

## Transportation Funded and Unfunded Infrastructure Lists 2015-2024

The figures in this attachment show all of the projects and annual programs that are required for construction between 2015 and 2024 (approximately \$5.6 billion in value). Each figure indicates which projects or programs will receive full or partial funding, and which will continue to be unfunded. The priority of both funded and unfunded projects is also provided, which will assist Council and Administration in allocating new sources of funding when any become available.

Figure 2.1 is a map showing the location of each funded and unfunded project.

Figures 2.2 through 2.6 provide a table showing the projects and annual programs broken down by infrastructure category. Each table provides the priority, planned construction date, funded and unfunded costs, and estimated operating cost impact. The figures are:

- Figure 2.2 – Mobility Hubs and Transit Corridors
- Figure 2.3 – Goods Movement and Traffic Growth
- Figure 2.4 – Transportation Network Optimization
- Figure 2.5 – Lifecycle and Asset Management
- Figure 2.6 – Support Functions

The prioritization levels for each of the projects in the above figures are as follows:

- APPROVED – the project has received previous budget approval from Council.
- REQUIRED – the project must be undertaken to fulfill Council direction, or to support other projects identified in the plan.
- HIGH / MEDIUM – reflects the relative priority of all other projects within the plan (Low priority projects fall outside the 10-year Investing in Mobility horizon).

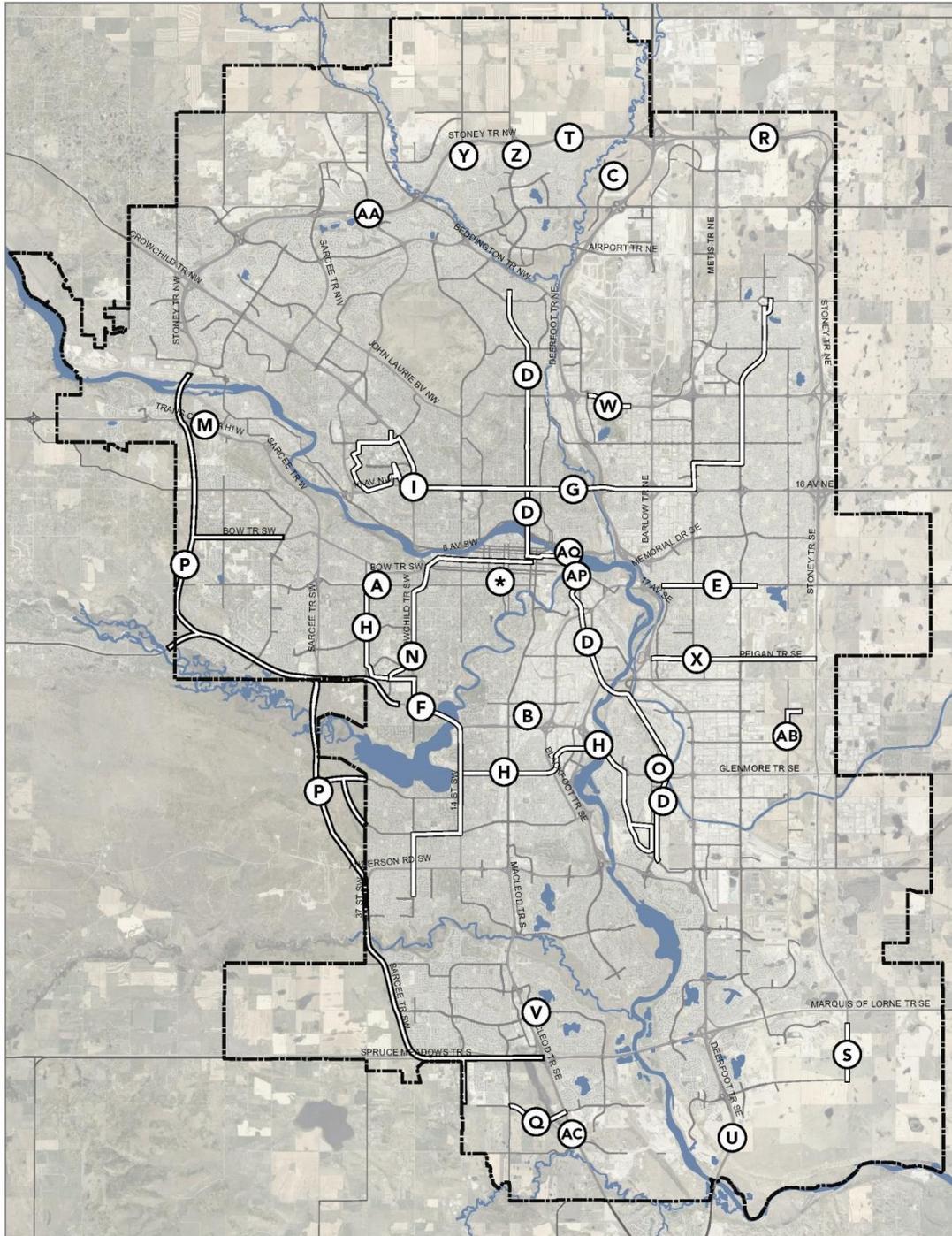
Figure 2.7 summarizes the estimated operating cost increases (excluding new transit revenues from the rapid transit corridors) that are shown in Figures 2.2 through 2.6.

