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**St Stephen's Green
Station Options
Assessment Summary**

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St Stephen's Green Station

Station Options Assessment Summary

June 2022

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Executive Summary

TII have undertaken in-depth analysis of station option locations as part of the development of the MetroLink route alignment. As part of this process a preferred option was developed at St. Stephens Green. The Office of Public Works (OPW) raised concerns relating to the impact on St. Stephens Green Park.

In response to OPW concerns, TII considered a number of localised station alternatives which would seek to further minimise temporary and permanent impacts on the Park. A total of 16 alternatives were considered of which 10 use a traditional cut and cover construction methodology and 6 use mined construction solutions.

Following detailed analysis of the options, the National Transport Authority (NTA) and Transport Infrastructure Ireland (TII) recommend that the scheme proceed to Railway Order with the current preferred option station design (Location 5) on the basis that the option:

- Strikes a balance between limiting the significant environmental impacts on the Park and important heritage buildings on St Stephens Green East, impacts on major utilities and traffic flows during the construction period;
- Has the shortest construction programme (**8.5 years**).

Of the 16 alternatives considered, location 8 and mined options 1 and 3 were considered viable. However, these options provide significantly reduced level of customer experience and construction duration increases by between **2 and 4 years**.

Good design of the station permanent 'pop-ups' and replanting of trees and other vegetation will provide a high-quality environment in the reinstated area of St. Stephen's Green Park, mitigating the long-term impact of the preferred option.

The provision of a compromised design would deliver a sub-optimal system that would remain in place for many decades.

Progressing any option, other than the Preferred Option will require approximately 6 - 12 months re-design, an updated EIAR and construction delays.

Preliminary Design and Preferred Option - Location 5



Park Impacts

The preferred MetroLink station will have a short-term impact on approximately 5% of the eastern interior of St Stephens Green Park for approx. **6 years**. (excluding plaza with station entrance building). Other than Location 7 and Mined Option 3, where there is no temporary encroachment on the Park, all other options require temporary Park occupation up to a period of 6 years (excluding plaza with station entrance building).

MetroLink's works within the perimeter boundary of the Park for the Preferred Option compare far more favourably than that of previously approved Railway Order for Metro North, where approximately 30% of the park was to be impacted.

Of the overall 9.2 Hectares of Park, less than 1% is required for the permanent footprint of the preferred option.

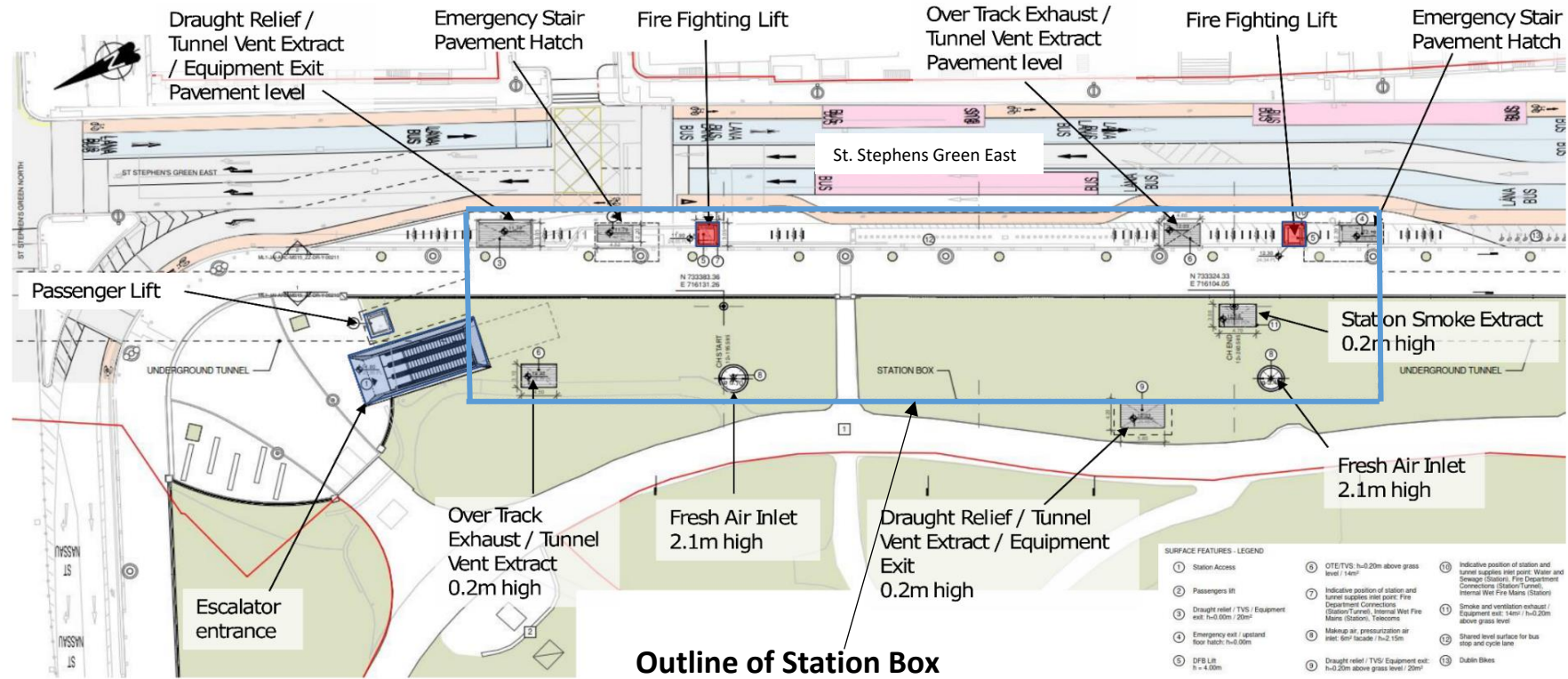
Public Realm

The Park will benefit from the large numbers accessing the metro station (the existing space being somewhat underpopulated), with potential for street theatre and performance art. The inner gateway provides a controlled entrance to the Park, with a new setting for the significant monument group. The symmetrical placement of this group is retained and is given increased emphasis by being directly opposite the park entrance. The preferred design reinstates railings and perimeter entrance pillars at the corner of the park, providing greater consistency with the other three corner entrances to the Park. The resulting public space is less exposed and benefits from greater definition as a separate realm to the street, with a resulting improved sense of place.



Preliminary Design and Preferred Option - Location 5

Preferred Design



SURFACE FEATURES - LEGEND

① Station Access	⑦ OTE/TVS: h=0.20m above grass level / 1.4m ²	⑩ Indicative position of station and tunnel supply riser point: Water and Sewage (Station), Fire Department Connections (Station/Tunnel), Internal Wet Fire Main (Station)
② Passengers lift	⑧ Indicative position of station and tunnel supply riser point: Fire Department Connections (Station/Tunnel), Internal Wet Fire Main (Station), Telecoms	⑪ Smoke and ventilation exhaust / Equipment exit: 1.4m ² / h=0.20m above grass level
③ Draught relief / TVS / Equipment exit: h=0.00m / 20m ²	⑨ Makeup air, pressurization air inlet: 6m ² facade / h=2.15m	⑫ Shared level surface for bus stop and cycle lane
④ Emergency exit / upstand floor hatch: h=0.00m	⑤ Draught relief / TVS / Equipment exit: h=0.20m above grass level / 20m ²	⑬ Dublin Bikes
⑤ DFB Lift: h=4.00m		

1 STATION LOCATION OPTIONS



Emerging Preferred Route

(EPR) Station Location St Stephen's Green East (March 2018)

Main Features:

- High level concept design only - Station box located entirely within the SSG's east carriageway.
- Surface access, lifts, and ventilation structures outside of the Park.

