

2024 Off-site Levies Bylaw Review Whitepaper September 18, 2023



Introduction

The purpose of this document is to provide background information on the infrastructure, benefit methodology and levy rate calculation being used to support the transportation portion of the 2024 Off-site Levies Bylaw. Transportation infrastructure includes the following:

- Interchanges.
- Road widenings.
- Structures over rail lines and creeks.
- Bus Rapid Transit (BRT) infrastructure.
- Always Available for All Ages and Abilities (5A) Network.
- Pedestrian overpasses.
- Greenfield traffic signals.

The preliminary transportation levy rate is \$156,386 per hectare. Once approved, this levy rate is anticipated to be updated periodically through bylaw amendments to reflect changes to any inputs, including infrastructure inclusions, cost estimates, land absorption, discount rates and escalation rates.

This paper sets out:

1. The transportation infrastructure needed to support growth.
2. The benefit allocation, or degree (expressed as a percentage) to which that infrastructure will benefit different areas, and growth assumptions.
3. The levy rate calculation.

Infrastructure

The costs of the following types of transportation infrastructure are included in the levy:

- **Interchanges** provide grade-separated connections for community and industrial traffic to the skeletal road network (see Map 7 of the *Calgary Transportation Plan 2020*). This includes corridors such as Stoney Trail, Macleod Trail south of Anderson Road, Glenmore Trail, Sarcee Trail S.W., Airport Trail and strategic connections on the Primary Goods Movement Network (such as Metis Trail N.E. and 128 Avenue N.E.). Interchanges support free-flow conditions along a primary corridor and minimize the travel delays and traffic conflicts that occur with at-grade intersections.
- **Road widenings** add capacity and eliminate pinch points to growing traffic volumes. This reduces traffic congestion caused by new demand and changes in traffic patterns resulting from new development (such as Country Hills Boulevard from Barlow Trail to Coventry Hills Boulevard, or Airport Trail from 60 Street N.E. to 68 Street N.E.).
- **Structures over rail lines or creeks** provide direct connections that reduce the traffic delays and back-ups caused by traffic and safety impacts of geographic barriers (such as 210 Avenue S.W. under CP Rail).
- **Bus Rapid Transit (BRT) infrastructure** includes improvements such as dedicated bus lanes and transit priority systems at traffic signals. BRT is a cost-effective approach to providing a high-quality transit service at a fraction of the construction cost of Light Rail Transit (LRT). BRT routes have fewer stops than a regular bus route, which means they can cover more ground, more quickly, providing direct connections to major destinations and LRT stations.
- **The Always Available for All Ages and Abilities (5A) Network** was approved by Council in February 2021 as part of a revision to the *Calgary Transportation Plan (CTP)*. This is an extensive walking and wheeling network that includes multi-use pathways and bikeways.
- **Pedestrian overpasses** are key links in the 5A Network that provide safe grade-separated connections across barriers and complete separation from vehicle traffic.
- **Greenfield traffic signals** provide controls for the flow of traffic, improving intersection safety.

Construction of transportation infrastructure is phased to meet near-term demand. The infrastructure included in the transportation levy may include different phases for delivering a facility, or upgrades to existing infrastructure as new developments come online and

create a significant change in demand.

Rationale for Infrastructure Inclusions

The transportation levy methodology distinguishes between infrastructure benefiting greenfield growth, infrastructure that benefits greenfield growth and provides a shared citywide benefit, and infrastructure downstream of growth in the Established Area that is not included in the levy. The following criteria was used to select infrastructure for the transportation levy:

- 1. Aligned to long-term plans and strategies (e.g., the CTP, Area Structure Plans (ASPs), or *RouteAhead*).
- 2. Located in or providing connections for greenfield development, including:
 - a. New or actively developing communities.
 - b. Industrial and employment lands.
 - c. Lands without approved ASPs.
- 3. Providing connections from growing communities to areas shown in Maps 1 and 2 in *Calgary's Municipal Development Plan*:
 - a. Greater downtown.
 - b. Major activity centers.
 - c. Employee intensive zones.
 - d. Primary transit network.
 - e. Major public open spaces.

The transportation infrastructure as described in the CTP, in ASPs, and in *RouteAhead* will continue to evolve as policies change or as new studies are completed. Any future infrastructure additions, removals, cost updates or scope changes may be reflected in periodic updates to the Off-site Levies Bylaw, with the levy rate recalculated to reflect the most current information available. The infrastructure being included in the transportation levy is listed in Attachment 1 below.

Some network upgrades and expansions are planned and are not included in the transportation levy (i.e., costs are not included in the levy rate calculation). These include some infrastructure that meets the criteria above such as LRT infrastructure in the Greenfield Area, and projects in the Established Area that are not directly aligned to greenfield growth areas. Infrastructure not included in the transportation levy is shown in Attachment 2 below.

Infrastructure Costs

Transportation infrastructure cost estimates were primarily provided by or developed in consultation with third-party consultants. The cost of infrastructure needed was assessed using the following elements:

Removals	Traffic signals	Transit stations (BRT only)
Grading	Stormwater	Internal City costs
Asphalt	Utilities	Engineering work
Concrete	Landscaping	Contingency
Signage	Structures	
Streetlights	Land acquisition	

Projects are at different stages of development and design, and cost estimates range from Class 5 (order of magnitude) for a project that has been identified but with very limited information, to Class 1 for a project in its final, pre-tender design. Costs estimated in prior years were adjusted for inflation to Q2 2023 using Statistics Canada's Non-Residential Building Construction Price Index. This ensures that infrastructure cost estimates are current and reflect recent inflationary increases. Estimated costs assume infrastructure is delivered through design-build contracts administered by The City.

5A routes may be delivered by developers as part of a new community build, or as a condition of approval, or may be delivered by The City through its capital programs. As a result of these different delivery mechanisms, pathways are often not delivered as a complete, continuous route. Most of the routes included in the Off-site Levies Bylaw have sections that are complete, and some also have sections that are likely to be delivered by developers. Transportation levy costs include only the upgrade or construction of elements that The City will deliver to complete each route.

Infrastructure costs are included in Attachment 1 below.

Growth Assumptions and Allocation of Benefit

Benefit of transportation infrastructure is allocated based on the share of forecast population and jobs in different areas:

- Greenfield areas that have already paid levies (levied lands).
- Greenfield areas that have not yet paid levies and may pay a levy in the future (unlevied lands).
- The Established Area.

Population and jobs are key factors driving transportation network impact and are being used to measure benefit. This method is simpler and more repeatable than transportation modeling and does not attempt to assess travel patterns, distance traveled, or trips generated from specific land uses.