Figure 2.8 shows the Flood-Resiliency Projects that have been submitted either to the Province or to Council for funding. Currently, these projects are being treated independently from the rest of the Investing in Mobility list. Projects that do not receive funding from the Province or from other Council funding sources will be blended into the four main infrastructure categories during the next update of Investing in Mobility, and will be prioritized alongside all other candidate projects.

As outlined in the TT2014-0308 cover report, Administration recommends that Council approve the funded and unfunded lists contained in these figures, and that they be used as the basis for developing Transportation's capital budget for Action Plan 2015-2018.

FIGURE 2.1 – FUNDED PROJECTS

OVERVIEW MAP OF FUNDED PROJECTS



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**FIGURE 2.2 – MOBILITY HUBS AND TRANSIT CORRIDORS**

MAP #	PROJECT	PRIORITY	DATE	FUNDED* (\$ millions)	UNFUNDED (\$millions)	Est. Operating Impact [Year] (\$ thousands)
-	Train Cars for LRT (Growth)	Required	2016-2018	\$66	\$80	\$1,500 [2018+]
A	Westbrook Transit Operation Control Centre (OCC)	Required	2015-2017	\$25	\$7	\$225 [2016+]
B	Chinook Station Transit Oriented Development (TOD)	Required	2015-2016	\$20	-	\$10 [2016+]
C	Bus Maintenance Facilities / Stoney Maintenance Facility	High	2015-2024	\$108	\$133	TBD
D	Green Line Program	High	2015-2022	\$524	\$150	\$6,125 [2022+]**
E	17 Avenue S.E. Transitway	High	2015-2022	\$98	-	\$600 [2022+]**
F	Southwest Transitway	High	2015-2022	\$40	-	\$5,400 [2022+]**
G	North Crosstown Bus Rapid Transit (BRT)	Medium	2015-2018	\$50	-	\$10,600 [2018+]**
H	South Crosstown Bus Rapid Transit (BRT)	Medium	2015-2018	\$20	-	\$1,500 [2018+]**
I	Foothills Hopstia / Stadium / Banff Trail Transit Oriented Development (TOD)	Medium	2015-2020	\$32	-	\$40 [2020+]
-	West Campus Mobility Project	Medium	N/A	-	\$30	\$2,000 [N/A]**
-	Northeast LRT Station Enhancements	Medium	N/A	-	\$22	TBD
-	South LRT Station Enhancements	Medium	N/A	-	\$16	TBD
-	South (Red Line) LRT Extension and Maintenance Facility	Medium	N/A	-	\$350	TBD
-	Northeast (Blue Line) LRT Extension	Medium	N/A	-	\$151	\$5,100 [date TBD]**
-	Traction Power Upgrade	Required	2015-2016	\$36	-	\$1,600 [2016+]
-	Bus and Community Shuttle Purchases (Growth)	High	Ongoing	\$60	\$101	+ \$15 / year
⊛	Centre City Mobility Program	High	Ongoing	\$65	-	+ \$25 / year
-	Transit Buildings and Stations	High	Ongoing	\$10	\$18	\$50 [2015+]
-	Auxiliary Transit Vehicles	Medium	Ongoing	\$7	-	-
<b>TOTAL:</b>				<b>\$1,161</b>	<b>\$1,058</b>	