Key Issues:

- St Stephen's Green East closed to traffic/public transport for duration of the station construction. Significant impact/direction of local traffic and bus routes.
- Major impact on utilities (Ovoid Sewer, Water, ESB, Gas etc.).
- Direct impacts on protected structures along SSG's east which would require strengthening works, such as, underpinning. Temporarily vacating buildings as access not being maintained for occupants or service connections.
- Significant infrastructure on footpath presents on street clutter, increased impacts for the mobility and vision impaired.

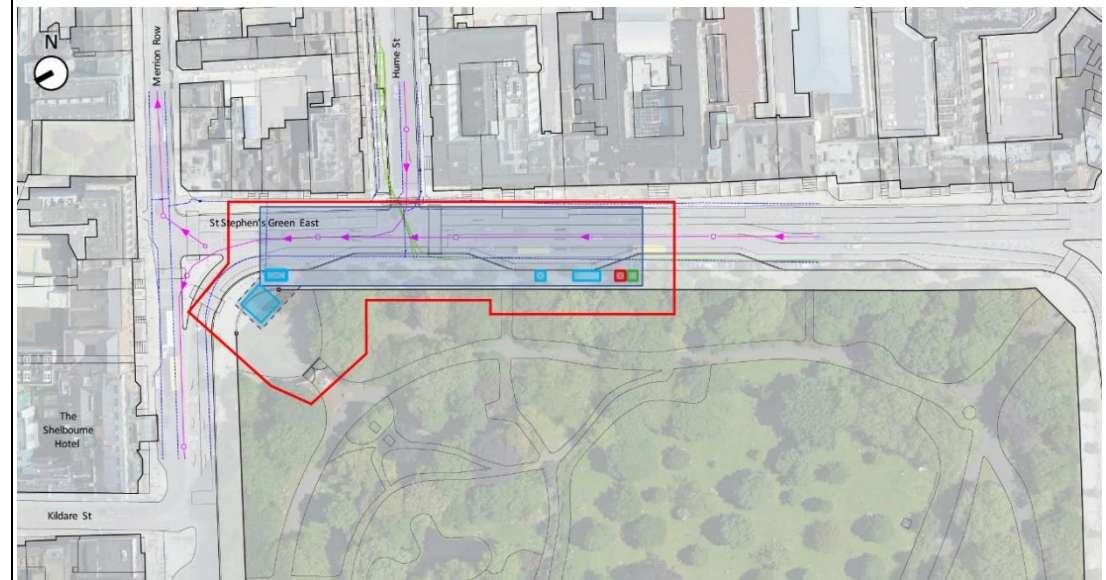
Impact on Park:

- Approx. 10-15m, (2,300m² or 2.5%) encroachment of overall park during construction (removal of trees, railings).
- Wolfe Tone memorial relocated (temporary) as part of the enhanced plaza access and reinstated post construction.
- Entrance to the Park closed during construction.
- Refurbishment and reinstatement of Park railings post construction.
- Permanent area required – 116m² (0.13% of Park).

Programme:

- Initial concept design and early programme indicated a construction duration of 6 years. Post discussions with stakeholders the programme is likely to be similar to Locations 1 and 4 i.e. **10.5 years**.

The Emerging Preferred Route station location was discounted during design development due to its impacts on traffic, utilities and the protected structures located on SSG east. For these reasons the Emerging Preferred station was replaced with the Preferred Route Station at Location 5.



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS



Location 1

Location Assessment 2020 Alternative Option 1 – 7 (Jan 2020)

Main Features:

- Station location moved south to avoid impact on Hume Street, just south of 1.8m/1.7m diameter sewers join. Station box located entirely within the St Stephen’s Green east.
- Surface access, lifts, and ventilation structures outside of Park (locations of surface features not developed).

Key Issues:

- Moving the station south increases distance to Tara Street station requiring 30m diameter intervention shaft mid-way between both stations.
- St Stephen’s Green East closed to traffic/public transport for duration of the station construction.
- Major impact on Utilities (Ovoid Sewer, Water, Electricity, Gas etc).
- Direct impacts on protected structures on SSG’s east which would require strengthening works, such as, underpinning. Temporarily vacating buildings as access not being maintained for occupants or service connections.
- Significant infrastructure on footpath presents on street clutter, increased impacts for the mobility and vision impaired.

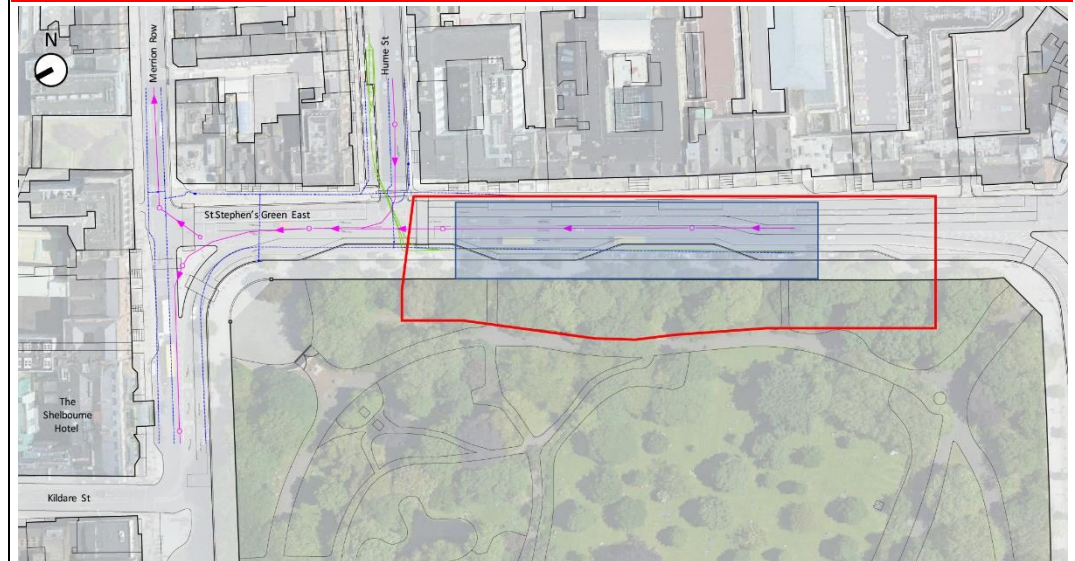
Impact on Park:

- Approx. 12-20m (2,400m² or 2.6%) encroachment of overall park during construction (removal of trees, railings).
- Refurbishment and reinstatement of Park railings post construction.
- Permanent area required – 0m² (0% of Park).

Programme:

- Significant additional programme and environmental impacts arising from the requirement to construct an intervention shaft mid-way between stations.
- Preliminary design & early programme indicated construction duration of **10.5 years**.

Due to its overall poor performance against some key assessment criteria, and in particular its impact on SSG traffic flows and the protected structures on SSG East, Location 1 was not considered to be a feasible station and was not progressed beyond its initial assessment.



