

City of Calgary

# 17 Avenue SE TPS Executive Summary

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*International Avenue*

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## Executive Summary

### ES1. Introduction

Cities in Canada are adopting new transportation policies that define the relative importance of travel modes by corridor. Calgary, through its newly adopted transportation plan, has identified new road cross sections that help define the desired roadway character and mode hierarchy. Also new to the Calgary Transportation Plan (CTP) are a series of maps that create logical networks for primary transit, cycling, high occupancy vehicle and goods movement. These new plans and road templates are part of the bigger “Plan It Calgary” approach of integrating land use and transportation decisions. The 17 Avenue SE study is the first opportunity since adoption of Plan It Calgary to determine the long term plans for a specific area in terms of both land use and transportation.

### ES2. Background

The 17 Avenue SE corridor plays many important roles. It is the original main street of the Forest Lawn community, a secondary highway with regional connections, a culturally diverse hub being dubbed International Avenue, and has recently been made part of Calgary’s envisioned primary transit and cycling networks.

The 2009 Calgary Transportation Plan (CTP) and Municipal Development Plan (MDP) identify 17 Avenue as an Urban Boulevard from Deerfoot Trail to 54 Street and a Parkway between 54 Street and Stoney Trail. An Urban Boulevard is identified as a corridor that gives the highest priority to walking, cycling and transit, and accommodates reasonably high volumes of vehicular traffic. The CTP supports this priority by classifying all links on the primary cycling and transit networks as Urban Boulevards. A Parkway focuses on pedestrian and cyclist movements (both recreational and commuting) but accommodates all modes of transportation.

This TPS follows key city-wide principles and policies that emphasize the importance of linking land use and mobility in support of sustainable community growth from an economic, social and environmental perspective. This study aims to enhance the viability of local businesses and residential communities in ways that take advantage of the upgrading of 17 Avenue SE without detracting from its role in the city-wide skeletal road network.

In June 2007, The City of Calgary’s Land Use Planning and Policy (LUPP) initiated the SE 17 Corridor Study to establish a vision and develop a land use concept plan in alignment with Council’s Sustainability Principles and the Municipal Development Plan (MDP). The Southeast 17 Corridor Study (LUPP) includes a vision that “17 Avenue SE functions as a multi-modal urban boulevard where walking, cycling and transit are the priorities.

In May 2009, The City retained AECOM to conduct the 17 Avenue SE Transportation Planning Study to design a transportation corridor that promotes alternative and active modes of transportation and complements the land use concept plan. As part of the study, issues such as safety, parking, access management, environmental and utility impacts and stormwater management were identified and addressed in the preferred concept. The study area is defined by two key roads i.e. 9 Avenue SE in Inglewood and 17 Avenue SE in Forest Lawn. The study area boundaries are shown in **Figure ES.1**.

This Report comprises key facts and findings of the study: **Part A** addresses the components of the study relating to 17 Avenue SE and Forest Lawn; and **Part B** addresses the components of the study relating to 9 Avenue SE and Inglewood.

## **ES3. Part A: Forest Lawn**

### **ES3.1 Purpose of the Study**

The purpose of the Transportation Planning Study was to develop a transportation corridor that includes dedicated road space for transit, cycling and walking, is consistent with the community and the City vision, and complements the proposed land use concept plan for this corridor.

### **ES3.2 Existing Conditions**

17 Avenue SE is currently a 4 lane arterial, with a posted speed limit of 50 km/h between 26 Street SE and 52 Street SE and 60 km/h east of 52 Street SE. Average Annual Daily Traffic (AADT) volumes along the corridor range from 23,100 to 29,150 between 26 Street SE and 68 Street SE, and are approximately 15,850 vpd east of 68 Street SE.

The corridor operates adequately with overall intersection levels of service of primarily C and D. However, most intersections have one or more failing movements, primarily on the minor street at unsignalized intersections.

There are 8 transit routes along or across 17 Avenue SE within the study area, and ridership is relatively high when compared to the City as whole, with transit ridership accounting for 17% of westbound trips into the Downtown core in the AM peak hour, and 23% of eastbound trips out of the Downtown core in the PM peak hour.

### **ES3.3 Alternatives**

This study, therefore, attempts to achieve/establish, through innovative planning and future development goals, a distinctive and character-based community in the Greater Forest Lawn area that complements the diversity and values of the residents and supports the long term goal of modal shift, accompanied by improved safety.

#### **ES3.3.1 Development of Alternatives**

The design speed is 60 km/h for the Urban Boulevard and 70 km/h for the Parkway but the same traffic lane widths are used for both concepts. All alternatives include adequate width for the potential future upgrade of the transit system to a rail-based transit system when warranted. The transit stations are situated at the far side of intersections at specified locations. In general, left turn lanes were provided only at intersections where transit stations are proposed.

##### **ES3.3.1.1 Alternative 1**

Alternative 1 consists of four lanes of vehicular traffic and two dedicated transit lanes in the median. The ultimate cross-section also includes dedicated on-street bike lanes, boulevards and sidewalks. The transit stations are provided along the median transit lanes at predetermined locations.

##### **ES3.3.1.2 Alternative 2**

Alternative 2 consists of four lanes of vehicular traffic and two curb side dedicated transit lanes. The ultimate cross-section also includes dedicated on-street bike lanes, boulevards and sidewalks. The transit stations are provided along the curb side transit lanes at predetermined locations.

##### **ES3.3.1.3 Alternative 3**

Alternative 3 is similar to Alternative 1 but with two lanes (instead of four) of vehicular traffic. All other features are the same as in Alternative 1.

### ES3.3.2 Evaluation Criteria

In order to evaluate each alternative and identify a preferred solution, a set of evaluation criteria was created. A comparative analysis of the three alternatives was carried out using five main criteria: safety, operations, sustainable modes, cost, and social and environmental impact. Each criterion was given a weighting, based on its importance and desirability, and then independently rated.

Based on the weighted evaluation, Alternative 1 turned out to be the preferred option. This alternative ranked higher than the others due to its superior results in operations and social/environmental impacts.

### ES3.4 Preferred Concept

The preferred roadway concept is shown in **Figures ES.2 to ES.18**.

The recommended concept provides:

- median transit lanes with transit priority at signalized intersections to provide less interrupted transit operations, reliability and station integration opportunities;
- wide sidewalks and boulevards to establish an urban character and allow inclusion of historic elements, including diagonal parking;
- on-street bike lanes to clearly define cycling as a legitimate mode and to appeal to less confident cyclists;
- enhanced roadway capacity due to the removal of curbside transit service and potential bike-transit and auto-transit conflict; and
- transit stations located near higher density development according to the land use concept.

An analysis and modeling of the preferred option indicates that traffic operations will be satisfactory and there will be a significant increase in transit ridership by the horizon year 2035.

#### ES3.4.1 Southeast 17 Land Use and Urban Design Concept

On May 13, Land Use Planning & Policy presented Southeast 17 Land Use and Urban Design Concept to the Calgary Planning Commission (CPC). The design concept included the preferred transportation corridor that included on-street bicycle lanes for the corridor. CPC directed Administration to prepare an alternative cross-section by removing the bicycle lanes away from the through lanes. Transportation Department examined the issue in detail and concluded that off-street bicycle lanes would not be feasible, for the following reasons:

- The Provincial Road Safety Act considers bicycles as a vehicle and does not allow provision of off-street bicycle paths,
- Multi-use pathways could accommodate cyclists but such a pathway is in conflict with the proposed land use for the corridor and this may impact the safety of the pathway,
- Dedicated on-street bicycle lanes separated through a raised median would require additional right-of-way. Such a lane will preclude on-street parking and will entail operational issues such as snow clearing etc.

### ES3.5 Cost Estimates

Preliminary cost estimates were developed for the preferred alternative. **Table ES.1** summarizes the anticipated Level A costs associated with the implementation of the ultimate recommended cross-section.

**Table ES.1 Cost Estimate – Forest Lawn**

<b>Item</b>	<b>Cost (Lump Sum) [\$]</b>
Roadworks	14,181,000
Stormwater	3,047,000
Landscaping	1,112,000
Utilities	3,443,000
Other	10,676,000
<b>Construction Subtotal</b>	<b>32,459,000</b>
Contingency 20%	6,492,000
Engineering 15%	4,869,000
<b>Subtotal</b>	<b>43,820,000</b>
Land Acquisition	50,334,000
<b>Total Cost</b>	<b>94,200,000</b>

### **ES3.6 Public Engagement**

This project followed City's engage! Policy. Land Use Planning & Policy and Transportation Planning got involved in a series of meetings with targeted stakeholder groups, which assisted the project team in making decisions and recommendations throughout the study process. Frequent meetings with and involvement of community association groups resulted in building a good rapport and relationship between the City and the stakeholders. Joint open houses were held in Forest Lawn to get the community involved in the study process.

Approximately 90 people attended the first open house and almost a similar number were in attendance at the second open house. Planning Team members engaged the attendees and responded to their inquiries. General feedback was very positive and the preferred alternative received wide public acceptance.

## **ES4. Part B: Inglewood**

### **ES4.1 Purpose**

The purpose of the Inglewood component of the study is to recommend a preferred transit route between 17 Avenue SE and the downtown that would contribute to a long-term transportation policy framework and address the Inglewood community's short term and long term transit needs.

### **ES4.2 Existing Conditions**

9 Avenue SE is currently a 4 lane roadway, with a posted speed limit of 50 km/h between 8 Street SE and 26 Street SE. Average Annual Daily Traffic (AADT) volumes along the corridor range from 22,000 west of 11 Street SE to 12,360 east of 11 Street SE.

The corridor operates adequately with overall intersection levels of service of primarily A and B. There are some movements experiencing difficulty, however, they are primarily on the minor streets at unsignalized intersections.

There are 8 transit routes along or across 9 Avenue SE within the study area, and ridership is relatively high, according to City of Calgary ridership forecasts.

## **ES4.3 Alternatives**

The project team reviewed past reports and concepts of alternative alignments for getting through Inglewood into the downtown core of Calgary. Time was also spent within the community getting a sense of the existing constraints and character of the neighbourhood.

### **ES4.3.1 Short Term Alternatives**

The proposed short term alignment would follow the existing transit routes along 17 Avenue SE and 9 Avenue SE via 19 Street SE. Preliminary options looked at the implementation of dedicated transit lanes to provide transit priority.

- Alternative 1 - Full-time transit-only lanes (the curb lane in each direction would be a dedicated transit lane used by both the local and BRT routes);
- Alternative 2 - Peak hour transit-only lanes with parking in the off-peak direction (the curb lane in the peak direction would be a dedicated transit-only lane, while the transit vehicles would share the lane with all traffic in the off-peak direction). During off-peak times, parking would be allowed on both sides and the middle lanes would be mixed-use lanes.

### **ES4.3.2 Long Term Alternatives**

Through many discussions among the City/consultant team, numerous stakeholder meetings with the community (including the Inglewood Community Association, representatives of the Blackfoot Truck Stop (BTS) and the Inglewood BRZ) and feedback from the first open house, three alternatives were developed and presented at the second open house. The alternatives are described below:

#### **ES4.3.2.1 Alternative 1**

The first alternative provides an at-grade transit station in the Blackfoot Truck Stop area. It includes the following features:

- Bridges over: CPR tracks (near SE LRT);
- Tunnels under: Blackfoot Trail and 15 Street SE (west of the Blackfoot Truck Stop);
- Stations: At-grade at Blackfoot Truck Stop; and
- Transit Route: Along the new alignment for both local and express routes up to the Blackfoot Truck Stop station, then local routes take 9 Avenue SE while BRT routes continue along the new alignment.

#### **ES4.3.2.2 Alternative 2**

The second alternative provides a below-grade transit station along 17 Avenue SE (north of Blackfoot Truck Stop). It includes the following features:

- Bridges over CPR tracks (near SE LRT) and 12 Street SE;
- Tunnels under Blackfoot Trail south of Blackfoot Truck Stop;
- Below-grade transit stations between CPR tracks and 9 Avenue SE (North of BTS) – under 17 Avenue SE; and
- Transit Route: Along the new alignment for express routes. Along 17 Avenue SE and 9 Avenue SE via 19 Street SE for local routes.

### ES4.3.2.3 Alternative 3

The third alternative provides a transit “one-way couplet” on 9 and 10 Avenues. It has the following features:

- Bridges over: Elbow River (2 crossings)
- Stations: Maintaining existing locations; adding stops along both westbound and eastbound routes
- Transit Route: Along the new alignment up to 19 Street SE, then westbound along 9 Avenue SE and eastbound along 10 Avenue SE for both local and express routes

### ES4.3.3 Evaluation

The short-term options were evaluated primarily based on operations and public input. The long-term evaluation considerations were categorized into:

- Transit improvement
- Operations and safety
- Land use & community impact
- Technical feasibility
- Cost implications

## ES4.4 Preferred Alternative

### ES4.4.1 Preferred Short Term Alternative

The preferred short term alternative consists of the conversion of the peak direction curbside lane of 9 Avenue SE from general purpose to transit-only, during the peak period. In the AM, the cross-section would include one westbound transit-only lane, one westbound general purpose lane, one eastbound general purpose lane, and parking along the south side. In the PM, the cross-section would include one eastbound transit-only lane, one eastbound general purpose lane, one westbound general purpose lane, and parking along the north side. The off-peak cross-section consists of parking on both sides of the roadway, and one general purpose lane in each direction. The proposed cross-sections are shown in **Figure ES.19**.

### ES4.4.2 Preferred Long Term Alternative

The preferred long term alternative (shown in **Figures ES.20 to ES.23**), consists of a new alignment from Forest Lawn to the proposed SE LRT line, including two at-grade stations, one at 28 Street SE and one on the north side of the Blackfoot Truck Stop area, a tunnel under Blackfoot Trail and 15 Street, and an above-grade structure over the CPR line, connecting to the proposed SE LRT line.

An analysis of the short-term alternatives indicates that the 9 Avenue SE corridor will have satisfactory traffic operations for the next ten years. The analysis assumes that Forest Lawn corridor is not improved in that period. This will result in marginal increase in transit ridership. However, implementation of the long-term recommendations will result in significant increase in transit ridership between Forest Lawn and the Downtown.

