

Transportation Improvement and Investment Plan

The Transportation Improvement and Investment Plan (TIIP) identifies projects that will improve and expand the transportation system. The identified projects attempt to provide a more balanced, well-connected and robust network. They include improvements for all modes as well as an expansion of the road network to accommodate future growth. This section outlines the projects according to the main mode they intend to serve. It provides planning level cost estimates and a planning horizon corresponding to when each project should be implemented. The projects include the road network, transit and active transportation modes.

The planning horizons used in the development of Connecting Airdrie correspond to the 65,000, 80,000 and 110,000 population levels. The 2011 Comprehensive Growth Strategy (CGS) projects a moderate growth rate on which population and time horizons can be harmonized to form a moderate growth scenario. Due to high population growth rates in recent years the TIIP also considers a high growth scenario. In the high growth scenario, the above population levels would be reached sooner. This is summarized in **Table 4**.

Road Network

Connecting Airdrie presents an aspirational road network developed in light of the vision consistent with the AirdrieONE Sustainability Plan. Project identification was guided by connectivity and accessibility principles intended to enhance local economic activity, activate the city centre and provide a more sustainable transportation system. Network modelling results supplemented this process and provided clearer indication as to the planning horizon at which the projects should be implemented.

However due to the large expected growth, additional network link and roadway capacity expansion projects are also desired.

Table 5 and **Figure 20** present the projects according to planning horizon. It also delineates between projects that build toward the aspirational network and those that accommodate peripheral growth. The aspirational network improvements will require that the City provides direction and negotiates with developers to amend approved plans.

Table 4: Growth Scenarios

Planning Horizon Population	Planning Horizon Year	
	Moderate Growth	High Growth
65,000	2024	2020
80,000	2035	2025
110,000	2057	2030+

