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DISRUPTION MANAGEMENT PLAN HIGHWAY 7 RAPIDWAY CONSTRUCTION BETWEEN BAYVIEW AVENUE AND WARDEN AVENUE TOWNS OF MARKHAM AND RICHMOND HILL

The Transportation Services Committee recommends the adoption of the recommendation contained in the following report dated June 1, 2011, from the Commissioner of Transportation Services.

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

This report identifies measures that will be undertaken to aid in the management of expected disruptions during the vivaNext rapidway construction within the heavily travelled Highway 7 Regional corridor.

3. BACKGROUND

Construction of the Highway 7 rapidway is underway

Viva Phase 2 (branded as vivaNext) includes the construction of 67 kilometres of surface rapid transit in dedicated rights-of-way along Highway 7, Yonge Street and Davis Drive (*see Attachment 1*).

The first phase of vivaNext scheduled for implementation between now and 2015 includes Highway 7 between Warden Avenue and Bayview Avenue, and Davis Drive, between Yonge Street and the Southlake Regional Health Centre. Both of these projects are now in the initial stages of construction.

Under the direction of York Region Rapid Transit Corporation (YRRTC), the design build consortium is in the detailed design phase of the approved vivaNext rapidway project on Highway 7 between Bayview Avenue and Warden Avenue in the Towns of Markham and Richmond Hill. The improvements will involve reconstruction of the existing road and installation of dedicated centre lanes for Viva buses, median platform stations, streetscaping, boulevard treatments, associated arterial road improvements, and a sophisticated traffic signal control system. The construction of this major Regional infrastructure project is planned over the next three years.

Over the last year, Transportation Services staff has been working with YRRTC to identify and address transportation system impacts during the upcoming construction. Through this cooperative approach, Regional staff has identified a number of initiatives which are recommended for implementation to try to minimize the impacts to pedestrians, cyclists, transit users, drivers, residents and businesses during this major construction project.

Two distinct work programs are planned for the Highway 7 rapidway between Bayview Avenue and Warden Avenue

The overall project has been divided into two linear sections. The western section extends from Bayview Avenue to Highway 404 and the eastern section extends from Highway 404 to Warden Avenue. The construction schedule for the project identifies the western section as the initial work area beginning in the spring of 2011 and the eastern section starting in 2012 (*see Attachment 2*).

Within each of the two work sections, construction is planned as a complex five-phase undertaking, involving multiple work crews

Transportation Services staff has approved a five-phase construction staging plan which has been included in the contracts for both work sections described above. Furthermore, the tenders call for the work to be carried out by multiple crews within each section, thus doubling the amount of simultaneous construction within each work section. The emphasis of this plan is to reduce the impact to the travelling public, residents and businesses in the area, while still allowing the contractor enough flexibility to ensure maximum production.

Each crew within each section will generally carry out the work in conformance with the five phases of construction as described below and illustrated in *Attachment 3*.

Construction Phases

1. Phase 1 will concentrate work in the middle of the existing Highway 7 corridor, and will consist of utility relocations, removal of existing centre island medians and installation of temporary traffic signals. Right turn lanes and queue jump lanes for transit will be eliminated at some locations. This phase of construction is currently nearing completion.
2. Once the initial median work is complete, it is proposed that the westbound lanes be shifted southerly, and widening of the north side of Highway 7 and boulevard construction will be carried out. This phase of construction is currently underway.

3. In the third phase of construction, all lanes will be shifted northerly, with three lanes of traffic to be maintained in each direction while widening on the south side of Highway 7 and south boulevard construction is carried out.
4. Once the construction of the new roadway lanes is complete, traffic will be shifted to the outside lanes of Highway 7 and construction of the dedicated bus lanes, medians, station platforms and station canopies will be carried out. During these phases, three lanes of traffic will be maintained in each direction on Highway 7.
5. The final phase of construction will consist of the paving of top course asphalt to provide for a consistent look across the entire Highway 7 corridor. To minimize traffic disruptions, this work is planned to be carried out overnight. The planned night work will also provide the highest quality product and maximum production.

Between the hours of 6:30 to 9:30 am and 3:30 to 7:00 pm, Monday to Friday, three lanes of general purpose traffic will be maintained in both directions during all phases of construction. Outside of these peak traffic periods, lane closures will be required to complete storm sewer roadway crossings and the hoisting of station canopies.