Transportation benefit is measured using a growth forecast for Calgary that assumes that all lands within Calgary's boundary will be developed by 2076 following current growth trends (i.e., a full buildout scenario). See Tab 6 of the *Transportation Levy Rate Model 2024 Off-site Levies Bylaw* for details. It includes all lands within Calgary's current boundary and does not assume any expansion or annexation of municipal boundaries during the forecast period.

It is forecast that there will be 13,921 hectares of unlevied land that may pay a levy in the future within the city boundaries at the end of 2023.

Benefit is not allocated for each individual project, but as a network of infrastructure given that transportation infrastructure benefits large areas and not a discrete area of land. Benefit is allocated according to the infrastructure's location within the network, either in the greenfield or the Established Area:

1. **Greenfield only:** infrastructure located in the greenfield. Transportation infrastructure located in the Greenfield Area will provide it with similar reliability, quality and levels of service provided in the Established Area, while maintaining or not affecting the current reliability, quality and level of service in the Established Area. Therefore, no benefit was allocated to the Established Area for this levy infrastructure.

100 per cent of the benefit is allocated between levied lands and unlevied lands. This allocation is based on the forecast population and jobs in levied lands (where a development agreement has been executed and off-site levies have been paid), and unlevied lands (where no development agreement has been executed and no off-site levies have been paid).

2. **Shared benefit:** infrastructure physically located in the Established Area that benefits lands outside the Established Area boundary. Transportation infrastructure located in the Established Area will accommodate capacity and direct connections from the greenfield and will provide similar reliability, quality and levels of service in both the greenfield and the Established Area. Therefore, benefit was allocated between the greenfield and the Established Area for this levy infrastructure.

100 per cent of the benefit is allocated between levied lands, unlevied lands and lands in the Established Area. This allocation is based on the forecast population and jobs in levied lands, unlevied lands and the Established Area.

Infrastructure for each of these categories is shown in Attachment 1 below. The benefit allocations for greenfield only and shared benefit infrastructure are calculated as follows:

$$1. \text{ Greenfield only benefit} = \frac{\text{Sum of forecast population \& jobs in all unlevied lands}}{\text{Sum of forecast population \& jobs in all greenfield lands}}$$

$$2. \text{ Shared benefit} = \frac{\text{Sum of forecast population \& jobs in all unlevied lands}}{\text{Sum of forecast population \& jobs citywide}}$$

Infrastructure Not Included in the Levy

In addition to the infrastructure included in the levy, other planned transportation infrastructure projects in the Established Area will

improve or maintain the reliability, quality and level of service in the Established Area, and will also typically accommodate capacity from greenfield lands and provide benefit to greenfield lands. However, infrastructure that will not provide a direct connection to the greenfield was not included in the levy rate calculation. This infrastructure is listed in Attachment 2 below.

Reflecting Regional Benefit

It is acknowledged that some infrastructure on Calgary's periphery provides some benefit to lands outside of the city. This regional benefit is not assessed using the share of forecast of population and jobs. Instead, regional benefit is reflected by including only a portion of the cost of infrastructure on Calgary's periphery.

Individual projects near Calgary's municipal boundary were assessed to identify the cost of the traffic movements and capacity needed for traffic going to, or from, Calgary lands. Only that cost is included in the levy rate calculation. The cost to build the movements or capacity that does not support Calgary lands is not included in the levy rate calculation (e.g., interchange ramps leading to or coming from land outside of Calgary). The City plans to pay this cost despite the lack of benefit to the Established Area because there is no mechanism to compel collection of the cost of this benefit from regional beneficiaries.

For example, the current cost estimate for the interchange planned at Stoney Trail and 60 Street N.E. is \$47 million. As this interchange sits within Calgary's city limits, the cost of all movements shown below in green are being included in the levy rate calculation (\$30 million). However, the capacity provided by half of the bridge and half of 60 Street N.E. has been assessed as unnecessary for Calgary traffic. As such, the cost of half of the bridge and half of 60 Street N.E. (shown below in red) is not included in the levy rate calculation (\$17 million).

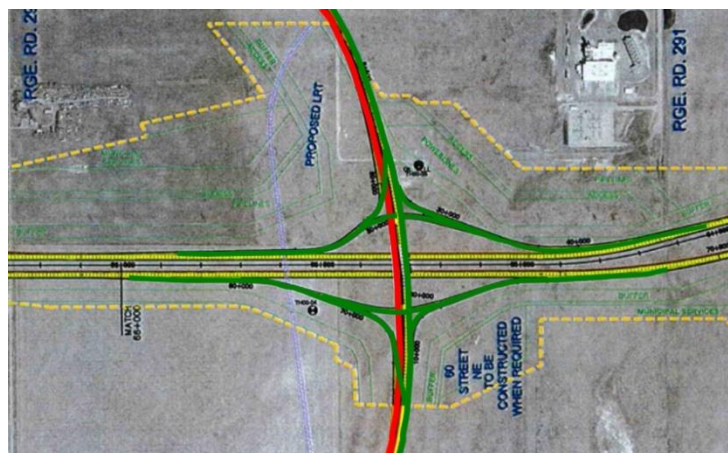


Figure 1. Interchange planned at Stoney Trail and 60 Street N.E

Infrastructure where this approach was taken is shown in the table below.

Location	Total Estimated Capital Cost (\$ millions)	Levied Cost (\$ millions)	Unlevied Cost (\$ millions)
Stoney Trail/60 Street N.E. Interchange	47	30	17
Airport Trail/Stoney Trail N.E. Interchange (Ultimate)	52	27	25
Glenmore Trail/116 Street East Interchange	105	46	59
Glenmore Trail/Garden Road S.E. Interchange	185	71	114
Highway 22X/85 Street S.W. Interchange	56	44	12
Highway 22X/53 Street S.W. Interchange	81	66	15
Highway 22X/69 Street S.W. Interchange	95	74	21
Trans-Canada/Garden Road Interchange	90	45	45
Glenmore Trail widening from Stoney Trail to 800 metres east of 116 Street E (2-6 lanes)	97	49	48
Crowchild Trail/12 Mile Coulee Road Interchange	77	0	77
Totals	885	452	433

Levy Rate Calculation

The levy rate calculations and supporting data are available in the *Transportation Levy Rate Model 2024 Off-site Levies Bylaw*. The calculation balances levy revenues with levy spending to ensure the levy fund has a balance of zero dollars at the end of the forecast period. This calculation:

- Accounts for the timing of both spending and developer contributions.
- Includes estimated annual income returned from investments made using the off-site levy balance.
- Incorporates a discount rate to reflect the time value of money.
- Incorporates an escalation rate to reflect inflation with respect to the cost of construction.
- Uses Excel's Goal Seek function to generate the levy rate value that, when inserted into the model's calculations, will result in an off-site levy fund balance of zero dollars at the end of the model period. This ensures that levy revenues (developer contributions plus investment income) match levy expenditures when all land has been levied and all expenditures have been completed.