## ES4.5 Cost Estimates

Preliminary cost estimates were developed for the preferred alternative. **Table ES.2** summarizes the anticipated Level A costs associated with the implementation of the ultimate alignment. It should be noted that a higher contingency should be considered until more detailed quantities can be obtained.

**Table ES.2 Cost Estimate – Inglewood**

Item	Cost (Lump Sum) [\$]
Roadworks	101,783,000
Stormwater	2,100,000
Landscaping	550,000
Utilities	3,414,000
Other	5,871,000
<b>Subtotal</b>	<b>113,718,000</b>
Contingency 20%	22,744,000
Engineering 15%	17,058,000
<b>Total Cost</b>	<b>153,520,000</b>

## ES4.6 Public Engagement

Consultation with interested and potentially affected parties was an essential part of the project. It provided an opportunity for stakeholders to offer input, which assisted the project team in making decisions and recommendations throughout the study process. The project team was involved in a series of meetings with targeted external stakeholder groups such as Inglewood Business Revitalization Zone (BRZ), Inglewood Community Association (ICA), and Blackfoot Truck Stop representatives. Two open houses were also held in Inglewood to present the study objectives and results to the area residents.

The first public open house was attended by 52 people. The second open house had a similar number of attendees (55). The residents took keen interest in the story boards and supported the preferred short and long-term plan.

## ES5. Summary of Recommendations

For the Forest Lawn portion of the study, it is recommended that Alternative 1 (four lanes of vehicular traffic and two dedicated transit lanes in the median) be implemented.

For the Inglewood component of the study, it is recommended that the short term alternative be implemented after the bridge over Elbow River is rehabilitated in the future. It is also recommended that the long term Alternative 1 (a new alignment from Forest Lawn to the proposed SE LRT line, including two at-grade stations, one at 28 Street SE and one on the north side of the Blackfoot Truck Stop area) be implemented.

**Table ES.3** provides a summary of the total project cost.

**Table ES.3 Total Cost Estimates**

	Forest Lawn		Inglewood		TOTAL COST (Lump Sum) [\$]
	Description	Cost (Lump Sum) [\$]	Description	Cost (Lump Sum) [\$]	
	Deerfoot to Stoney Trail	94,200,000	Deerfoot to Downtown	153,520,000	247,720,000
<b>Total Cost</b>					<b>247,720,000</b>

*Note: The Forest Lawn cost includes \$50,334,000 for land and property acquisition.*

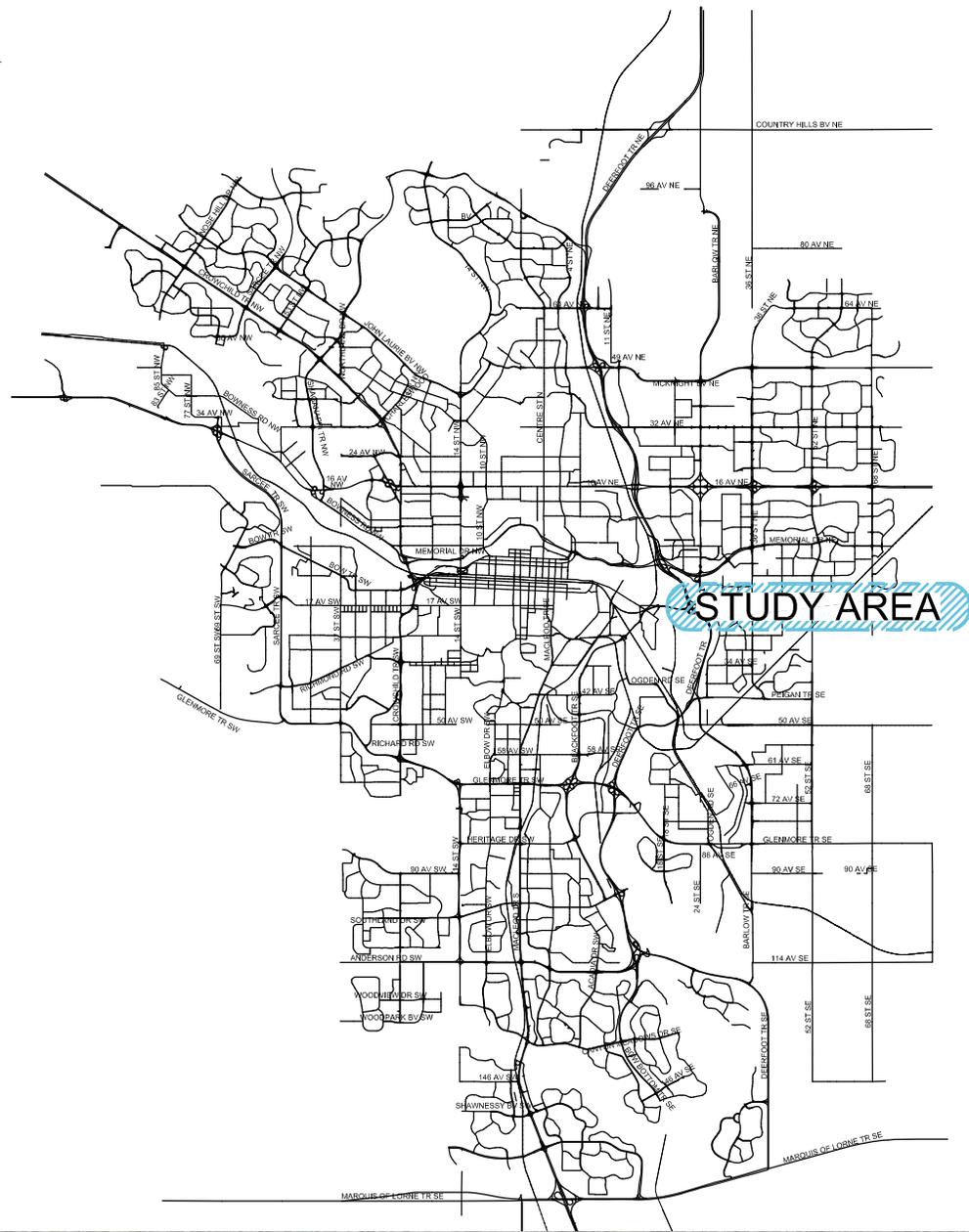
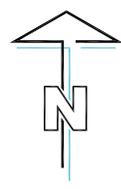
## **Statement of Qualifications and Limitations**

This document is considered to be a component of the “17 Avenue SE Transportation Planning Study” Final Report. As such, please refer to the Final Report for a full description of AECOM’s qualifications and limitations.

# Appendix A

## Figures – Executive Summary

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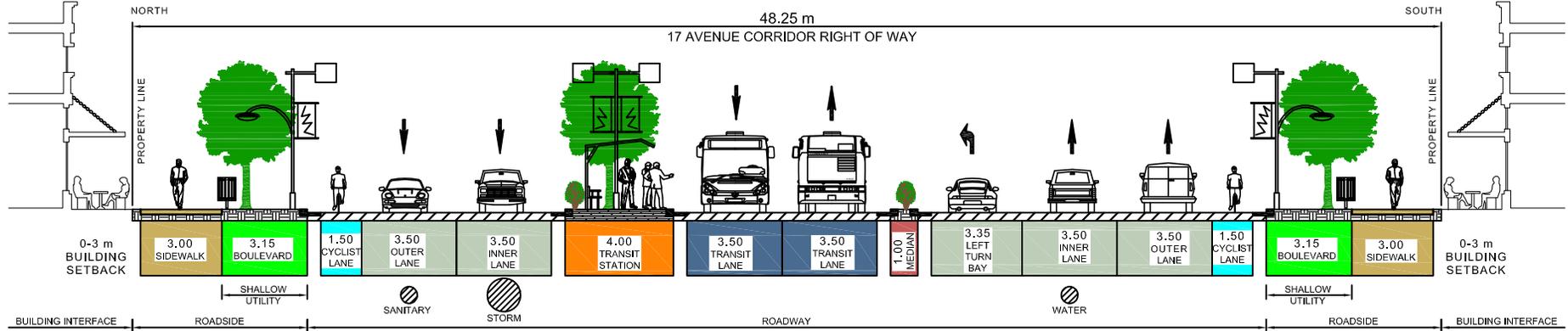
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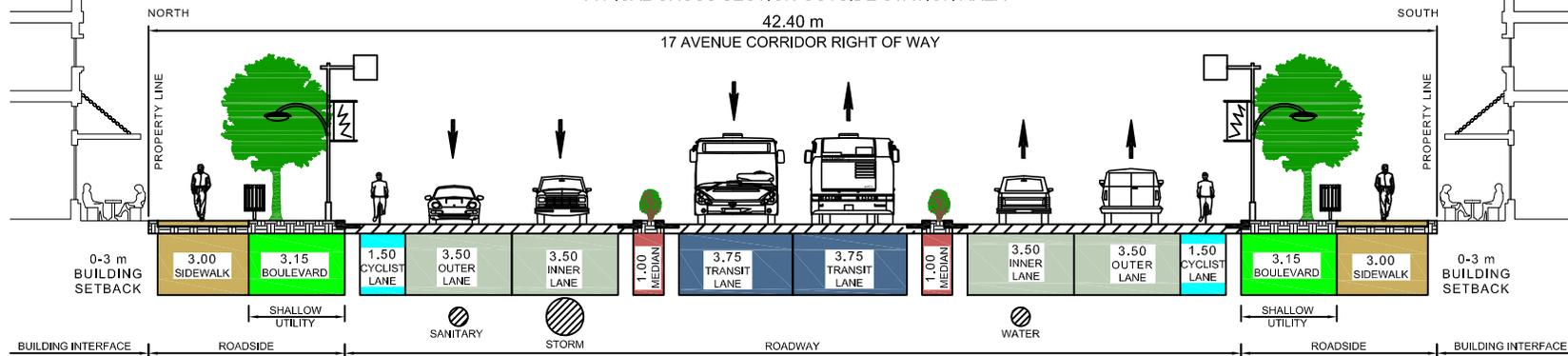
**STUDY AREA**  
 SCALE NTS

**Study Area  
 Figure ES.1**

URBAN BLVD. SECTION (EAST OF 28 ST. TO WEST OF 36 ST. & EAST OF 45 ST. TO 54 ST)  
TYPICAL CROSS SECTION AT STATION AREA



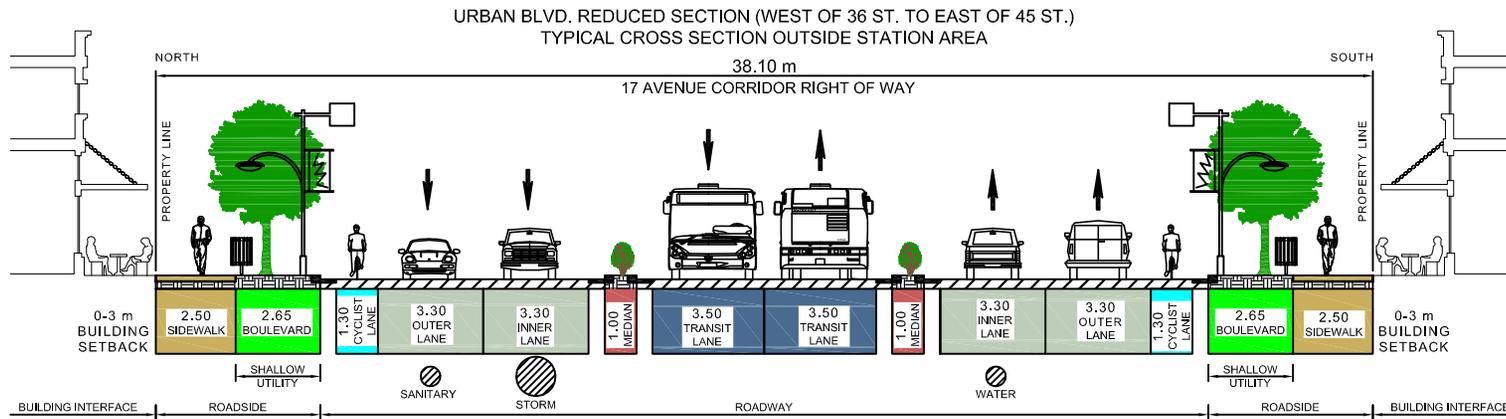
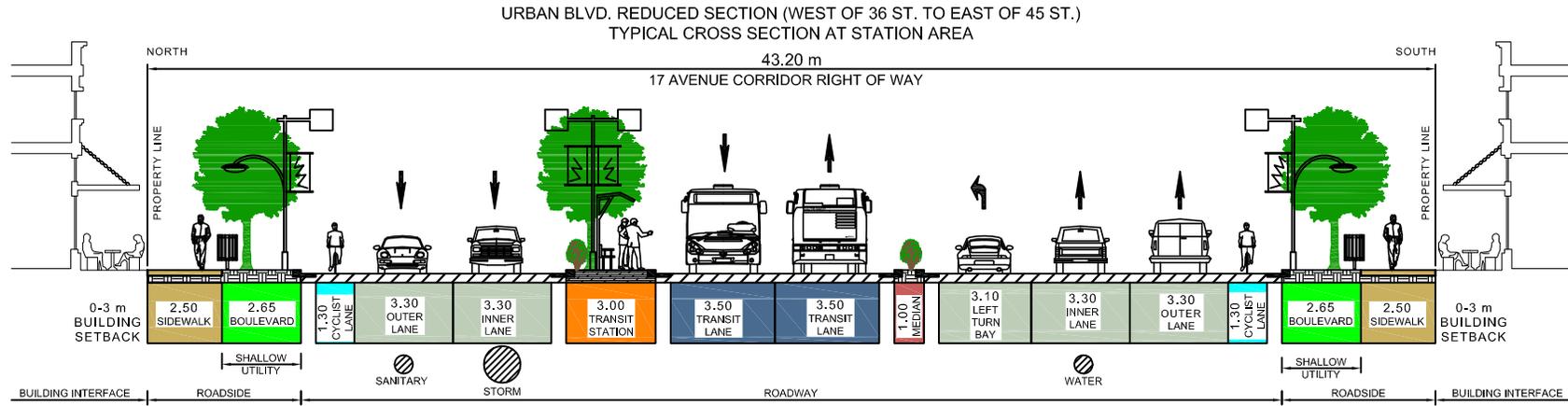
URBAN BLVD. SECTION (EAST OF 28 ST. TO WEST OF 36 ST. & EAST OF 45 ST. TO 54 ST)  
TYPICAL CROSS SECTION OUTSIDE STATION AREA