KEY	
TEMPORARY/Underground	PERMANENT SURFACE FEATURES
Construction Boundary	PASSENGER LIFT/ENTRANCE
Access Shaft	DUBLIN FIRE BRIGADE LIFT
Station Box	VENTILATION GRILLE/SHAFT
Below Ground Works (Shaded area)	INTERVENTION ACCESS/EGRESS
Main Utilities	



Location 2

Location Assessment 2020 Alternative Option 1 – 7 (Jan 2020)

Main Features:

- Station box is moved further west into St Stephen’s Green to allow for some traffic movements to be maintained and moved south to avoid impact on Hume Street and avoid the location where large diameter sewers join.
- Significantly reduced local traffic impacts and provides two northbound traffic and one southbound bus lane remaining open during works.
- Some reduced impact on utilities (no diversion of Ovoid sewer).
- Significantly reduced impacts on protected structures on SSG’s east.

Key Issues:

- Moving the station south increases distance to Tara Street requiring a 30m diameter intervention shaft to be constructed mid-way between both stations.

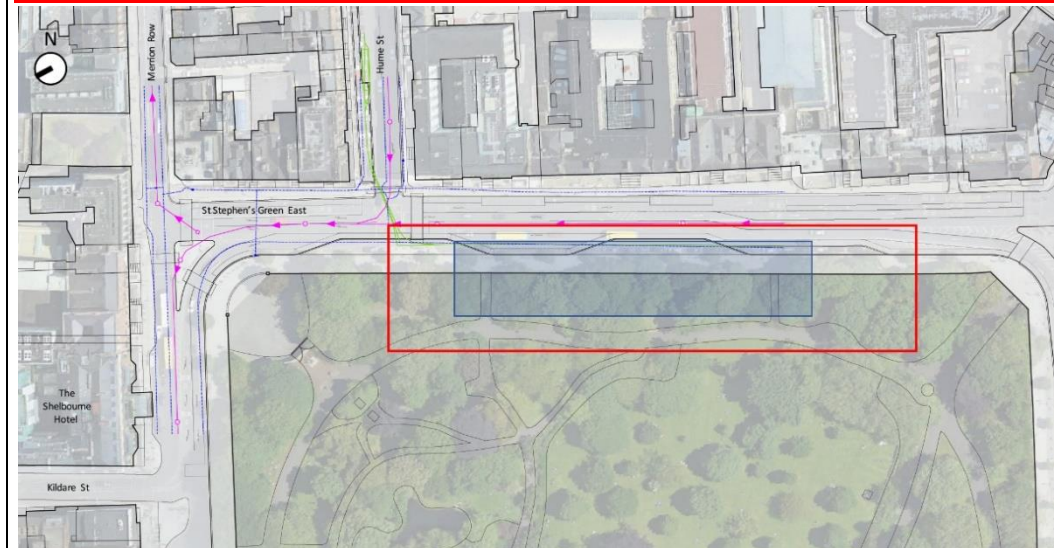
Impact on Park:

- Approx. 27m (3,800m² or 4.1%) encroachment or overall Park during construction (removal of trees, railings). Works include piled walls and concrete slab construction.
- Some passenger, fire lifts and ventilation structures would be permanently located within the Park (locations of surface features not developed).
- Refurbishment and reinstatement of Park railings post construction.
- Permanent area required – 70m² (0.08% of Park).

Programme:

- Significant additional environmental impacts from the requirement for intervention shaft mid-way between stations.
- Preliminary design & early programme indicated construction duration of **8.5 years**.

Due to its overall poor performance against some key assessment criteria, and the requirement for an intervention shaft, Location 2 was not considered to be a feasible station and was not progressed beyond its initial assessment.



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS



Location 3

Location Assessment 2020 Alternative Option 1 – 7 (Jan 2020)

Main Features:

- Station located entirely within St Stephen’s Green to avoid traffic, services and building impacts during construction.
- All significant utilities impacts removed.
- Significantly reduced impacts on protected structures on SSG’s east
Virtually all significant local traffic impact removed, existing traffic lanes/movements remain unchanged.

Key Issues:

- Moving the station south increases distance to Tara Street requiring a 30m diameter intervention shaft to be constructed mid-way between both stations.
- Impact on SSG Park significant.

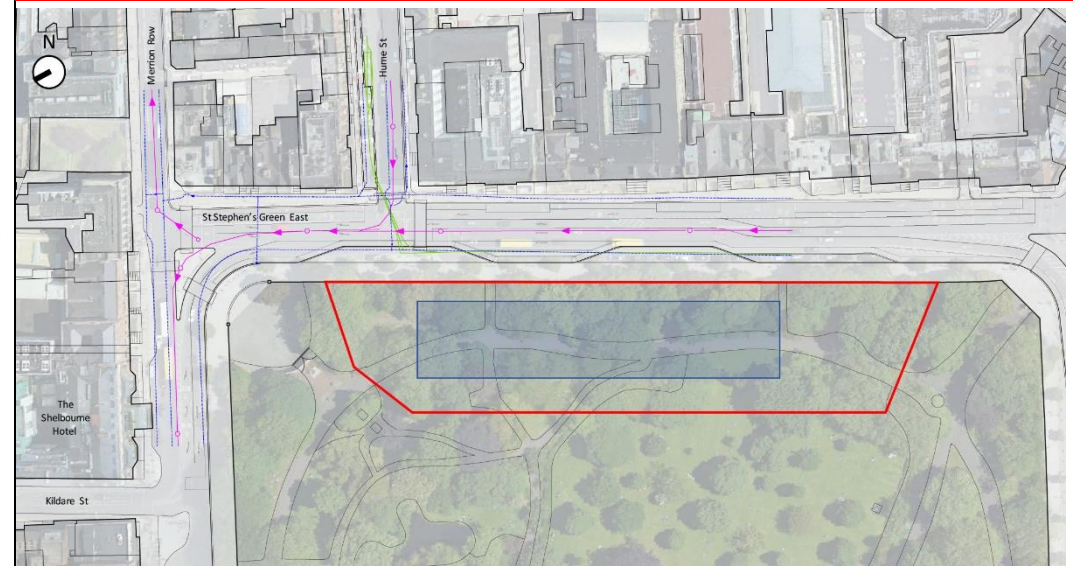
Impact on Park:

- Approx. 40m (6,300m² or 6.8%) encroachment of overall Park during construction (removal of trees, railings). Works include piled walls and concrete slab construction.
- All passenger, fire lifts and ventilation structures would be permanently located within the Park (locations of surface features not developed).
- Refurbishment and reinstatement of Park railings post construction.
- Permanent area required – 126m² (0.14% of Park).

Programme:

- Significant additional environmental impacts from the requirement for intervention shaft mid-way between stations.
- Preliminary design & early programme indicated construction duration of **8.5 years**.

Due to its overall poor performance against some key assessment criteria, and in particular its impact on SSG Park and the requirement for an intervention shaft, Location 3 was not considered to be a feasible station and was not progressed beyond its initial assessment.



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS



Location 4

Location Assessment 2020 Alternative Option 1 – 7 (Jan 2020)

Main Features:

- Similar to EPR location, Station box positioned just north of Hume Street primarily within carriageway of St Stephen’s Green East.
- All Passenger, fire lifts and ventilation structures would be permanently located outside the Park (locations of surface features not developed).

Key Issues:

- St Stephen’s Green East closed to traffic/public transport for duration of the station construction. Significant impact/direction of local traffic and bus routes.
- Major impact on utilities (Ovoid Sewer, Water, Electricity, Gas etc).
- Direct impacts on buildings listed on the protected structures along SSG’s East which would require strengthening works, such as, underpinning. Temporarily vacating buildings as access not being maintained for occupants or service connections.
- Significant infrastructure on footpath presents on street clutter, increased impacts for the mobility and vision impaired.