<i>Iterative Annual Calculation</i> <i>applies escalation and discount rates</i>		Final Model Year
Year	y1... y2... y3... etc...	yN
Starting Levy Fund Balance	\$	
Capital Expenditures	Minus \$	
Developer Contributions (levy rate x ha)	Plus \$	
Investment Income	Plus \$	
Ending Levy Fund Balance	= \$	= \$0

Figure 1. Conceptual levy rate calculation

The steps for calculating the levy rate include:

1. Determining the number of hectares of unlevied land (13,921.1 hectares) and estimating annual land absorption through the model period.
2. Identifying the capital costs for infrastructure that benefits unlevied lands.
3. Determining the benefit allocations that apply to the infrastructure benefiting unlevied lands.
4. Determining the leviable capital cost, as the sum of capital costs multiplied by benefit allocations.
5. Setting annual spending for each year in the model period. The escalation rate is applied to determine infrastructure costs in future dollars, and the discount rate is applied to determine the amount needed in today's dollars.
6. Using Excel's Goal Seek function to calculate the transportation off-site levy rate. This is the final input to the calculation that allows for the determination of revenues needed to offset project expenditures and result in a levy fund balance of zero dollars at the end of the model period.
 - a. The levy rate is multiplied by the annual land absorption to determine developer contributions.
 - b. The discount factor, or investment rate of return, is applied to each year's closing levy fund balance to estimate annual investment revenue.

The levy rate is anticipated to be updated on a periodic basis through bylaw amendments to reflect changes to any inputs, including infrastructure inclusions, cost estimates, land absorption, discount rates and escalation rates.

Attachment 1: Levy Infrastructure

Table 1. Greenfield infrastructure to be included in the 2024 Off-site Levies Bylaw

Project Name	Infrastructure Type	Total Cost (\$ millions)	Benefit
Greenfield Only			
5A Network (greenfield pathways and bikeways)	5A Network	44	50.9%
144 Avenue North BRT Route	BRT Infrastructure	50	50.9%
162 Avenue S.W. BRT from S.W. Ring Road to west side of Providence	BRT Infrastructure	47	50.9%
MAX 301 BRT from Aurora Park to 144 Avenue North	BRT Infrastructure	9	50.9%
MAX Purple BRT from 84 Street E to City Limits	BRT Infrastructure	84	50.9%
MAX Purple BRT from Hubalta to 84 Street S.E.	BRT Infrastructure	51	50.9%
MAX Teal extension from Douglasdale Business Park to 68 Street S.E.	BRT Infrastructure	8	50.9%
Greenfield Traffic Signals (539)	Greenfield Traffic Signals	161.7	50.9%
Airport Trail/36 Street N.E. Interchange	Interchange	49	50.9%
Airport Trail/60 Street N.E. Interchange	Interchange	141	50.9%
Airport Trail/Stoney Trail N.E. Interchange (Ultimate)	Interchange	27	50.9%
Deerfoot Trail/128 Avenue N.E. Interchange	Interchange	53	50.9%
Deerfoot Trail/Airport Trail Interchange (Ultimate)	Interchange	104	50.9%
Glenmore Trail/Stoney Trail S.E. Interchange (Ultimate)	Interchange	238	50.9%
Glenmore Trail/116 Street East Interchange	Interchange	46	50.9%
Glenmore Trail/68 Street S.E. Interchange	Interchange	111	50.9%
Glenmore Trail/Garden Road S.E. Interchange	Interchange	71	50.9%
Highway 2/Crossiron Drive Interchange (second structure and upgrade requirements)	Interchange	38	50.9%
Highway 22X/104 Street S.E. Flyover	Interchange	36	50.9%
Highway 22X/120 Street S.E. Interchange	Interchange	77	50.9%
Highway 22X/53 Street S.W. Interchange	Interchange	66	50.9%
Highway 22X/69 Street S.W. Interchange	Interchange	74	50.9%
Highway 22X/85 Street S.W. Interchange	Interchange	44	50.9%
Macleod Trail/194 Avenue S.E. Interchange	Interchange	120	50.9%
Macleod Trail/210 Avenue S.E. Interchange	Interchange	90	50.9%
Metis Trail/128 Avenue N.E. Interchange	Interchange	72	50.9%

Project Name	Infrastructure Type	Total Cost (\$ millions)	Benefit
Metis Trail/64 Avenue N.E. Interchange	Interchange	65	50.9%
Metis Trail/Airport Trail Interchange	Interchange	194	50.9%
Peigan Trail/52 Street S.E. Interchange	Interchange	90.25	50.9%
Peigan Trail/68 Street S.E. Interchange	Interchange	104.25	50.9%
Stoney Trail/106 Avenue S.E. Flyover	Interchange	37	50.9%
Stoney Trail/11 Street N.E. Interchange (Ultimate)	Interchange	25	50.9%
Stoney Trail/130 Avenue S.E. Half Interchange	Interchange	42	50.9%
Stoney Trail/32 Avenue N.E. Flyover	Interchange	41	50.9%
Stoney Trail/60 Street N.E. Interchange	Interchange	30	50.9%
Stoney Trail/61 Avenue S.E. Flyover twinning	Interchange	22	50.9%
Stoney Trail/64 Avenue N.E. Flyover	Interchange	36	50.9%
Stoney Trail/Memorial Drive Flyover	Interchange	60	50.9%
Trans-Canada/133 Street Half Interchange	Interchange	50	50.9%
Trans-Canada/Garden Road Interchange	Interchange	45	50.9%
Transit/Fire/Active Modes Flyover from Valley Ridge to Greenwich	Interchange	19	50.9%
17 Avenue S.W. connecting Aspen Landing to future Springbank Hill lands	Pedestrian Overpasses	9	50.9%
52 Street S.E. connecting Auburn Bay and Mahogany	Pedestrian Overpasses	10	50.9%
Airport Trail east of Metis Trail, connecting Cityscape and Savannah	Pedestrian Overpasses	10	50.9%
Bow River connecting Cranston and Wolf Willow/Fish Creek Park	Pedestrian Overpasses	20	50.9%
Bow River connecting Legacy and Cranston	Pedestrian Overpasses	23	50.9%
Bow River crossing at Bearspaw	Pedestrian Overpasses	22	50.9%
Bow Trail east of 85 Street S.W., connecting West Springs and Strathcona Park	Pedestrian Overpasses	14	50.9%
Country Hills Boulevard N.E. west of Stoney Trail, connecting North and South Cornerstone	Pedestrian Overpasses	9	50.9%
Highway 22X S.E. at canal between 104 Street S.E. and 120 Street S.E.	Pedestrian Overpasses	12	50.9%
Macleod Trail south of Stoney Trail, connecting Silverado and Chaparral	Pedestrian Overpasses	9	50.9%
Metis Trail N.E. north of Airport Trail, connecting Cityscape and Northeast Industrial	Pedestrian Overpasses	9	50.9%
Priddis Slough crossing in Silverado	Pedestrian Overpasses	19	50.9%