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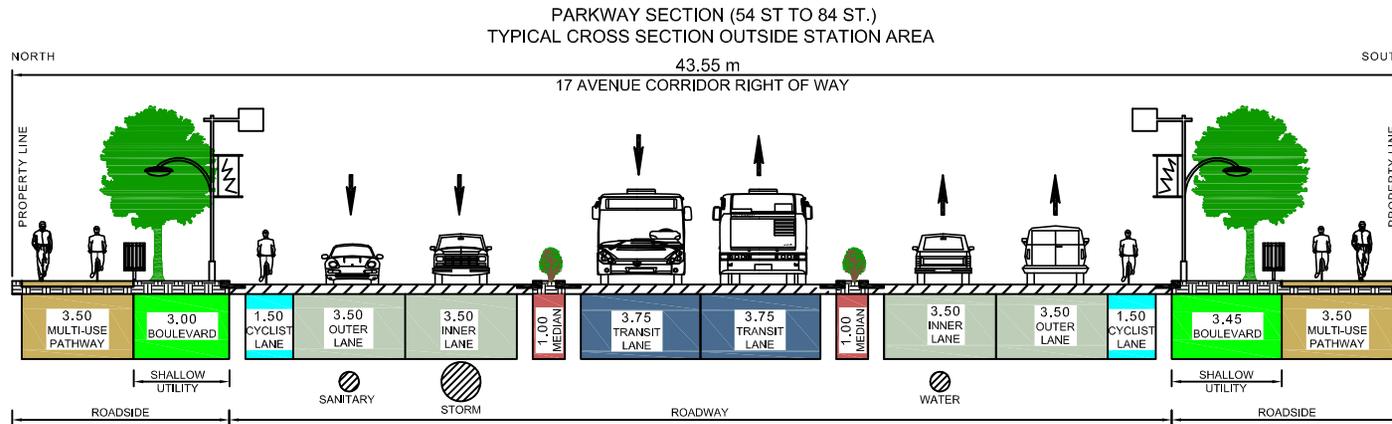
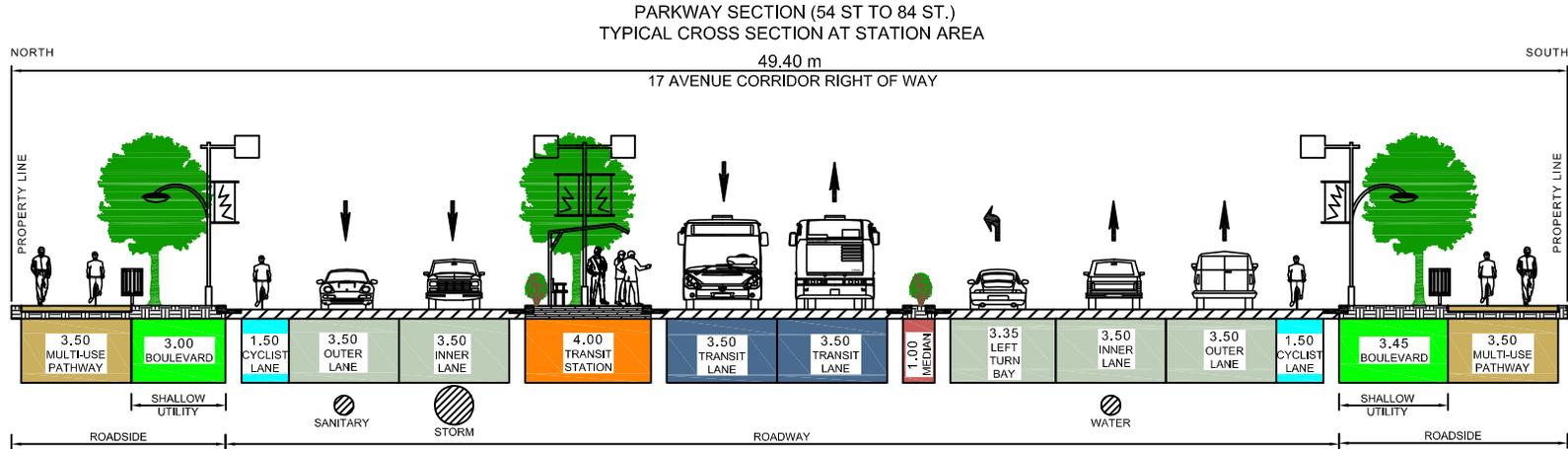
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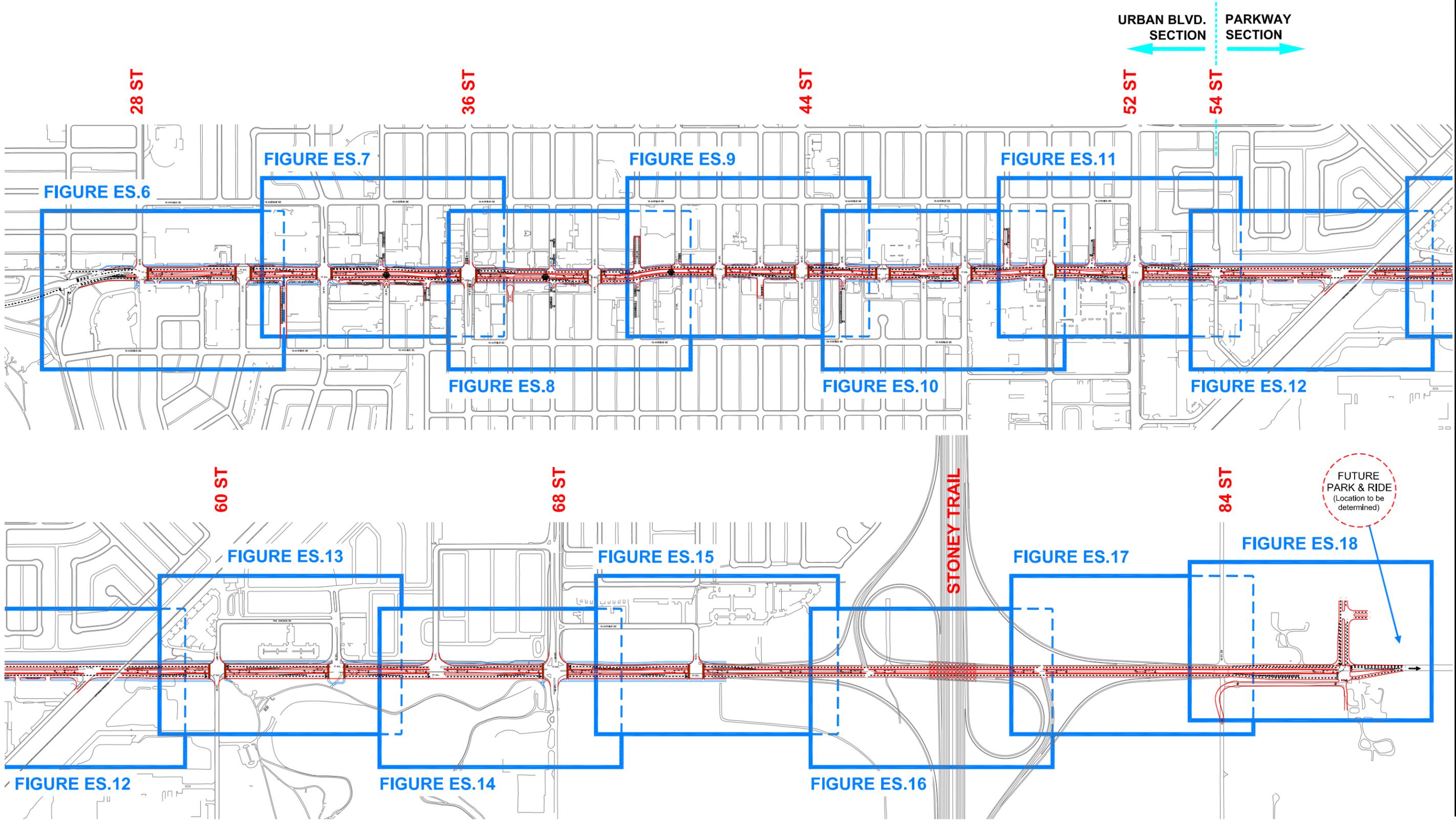
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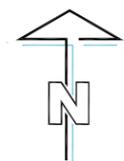
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**Parkway Cross-Section  
Figure ES.4**

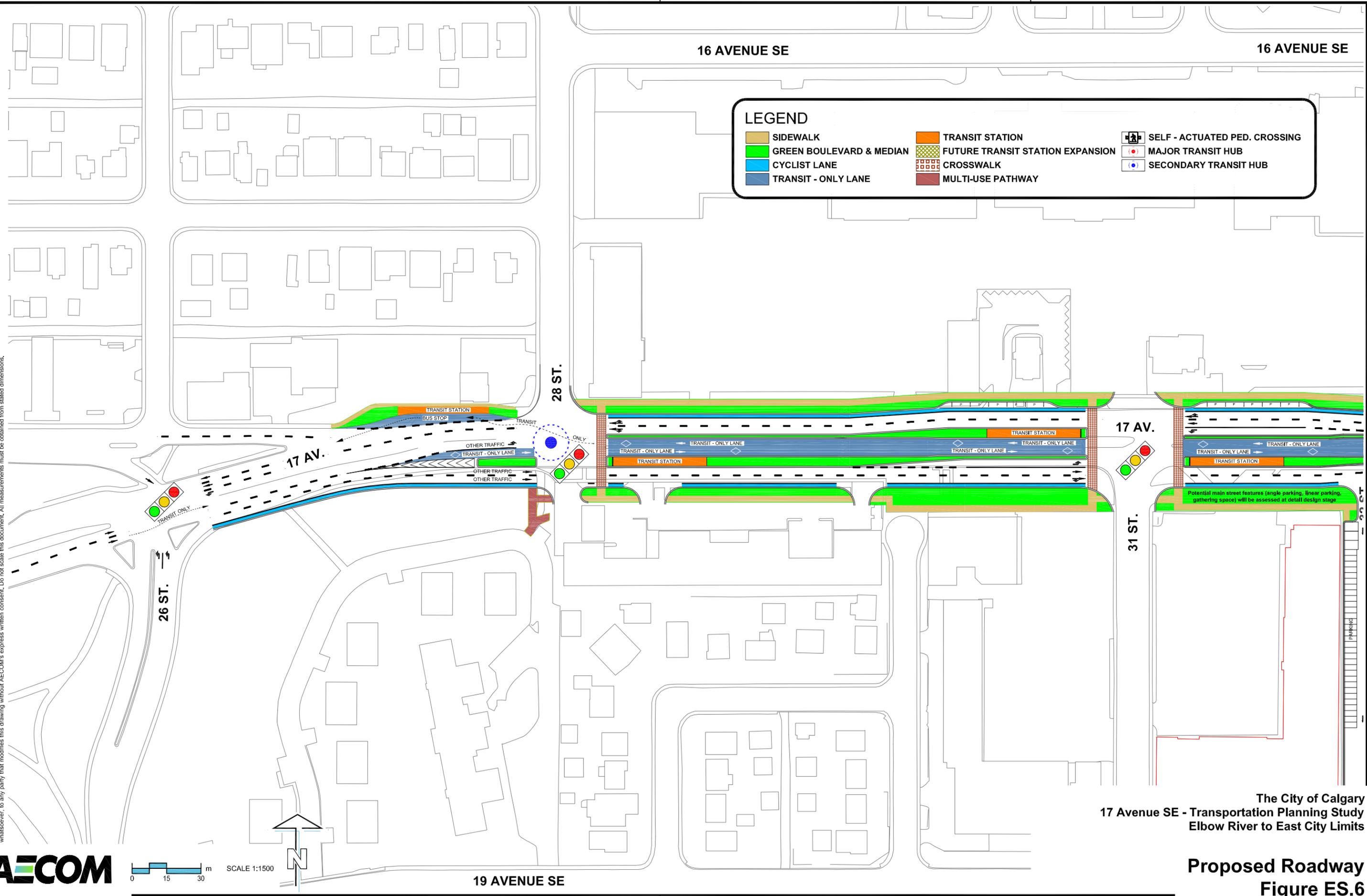
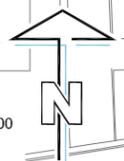
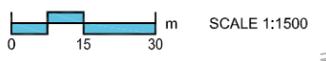