Table 5: Roadway Capital Improvements

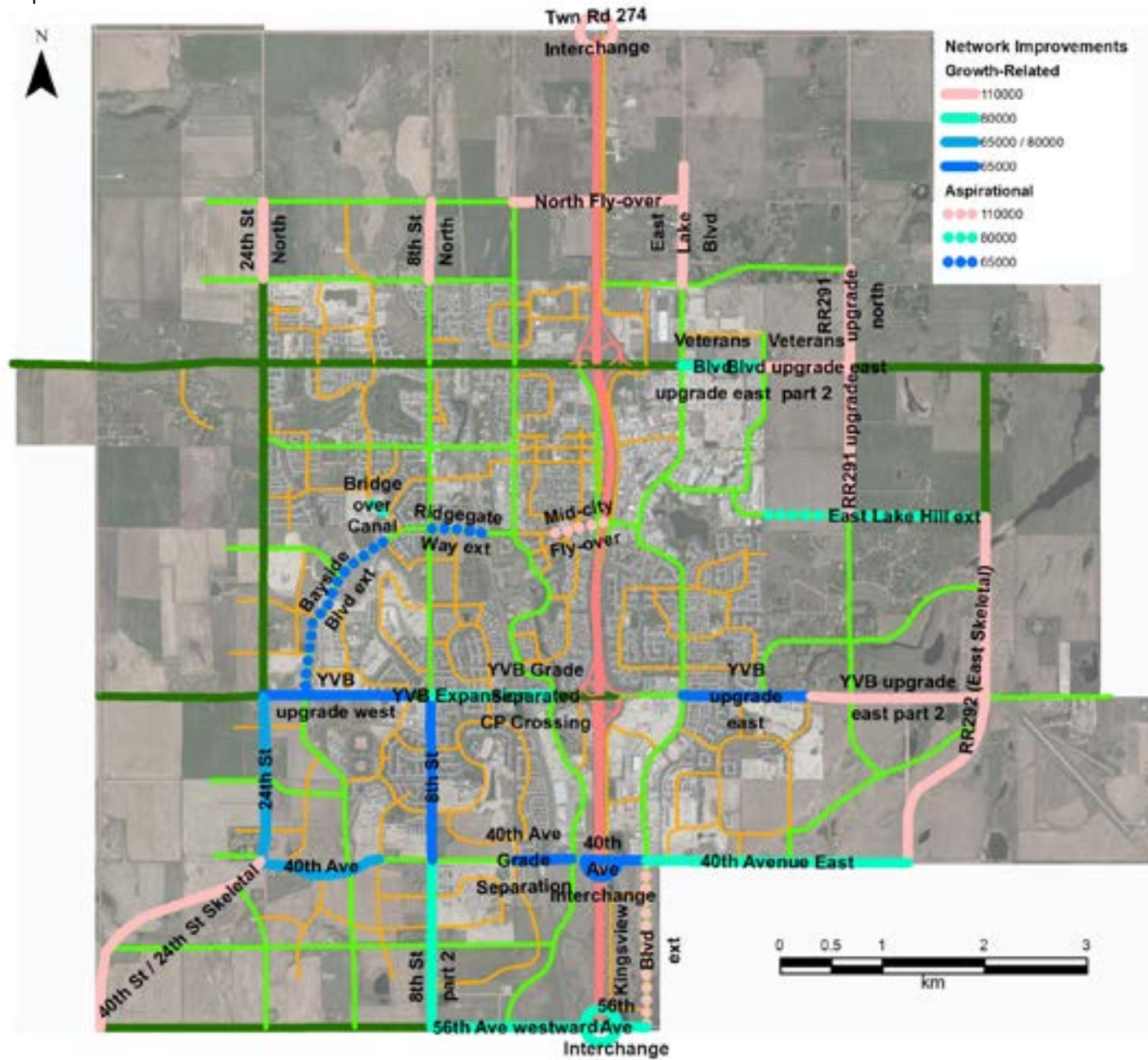
Planning Horizon	Project	Location	Approx. X-Section	Cost Estimate	Responsibility
Growth-Related Projects					
65,000	YVB upgrade east	Kings Heights Gate to Ravenswood View	Upgrade to 2 lanes urban + ped	\$3.8 M	Developers(s)
65,000	YVB upgrade west	Bayside Gate to 24th St	Upgrade to 4 lanes urban + ped	\$7.0 M	Developers(s)
65,000	40th Ave Interchange ¹	40th Ave and Hwy 2. Includes 40th Ave eastward to Kingsview Blvd	Southbound Movements only	\$46.0 M	Airdrie/Province/Developers(s)
65,000	8th St	YVB to 40th Ave	Upgrade to 4 lanes urban divided + ped	\$4.0 M	Developers(s)
65,000	40th Ave with Grade Separated CP Crossing	Reynolds Gate to Main St	New 2 lanes urban + ped	\$10.0 M	Developers(s)
65,000/ 80,000	40th Ave	From Windsong Blvd to 24th St	New 2 lanes urban + ped	\$7.0 M	Developers(s)
65,000/ 80,000	24th St	YVB to future 40th Ave	New 2 lanes urban, ROW for 6	\$7.0 M	Developers(s)
80,000	56th Ave Interchange	56th Ave and Hwy 2. Includes 56th Ave eastward to Kingsview Blvd ext.	Full Movements	\$46.0 M	Province/Developers(s)
80,000	56th Ave westward	Hwy 2 to 8th St	Upgrade to 2 lanes urban, ROW for 6	\$7.5 M	Developer(s)
80,000	YVB Grade Separated CP Crossing	Yankee Valley Blvd at CP Railway tracks	Expand to 6 lanes	\$20.0 M	Airdrie/Developers(s)
80,000	YVB expansion	8th St to Main St	Expand to 6 lanes	\$4.5 M	Developers(s)
80,000	Veterans Blvd upgrade east	East Lake Blvd to East Lake Rd	Upgrade to 4 lanes urban divided + ped	\$4.5 M	Developers(s)
80,000	8th St	40th Ave to 56th Ave	New 4 lanes urban divided + ped	\$8.0 M	Developers(s)
80,000	40th Avenue East	Connect Kingsview Blvd to East Skeletal	New 2 lanes urban divided + ped	\$11.5 M	Developers(s)
110,000	RR292 (East Skeletal)	East Lake Hill extension to Regional Connection ²	New 4 lanes urban	\$18.5 M	Developers(s)

¹ The implementation of the 40th Ave interchange can be delayed and the 56th Avenue interchange prioritized, depending on the outcomes of additional functional planning.

² This connection and its exact location will depend on regional transportation planning and will require cross-jurisdictional collaboration and negotiation.