Project Name	Infrastructure Type	Total Cost (\$ millions)	Benefit
Rail crossing at 68 Street S.E. north of 114 Avenue S.E., in East Shepard Industrial	Pedestrian Overpasses	21	50.9%
Shaganappi Trail N.W. just north of Stoney, connecting Sherwood and Kincora	Pedestrian Overpasses	9	50.9%
Stoney Trail at 36 Street N.E., connecting the Northeast Residual Area and Stonegate Landing	Pedestrian Overpasses	13	50.9%
Stoney Trail at 69 St N.W., connecting Royal Vista and Citadel	Pedestrian Overpasses	8	50.9%
Stoney Trail between Centre Street and 11 Street N.E., connecting Keystone Hills and Coventry Hills	Pedestrian Overpasses	10	50.9%
Stoney Trail between Centre Street and 14 Street N.W., connecting Carrington and Panorama Hills	Pedestrian Overpasses	10	50.9%
Stoney Trail between Metis Trail and 60 Street N.E., connecting the Northeast Residual Area with Redstone	Pedestrian Overpasses	9	50.9%
Stoney Trail between Sarcee and Shaganappi, connecting Sherwood and Hamptons	Pedestrian Overpasses	9	50.9%
114 Avenue S.E. grade separation at CP Rail	Road Structures over rail/creek	30	50.9%
130 Avenue S.E. over Shepard Canal	Road Structures over rail/creek	20	50.9%
144 Avenue N.W. at West Nose Creek - Phase 2	Road Structures over rail/creek	21.6	50.9%
160 Avenue N.E. at CP Rail and Nose Creek Crossing	Road Structures over rail/creek	73	50.9%
160 Avenue N.W. at West Nose Creek	Road Structures over rail/creek	53	50.9%
210 Avenue S.W. grade separation at CP Rail	Road Structures over rail/creek	49	50.9%
Mountain View Road over West Nose Creek	Road Structures over rail/creek	39	50.9%
Pine Creek Crossing in South Macleod	Road Structures over rail/creek	47	50.9%
Trans-Canada widening (westbound third lane over rail)	Road Structures over rail/creek	8	50.9%
114 Avenue S.E. widening from Barlow Trail to Stoney Trail (4-6 lanes)	Road Widenings	35	50.9%

Project Name	Infrastructure Type	Total Cost (\$ millions)	Benefit
128 Avenue N.E. widening from Deerfoot Trail to Stoney Trail	Road Widening	150	50.9%
Airport Trail widening from 60 Street N.E. to 68 Street N.E. (2-4 lanes)	Road Widening	23	50.9%
Country Hills Boulevard N.E. widening from Barlow Trail to Coventry Boulevard (4-6 lanes)	Road Widening	125	50.9%
Glenmore Trail widening from Stoney Trail to 800 metres east of 116 Street East (2-6 lanes)	Road Widening	49	50.9%
Highway 566 widening from Range Road 15 (Panorama Road) to QEII (2-4 lanes)	Road Widening	23.5	50.9%
Metis Trail N.E. widening from Airport Trail to Stoney Trail (4-6 lanes)	Road Widening	17	50.9%
Shared Benefit Infrastructure			
5A Network (established area pathways and bikeways)	5A Network	35	21.4%
162 Avenue S.W. BRT from Shawnessy to S.W. Ring Road	BRT Infrastructure	65	21.4%
52 Street East BRT from Saddle Towne to Seton	BRT Infrastructure	71	21.4%
MAX 301 BRT from Downtown to Aurora Park	BRT Infrastructure	67	21.4%
Route 305 Improvements	BRT Infrastructure	35	21.4%
16 Avenue N.E./68 Street N.E. Interchange	Interchange	54	21.4%
Deerfoot Trail/Peigan Trail/Barlow Trail Interchange (Ultimate)	Interchange	119	21.4%
Glenmore Trail/52 Street S.E. Interchange	Interchange	101	21.4%
Glenmore Trail/Barlow Trail S.E. Interchange	Interchange	40	21.4%
Peigan Trail/26 Street S.E. Interchange	Interchange	43.25	21.4%
Peigan Trail/36 Street S.E. Interchange	Interchange	55.25	21.4%
Peigan Trail grade separation at CN Rail Crossing	Interchange	59	21.4%
Sarcee Trail S.W./Bow Trail Interchange	Interchange	169	21.4%
Beddington Trail N.W., connecting Country Hills and Sandstone Valley	Pedestrian Overpasses	12	21.4%
Deerfoot Trail connecting Douglasdale with Shepard Industrial	Pedestrian Overpasses	14	21.4%
Deerfoot Trail just north of Stoney Trail S.E., connecting McKenzie Lake and McKenzie Towne	Pedestrian Overpasses	18	21.4%
Deerfoot Trail north of 130 Avenue S.E., connecting Douglasdale and East Shepard Industrial	Pedestrian Overpasses	19	21.4%
Deerfoot Trail south of 130 Avenue S.E., connecting McKenzie Lake and McKenzie Towne	Pedestrian Overpasses	16	21.4%
LRT crossing in Martindale	Pedestrian Overpasses	12	21.4%