**KEY PLAN**  
 SCALE: NTS



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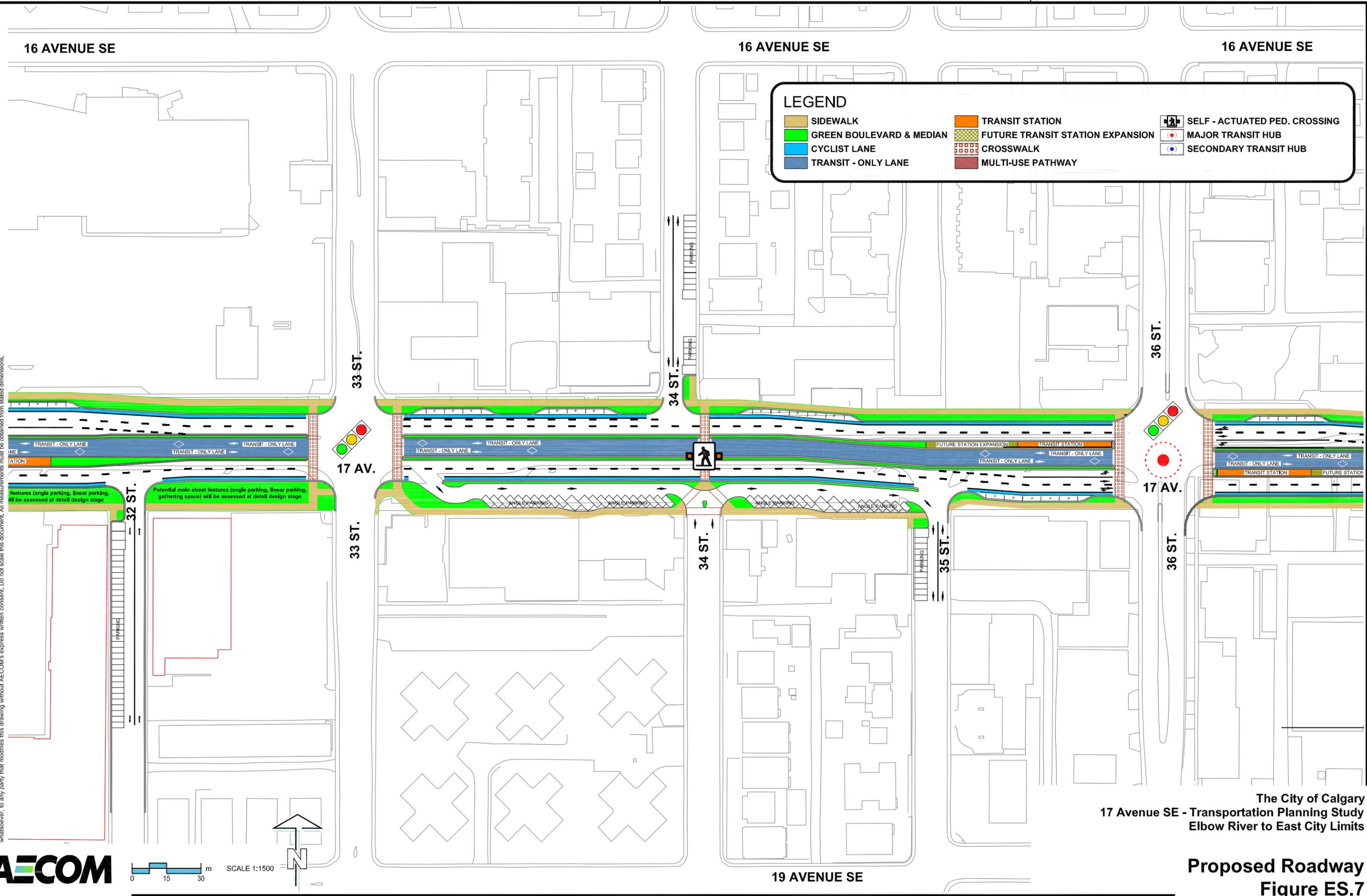
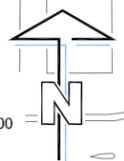
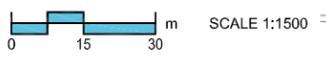
**LEGEND**

SIDEWALK	TRANSIT STATION	SELF - ACTUATED PED. CROSSING
GREEN BOULEVARD & MEDIAN	FUTURE TRANSIT STATION EXPANSION	MAJOR TRANSIT HUB
CYCLIST LANE	CROSSWALK	SECONDARY TRANSIT HUB
TRANSIT - ONLY LANE	MULTI-USE PATHWAY	

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**Proposed Roadway  
 Figure ES.6**

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**LEGEND**

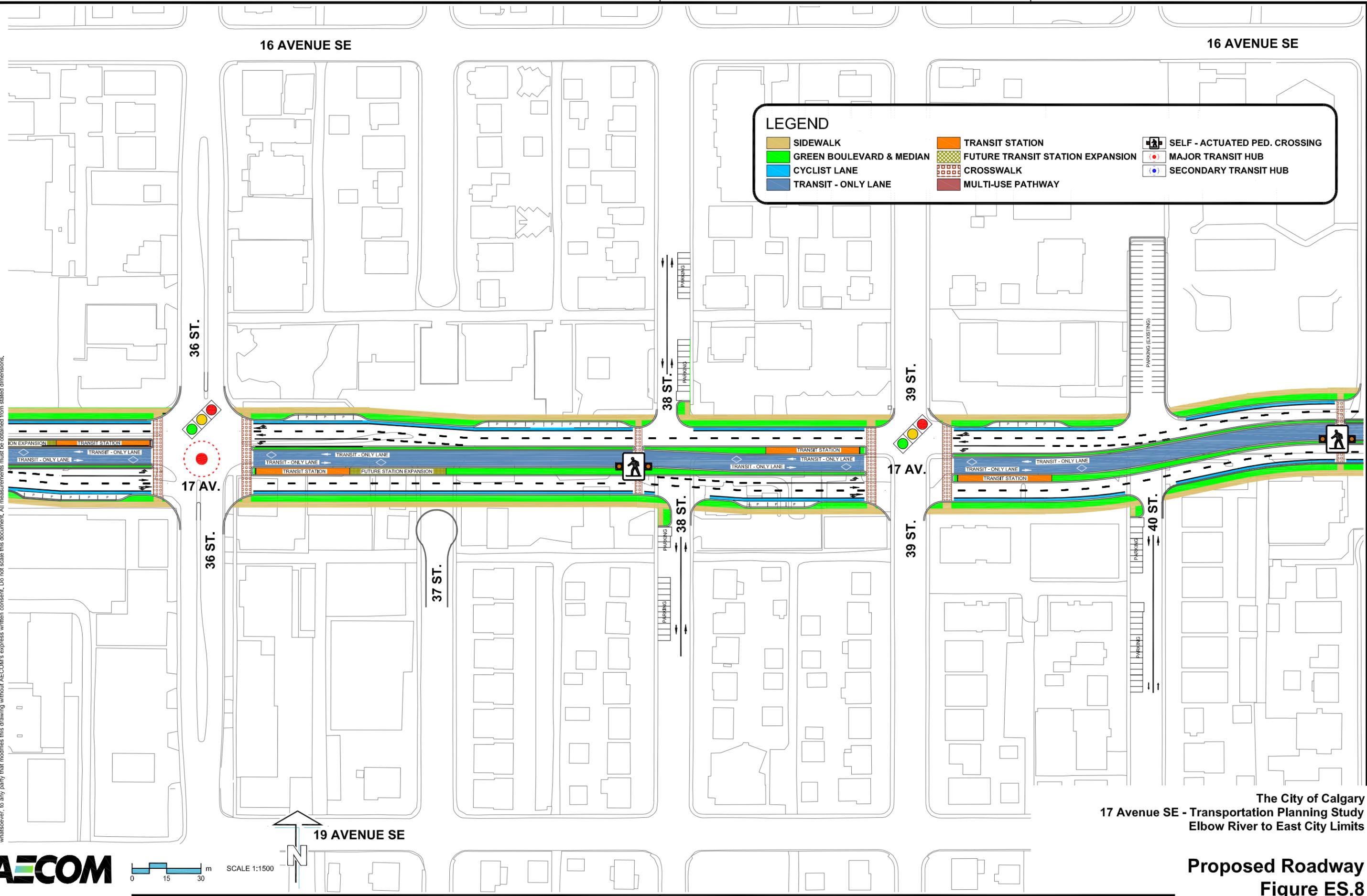
SIDEWALK	TRANSIT STATION	SELF - ACTUATED PED. CROSSING
GREEN BOULEVARD & MEDIAN	FUTURE STATION EXPANSION	MAJOR TRANSIT HUB
CYCLIST LANE	CROSSWALK	SECONDARY TRANSIT HUB
TRANSIT - ONLY LANE	MULTI-USE PATHWAY	

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**Proposed Roadway  
 Figure ES.7**

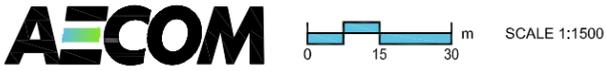
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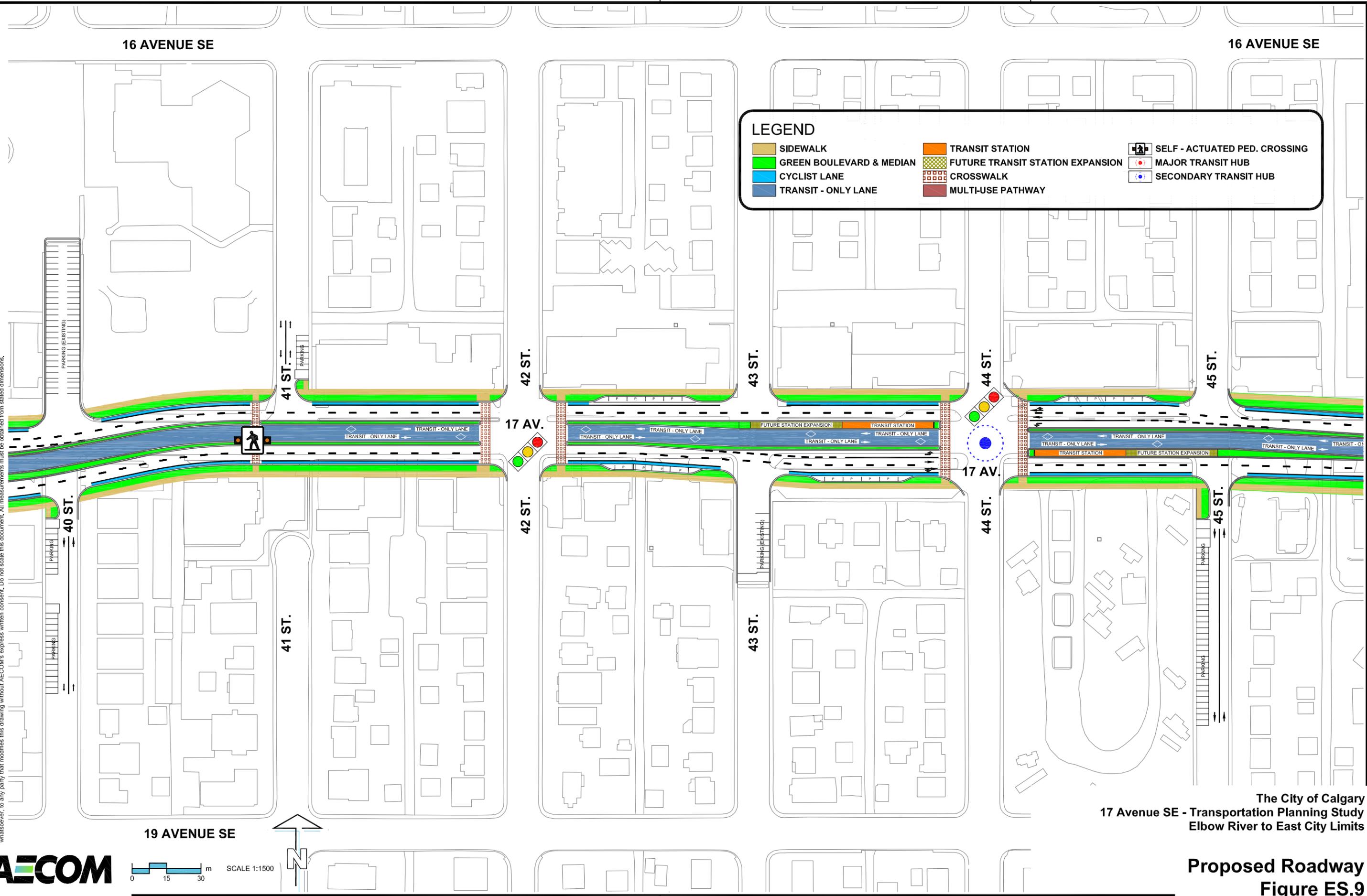


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Proposed Roadway  
 Figure ES.8



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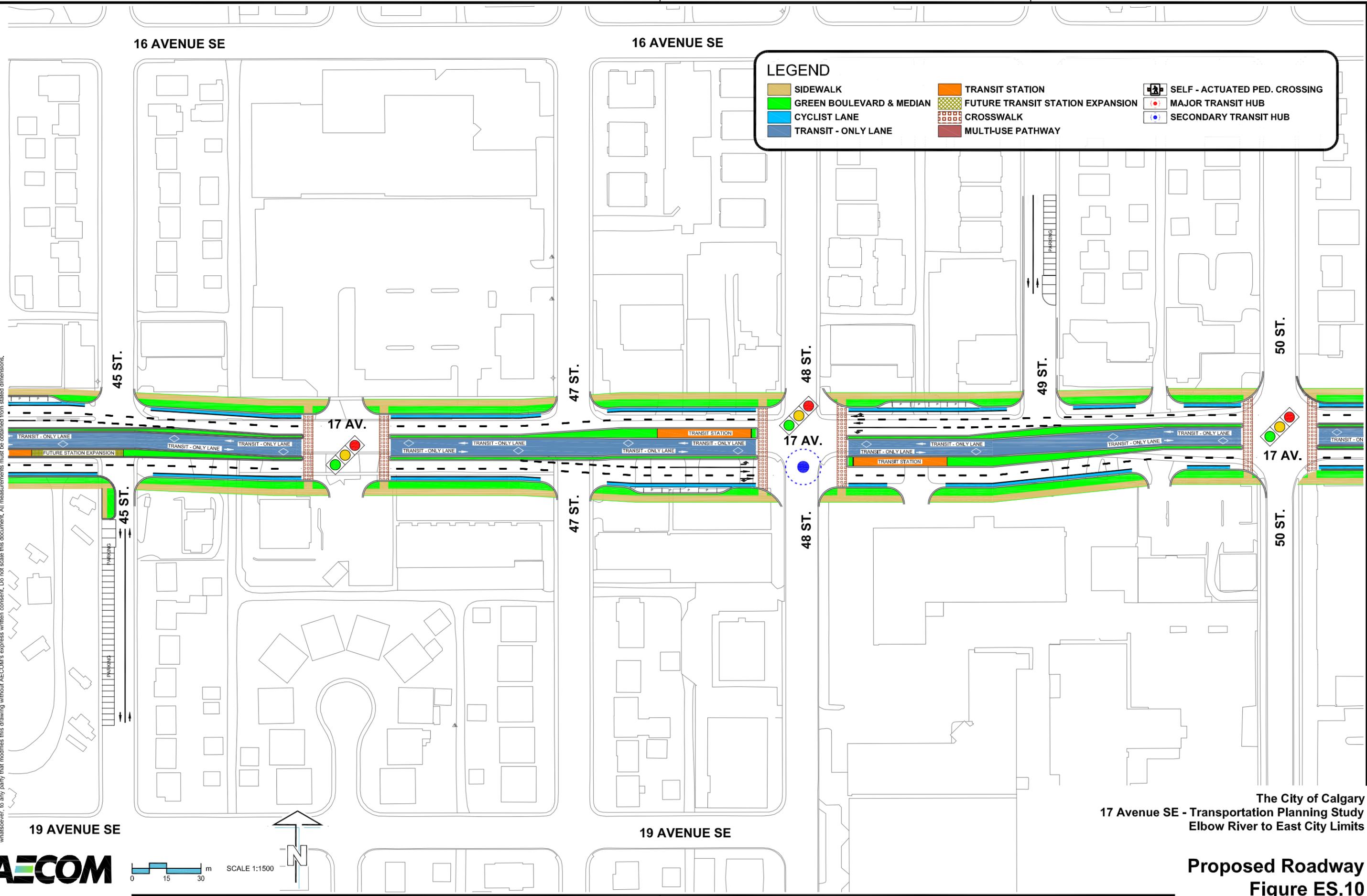


