational traffic flow
• Provides ability to provide dedicated drop off areas
• Improved safety of public and workforce
• Insufficient width to accommodate single lane carriageway and construction works
• To occupy areas only once and for shorter durations
• Easier to market and provide way-finding information
The Phases......

- Current main works phasing, TBC 20th February
- Phase 1 – April 2019 to Mid-September 2019 (Fresher’s Week)
- Phase 2 – Mid-September 2019 to End 2019
- Phase 3 – January 2020 to August 2020
- Phase 4 – August 2020 to December 2021. Predominantly off highway including paving works, testing and commissioning, tram testing, driver training
Gas and Berkley Street Street Reversal

Wider proposed traffic management......
Thanks for listening........