Project Name	Infrastructure Type	Total Cost (\$ millions)	Benefit
Shaganappi Trail N.W. at Nose Hill Park	Pedestrian Overpasses	8	21.4%
Shaganappi Trail N.W. connecting Hamptons and Hidden Valley	Pedestrian Overpasses	7	21.4%
Stoney Trail east of Macleod Trail, connecting Chaparral and Sundance	Pedestrian Overpasses	16	21.4%
WID canal crossing at 72 Avenue S.E., connecting Foothills and Ogden	Pedestrian Overpasses	3	21.4%
Beddington Trail N.W. widening from Country Hills Boulevard N.W. to Stoney Trail (4-6 lanes)	Road Widenings	22	21.4%
Bow Trail S.W. widening from 69 Street to Stoney Trail (4-6 lanes)	Road Widenings	13	21.4%
Peigan Trail widening from Barlow Trail to Stoney Trail (2-4 lanes)	Road Widenings	53	21.4%
Sarcee Trail S.W. widening from Bow Trail to Trans-Canada (4-6 lanes)	Road Widenings	149	21.4%
Sarcee Trail S.W. widening from Glenmore Trail to Bow Trail (4-6 lanes)	Road Widenings	73	21.4%
Shaganappi HOV from Bowness Road to Stoney Trail	Road Widenings	179	21.4%
Shaganappi Trail N.W. widening from Stoney Trail to Country Hills Boulevard (6-8 lanes)	Road Widenings	7	21.4%
Total Cost of Infrastructure Being Levied For (\$ millions)		5,324.8	

Attachment 2: Infrastructure Not Included in the Levy

Project Name	Infrastructure Type	Total (\$ millions)
Westbrook to Mount Royal University Transit Connection	BRT Infrastructure	345
14 Street N.W./Country Hills Boulevard Interchange	Interchange	63
14 Street S.W./Anderson Road Interchange	Interchange	103
16 Avenue N.E./19 Street N.E. Interchange (with Revisions to 16 Avenue N.E./Barlow Trail Interchange)	Interchange	72
26 Avenue S.E. Connector/Blackfoot Trail Interchange	Interchange	TBD
Anderson Road/Macleod Trail directional ramps	Interchange	TBD
Anderson Road S.E./Acadia Drive Interchange	Interchange	66
Anderson Road S.E./Bonaventure Drive Interchange	Interchange	64
Anderson Road S.E./Woodpark Boulevard Interchange	Interchange	TBD
Anderson Road S.W./24 Street SW Interchange	Interchange	68
Anderson Road S.W./Elbow Drive Interchange	Interchange	127
Crowchild Trail/12 Mile Coulee Road Interchange	Interchange	77

Project Name	Infrastructure Type	Total (\$ millions)
Crowchild Trail/24 Avenue N.W. Interchange and C/D System (including new bridge over University Drive)	Interchange	TBD
Crowchild Trail/University Drive/16 Avenue N.W. - Upgrade/Revise Interchanges	Interchange	TBD
Deerfoot Trail/16 Avenue N.E. Interchange 3rd level	Interchange	160
Deerfoot Trail/17 Avenue S.E. EBL directional and basketweaves between Memorial and 17 Avenue S.E.	Interchange	145
Deerfoot Trail/32 Avenue N.E. Interchange Revisions	Interchange	10
Deerfoot Trail/50 Avenue S.W. Interchange	Interchange	TBD
Deerfoot Trail/Anderson Road/Bow Bottom Trail Interchange (Ultimate)	Interchange	255
Deerfoot Trail/Beddington Trail/11 Street N.E. Interchange (Ultimate)	Interchange	109
Deerfoot Trail/Glenmore Trail/Blackfoot Trail Interchange (Ultimate)	Interchange	330
Deerfoot Trail/Glenmore Trail Interchange Improvements	Interchange	69
Deerfoot Trail/McKnight Boulevard N.E. Interchange Upgrade	Interchange	5
Deerfoot Trail/Memorial Drive Interchange (Ultimate)	Interchange	115
Deerfoot Trail CD System between Glenmore Trail and Peigan Trail (including twin Calf Robe Bridge)	Interchange	346
Glenmore Trail/Richard Road S.W. Interchange	Interchange	59
Macleod Trail/25 Avenue Interchange	Interchange	TBD
Macleod Trail/Heritage Drive Interchange	Interchange	116
Macleod Trail/Lake Fraser Gate Interchange	Interchange	58
McKnight Boulevard N.E./19 Street Interchange	Interchange	53
McKnight Boulevard N.E./47 Street Interchange	Interchange	41
McKnight Boulevard N.E./68 Street Interchange	Interchange	60
McKnight Boulevard N.E./Aviation Boulevard (12 Street N.E.) Interchange	Interchange	48
McKnight Boulevard N.E./Barlow Trail Interchange	Interchange	64
McKnight Boulevard N.E./Falconridge Boulevard Interchange	Interchange	63
Sarcee Trail S.W./Richmond Road Interchange	Interchange	106
Shaganappi Trail N.W./16 Avenue Interchange	Interchange	126
Shaganappi Trail N.W./Country Hills Boulevard Interchange	Interchange	75
Shaganappi Trail N.W./Edgemont Boulevard Interchange	Interchange	63
Shaganappi Trail N.W./John Laurie Boulevard Interchange	Interchange	65
Shaganappi Trail N.W./Northland Drive Interchange	Interchange	50