Disruption Management Plans for the vivaNext construction on Davis Drive, Yonge Street and the remainder of the Highway 7 rapidway are currently under design

This report considers the impacts of the vivaNext rapidway construction on Highway 7 between Warden Avenue and Bayview Avenue. Similar projects are planned for Davis Drive, Yonge Street and sections of Highway 7 west of Yonge Street.

These additional projects will also result in disruption to residents, businesses, transit riders, automobile traffic, pedestrians and cyclists during the construction period. Disruption Management Plans are being prepared for each project to ensure that any unique needs for each construction area are captured appropriately.

These additional Disruption Management Plans will be summarized and presented to Regional Council in future reports.

4. ANALYSIS AND OPTIONS

Highway 7 moves more people than any other corridor in the Region

Highway 7 is a major transportation artery in the southern part of the Region. The corridor connects three Regional Centres, and serves the Region's major employment area. Currently, up to 70,000 vehicles travel portions of Highway 7 between Bayview Avenue and Highway 404 each business day, with 3,000 or more vehicles travelling in

each direction during a peak hour. The Viva Pink and Purple rapid transit service carries 9,600 customers every day in this corridor.

The parallel and intersecting arterial roads and transit services are also among the busiest in the Region providing the supporting (or feeder) network for Highway 7

16th Avenue between Yonge Street and Warden Avenue, as well as all of the north-south arterial roads in the area are all important local transit routes which connect with Viva rapid transit services. The traffic also bound for either Highway 7 or the employment or residential areas, which Highway 7 services, utilize these same roads. Similarly, the YRT bus routes within the area bounded by Highway 407, 16th Avenue, Yonge Street and Warden Avenue are experiencing ridership increases.

These very high traffic and transit ridership volumes are precisely why the vivaNext project is so vitally important in this corridor. It must also be pointed out however, that these volumes are what make the implementation phase of this major infrastructure project so challenging in this very busy area.

Traffic and transit operations in the area will be negatively impacted during the three-year construction period

Construction activities in the Highway 7 corridor will result in significant changes to traffic patterns over a wide area that will affect 14th Avenue, 16th Avenue, Yonge Street, Bayview Avenue, Leslie Street, Woodbine Avenue, Warden Avenue and Kennedy Road.

During the past several months, staff used a computer transportation model to predict the potential impacts associated with the construction of the vivaNext rapidway along Highway 7.

The model indicates that the average vehicle travel time along Highway 7 between Bayview Avenue and Kennedy Road is expected to increase by 20% during peak periods. Since all of the bus services in this area operate in mixed-traffic conditions and the queue jump lanes will be removed, the bus travel times will also be significantly affected. YRT/Viva staff estimate that routes travelling along Highway 7 will experience a 20 minute delay per directional trip due to traffic congestion, the removal of the queue jump lanes, servicing of Viva stations (boardings and alightings) and merging back into traffic. Similar impacts to traffic on parallel Regional and local roadways will also result in delays as travellers attempt to navigate alternative routes and/or modes to arrive to their destinations. As all of the existing bus services in this area operate in mixed-traffic conditions subject to the same travel time impacts, it is estimated that the surrounding transit routes will experience a ten minute delay per directional trip.

The vivaNext construction will disrupt traffic flow patterns and cause surface route congestion due to travel lane closures and transit queue jump closures for the duration of

the construction. It is anticipated that without the implementation of mitigation measures, there will be significant travel time delays for transit customers.

Pedestrians and local residents will be impacted

The vivaNext construction will require pedestrians to move through areas that subject them to noise and dust. In the design of the temporary sidewalks every consideration will be made to route pedestrians away from these impacts.

Local residents may experience delays in accessing their neighbourhoods as a result of this construction. Increased delays along Highway 7 will likely result in increased neighbourhood traffic infiltration onto the local road system.

Regional and YRRTC staff have been working on a number of measures to minimize the impacts to transit-riders and road-users

During the construction, YRT/Viva will be working to provide transit services that will mitigate the impacts of construction and retain current ridership in and near the construction zone. YRT/Viva will implement operational changes with a view to maintain an acceptable level of service through the duration of the rapidway construction.