Park Impact:

- Approx.12- 15m (1,300m² or 1.4%) encroachment of overall Park during construction (removal of trees, railings).
- Refurbishment and reinstatement of Park railings post construction.
- Permanent area required – 0m² (0% of Park).

Programme:

- Station construction programme is significantly impacted due to significant utilities diversions.
- Preliminary design & early programme indicated construction duration of **10.5 years**.

Due to its overall poor performance against some key assessment criteria, and in particular its impact on SSG traffic flows and the protected structures on SSG East, Location 4 was not considered to be a feasible station and was not progressed beyond its initial assessment.



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS



Location 5 – Preferred Solution

Location Assessment 2020 Alternative Option 1 – 7 (Jan 2020)

Main Features:

- The station is located partially within the Park and partially within SSG Carriageway.
- Significantly reduced local traffic impacts and provides two northbound traffic and one southbound bus lane remaining open during works.
- All significant utilities impacts removed.
- No separate intervention shaft required.

Key Issues:

- Impact on SSG Park.

Park Impact:

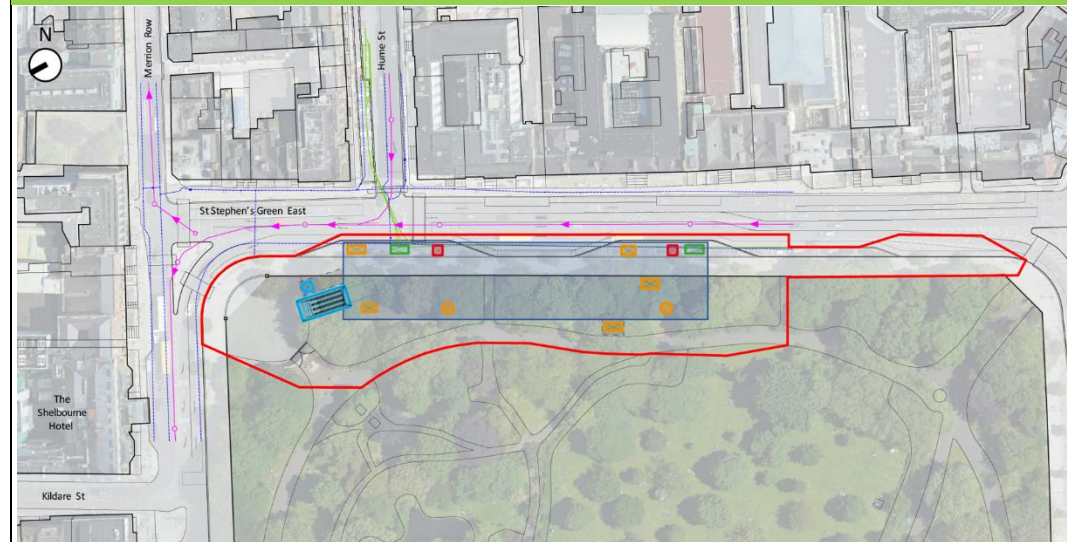
- Approx. 27m (4,600m² or 5%) encroachment of overall Park during construction and would be closed to the public for the construction phase (removal of trees, railings). Works include piled walls and concrete slab construction.
- Refurbishment and reinstatement of Park railings post construction.
- Some ventilation structures would be permanently located within the Park.
- Wolfe Tone Memorial relocated as part of the enhanced plaza access.
- Permanent area required – 196m² (0.21% of Park).

Programme:

- Preliminary design & early programme indicated construction duration of **8.5 years**.
- Preferred solution and basis of current Preliminary Design and Railway Order Application.

Location 5 strikes a balance between the impacts on SSG Park and the disruption of traffic flows on SSG East. It also avoids significant utility diversions and reduces the impacts to the protected structures on SSG East. This option was ultimately preferred to Option 6 and was brought forward as the Preferred Station Location for SSG.

**Note Green Box indicates this option was one of two preferred of the Jan 2020 alternatives*



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS

Design Option 5A and 5B

(Using Preferred Design - Alternative Station Entrances/Lift/Ventilation shafts Assessment)

Main features:

- Station box as per preferred design.
- Option A - Station entrance remains as per preferred design.
- Option B – Station entrance moved to footpath area.
- Fire lifts and ventilation structures permanently located outside Park.

Key issues:

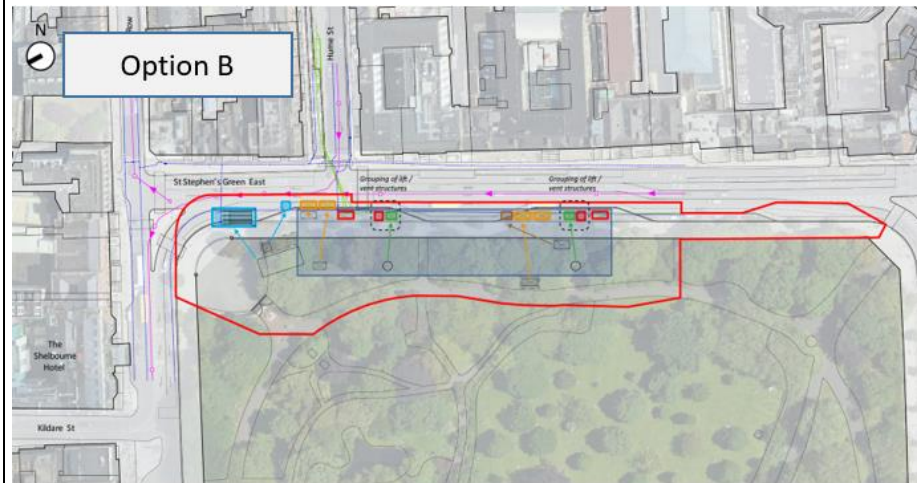
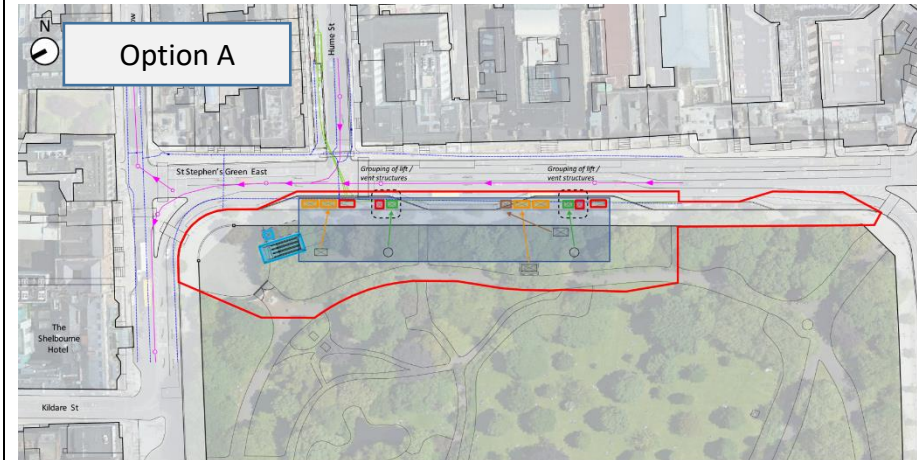
- Significant infrastructure on footpath presents on street clutter, increased impacts for the mobility and vision impaired.
- Option B – Station box extended at Concourse level for escalators and passenger lift.
- Option B - Station entrance provides reduced passenger flow.
- Option B – Reduction in road capacity. 1No southbound and 1No. northbound left turn only with removed pedestrian island.