\* Pending Council approval through Action Plan budgets

\*\* Operating costs for rapid transit corridors do not include new fare revenue

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**FIGURE 2.3 – GOODS MOVEMENT AND TRAFFIC GROWTH**

MAP #	PROJECT	PRIORITY	DATE	FUNDED* (\$ millions)	UNFUNDED (\$ millions)	Est. Operating Impact [Year] (\$ thousands)
M	Trans Canada Highway and Bowfort Road Interchange	Approved	2015-2016	\$49	-	\$30 [2016+]
N	Crowchild Trail and Flanders Avenue Interchange Upgrade	Approved	2018	\$20	-	\$15 [2016+]
O	Glenmore Trail and Ogden Road Interchange	Approved	2015-2016	\$105	-	\$45 [2016+]
P	Southwest and West Ring Road Connections	Required	2015-2019	\$133	-	\$500 [2019+]
Q	Priddis Slough Crossing (194 Avenue S) and CPR Grade Separation	Required	2015-2016	\$47	-	\$120 [2016+]
R	Stoney Trail and 60 Street N.E. Ramps	Required	2017	\$6	-	\$5 [2017+]
S	88 Street S.E. Skeletal Road Extension	Required	2020	\$17	-	\$50 [2020+]
T	Stoney Trail and 11 Street N.W. Ramps	Required	2021	\$6	-	\$5 [2021+]
U	Deerfoot Trail and 212 Avenue S.E. Ramps	Required	2023-2024	\$16	-	\$5 [2024+]
V	Macleod Trail and 162nd Avenue S. Interchange	High	2015-2017	\$55	-	\$25 [2017+]
W	McKnight Boulevard Widening - 12th Street N.E. to 19th Street N.E.	High	2015	\$17	-	\$40 [2015+]
X	Peigan Trail Twinning - Barlow Trail to Stoney Trail	High	2019-2020	\$35	-	\$120 [2020+]
Y	Stoney Trail and 14 Street N.W. Interchange	High	2015/2020-22	\$60	-	\$30 [2022+]
Z	Stoney Trail and Centre Street Interchange Upgrade	Medium	2023	\$15	-	\$10 [2023+]
AA	Stoney Trail and Shaganappi Trail Interchange Upgrade	Medium	2022	\$15	-	\$10 [2022+]
AB	61 Avenue S.E. Extension - 68 Street S.E. to Ring Road	Medium	2015	\$3	-	\$30 [2015+]
AC	Macleod Trail and 194 Avenue / 210 Avenue Improvements	Medium	2022-2024	\$70	-	\$40 [2024+]
-	Crowchild Trail - Bow River Crossing	High	N/A	-	\$150	\$35 [N/A]
-	16th Avenue N.E. and 19th Street N.E. Interchange	High	N/A	-	\$105	\$35 [N/A]
-	52nd Street S.E. Widening - Peigan Trail to 61st Avenue S.E.	High	N/A	-	\$6	\$35 [N/A]
-	Glenmore Trail and Barlow Trail S.E. Interchange	High	N/A	-	\$82	\$35 [N/A]
-	Glenmore Trail and 52nd Street S.E. Interchange	Medium	N/A	-	\$101	\$45 [N/A]
-	Airport Trail N.E. Phase 2 - Connection to Metis Trail and Interchanges	Medium	N/A	-	\$83	\$90 [N/A]
-	Country Hills Boulevard Widening - Barlow Trail to Coventry Boulevard	Medium	N/A	-	\$20	\$50 [N/A]
-	114 Avenue S.E. Widening - 52 Street S.E. to 68 Street S.E.	Medium	N/A	-	\$15	\$35 [N/A]
-	Stoney Trail and 130 Avenue S. Ramp	Medium	N/A	-	\$12	\$10 [N/A]
-	14 Street S.W. Widening - Anderson Road to Canyon Meadows Drive	Medium	N/A	-	\$15	\$20 [N/A]
-	85th Street N.W. Realignment at Country Hills Boulevard	Medium	N/A	-	\$4	\$5 [N/A]
-	144 Avenue N.W. Crossing of West Nose Creek	Medium	N/A	-	\$15	\$60 [N/A]
-	New Traffic Signals / Pedestrian Corridors	Medium	Ongoing	\$23	-	\$50 [2015+]
-	Roads Equipment and Systems	Medium	Ongoing	\$8	\$7	\$100 [2015+]
-	Noise Barriers	Medium	Ongoing	\$9	-	-
-	Subdivision Road Construction	Medium	Ongoing	\$13	-	-
-	Development of Subdivision Access Roads	Medium	Ongoing	\$40	\$7	\$800 [2015+]
<b>TOTAL:</b>				<b>\$762</b>	<b>\$622</b>	