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 17 Avenue SE - Transportation Planning Study  
 Elbow River to East City Limits

Proposed Roadway  
 Figure ES.9

ISS/REV: A  
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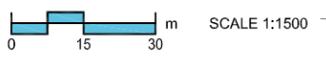
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**LEGEND**

	SIDEWALK		TRANSIT STATION		SELF - ACTUATED PED. CROSSING
	GREEN BOULEVARD & MEDIAN		FUTURE TRANSIT STATION EXPANSION		MAJOR TRANSIT HUB
	CYCLIST LANE		CROSSWALK		SECONDARY TRANSIT HUB
	TRANSIT - ONLY LANE		MULTI-USE PATHWAY		

19 AVENUE SE

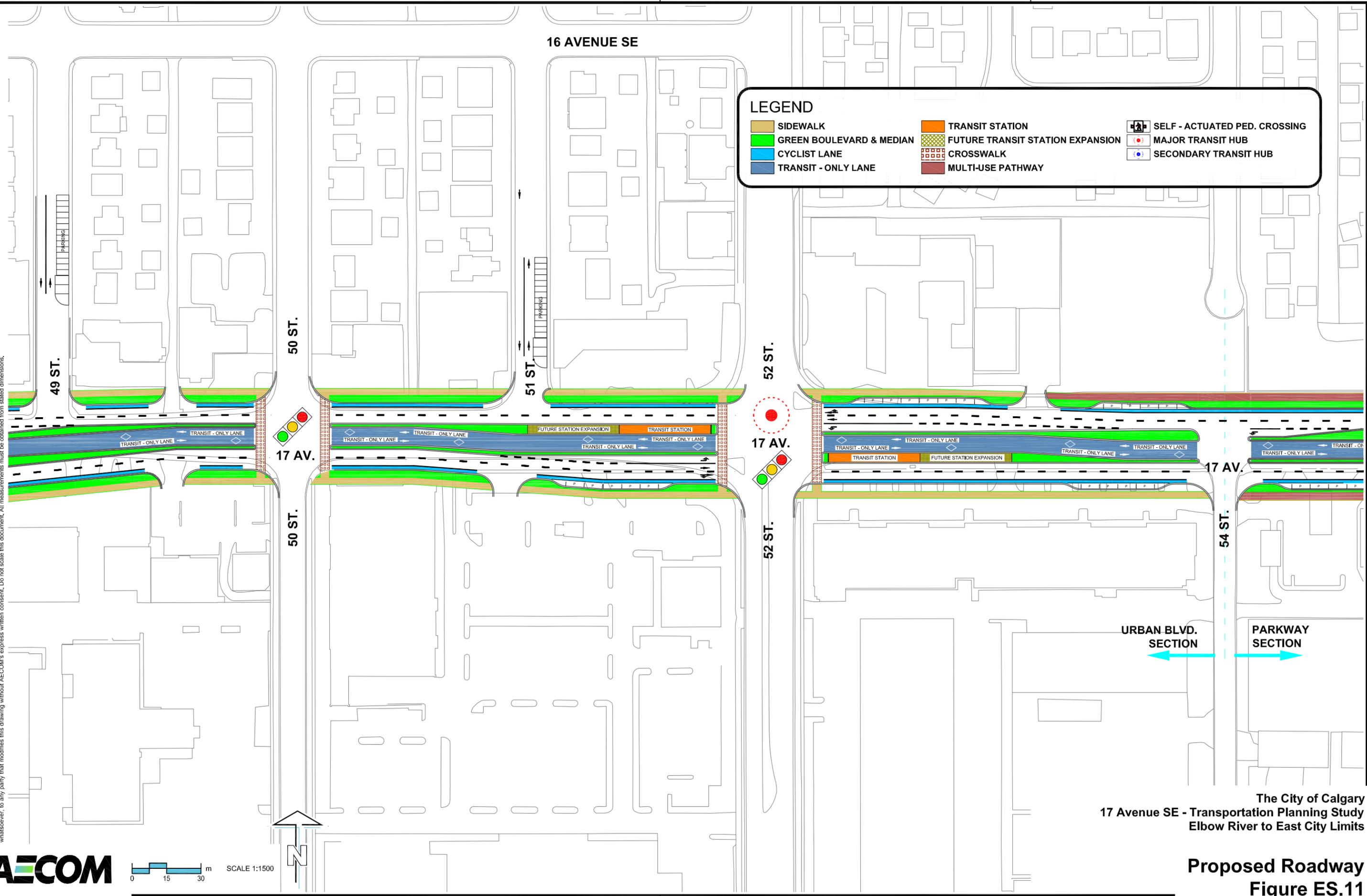
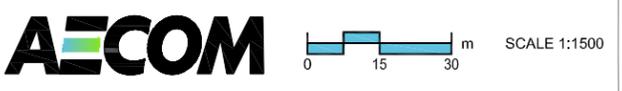


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 Elbow River to East City Limits

**Proposed Roadway**  
**Figure ES.10**

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**LEGEND**

SIDEWALK	TRANSIT STATION	SELF - ACTUATED PED. CROSSING
GREEN BOULEVARD & MEDIAN	FUTURE TRANSIT STATION EXPANSION	MAJOR TRANSIT HUB
CYCLIST LANE	CROSSWALK	SECONDARY TRANSIT HUB
TRANSIT - ONLY LANE	MULTI-USE PATHWAY	

URBAN BLVD. SECTION  
 PARKWAY SECTION

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 Elbow River to East City Limits

**Proposed Roadway  
 Figure ES.11**

B SIZE 11" x 17" (279.4mm x 431.8mm)

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Saved By: loppem

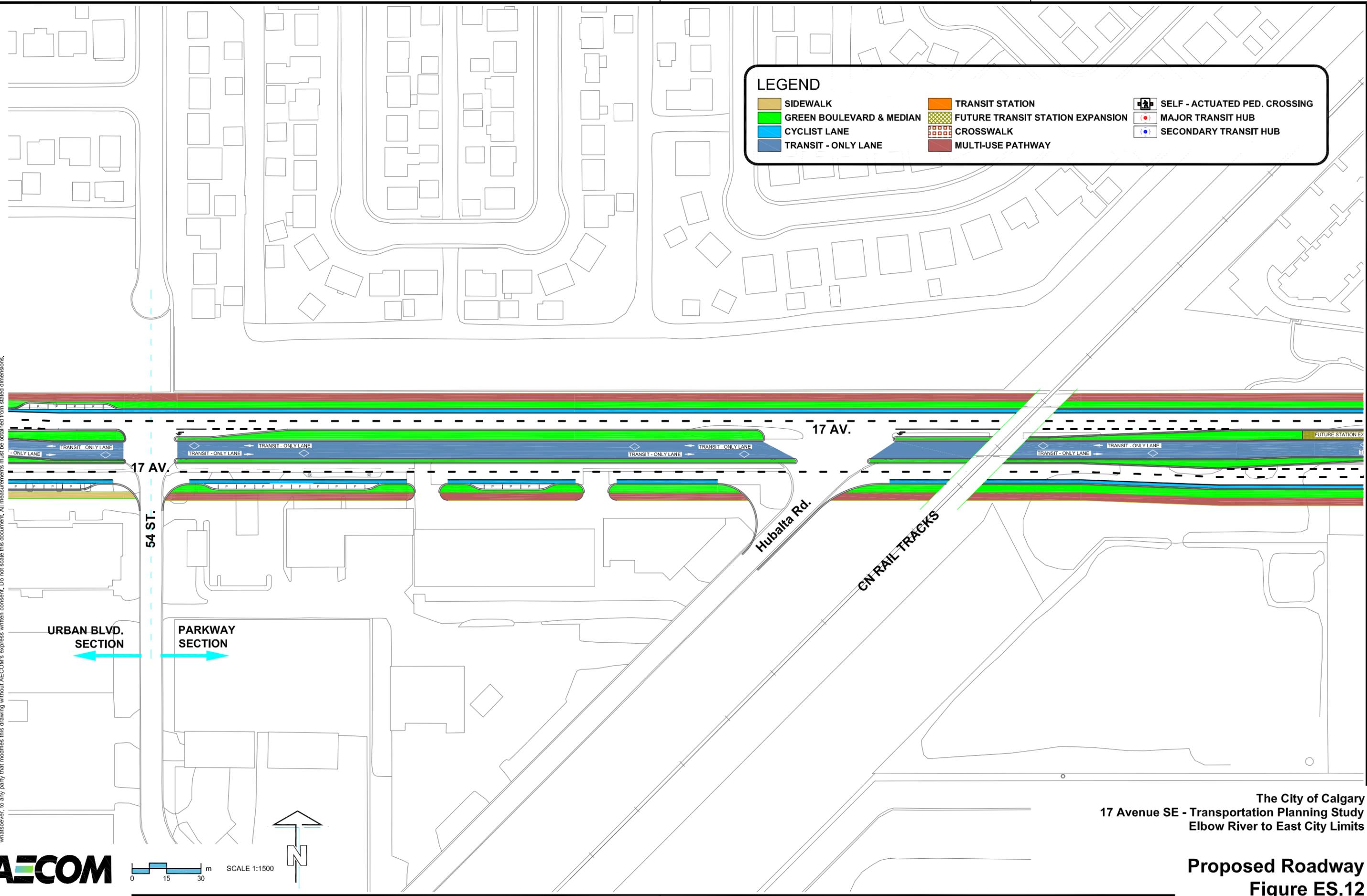
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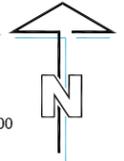
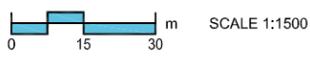
**LEGEND**

 SIDEWALK	 TRANSIT STATION	 SELF - ACTUATED PED. CROSSING
 GREEN BOULEVARD & MEDIAN	 FUTURE TRANSIT STATION EXPANSION	 MAJOR TRANSIT HUB
 CYCLIST LANE	 CROSSWALK	 SECONDARY TRANSIT HUB
 TRANSIT - ONLY LANE	 MULTI-USE PATHWAY	



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**Proposed Roadway  
 Figure ES.12**

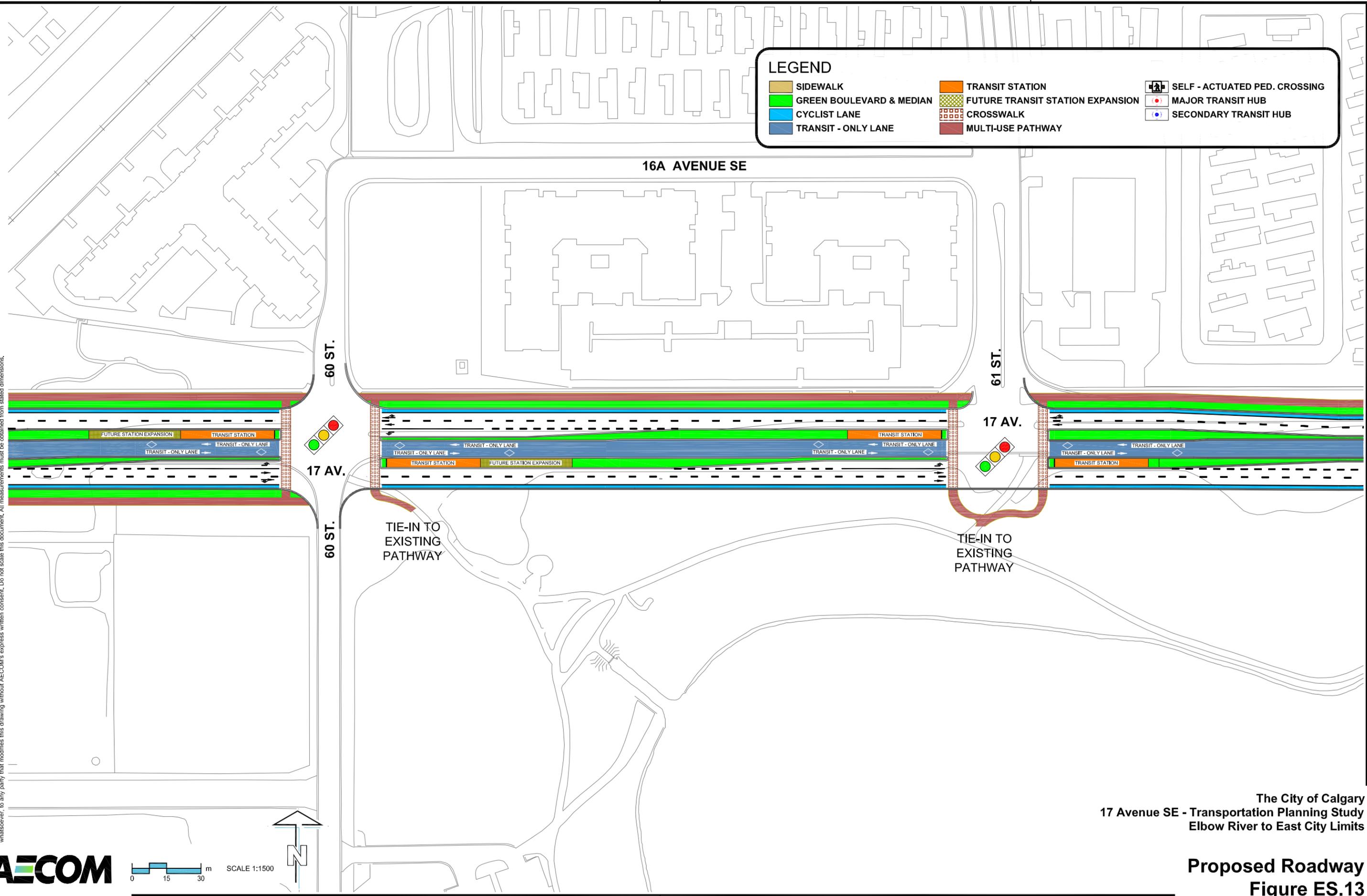


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**LEGEND**

 SIDEWALK	 TRANSIT STATION	 SELF - ACTUATED PED. CROSSING
 GREEN BOULEVARD & MEDIAN	 FUTURE TRANSIT STATION EXPANSION	 MAJOR TRANSIT HUB
 CYCLIST LANE	 CROSSWALK	 SECONDARY TRANSIT HUB
 TRANSIT - ONLY LANE	 MULTI-USE PATHWAY	



**AECOM**

0 15 30 m SCALE 1:1500

North arrow pointing up.