The following operational changes are being evaluated as potential solutions:

- Increase the number of buses and update in order to maintain existing frequency levels. Update transit schedules to reflect actual travel time through and around the construction zone while maintaining the level of service.
- Temporary routing changes to operate via Highway 407 between Warden Avenue and Richmond Hill Centre for select Highway 7 Viva services including a new temporary Viva branch to operate via Highway between Richmond Hill Centre and Unionville GO Station.
- Implement a communications strategy that ensures customers are well-informed with routing changes, updated schedules and expected delays.

YRT/Viva will monitor these transit service mitigation actions and make service adjustments to operations to address operational and customer service issues that may arise.

The cost of these mitigating measures are estimated to be between \$5M and \$8M dollars and will be considered in the 2012 Budget process. The majority of this additional cost is required in order to maintain a reasonable level of transit service throughout the construction period.

Measures are proposed to minimize traffic impacts within and around the area of the Highway 7 rapidway project

In addition to the primary focus of maintaining transit service expectations in the area, Regional staff continues to work with YRRTC to put in place traffic management plans that include the following components:

- Travel time information to the public using roadside variable message boards.
- Website with social media capabilities to provide construction updates.
- Modified traffic signal timing on alternate routes to meet changing traffic patterns.
- On-site public consultation centres to provide construction updates.
- Maximum Regional road network availability during construction by not allowing lane closures on alternate routes in an area bounded by Yonge Street, 16th Avenue, 14th Avenue and Kennedy Road.
- Monitoring of the effectiveness and impacts of the construction staging, traffic signal timing, traveler information and other mitigating measures on transit users, commuter traffic, pedestrians, cyclists and emergency services

A number of additional measures are also being implemented to assist with the movement of traffic and pedestrians along the Highway 7 rapidway project

The following additional measures will be implemented to ensure pedestrian safety and monitor construction impacts:

- Temporary sidewalks will be installed within the construction zone to maintain pedestrian access where it exists today and to all YRT/Viva stops.
- Project and Regional staff will be monitoring traffic impacts and making adjustments as required.
- Project and Regional staff will be monitoring and tracking changes to set the stage for future phases of vivaNext.

Local access will be maintained to all residences and businesses during construction. A communications plan has been developed to inform businesses, residents and YRT/Viva customers of the construction impacts to services along the corridor.

The proposed mitigating measures will be implemented on an urgent basis in response to on-street operational needs

Regional staff are continuously monitor the impacts of the on-going construction activity and will implement the appropriate mitigating measures on an as needed basis. Due to the nature of construction activity and the difficulty in predicting the response of road users it is recommended that mitigating measures be put in place on a responsive basis.

5. FINANCIAL IMPLICATIONS

These initiatives are not included in either the YRRTC project budget or the YRT/Viva 2011 operating budget. For 2011, funds will need to be made available from reserves to allow the transit and traffic mitigating measures to be implemented. Costs of the proposed mitigating measures during the remaining years of construction will be considered through the 2012 budget process.

6. LOCAL MUNICIPAL IMPACT

The construction of dedicated lanes along Highway 7 for Viva buses will integrate improved public transit facilities, improved pedestrian and cycling amenities and enriched streetscapes to support the Region's goal for higher density mixed use transit oriented development in accordance with approved official plans.

The vivaNext project design and construction is being closely coordinated with local municipal staff along the rapid transit corridors to minimize impact. Significant changes to traffic patterns over a wide area will likely result in an increase in traffic infiltration onto the local street system.

7. CONCLUSION

Transportation Services staff will continue to work with YRRTC staff during construction to monitor the effectiveness of the disruption management plans that have been implemented.

Transportation Services staff will report on the effectiveness of these measures and any further needs on a regular basis commencing in 2012.

For more information on this report, please contact Steven Kemp, Director, Traffic Management and Intelligent Transportation Systems at Ext. 5226.