Park Impact:

- Option A reduces permanent impact on Park and Option B removes permanent impact on Park.
- Option A - Wolfe Tone Memorial relocated as part of the enhanced plaza access.
- Temporary construction area impact remains as per preferred design (removal of trees, railings) Approx. 4,600m² or 5% of overall park occupied for duration of the works. Works include piled walls and concrete slab construction.
- Refurbishment and reinstatement of Park railings post construction.
- Permanent area required: Option 5a – 126m² (0.14% of Park)
Option 5B – 0m² (0% of Park)

Programme:

- Preliminary design & early programme indicated construction duration of **8.5 years**.



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS



Location 6

Location Assessment 2020 Alternative Option 1 – 7 (Jan 2020)

Main Features:

- Station box is situated entirely within St. Stephen’s Green Park.
- Virtually all significant local traffic impact removed existing traffic lanes/movements remain unchanged.
- All significant utilities impacts removed.
- No separate intervention shaft required.

Key Issues:

- SSG park impact

Park Impact:

- Approx. 40m (7,000m² or 7.6%) encroachment of overall Park during construction and would be closed to the public for the construction phase (removal of trees, railings). Works include piled walls and concrete slab construction.
- Refurbishment and reinstatement of Park railings post construction.
- Passenger, fire lifts and ventilation structures would be permanently located within the Park (locations of surface features not developed).
- Wolfe Tone Memorial relocated as part as the enhanced plaza access.
- Permanent area required –126m² (0.14% of Park).

Programme:

- Preliminary design and early programme indicated a construction duration of **8.5 years**.
- Lack of intervention shaft can reduce programme.

Location 6 confines all the construction impacts to within SSG Park and avoids impacts to traffic flows on SSG East, utilities and the protected structures. It also avoids significant utility diversions and reduces the impacts to the protected structures on SSG East.

*Note Green Box indicates this option was one of two preferred of the Jan 2020 alternatives



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS



Location 7

Location Assessment 2020 Alternative Option 1 – 7 (Jan 2020)

Main Features:

- The station is moved to a new location at Earlsfort Terrace.

Key Issues:

- Earlsfort terrace closed to traffic for duration of the station construction.
- Major impact on utilities (Ovoid Sewer, Water, Electricity, Gas etc).
- Distance between Tara Street and Earlsfort Terrace station is in excess of 1km requiring a 30m diameter intervention shaft located between these stations.
- Distance between Charlemont Station as Earlsfort Terrace station is less than 450m and unusual for a metro system. Results overlapping demand catchments and passenger demand being unnecessarily split at both locations.
- Architectural elements within the grounds of the National Concert Hall, including walls and gates would be removed and stored for reinstatement on completion, as necessary.
- Requires increased walking distance to key trip attractors such as Grafton Street shopping area and SSG Park.
- 0% impact on SSG Park.

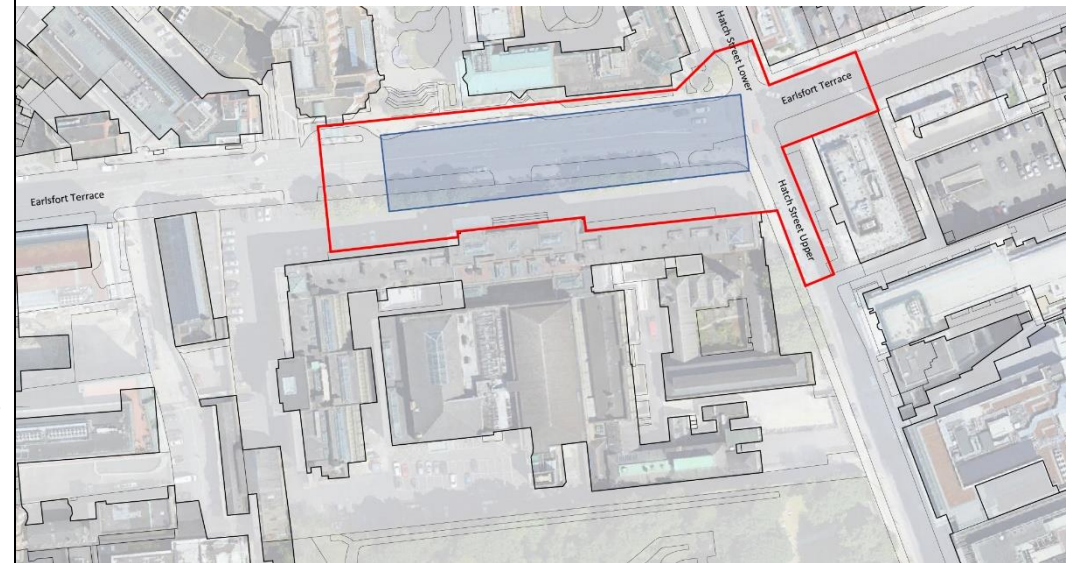
Park Impact:

- Minimal/None.

Programme:

- Preliminary design and early programme indicated a construction duration of **10.5 years**.

Due to its overall poor performance against some key assessment criteria, and in particular its impact on Earlsfort Terrace and the National Concert Hall Location 7 was not considered to be a feasible station and was not progressed beyond its initial assessment



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS

Location 8 Re-assessment of Station, entirely within St Stephen's Green East Carriageway

Additional Option Assessment March 2021

Main Features:

- The station sits entirely within the SSG east carriageway.
- The western extent of the box would be situated approximately 2.5m from the eastern railings of St Stephen's Green Park.
- Additional Entrance on Hume Street.

Key Issues:

- St Stephen's Green East closed to traffic for duration of the station construction. Significant impact/direction of local traffic and bus routes.
- Major impact on utilities (Ovoid Sewer, Water, Electricity, Gas etc.)
- Direct impacts on protected structures on SSG's east which would require strengthening works, such as, underpinning.
- Temporarily vacating buildings as access not being maintained for occupants or service connections.
- Significant infrastructure on footpath presents on street clutter, increased impacts for the mobility and vision impaired.

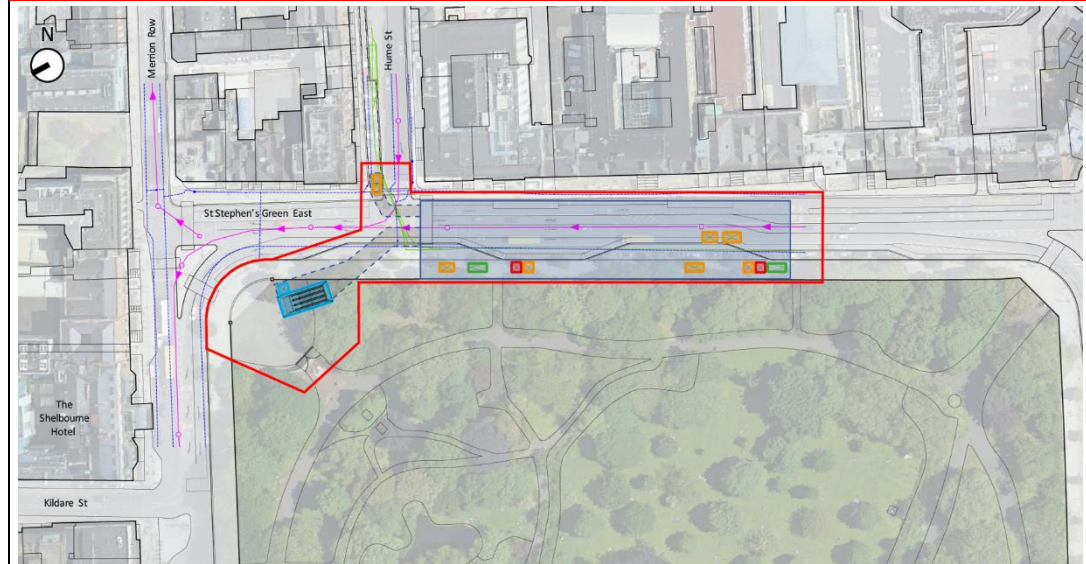
Park Impact:

- Other than the main station entrances all passenger, fire lifts and ventilation structures would be permanently located outside Park.
- Approx. 1,300m² or 1.4% encroachment of overall Park during construction (removal of trees, railings).
- Wolfe Tone Memorial relocated as part of the enhanced plaza access.
- Permanent area required –126m² (0.14% of Park)

Programme:

- Construction programme **(10.5 years)**.

This Option was considered viable but was ultimately ruled out due to its poor performance against programme criteria



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS

2 MINED OPTIONS

The mined options presented here reflect those considered to further reduce impact on St. Stephens Green Park

Mined Station Alternatives – Option 1

Mined Option Review (April 2022)

Main Features:

- Entrance is located within the footpath of St Stephen’s Green North.
- This connects to the main access shaft located in the Plaza area which in turn leads to the platform concourse (located in the mined platform cavern).
- Mined option requires deeper station depth.

Key Issues:

- Difficult passenger wayfinding, navigating four sets of escalators to platform, significant disadvantage to the mobility and visually impaired.
- Walking time from surface to platform level 153% longer than preferred solution, 2.5 minutes V’s 1.6 minutes.
- Cavern construction presents risks of generating noise and ground borne noise and vibration that has potential to impact hotels and residents.
- Architectural canopy design significantly different to MetroLink vision. Presents a significantly different and sub-optimal architectural vision and feeling of space when compared to other MetroLink stations line wide.
- Emerging intervention may depart from DFB requirement and challenge gaining approval from DFB.
- Having a station entrance located in these footpaths would result in poor integration with the public realm, constrain footpath access.

Park Impact:

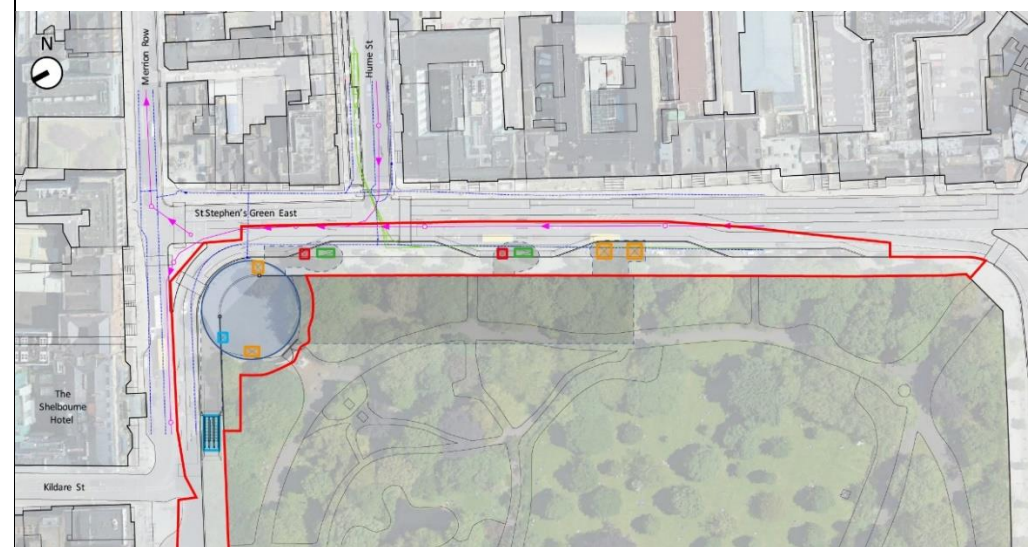
- Significant temporary construction shaft located at Park entrance.
- Wolfe Tone memorial removed and reinstated post construction.
- Main station mined beneath the Park.
- Approx. 1,300m² or 1.4% encroachment of overall park during construction.
- Permanent area required – 40m² (0.04% of Park).

Programme:

- Preliminary design & early programme indicated construction duration of **10.5 years**.

Of the six mined station options considered, Option 1 was the most viable mined solution.

*Note Green Box indicates this option is preferred of the April 2022 mined alternatives options



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS



Mined Station Alternatives – Option 1A

Mined Option Review (April 2022)

Main Features:

- Same as option 1 with platform moved north of the main cavern.
- Construction shaft is located in the centre of the station.
- Ventilation shaft for the northern end of the station provided north of St Stephen’s Green North and to rear of the Huguenot house, to reduce on street clutter.

Key Issues:

- Key issues same as Option 1.
- Moving of the platforms north generates greater risk and impact to overlying property.

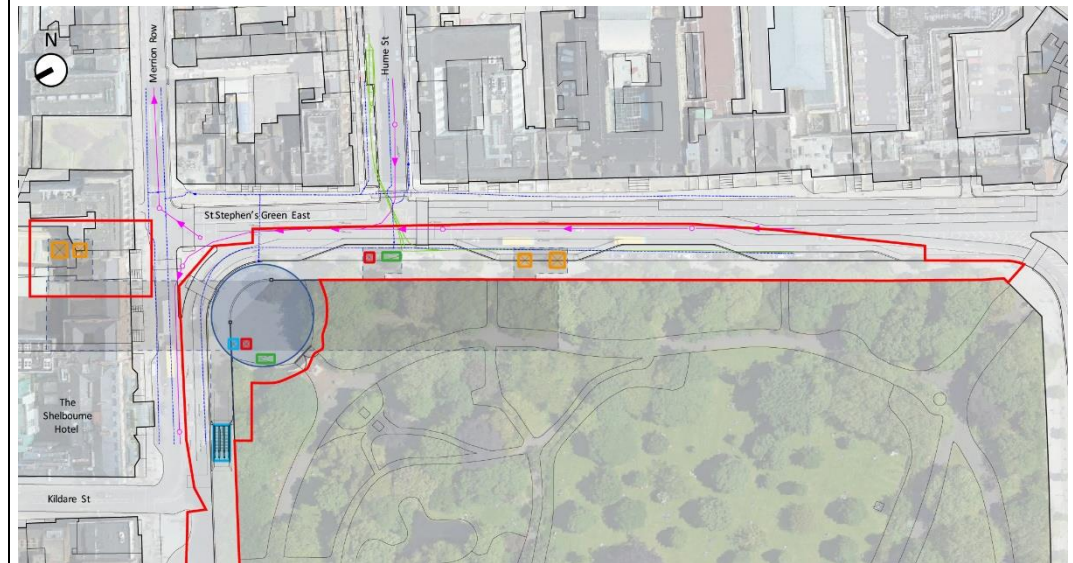
Park Impact:

- Significant temporary construction shaft structure located at the Park entrance.
- Main station mined beneath the Park.
- Wolfe Tone memorial removed and reinstated post construction.
- Approx. 1,300m² or 1.4% encroachment of overall Park during construction.
- Permanent area required – 30m² (0.03% of Park).