\* Pending Council approval through Action Plan budgets

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**FIGURE 2.4 – TRANSPORTATION NETWORK OPTIMIZATION**

MAP #	PROJECT	PRIORITY	DATE	FUNDED* (\$ millions)	UNFUNDED (\$millions)	Est. Operating Impact [Year] (\$ thousands)
-	Next Generation Traffic Management Centre	High	2015-2018	\$8	\$4	-
-	Pathway Missing Links (Parks)	Required	Ongoing	\$30	-	-
-	Traffic Congestion Relief	High	Ongoing	\$6	\$14	\$30 [2015+]
-	Primary Transit Network Optimization	High	Ongoing	\$10	\$10	-
-	Various Street Improvements (VSI)	High	Ongoing	\$30	-	-
-	Safety Improvements	High	Ongoing	\$10	-	-
-	City-Wide Active Modes Program	High	Ongoing	\$32	-	-
-	Operational Improvements on Roads & Streets	Medium	Ongoing	\$83	-	-
-	Intelligent Transportation Systems	Medium	Ongoing	\$9	\$17	-
* Pending Council approval through Action Plan budgets				<b>TOTAL:</b>	\$218	\$45

**FIGURE 2.5 – LIFECYCLE AND ASSET MANAGEMENT**

MAP #	PROJECT	PRIORITY	DATE	FUNDED* (\$ millions)	UNFUNDED (\$millions)	Est. Operating Impact [Year] (\$ thousands)
-	Train Cars for LRT (Replacement)	Required	2015-2024	\$278	-	-
AP	Vehicle Bridge Replacement - 12th Street S.E. (Zoo)	High	2015-2016	\$19	-	-
AQ	Vehicle Bridge Replacement - 9th Avenue S.E. (Inglewood)	High	2017-2018	\$11	-	-
-	Pathway Lifecycle and Asset Management (Parks)	Required	Ongoing	\$10	-	-
-	Transit Reliability	High	Ongoing	\$6	\$14	-
-	Pavement Rehabilitation	High	Ongoing	\$100	\$73	-
-	Asphalt Surface Overlay	High	Ongoing	\$25	-	-
-	Major Road Reconstruction	High	Ongoing	\$106	-	-
-	Bus and Community Shuttle Purchases (Replacement)	High	Ongoing	\$135	\$25	-
-	Bridge Rehabilitation and Protection	High	Ongoing	\$100	\$20	-
-	Traffic Signals / Pedestrian Corridor Lifecycle	High	Ongoing	\$43	\$20	\$125 [2015+]
-	Pedestrian Bridge Replacement and Upgrading	High	Ongoing	\$58	-	-
-	Streetlights - Maintenance & Upgrades	High	Ongoing	\$52	\$27	\$100 [2015+]
-	Train Car Refurbishment	Medium	Ongoing	\$43	-	-
-	Bus Refurbishment	Medium	Ongoing	\$37	\$2	-
-	LRT Infrastructure Rehabilitation	Medium	Ongoing	\$88	\$13	-
-	Transit Garage Lifecycle Rehabilitation	Medium	Ongoing	\$24	\$11	-
-	Roads Plants Capital	Medium	Ongoing	\$3	-	-
-	Roads District Yards and Depots	Medium	Ongoing	\$7	-	-
-	Activity Centre and Corridor Maintenance	Medium	Ongoing	\$6	-	-
-	Transit Signals and Communication	Medium	Ongoing	\$31	\$25	\$1,000 [2018+]
-	Access Calgary Technology	Medium	Ongoing	\$9	\$3	\$100 [2015+]
-	Transit Technology Upgrades and Sustainment	Medium	Ongoing	\$14	\$22	-
-	Fare Collection Equipment	Medium	Ongoing	\$9	\$19	\$450 [2015+]
-	Slope Stabilization	Medium	Ongoing	\$5	-	-
-	Local Improvement Paving and Sidewalk	Medium	Ongoing	\$6	\$19	-
-	Transit Security Technologies	Medium	Ongoing	-	\$5	-
-	Transit Public Safety and Enforcement Technologies	Medium	Ongoing	-	\$4	-
-	Transit Training Simulators	Medium	Ongoing	-	\$4	-
-	Transit Parking Lot Asset Management	Medium	Ongoing	-	\$3	-
* Pending Council approval through Action Plan budgets				<b>TOTAL:</b>	\$1,225	\$309