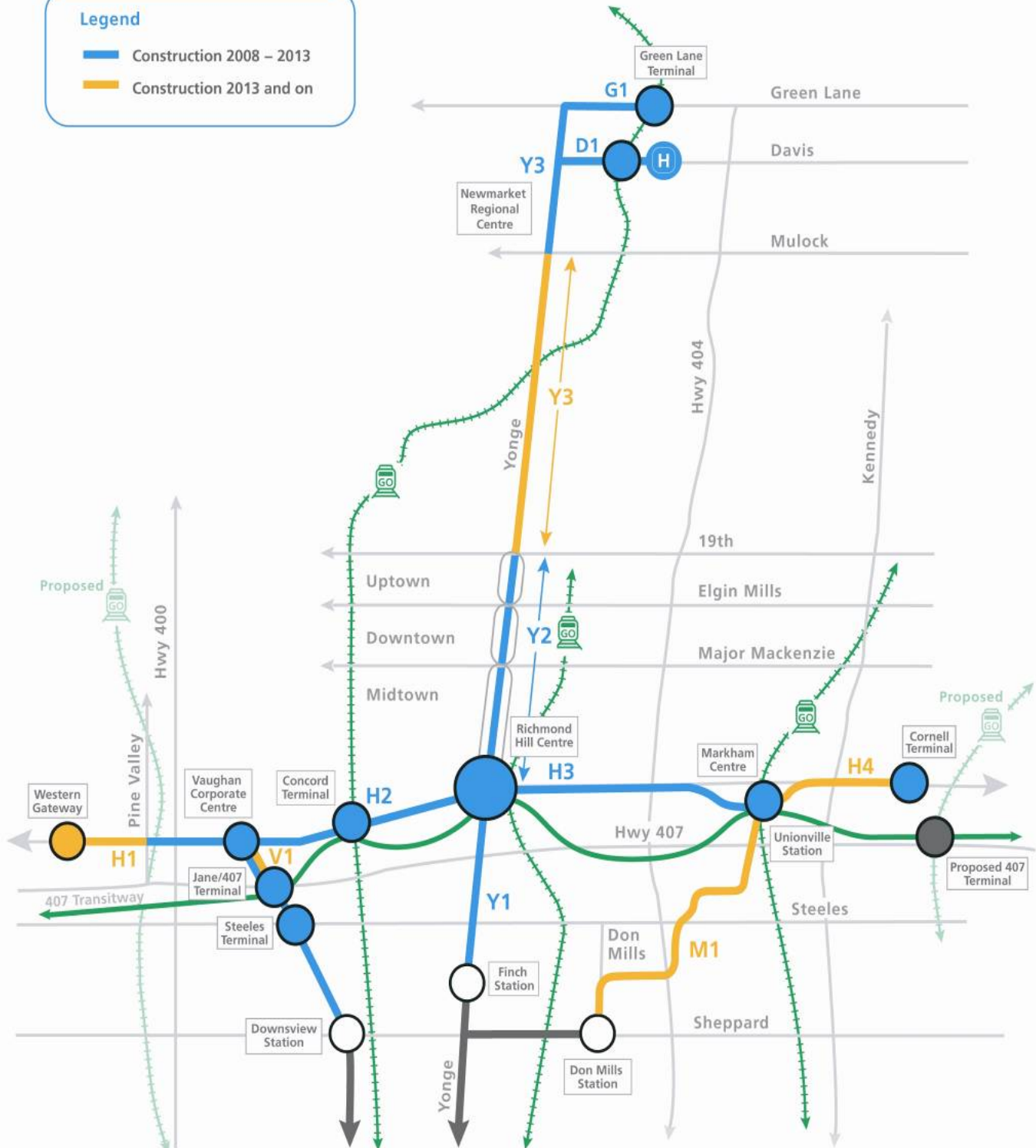
The Senior Management Group has reviewed this report.

(The two attachments referred to in this clause are attached to this report.)