Programme:

- Preliminary design and early programme indicated a construction duration of **10.5 years**.

Moving the platform tunnel north is unlikely to offer significant benefit but would need to be subject to further review if Mined Option 1 was to be taken forward for preliminary design development.



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS

Mined Station Alternatives – Option 2

Mined Option Review (April 2022)

Main Features:

- Entrance to the station is located within the footpath of St. Stephen’s Green North.
- Single bore tunnel widened to accommodate central platform arrangement and cavern.
- The platform island configuration requires running tunnel transition enlargements (165m and 178m long north and south of the station, respectively).
- Mined option requires deeper station depth.

Key Issues:

- Key issues same as Option 1.
- Island platform configuration is a significant departure from the Metrolink design concept and would be the only station on the Line configured this way, and therefore inconsistency for passenger use and wayfinding.

Park Impact:

- Significant temporary construction shaft structure located at the Park entrance.
- Wolfe Tone memorial removed and reinstated post construction.
- Main station mined beneath the Park.
- Approx. 1,300m² or 1.4% encroachment of overall park during construction works.
- Permanent area required – 22m² (0.02% of Park).

Programme:

- Preliminary design and early programme indicated a construction duration of **10.5 years**.

This option requires an island platform configuration requiring the construction of 150m+ long running tunnel transitions. For this reason the option did not progress to second stage of assessment



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS



Mined Station Alternatives – Option 2A

Mined Option Review (April 2022)

Main Features:

- Similar to Option 2 but with a ventilation shaft for the northern end of the station provided north of St. Stephen’s Green North to rear of the Huguenot house, to reduce street clutter.
- Emergency access/egress and DFB lift located on north side of SSG north.
- Platforms have been moved slightly north.

Key Issues:

- Key issues same as Mined Option 1 and 2.
- Additional on street clutter on SSG north introduces additional impacts for mobility and visually impaired.

Park Impact:

- Significant temporary construction shaft structure located at the Park entrance.
- Main station mined beneath the Park.
- Wolfe Tone memorial removed and reinstated post construction.
- Approx. 1,300m² or 1.4% encroachment of overall Park during construction.
- Permanent area required – 10m² (0.01% of Park).

Programme:

- Preliminary design and early programme indicated a construction duration of **10.5 years**.

This option requires an island platform configuration requiring the construction of 150m+ long running tunnel transitions. For this reason, the option did not progress to second stage of assessment



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS



Mined Station Alternatives – Option 3

Mined Option Review (April 2022)

Main Features:

- 12.5m wide access box, constructed within St Stephen’s Green East footpath for main entrance.
- Underground passageway connection to the station cavern.
- Mined option requires deeper station depth.

Key Issues

- Extremely constrained construction access for the necessary sequential working to construct the box (Limited clear space between diaphragm walls)
- Architectural canopy design will be significantly different to the MetroLink vision. Presents a significantly different and sub-optimal architectural vision and feeling of space when compared to other MetroLink stations line wide.
- Walking time from surface to platform level 173% longer than preferred station 2.73minute vs 1.6minutes.
- Difficult passenger wayfinding, providing a significant disadvantage to the mobility and visually impaired.
- Emerging intervention may depart from DFB requirement and challenge gaining approval from DFB.
- Having a station entrance located in footpath will result in poor integration with the public realm, constrain footpath access.

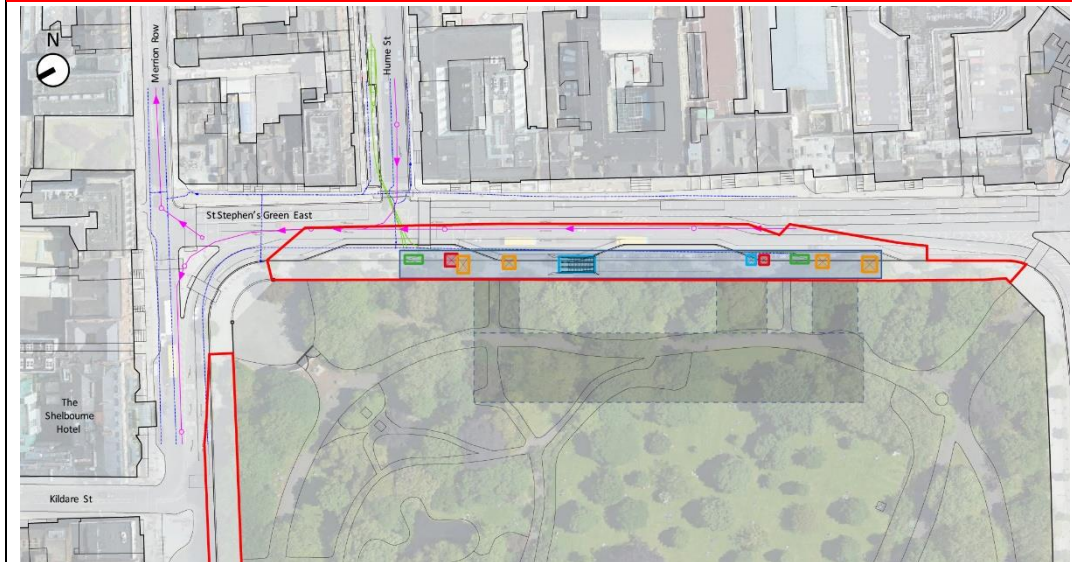
Park Impact:

- Mined cavern beneath the Park.
- 0% encroachment of overall park during construction.
- Permanent area required – 0m² (0% of Park).
- Some possible impact on park rails which would be refurbished and reinstated post construction.

Programme:

- Construction duration of **12.5 years**.

Of the mined options, Option 3 compared less favorably to Option 1 from a programme and passenger experience perspective



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS



Mined Station Alternatives – Option 4

Mined Option Review (April 2022)

Main Features:

- Option 4 was derived as a complete mined option.
- Two station entrances located one north of SSG and one on the junction of Lesson Street Lower Earlsfort Terrace.
- Mined option requires deeper station depth.

Key Issues:

- Key issues similar to option 1.
- Demolition of commercial building Earlsfort Terrace/ Lesson Street Lower.
- Architectural concept and passenger experience is considered to be poor and is a radical change from the overarching architectural vision for MetroLink.

Park Impact

- Significant temporary construction shaft structure located at the Park entrance.
- Main station mined beneath the Park.
- No permanent surface structures within the Park.
- Wolf Tone memorial temporarily removed.
- Approx. 1,300m² or 1.4% encroachment of overall park during construction.
- Permanent area required – 40m² (0.04% of Park).

Programme:

- Concept design & early programme indicated construction duration of **10.5 years**.

Of the mined options, Option 4 compared less favorably to Option 1 from a programme and passenger experience perspective



KEY

TEMPORARY/Underground

- Construction Boundary
- Access Shaft
- Station Box
- ▨ Below Ground Works (Shaded area)
- Main Utilities

PERMANENT SURFACE FEATURES

- PASSENGER LIFT/ENTRANCE
- DUBLIN FIRE BRIGADE LIFT
- VENTILATION GRILLE/SHAFT
- INTERVENTION ACCESS/EGRESS

Early concept mined solution Alternatives (Options A-D)

Mined Option Review (March 2021)

Background:

- In March 2021 consideration was given to a number of early concept mined station solutions for SSG.