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 Elbow River to East City Limits

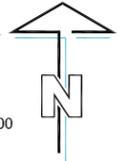
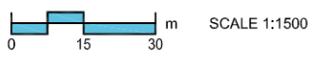
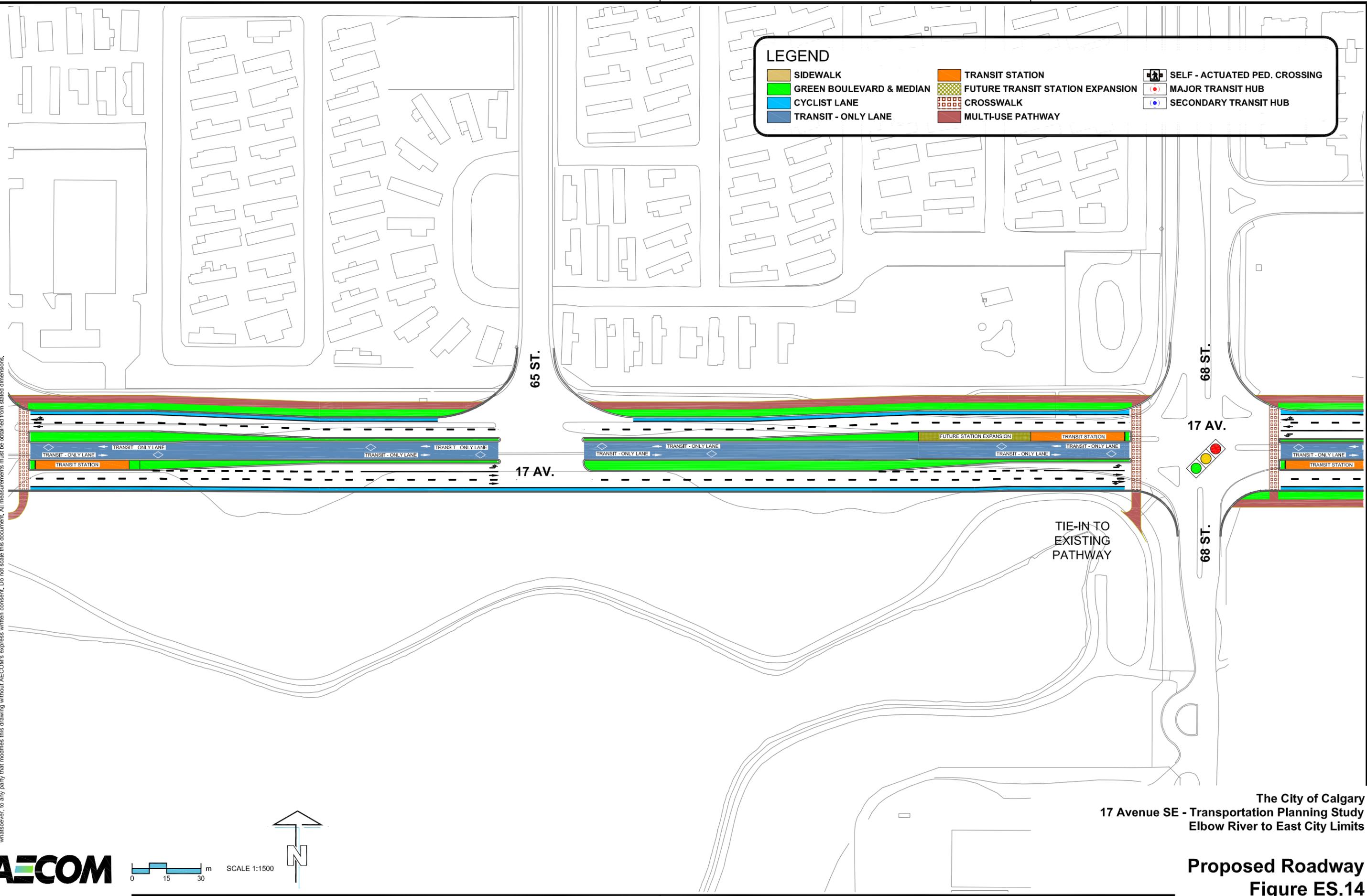
**Proposed Roadway**  
**Figure ES.13**

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**LEGEND**

 SIDEWALK	 TRANSIT STATION	 SELF - ACTUATED PED. CROSSING
 GREEN BOULEVARD & MEDIAN	 FUTURE TRANSIT STATION EXPANSION	 MAJOR TRANSIT HUB
 CYCLIST LANE	 CROSSWALK	 SECONDARY TRANSIT HUB
 TRANSIT - ONLY LANE	 MULTI-USE PATHWAY	



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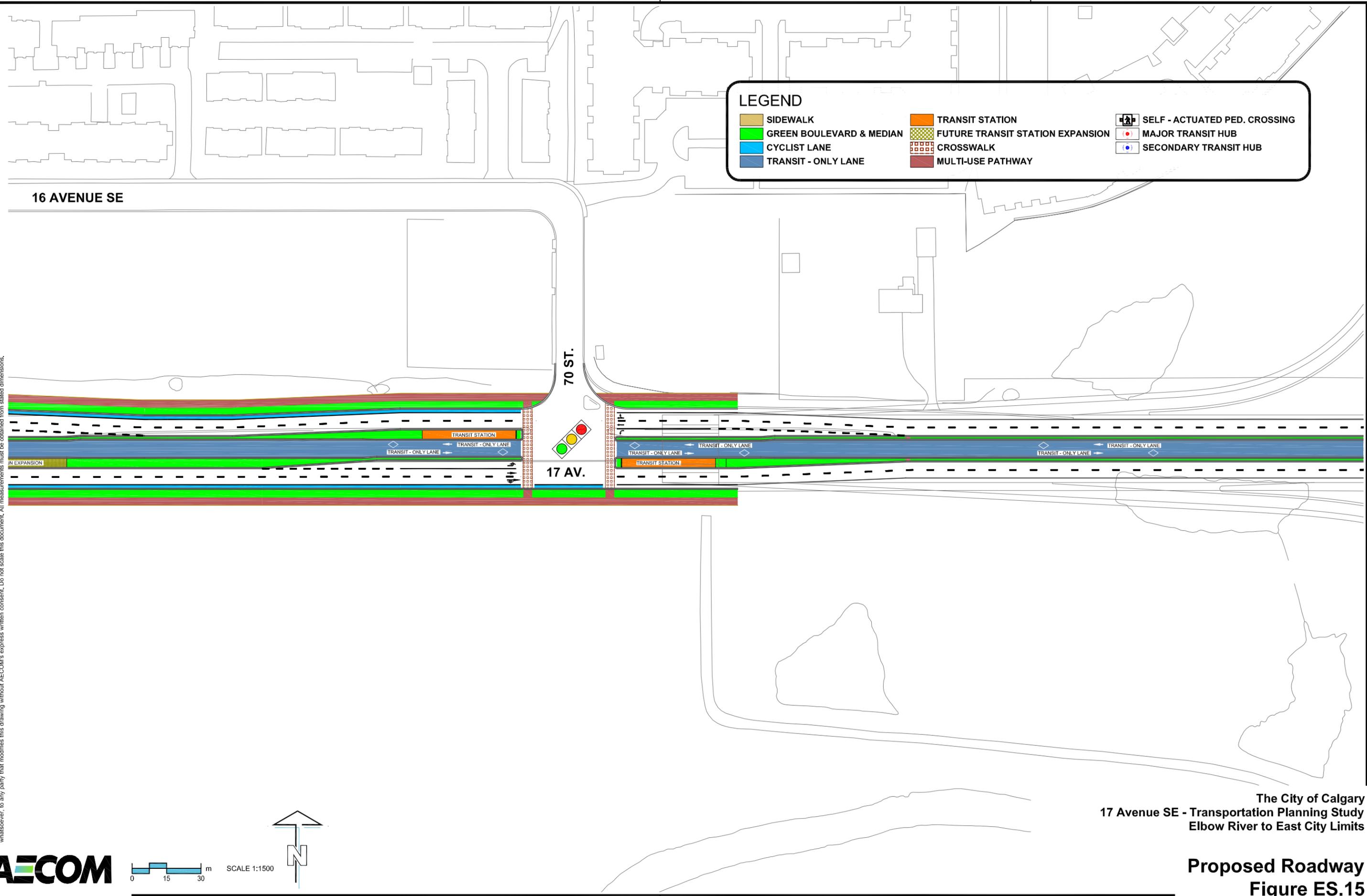
**Proposed Roadway  
 Figure ES.14**

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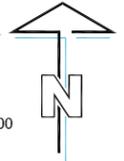
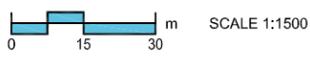
**LEGEND**

 SIDEWALK	 TRANSIT STATION	 SELF - ACTUATED PED. CROSSING
 GREEN BOULEVARD & MEDIAN	 FUTURE TRANSIT STATION EXPANSION	 MAJOR TRANSIT HUB
 CYCLIST LANE	 CROSSWALK	 SECONDARY TRANSIT HUB
 TRANSIT - ONLY LANE	 MULTI-USE PATHWAY	



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 Elbow River to East City Limits

**Proposed Roadway  
 Figure ES.15**

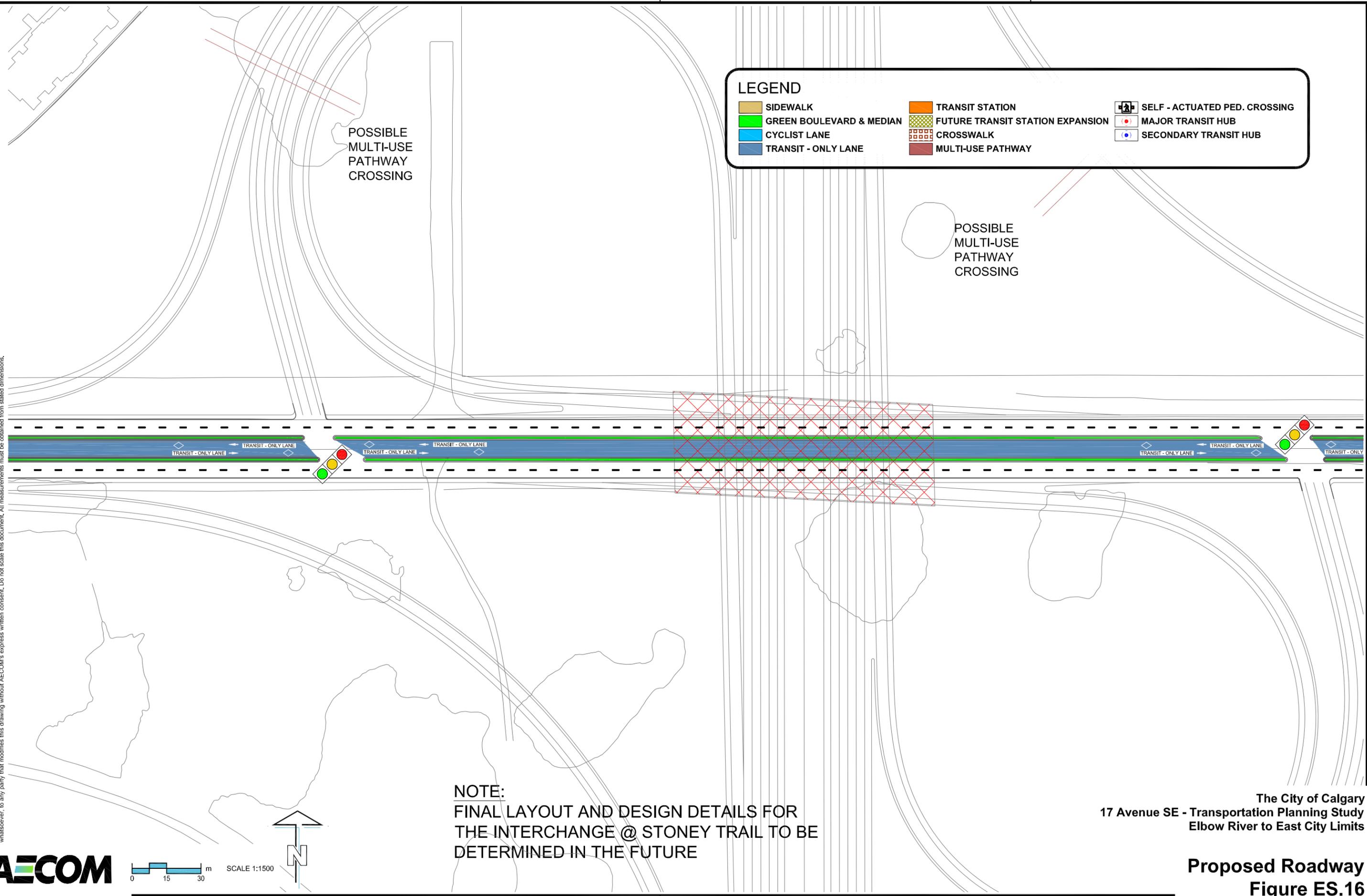


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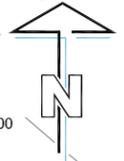
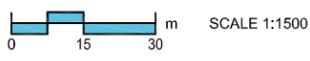
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**LEGEND**