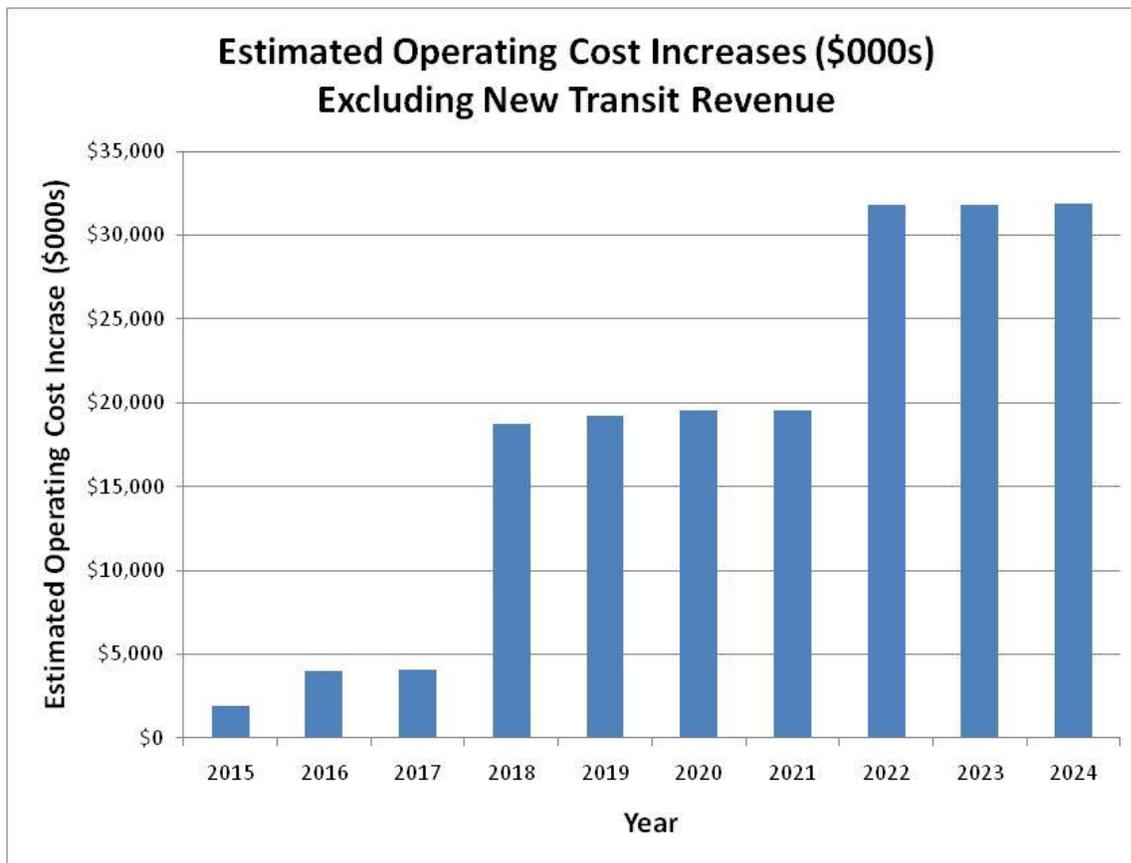
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**FIGURE 2.6 – SUPPORT FUNCTIONS**

MAP #	PROJECT	PRIORITY	DATE	FUNDED* (\$ millions)	UNFUNDED (\$millions)	Est. Operating Impact [Year] (\$ thousands)
-	Functional Studies	Required	Ongoing	\$25	-	-
-	Detailed Design Studies	Required	Ongoing	\$20	-	-
-	Regional Transportation Model	Required	Ongoing	\$7	-	-
-	MSI Financing Costs	Required	2015-2017	\$45	-	-
-	Future Land	High	Ongoing	\$143	-	-
<b>TOTAL:</b>				<b>\$240</b>	<b>\$0</b>	

\* Pending Council approval through Action Plan budgets

**FIGURE 2.7 – ESTIMATED OPERATING COST SUMMARY**



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**FIGURE 2.8 – FLOOD-RESILIENCY PROJECTS (AS OF 2014 APRIL 29)**

PROJECTS SUBMITTED TO THE PROVINCE (VIA ROC) FOR MITIGATION & RESILIENCY FUNDING APPROVAL ON 2014 MAR 29: Longer term projects. ROC did NOT ask for Council support or funding on these projects. These are to be received for information only at this time with ROC's commitment to report back on any funding decision by November.