Planning Horizon	Project	Location	Approx. X-Section	Cost Estimate	Responsibility
110,000	RR291 upgrade	From East Lake Hill extension to Veterans Blvd	Upgrade to 2 lanes urban + ped	\$4.0 M	Developers(s)
110,000	YVB upgrade east part 2	Ravenswood View to East Skeletal	Upgrade to 4 lanes urban + ped	\$6.0 M	Developers(s)
110,000	40th St (RR13) / 24th St Skeletal	From 40th Ave to 56th Ave	New 4 lanes urban, ROW for 6	\$14.5 M	Developers(s)
110,000	RR291 upgrade north	Veterans Blvd to 800 m north	Upgrade to 2 lanes urban divided + ped	\$4.5 M	Developers(s)
110,000	East Lake Blvd	Highland Park Lane to 800 m north	Upgrade to 2 lanes urban undivided + ped	\$4.5 M	Developers(s)
110,000	24th St north	Veterans Blvd to 1600 m north	Upgrade to 2 lanes urban divided + ped	\$9.0 M	Developers(s)
110,000	8th St north	Veterans Blvd to 1600 m north	Upgrade to 2 lanes urban undivided + ped	\$9.0 M	Developers(s)
110,000	North Fly-over	Located between Veterans Blvd and Twp Rd 274	New 2 lanes + ped & cycling	\$TBD	Airdrie
110,000	Twp Rd 274 Interchange	Twp Rd 274 Ave and Hwy 2.	TBD	\$46.0 M	Province/Developers(s)
110,000	Veterans Blvd upgrade east Part 2	East Lake Rd to RR291	Upgrade to 4 lanes urban divided + ped	\$4.5 M	Developers(s)
Aspirational Network Improvements					
65,000	Ridgegate Way extension	Connect Railway Gate with Tower Lane Dr / Ridgegate Way	New 2 lanes + ped & cycling	\$3.0 M	Airdrie
65,000	Bayside Blvd extension	Connect current Bayside Blvd to Yankee Valley Blvd	New 2 lanes + ped & cycling	\$TBD	Airdrie/Developers(s)
80,000	East Lake Hill extension	Connect to future RR291	New 2 lanes	\$6.0 M	Airdrie/Developers(s)
80,000	Bridge over Canal	Connect Canals Blvd with Canoe Ave	New 2 lanes + ped & cycling	\$4.5 M	Airdrie/Developers(s)
110,000	Kingsview Blvd extension	56th Ave to Sharp Hill Way	New 2 lanes	\$8.0 M	Airdrie/Developers(s)
110,000	Mid-city Fly-over	Approximately connecting Allen St to East Lake Cres	New 2 lanes + ped & cycling	\$TBD	Airdrie

Figure 20: Roadway Capital Improvements



The estimates presented in the above table were prepared using index prices from Alberta Transportation's "Weighted Unit Price Averages" list for Alberta's Southern Region for 2013. Prices for structures relied on Alberta Transportation's "Bridge Construction Projects Monthly/Annual Cost" report for 2013. Costs were supplemented using the 2012 edition of the RSMeans "Heavy Construction Cost Data" for 2012 and adjusting for exchange rates and price escalation. The quantities used were derived from conceptual descriptions of the project and compared with other projects in the Calgary area. The total costs also include assumptions for right of way acquisitions where required, and assumed approval of the required at grade railway crossings.

It is important to note that the amounts will be refined as the planning cycle moves forward into the conceptual layout phase, and as the TIIP is reconciled with the drainage and utilities Capital Investment Plan (CIP). This will allow the City to identify possible cost efficiencies or other projects needed to complete the functionality of the infrastructure system as a whole. Additionally, once the entire infrastructure CIP is reconciled, sustainability policies and measures will need to be identified (such as the use of perpetual pavements or LID drainage best practices) which might impact these capital cost investments, but would help improve life cycle expenditure.

Transit

Transit capital expenditures are based on a shift of 11% of auto trips to sustainable modes. Transit would consist of 6% of these auto trips

to provide a realistic basis. The remaining 5% of these trips would be undertaken with active transportation modes. This is consistent with the 2008 Transportation Master Plan in which it was recommended that an "11% traffic diversion to public transit or alternate modes of transportation" be included within the overall traffic model. This also reflects the modelling undertaken to show how the aspirational network performs given this mode shift.

As well, the 2008 TMP contained strong recommendations on improving transit service throughout the community by:

- Rethinking the layout of new subdivisions to make them more suited to transit operations.
- Making transit facilities and connectivity a priority in neighbourhood planning.
- Making provision for transit centres in Neighbourhood Structure Plans and City budgets.
- Consideration of bus lanes, queue jump lanes and transit priority signals on major corridors.
- Creating pedestrian-friendly environments throughout and between neighbourhoods.
- Prioritizing transit access to major nodes and centres.
- Creating mixed use nodes within neighbourhoods to foster greater use of non-vehicular modes.