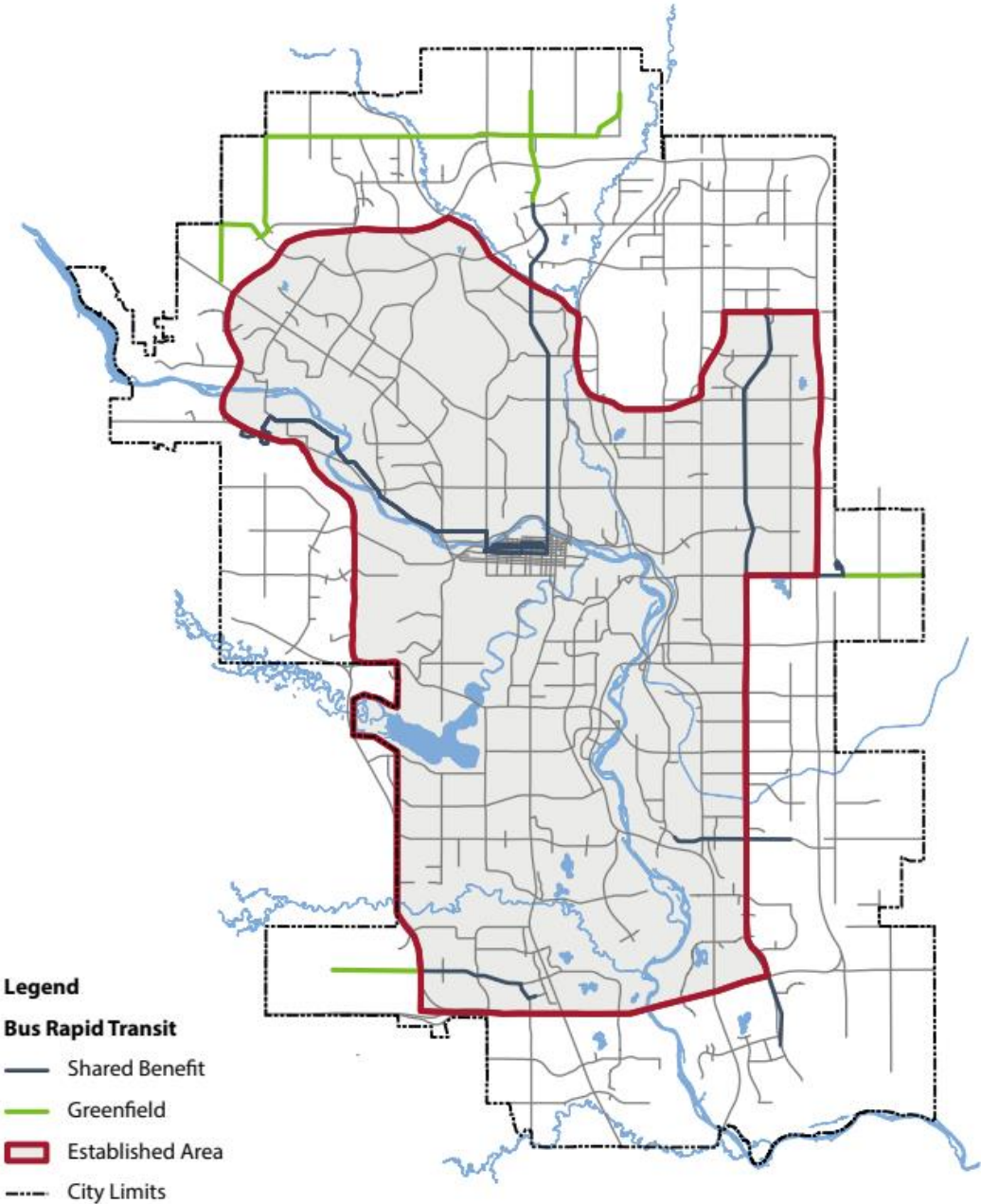
Project Name	Infrastructure Type	Total (\$ millions)
Southland Drive Basketweave at Deerfoot Trail	Interchange	64
Route 201 Red Line LRT extension to 210 Avenue South and Maintenance Facility	LRT	819
Route 202 Blue Line LRT extension from 128 Avenue N.E. to Stonegate N.E.	LRT	160
Route 202 Blue Line LRT extension from Saddletowne to 128 Avenue N.E. Station in Redstone	LRT	132.9
Route 202 Blue Line LRT extension from 69 Street S.W. to 85 Street S.W.	LRT	263
Crowchild Trail widening bridge over Bow River (6-8 lanes) Crowchild Trail/5 Avenue N.W. - Flyover Crowchild Trail/Kensington Road N.W. - Interchange	Major Structures	TBD
Glenmore Causeway widening to 8 core lanes with CD System Glenmore/Crowchild Interchange (Ultimate) Glenmore Trail/14 Street Interchange (Ultimate)	Major Structures	TBD
16 Avenue N.W. connecting Canada Olympic Park to Bowness	Pedestrian Overpasses	12
Anderson LRT Station across Macleod Trail at north end of site	Pedestrian Overpasses	10
Bow River crossing at Calf Robe Bridge	Pedestrian Overpasses	TBD
Bow River crossing at Inglewood Grove S.E.	Pedestrian Overpasses	TBD
Bow River crossing at Parkdale Boulevard N.W.	Pedestrian Overpasses	TBD
Crossing 14 Street S.W. at 90 Avenue	Pedestrian Overpasses	TBD
Crossing 14 Street S.W. at 96 Avenue	Pedestrian Overpasses	TBD
Crossing 17 Avenue at Sirocco LRT	Pedestrian Overpasses	TBD
Crossing 37 Street S.W. at Glenmore Trail	Pedestrian Overpasses	TBD
Crossing Blackfoot Trail S.E. at 11 Street	Pedestrian Overpasses	TBD
Crossing Canal/CN Rail / Ogden Road	Pedestrian Overpasses	TBD
Crossing Crowchild Trail S.W. at 22A Street	Pedestrian Overpasses	TBD
Crossing Crowchild Trail S.W. at Sunset Avenue	Pedestrian Overpasses	TBD
Crossing Deerfoot Trail S.E. at 46 Avenue	Pedestrian Overpasses	TBD
Crossing Glenmore Trail S.W. at Henwood Street	Pedestrian Overpasses	TBD
Crossing James McKeivitt Road S.W.	Pedestrian Overpasses	TBD
Crossing John Laurie Boulevard N.W. at Charleswood Drive	Pedestrian Overpasses	TBD
Crossing McKnight Boulevard N.E. at 60 Street	Pedestrian Overpasses	TBD
Crossing Rail to Dartmouth Road in Manchester	Pedestrian Overpasses	TBD

Project Name	Infrastructure Type	Total (\$ millions)
Crossing Sarcee Trail N.W. at Edgeland Rise	Pedestrian Overpasses	TBD
Crossing Shaganappi Trail N.W. at Edgemont Boulevard	Pedestrian Overpasses	TBD
Crossing Shawnessy Blvd S.W. at Millrise Crescent	Pedestrian Overpasses	TBD
Crossing Tsuut'ina Trail S.W. at Cedardale Bay S.W.	Pedestrian Overpasses	TBD
Deerfoot Trail at 40 Avenue N.E.	Pedestrian Overpasses	9
Deerfoot Trail at Beddington Trail N.E.	Pedestrian Overpasses	12
Edgemont Ravine	Pedestrian Overpasses	TBD
Elbow River crossing at 50 Avenue S.W.	Pedestrian Overpasses	TBD
LRT/CPR tracks from Shalom Way to Shawmeadows Rise S.E.	Pedestrian Overpasses	17
Macleod Trail north of 25 Avenue South, Erlton to LRT station	Pedestrian Overpasses	16
Nose Creek, 32 Avenue N.E.	Pedestrian Overpasses	4
Rail crossing at 34 Avenue S.E.	Pedestrian Overpasses	TBD
Rail crossing at 78 Avenue S.E. in Ogden	Pedestrian Overpasses	TBD
Rail crossing at Penedo Way	Pedestrian Overpasses	TBD
Airport Transit Connector - Blue Line to Airport	People Mover	585
Airport Transit Connector - Green Line to Airport	People Mover	750
14 Street S.W. widening from 90 Avenue to Anderson Road (4-6 lanes)	Road Widenings	TBD
14 Street S.W. widening from Anderson Road to Canyon Meadows Drive (2-4 lanes)	Road Widenings	17
16 Avenue N.E. widening from Barlow Trail to Stoney Trail (4-6 lanes)	Road Widenings	36
16 Avenue N.W. widening from Shaganappi Trail to Sarcee Trail N.W. (4-6 lanes), with 6-lane bridge and CP underpass	Road Widenings	180
50 Avenue S.W. 4-lane extension from Macleod Trail to Deerfoot Trail S.E.	Road Widenings	161
52 Street E widening from 17 Avenue S.E. to McKnight Boulevard N.E. (HOV Corridor)	Road Widenings	TBD
52 Street SE widening from 17 Avenue S.E. to Peigan Trail S.E. (4-6 lanes)	Road Widenings	TBD
Anderson Road S.E. widening from Bonaventure Drive to Deerfoot Trail (2-3 east-bound lanes)	Road Widenings	9
Barlow Trail N.E. widening from Memorial Drive to 16 Avenue (4-6 lanes)	Road Widenings	38
Bow Trail S.W. widening from 37 Street to Sarcee Trail (6 lanes)	Road Widenings	68
Deerfoot Trail widening from Memorial Drive to Stoney Trail (6-8 lanes)	Road Widenings	196