Main Features:

- 4 early concept designs were considered, all of which involved locating the station beneath the SSG East carriageway and involved significant construction shafts in the SSG carriageway and/or in adjoining streets.

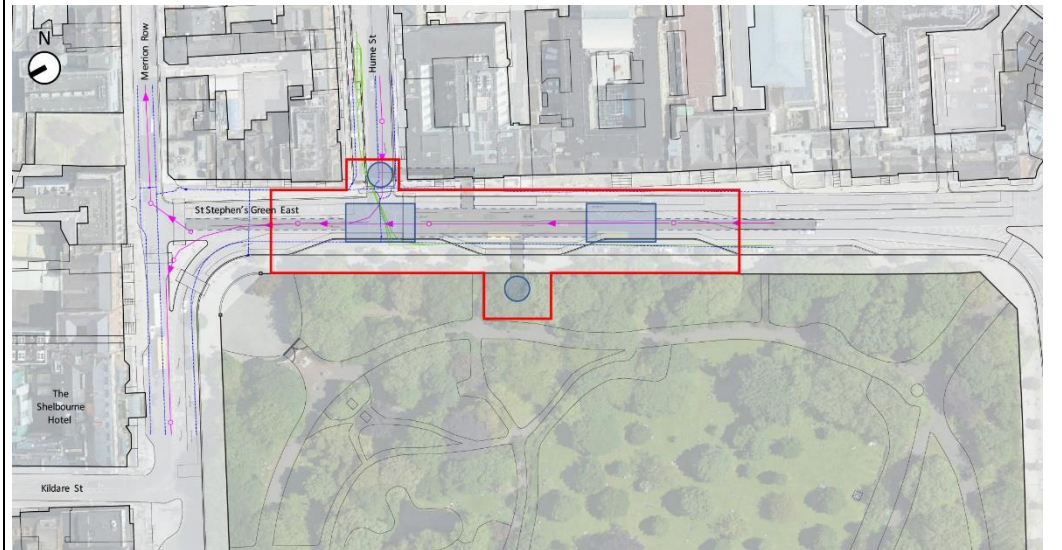
Park Impact

- The options sought to remove MetroLink infrastructure and construction activity from the Park.

Outcome of the Assessment:

- All of the mined tunnel options were considered not to have advantages over the proposed station location or a cut and cover station constructed wholly under St. Stephen’s Green East.
- When the additional construction challenges, increased risk of damage to buildings, to utilities, and disruption to local residents, pedestrians, bus services and general traffic flows were considered, it was concluded that a station box within the carriageway and pathways of St. Stephen’s Green East did not justify containing all the construction works outside of the Park and wholly under St. Stephen’s Green East. In addition, the significant programme implications of this option were prohibitive in comparison to the proposed option.

These options were discounted during design development due to its impacts on traffic, utilities and the protected structures located on SSG east.



Option D - Early Concept (drawings for Options A,B,C were not developed at that time)

KEY	
TEMPORARY/Underground	PERMANENT SURFACE FEATURES
— Construction Boundary	 PASSENGER LIFT/ENTRANCE
 Access Shaft	 DUBLIN FIRE BRIGADE LIFT
 Station Box	 VENTILATION GRILLE/SHAFT
 Below Ground Works (Shaded area)	 INTERVENTION ACCESS/EGRESS
— Main Utilities	

3 OPTIONS SUMMARY



MetroLink SSG Options Assessment Summary

June 2022


Option Description	Overall Construction Programme Impact	Temp. & Perm. % of overall Park Required	Comments
Emerging Preferred (Mar 2018)	10.5 yrs	Temp. 2.5% Perm. 0.13%	SSG East. Significant infrastructure on footpath, increased impacts for mobility & visually impaired. Reduced passenger and pedestrian experience 1 yr delay to RO Application, 2-yr prolongation to construction programme
Location 1	10.5yrs	Temp. 2.6% Perm. 0%	SSG East. Significant infrastructure on footpath, increased impacts for mobility & visually impaired. Reduced passenger & pedestrian experience. Additional intervention shaft, 1 yr delay to RO Application, 2-yr prolongation to construction programme
Location 2	8.5yrs	Temp. 4.1% Perm. 0.08%	Partly in road & park. Reduced passenger & pedestrian experience. Additional intervention shaft & 1 yr delay to RO Application
Location 3	8.5yrs	Temp. 6.8% Perm. 0.14%	Fully within Park, no on street clutter, good passenger and pedestrian experience, access at entrance to park. Additional intervention shaft & 1 yr delay to RO Application
Location 4	10.5yrs	Temp. 1.4% Perm. 0%	SSG East. Significant infrastructure on footpath, increased impacts for the mobility & visually impaired. Reduced passenger & pedestrian experience if entrance within footpath. 1 yr delay to RO Application, 2-yr prolongation to construction programme
Location 5 (Preferred Design)	8.5yrs	Temp. 5% Perm. 0.21%	Preferred Solution as included in Preliminary Business Case. Partly in road & park. Consistent architectural vision, wayfinding & passenger experience with other stations along the route
Design Alternative 5A & B	8.5yrs	A - T.5% /P. 0.14% B – T. 5%/P.0%	Options 5A&B - Significant infrastructure on footpath, increased impacts for the mobility & visually impaired. Reduced passenger & pedestrian experience. 1 yr delay to RO Application
Location 6	8.5yrs	Temp. 7.6% Perm. 0.14%	Fully within Park, no on street clutter, good passenger experience if access remains at entrance to park. Similar to Location 5 - with 1 yr delay to RO Application
Location 7	10.5yrs	Temp. 0% Perm. 0%	Earlsfort Terrace. Significantly reduced passenger experience, longer walking distance to key trip attractors. Additional intervention shaft, 1 yr delay to RO Application, 2-yr prolongation to construction programme
Location 8	10.5yrs	Temp. 1.4% Perm. 0.14%	SSG East, additional entrance on Hume St. Significant infrastructure on footpath, increased impacts for the mobility & visually impaired. Reduced passenger & pedestrian experience. 1 yr delay to RO Application, 2-yr prolongation to construction programme
Mined Option 1	10.5yrs	Temp. 1.4% Perm. 0.04%	Significantly different & sub-optimal architectural vision & poor passenger experience. 1 yr delay to RO Application, 2-yr prolongation to construction programme
Mined Option 1A	10.5yrs	Temp. 1.4% Perm. 0.03%	Significantly different & sub-optimal architectural vision & poor passenger experience. 1 yr delay to RO Application, 2-yr prolongation to construction programme
Mined Option 2	10.5yrs	Temp. 1.4% Perm. 0.02%	Significantly different & sub-optimal architectural vision & poor passenger experience. 1 yr delay to RO Application, 2-yr prolongation to construction programme
Mined Option 2A	10.5yrs	Temp. 1.4% Perm. 0.01%	Significantly different & sub-optimal architectural vision & poor passenger experience 1 yr delay to RO Application, 2-yr prolongation to construction programme
Mined Option 3	12.5yrs	Temp. 0% Perm. 0%	Significantly different & sub-optimal architectural vision & significantly reduced passenger experience. 1 yr delay to RO Application, 4-yr prolongation to construction programme
Mined Option 4	10.5yrs	Temp. 1.4% Perm. 0.04%	Significantly different & sub-optimal architectural vision & poor passenger experience. 1 yr delay to RO Application, 2-yr prolongation to construction programme



METROLINK

 info@metrolink.ie

 www.metrolink.ie

 1800 333 777

 @metrolink_ie