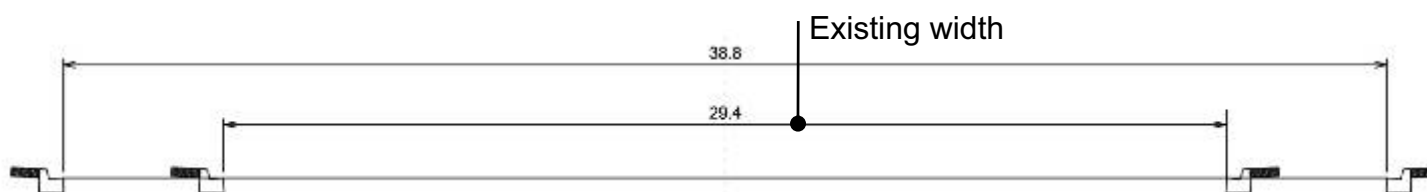
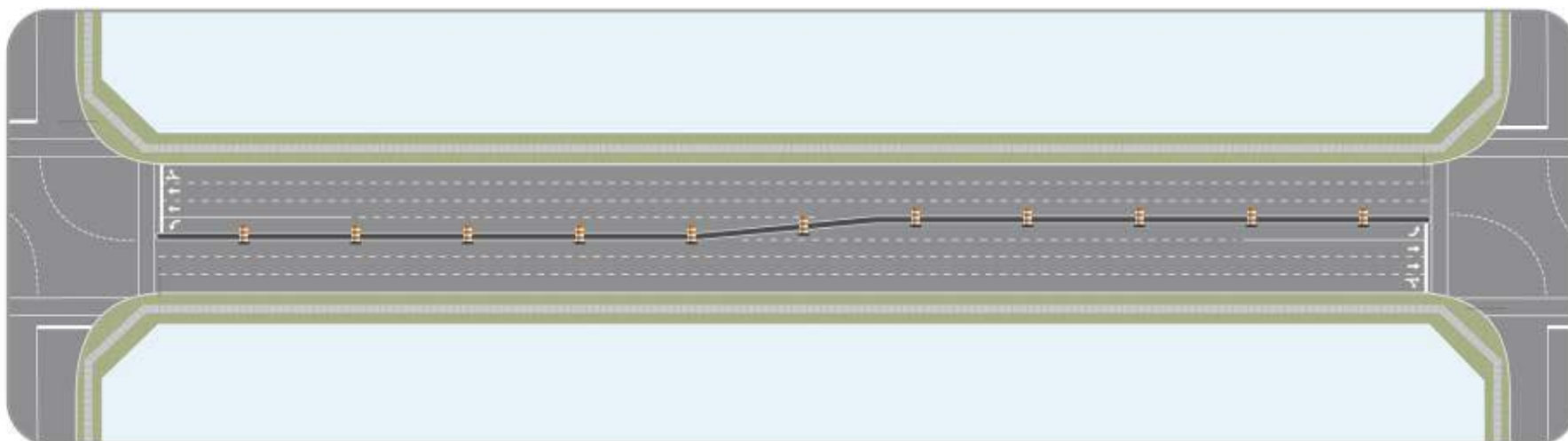
York Region Rapid Transit Network