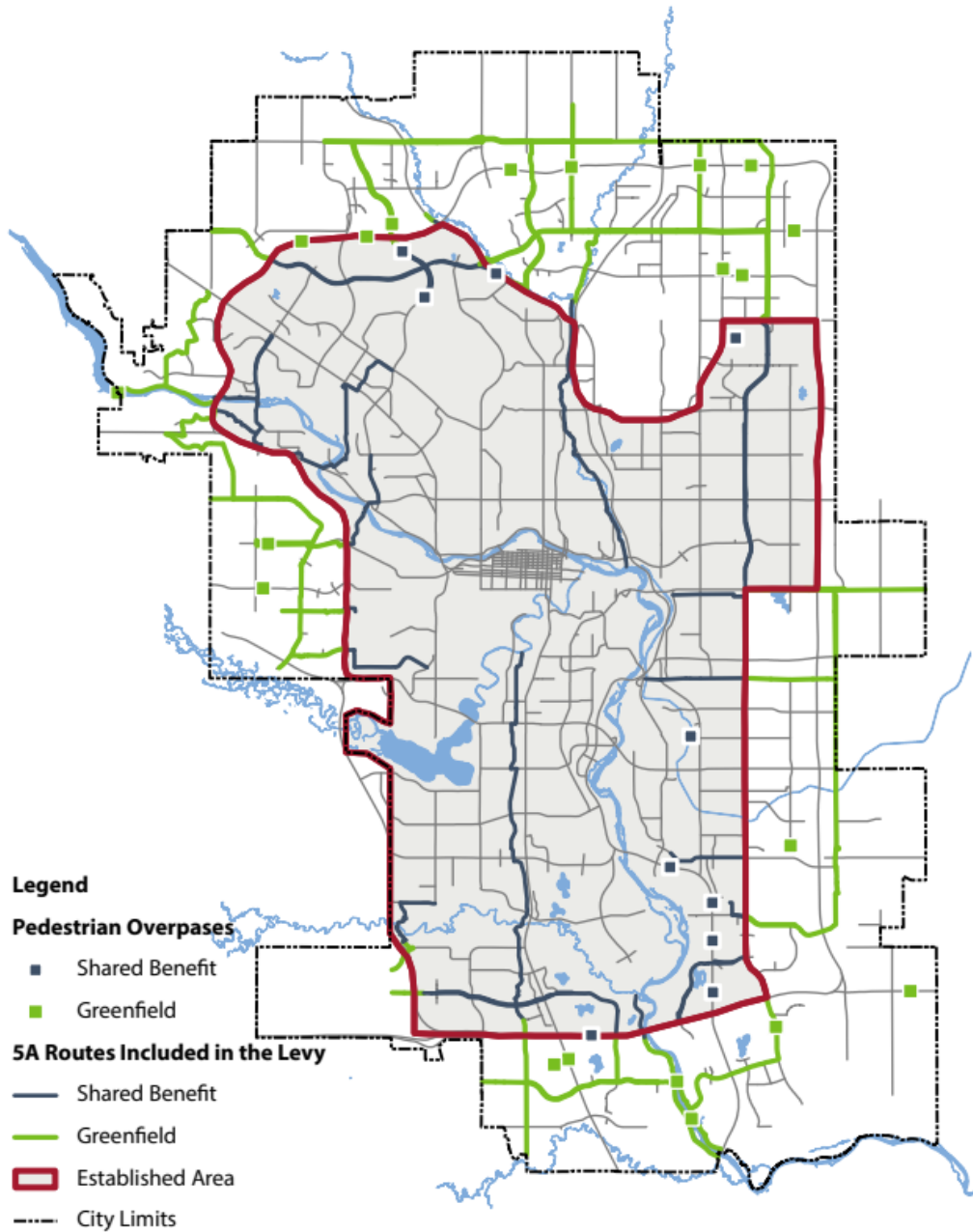
Project Name	Infrastructure Type	Total (\$ millions)
McKnight Boulevard N.E. widening from Edmonton Trail to 4 Street N.W. (4-6 lanes)	Road Widenings	60
Total Not Eligible for Levy Funding		7,194.9