To date there has been no progress on achieving these recommendations. In addition to the 2008 transit recommendations, the following improvements are required.

- Alter building setback requirements and building parking lot locations to allow short, easy access between transit stops and building entrances. Buildings should be located directly adjacent to, and front onto, the roadway.
- Reserve the use of bus bays for major timing points (schedule recovery) or transfer locations.
- Increase allowable residential density near transit stops, as well as allowing more intense land use.
- Consider a relaxation in minimum parking requirements for developments near major existing or future transit stops.
- Stronger branding, municipal support, public awareness and information campaigns as well as more information posted at transit stops (schedule, connections, locality maps, etc).
- Consider adopting the Calgary Transit Friendly Design Guide.

From a transit system perspective, to provide the required level of transit service, Airdrie Transit will need to expand significantly. Based on a comparison with Red Deer, St Albert, Strathcona County, Lethbridge and the Canadian average for communities between 50,000 and 150,000 population it is reasonable that Airdrie Transit could develop from achieving 2 transit trips per capita today to 30 transit trips per capita in 10 years, especially in a high growth scenario. Airdrie Transit would expand from carrying 150,000 passengers per year to 2 million trips per year.

A 10 year transit plan for a community population of at least 65,000 would require the capital investments as shown in **Table 6**:

Active Transportation

Many of the active transportation improvements are intended to fill continuity gaps in the multiuse pathway or sidewalk networks. Many additional improvements are minor in nature and involve realigning pathways and their connections to provide more direct routes. The improvements also provide a continuous network structure that supports the hierarchical primary bicycle network.

Improvements have been oriented toward key destinations such as schools, main commercial zones and important bus stops. To improve active mode accessibility to schools, several redevelopment opportunities have been identified that would require acquisition of property to accommodate a multiuse path.

All of the proposed projects (**Figure 19**: Active Transportation Improvements) should occur within the 10 year timeframe of the TIIP, especially under a high growth scenario. As there are a multitude of projects, the following is a high-level guideline to determine which projects are of higher priority:

- Projects around schools
- Projects intended to make the city centre more accessible

Table 6: Transit Capital Investments

Vehicle or Facility	Quantity	Total
Bus Fleet	40 (buses)	\$16.0 M
Park & Ride and Bus Intercept Facilities	2 sites totaling 400 stalls (approx. 4 acres)	\$6.0 M
Bus Storage and Maintenance Facility	50 bus capacity	\$12.0 M
Transit Zone Improvements	\$300,000/yr over 10 yrs	\$3.0 M

- Projects that are on the primary bicycle network routes
- Connections to transit stops and facilities
- Improvements and missing links on the multiuse path along the west side of the railway and Nose Creek in the north.

The latter project above poses a substantial opportunity to provide a very direct connection from the south of Airdrie to the north which runs adjacent to the city centre. Due to its potential directness, continuity and near total separation from traffic, this kind of path allows for distance and even time advantages over motorized modes. Users will come to understand these advantages and make use of such paths. This should become the active transportation network’s spine. Although many improvements are being recommended, investment costs for each project are relatively small. **Table 7** groups similar projects and their combined total cost.

Table 7: Active Transportation Capital Investments

Improvement Type	Qty	Cost Estimate
Bike Lanes ⁵	6500 m	\$750,000
Multiuse Path	8570 m	\$800,000
Multiuse Crossing	3	\$40,000
Multiuse Bridge	3	\$850,000
Bicycle Path ⁶	1650 m	\$150,000
Multiuse Path & Midblock Crossing ⁷	600 m	\$55,000
Striping ⁸	1	\$13,000
Sidewalk	100 m	\$5,000
Midblock Crossing	2	\$3,000

⁵ The cost to construct bike lanes varies wildly. This is the median cost based on a range of projects in North America. However, they ranged from \$4.00 to \$340.00 per linear meter depending on the quality of the facility. Simple striping and stenciling would be on the low end of this range.

⁶ The difference between a bicycle path and multiuse path is effectively only in designation. Bicycle Paths have been designated along the primary bicycle route network where a multiuse path was not present, but an adjacent sidewalk was.

⁷ Similar to note 2 above: This uses the same unit price as a multiuse path, but denotes a path that connects to (and should be constructed concurrently with) a midblock crossing.

⁸ This differs from a bike lane in that these are found within parking lots that provide connections to multiuse paths. The striping would generally serve to improve way-finding for cyclists and alert car drivers that special attention is required.