 SIDEWALK	 TRANSIT STATION	 SELF - ACTUATED PED. CROSSING
 GREEN BOULEVARD & MEDIAN	 FUTURE TRANSIT STATION EXPANSION	 MAJOR TRANSIT HUB
 CYCLIST LANE	 CROSSWALK	 SECONDARY TRANSIT HUB
 TRANSIT - ONLY LANE	 MULTI-USE PATHWAY	



**NOTE:**  
 FINAL LAYOUT AND DESIGN DETAILS FOR  
 THE INTERCHANGE @ STONEY TRAIL TO BE  
 DETERMINED IN THE FUTURE



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 Elbow River to East City Limits

**Proposed Roadway  
 Figure ES.16**

B SIZE 11" x 17" (279.4mm x 431.8mm)

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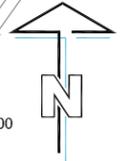
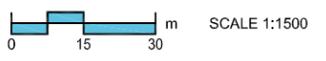
**LEGEND**

 SIDEWALK	 TRANSIT STATION	 SELF - ACTUATED PED. CROSSING
 GREEN BOULEVARD & MEDIAN	 FUTURE TRANSIT STATION EXPANSION	 MAJOR TRANSIT HUB
 CYCLIST LANE	 CROSSWALK	 SECONDARY TRANSIT HUB
 TRANSIT - ONLY LANE	 MULTI-USE PATHWAY	



84 ST. SE

84 ST.



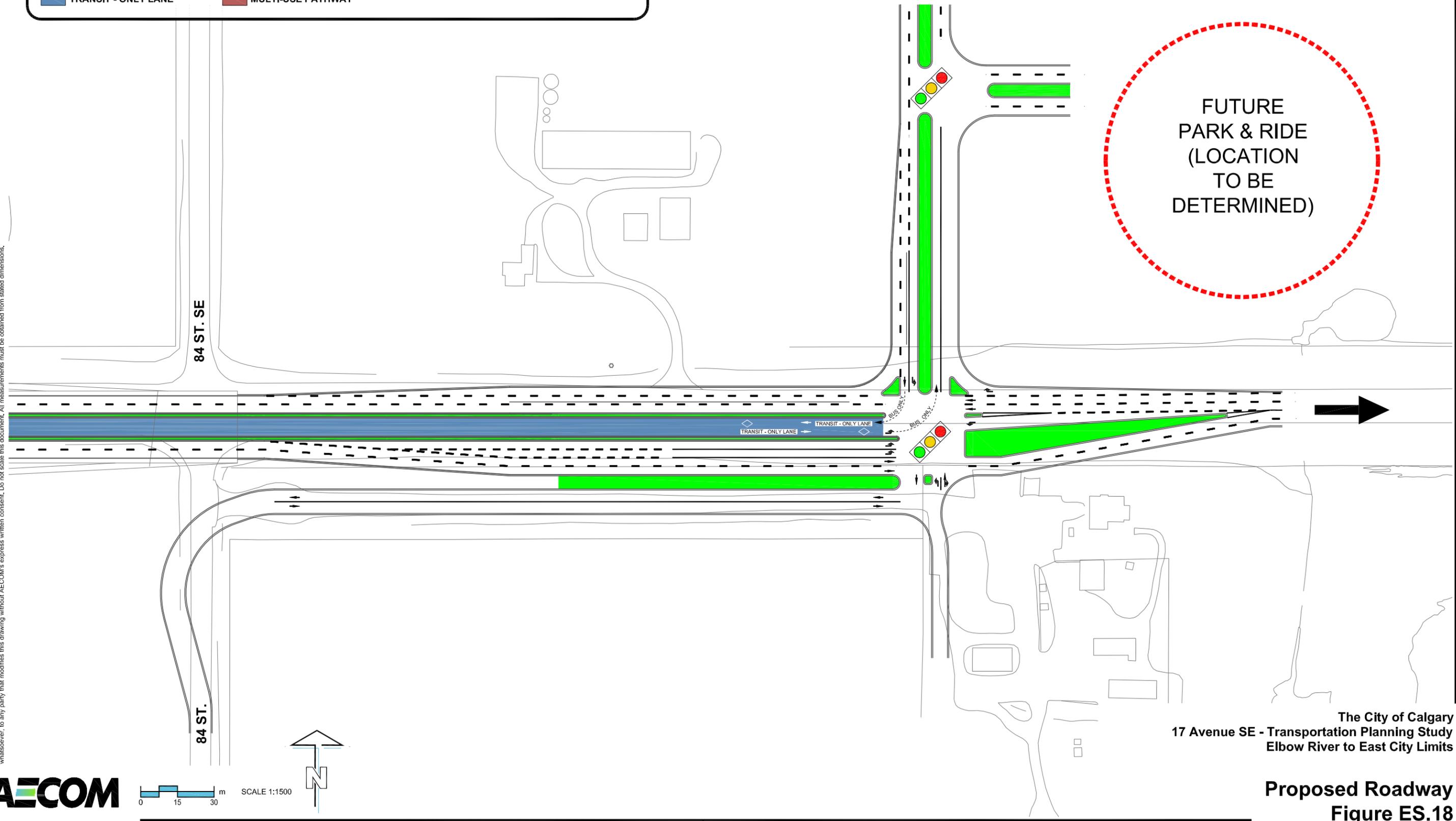
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Elbow River to East City Limits

**Proposed Roadway**  
**Figure ES.17**

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**LEGEND**

 SIDEWALK	 TRANSIT STATION	 SELF - ACTUATED PED. CROSSING
 GREEN BOULEVARD & MEDIAN	 FUTURE TRANSIT STATION EXPANSION	 MAJOR TRANSIT HUB
 CYCLIST LANE	 CROSSWALK	 SECONDARY TRANSIT HUB
 TRANSIT - ONLY LANE	 MULTI-USE PATHWAY	



0 15 30 m  
 SCALE 1:1500

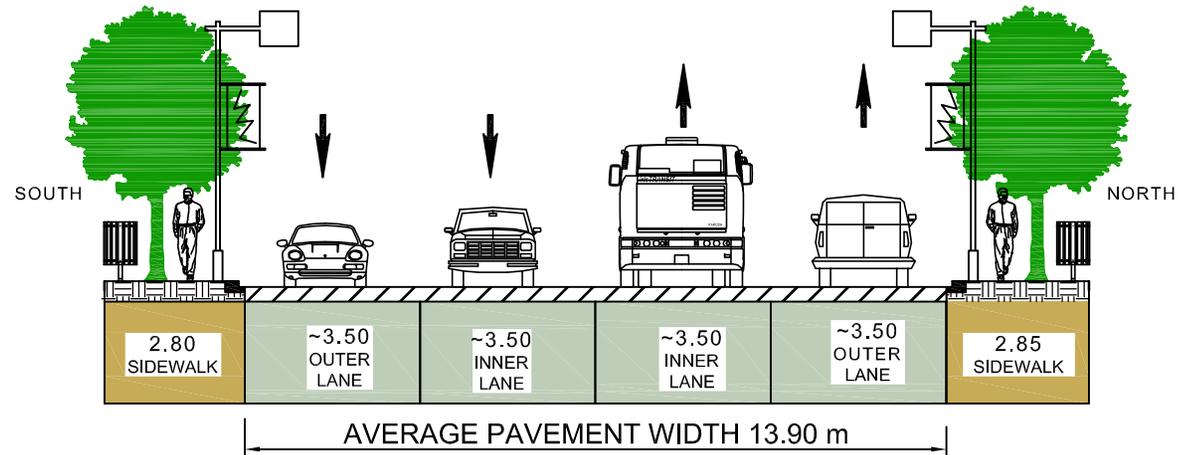
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**Proposed Roadway  
 Figure ES.18**

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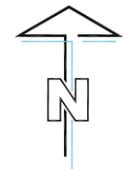
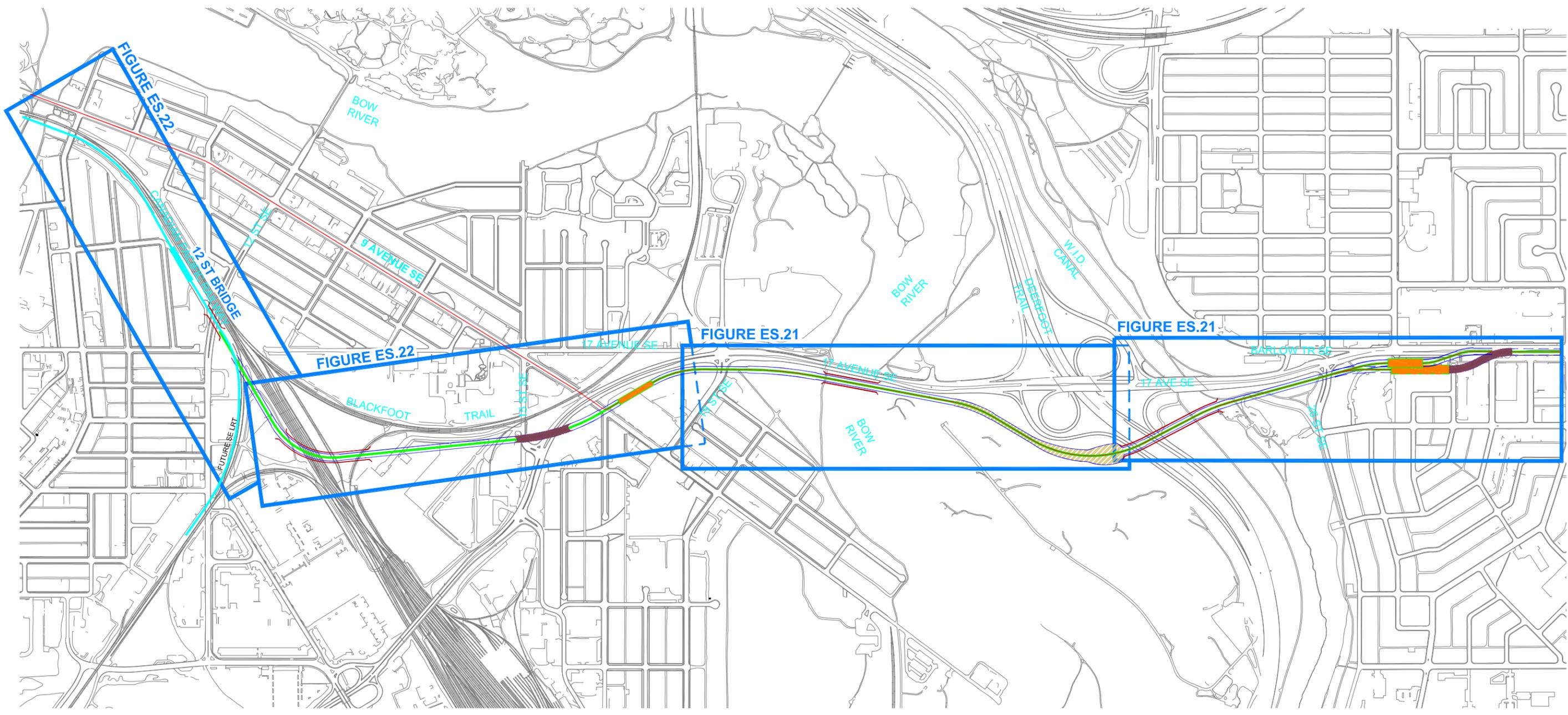
### 9th AVENUE SE CROSS SECTION PEAK HOUR TRANSIT LANES

LANE USE				
	OUTER LANE	INNER LANE	INNER LANE	OUTER LANE
P.M.	TRANSIT	TRAFFIC	TRAFFIC	PARKING
OFF PEAK	PARKING	TRAFFIC	TRAFFIC	PARKING
A.M.	PARKING	TRAFFIC	TRAFFIC	TRANSIT



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**Preferred Short Term Alternative**  
**Cross-Section**  
**Figure ES.19**

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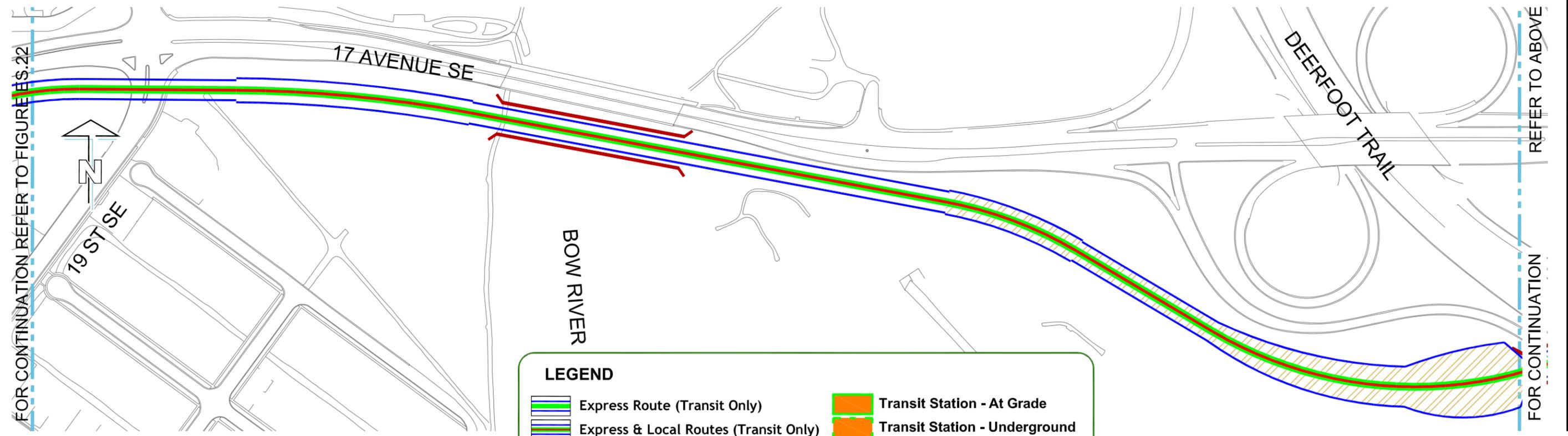
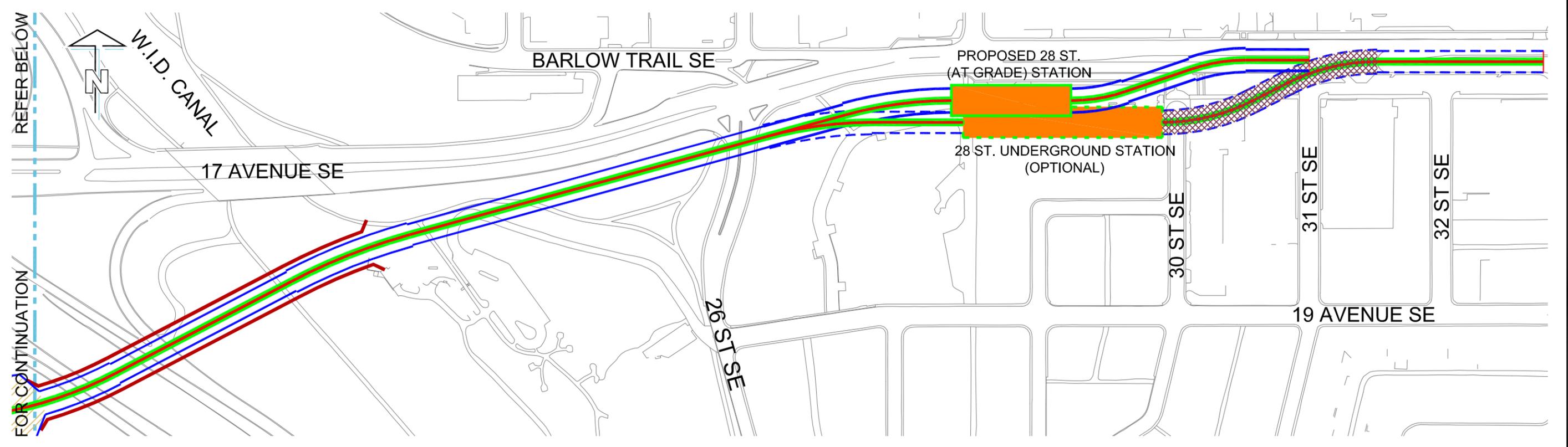