BU	Project ID	Project Summary	Estimated Total Capital Cost (\$000s)
Calgary Transit	P-25	South LRT Corridor - Track Drainage Improvements	\$1,500
Calgary Transit	P-24	Raise Victoria Park switch gear	\$250
Calgary Transit	P-21	South LRT Corridor - Tunnel relamping	\$350
Calgary Transit	P-23	Relocation of Erlton LRT Station signal room to higher elevation	\$500
Calgary Transit	P-22	Relocation of Cemetery Hill electrical and pump station to higher	\$250
Roads	I-44/P-33	Emergency Access to Bow River and Weir Area	\$350
Roads	P-27	Construction of enhanced erosion and scour protection	\$8,550
Roads	P-28	Next Generation Roads Traffic Management Centre	\$11,875
Roads	P-29	Back Lane Paving (In Flood Zones)	\$6,000
Roads	P-30	Calgary Communication Network (CCN)	\$5,000
Roads	P-31	Signal Controller Upgrades to IP Address-able	\$3,000
Roads	C-19 P-32	Streetlight Relay Replacement	\$2,400
Trans. Infrastructure	P-39	Replacement of Elbow River Traffic Bridge – Pattison (Macleod Trail)	\$14,000
Trans. Infrastructure	P-36	Replacement of Elbow River Traffic Bridge – Scollen (24th Avenue)	\$9,000
Trans. Infrastructure	P-38	Replacement of Elbow River Traffic Bridge – Victoria (Macleod Trail)	\$18,000
Trans. Infrastructure	P-35	Replacement of Elbow River Traffic Bridge – Mission (4th Street)	\$16,000
Trans. Infrastructure	P-37	Replacement of Elbow River Traffic Bridge – Elboya Bridge	\$13,000
Trans. Infrastructure	P-34	Elbow River Pedestrian Bridges Replacements	\$10,500

QUICK-WIN PROJECTS - SUBMITTED TO ROC ON 2014 MAR 17: Short-term (<6 months) projects, deliver resiliency benefits quickly. ROC requested Council support and budget.

BU	Project ID	Project Summary	Estimated Total Capital Cost (\$000s)
Calgary Transit	I-39	LRT Tugger Hi-Rail Truck	\$850
Calgary Transit	I-40	Access Calgary IVR network switch/backup	\$250
Calgary Transit	I-41	Access Calgary Phone backup system	\$300
Calgary Transit	I-42	Internet mobile backup connection	\$25
Roads	I-43	Signal Cabinet Retrofit	\$300
Roads	-	Tender out contracts for road construction contractors on stand by	\$200
Roads	-	Review transit and HOV priority lanes for Roads use during floods	\$250
Roads	I-46	Inglewood Bird Sanctuary Bridge C - construction of deep foundation	\$500

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**FIGURE 2.8 (CONTINUED)**

COMMUNITY PROJECTS - SUBMITTED TO ROC ON 2014 MAR 17: Deliver direct benefits to the community and citizens at large. ROC requested Council support and budget.

BU	Project ID	Project Summary	Estimated Total Capital Cost (\$000s)
Roads	C-18	Underground Signal Duct Replacement	\$150
Roads	-	Median / Other Detours / Crossovers	TBD

Approved projects as per April 14, 2014 Combined Meeting of Council. Capital budget funded through the Fiscal Stability Reserve and Administration will bring forward for consideration any continuing operating costs as part of Action Plan 2015-2018.

BU	Project ID	Project Summary	Estimated Total Capital Cost (\$000s)
Roads	C-18	Underground Signal Duct Replacement	\$75 (2015)
Roads	C-19 / P-32	Streetlight Relay Replacement	\$1,200 (2015)