Attachment 3: Maps

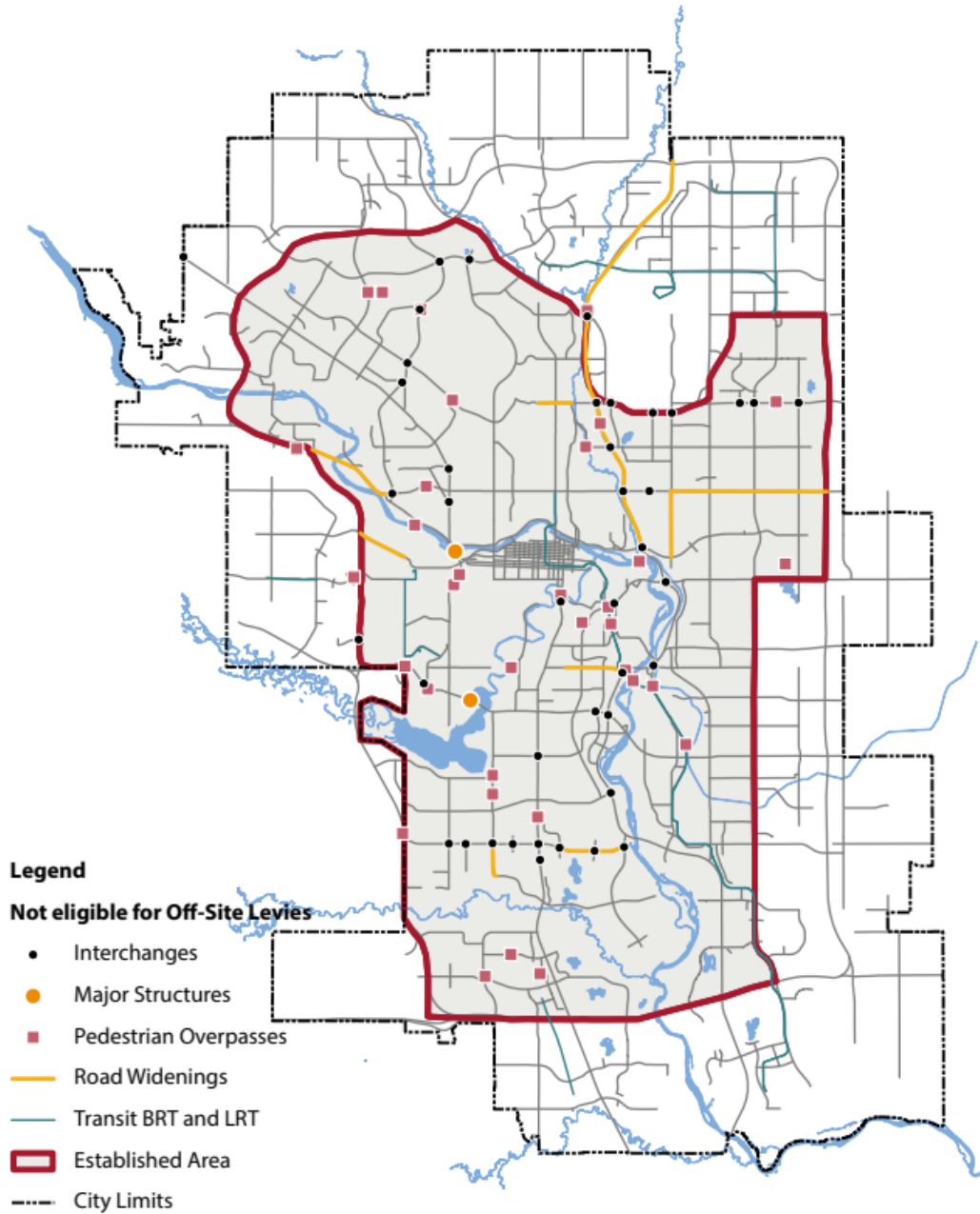
Bus Rapid Transit included in the Levy



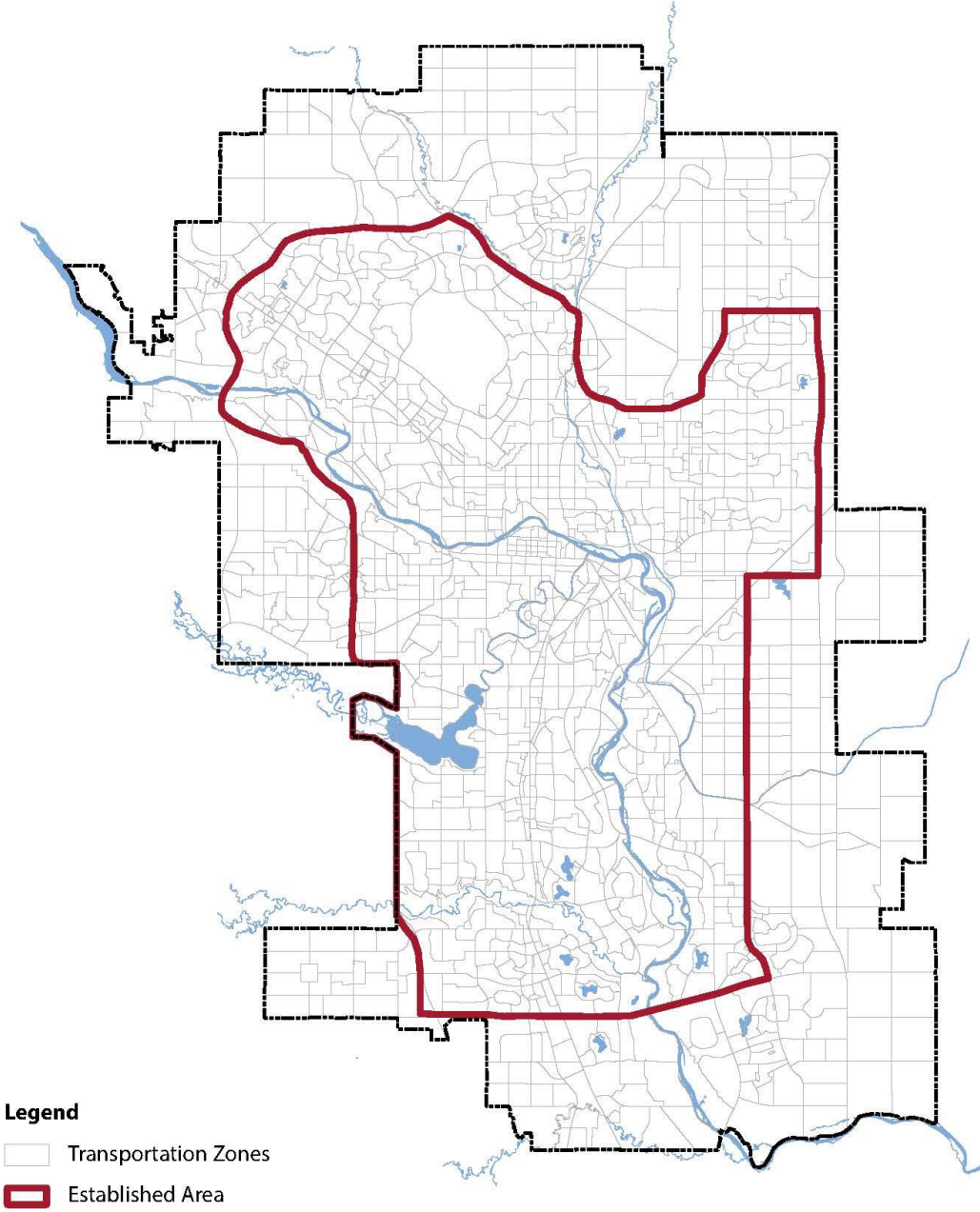
Pedestrian Overpasses and Leviable 5A Routes



Infrastructure Not Included in the Levy



Transportation Zones



Legend

- Transportation Zones
- Established Area