**KEY PLAN**  
SCALE: NTS

The City of Calgary  
17 Avenue SE - Transportation Planning Study  
Elbow River to East City Limits  
**Preferred Long Term Alternative**  
**Key Plan**  
**Figure ES.20**

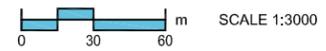


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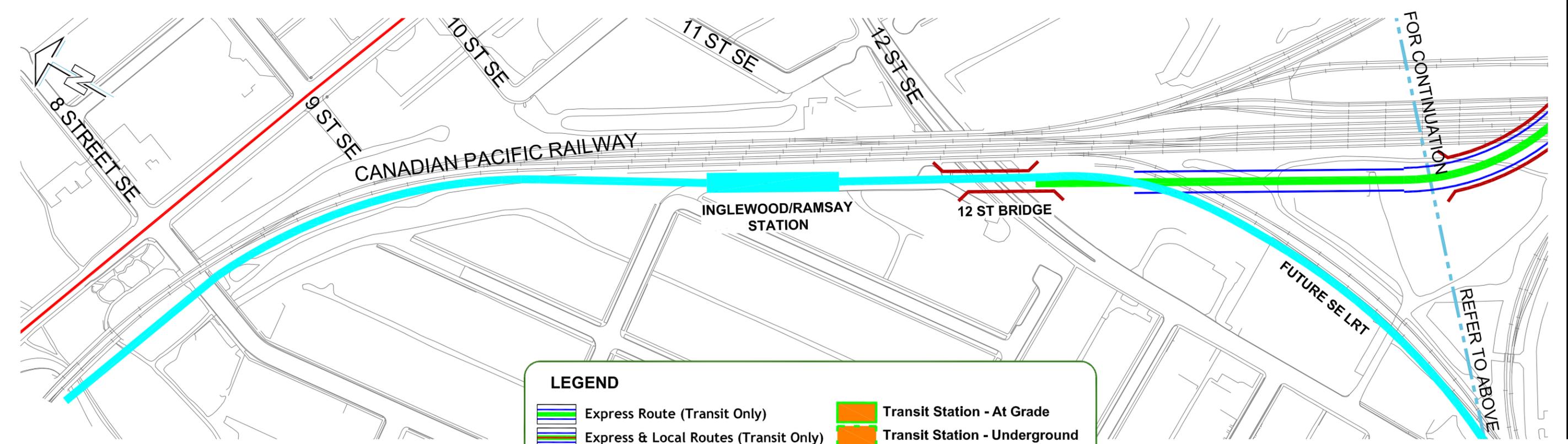
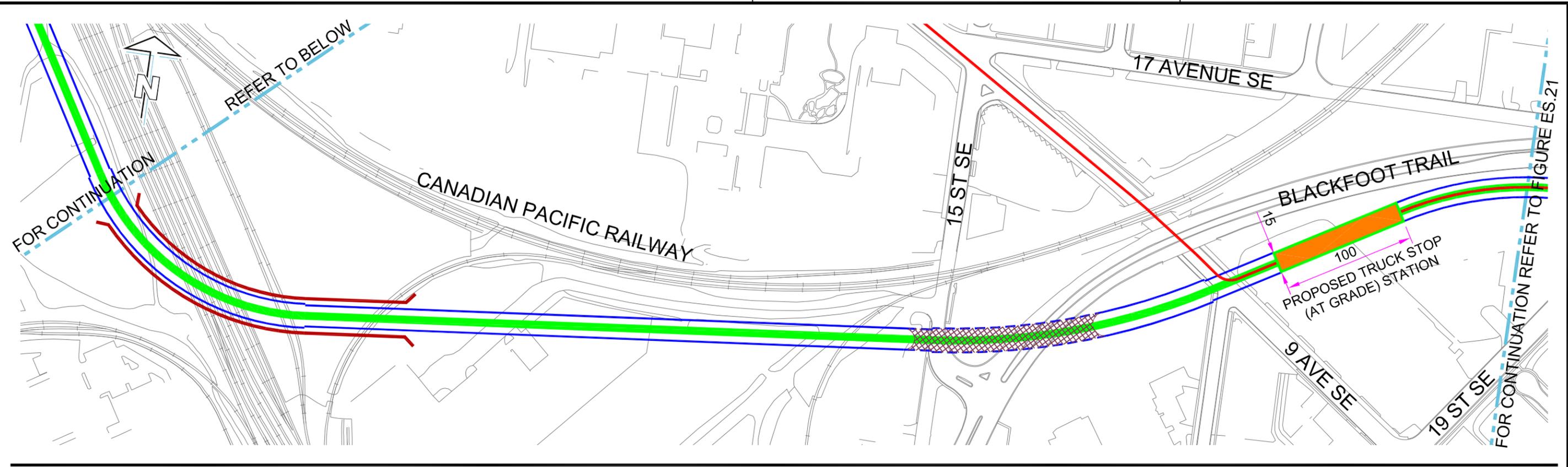
**LEGEND**

	Express Route (Transit Only)		Transit Station - At Grade
	Express & Local Routes (Transit Only)		Transit Station - Underground
	Tunnel (Transit Only)		Sidewalk
	Embankment (Transit Only)		Crosswalk
	Bridge (Transit Only)		Green Boulevard
	Local Transit (Shared)		SE LRT Route & Station



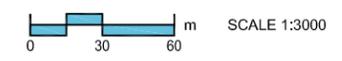
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 Elbow River to East City Limits  
**Preferred Long Term Alternative**  
**Figure ES.21**

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**LEGEND**

	Express Route (Transit Only)		Transit Station - At Grade
	Express & Local Routes (Transit Only)		Transit Station - Underground
	Tunnel (Transit Only)		Sidewalk
	Embankment (Transit Only)		Crosswalk
	Bridge (Transit Only)		Green Boulevard
	Local Transit (Shared)		SE LRT Route & Station

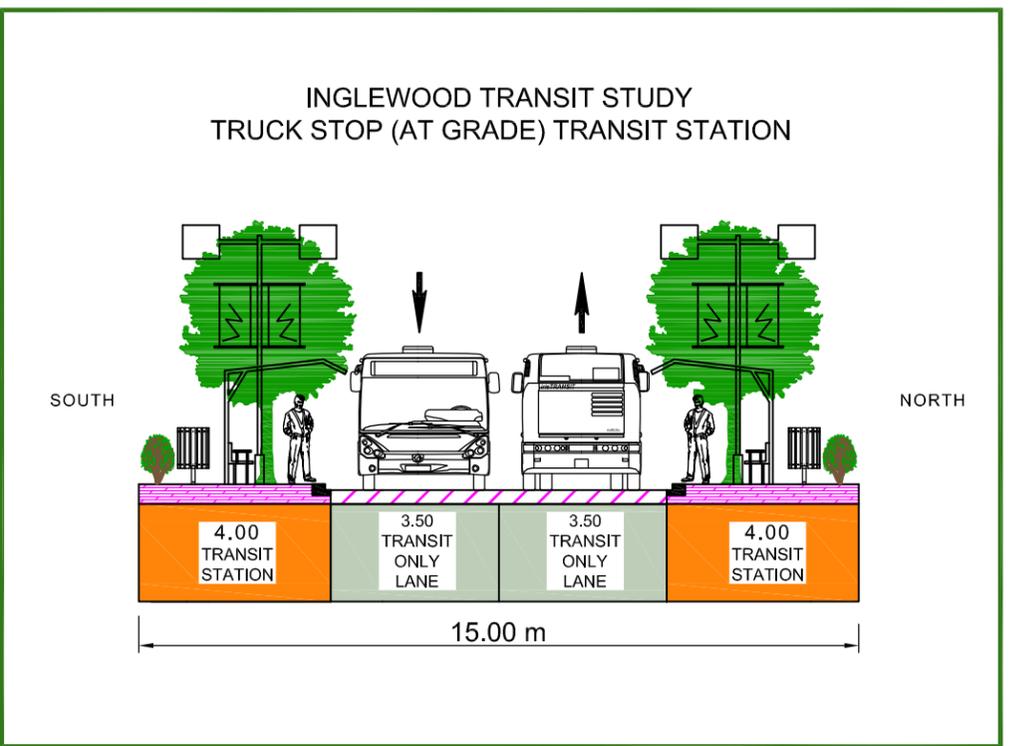
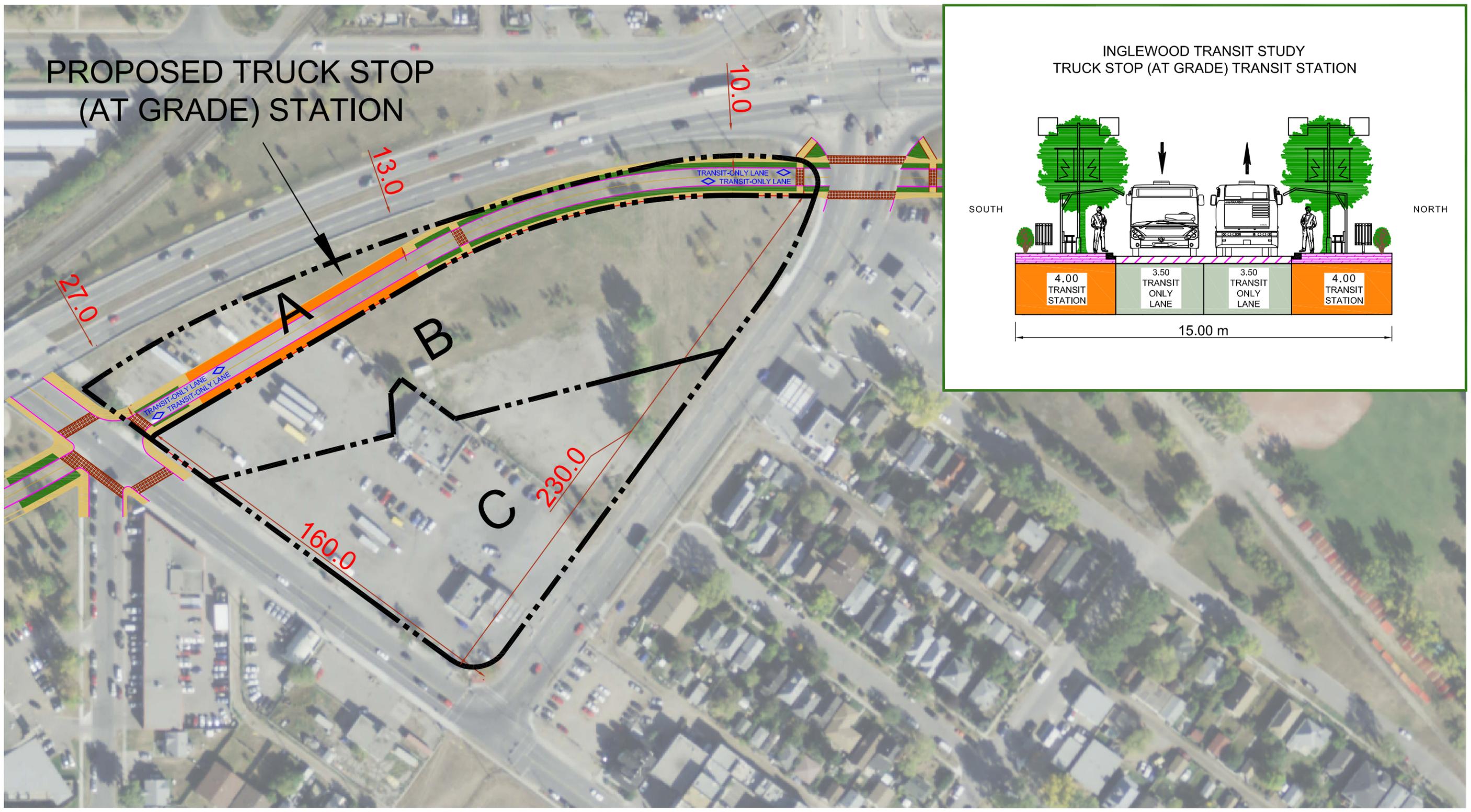


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 Elbow River to East City Limits

**Preferred Long Term Alternative**  
**Figure ES.22**

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# PROPOSED TRUCK STOP (AT GRADE) STATION



**LEGEND**

- Transit Station - At Grade
- Sidewalk
- Crosswalk
- Green Boulevard

- A : Land required for transit way (0.580 ha)
- B : Remaining City's land (1.314 ha)
- C : Privately owned land (1.128 ha)