Legend

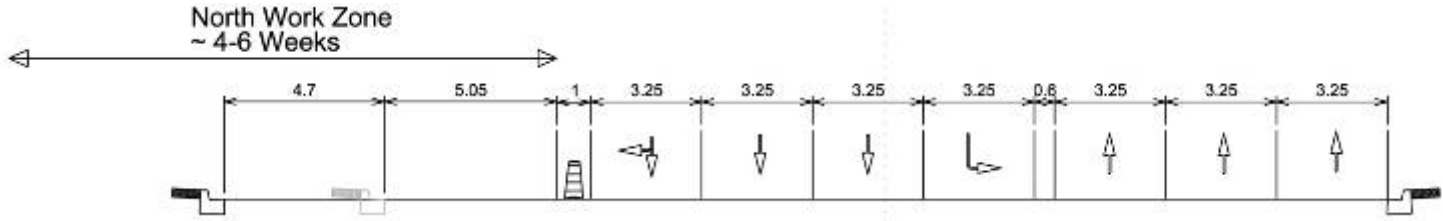
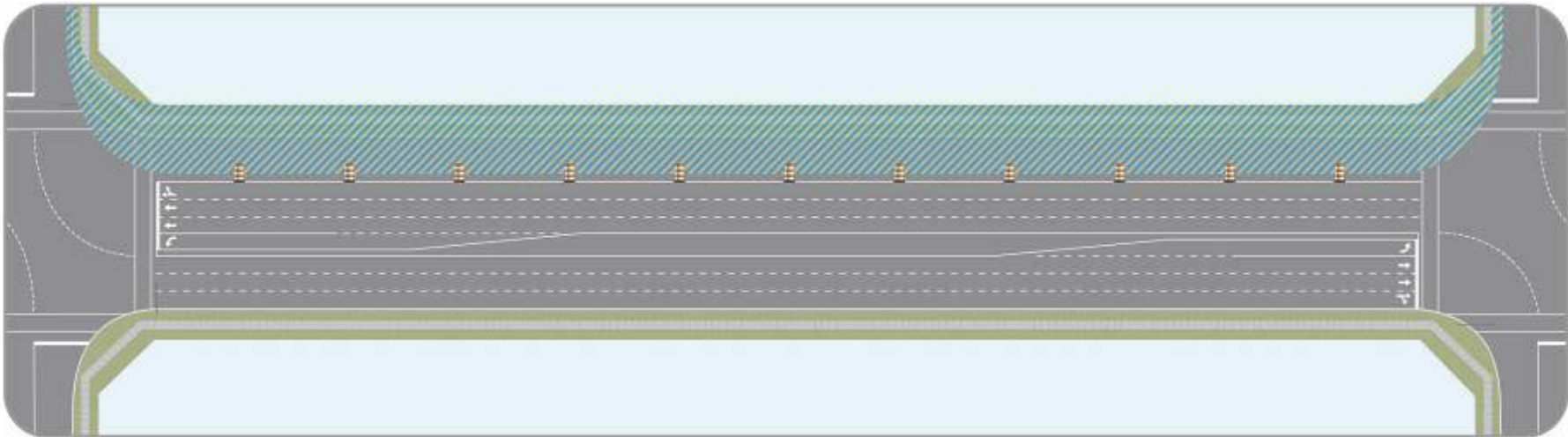
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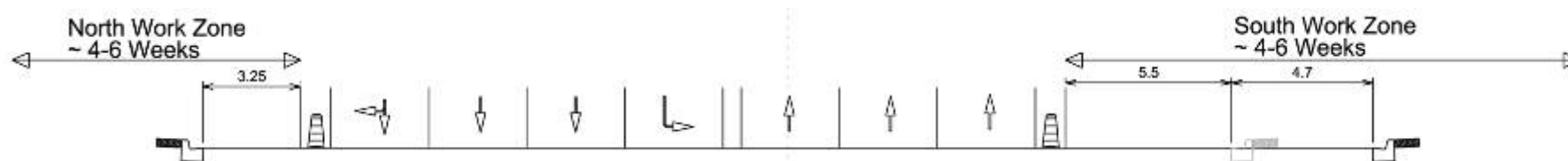
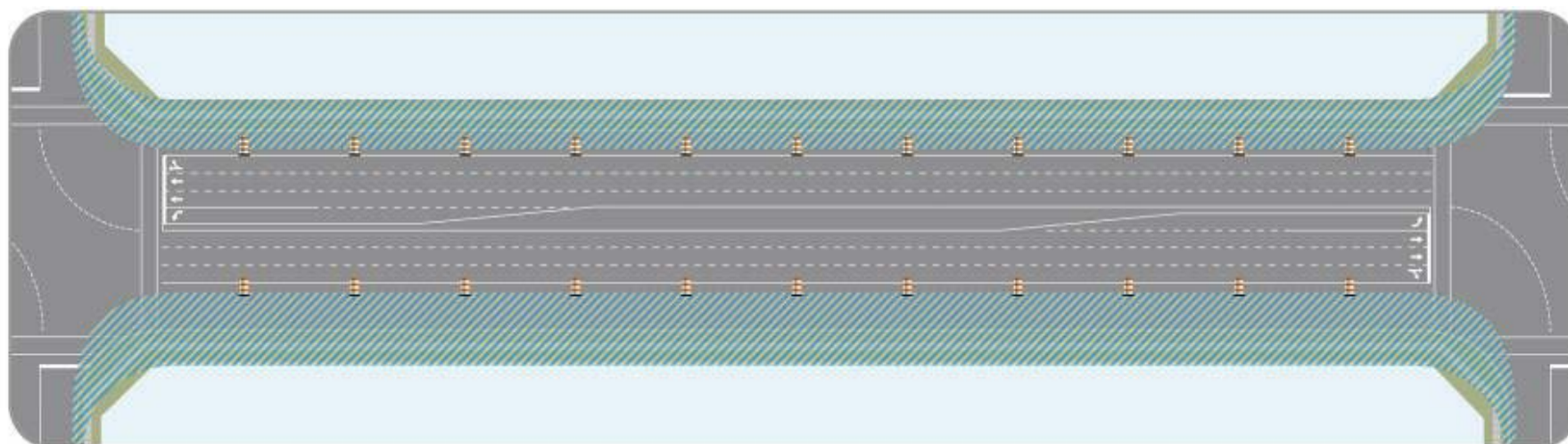
Removal of raised centre medians



First side road widening



Second side road widening



Platform and canopy installation

