

Buena Vista CA Meeting

March 30, 2017

7:00 p.m.

Agenda

1. Who does what?
2. How do Projects get identified?
3. How do Projects get funded?
4. Syd Buckwold Bridge

Who does What?

Transportation

- New roads, bridges, pedestrian facilities
- Conceptual Planning
- Functional Planning
- Cost estimates
- Prioritize projects
- Get approval from Council

Who does What?

Examples

- North Commuter Parkway
- Circle Drive South
- 22nd Street / Diefenbaker Drive
- 51st Street / Warman Road
- 2 new interchanges
- 1.3M of new sidewalks this year

Who does What?

Construction and Design

- From functional design, completes detailed design
- Tenders projects to market
- Hires and manages contractors
- ‘Typical’ City projects: arterial streets, sound walls, water sewer replacements

Who does What?

Major Projects

- Manages large, complex large construction projects
- Asset management
- Procurement, project management
- Ex: Remai, North Commuter Parkway, Traffic Bridge, University Bridge Re-hab
- Ex: sidewalk replacement, sewer line replacement, asphalt replacement

Project Identification

- Intersection Improvement program
- Neighbourhood Traffic Review program
- Traffic Signal Installations programs (new)
- Corridor Studies
- Network improvements (2 new interchanges)
- Collaboration with other divisions (i.e. Victoria Avenue Reconstruction)
- Master Plans (Active Transportation)

Project Funding Approvals

- Typically, at budget time provide council a list of prioritizes, cost estimates, and recommendations
- Council approves...or does not!

Traffic Signal Projects

TABLE: TRAFFIC SIGNAL PRIORITY LIST

Rank	Intersection		Classification	Existing Control	Date of Traffic Data Used	Warrant Points	Status
	Road 1	Road 2					
1	Lorne Avenue	Ruth Street	Arterial - Arterial	4 - way Stop	June 24, 2015	185	2017 construction
2	115th Street	Berini Drive	Collector - Arterial	4 - way Stop	May 18, 2014	132	2017 construction
3	Preston Avenue	Adelaide Street	Arterial - Collector	2 - way Stop E/W	October 7, 2015	118	TBD, further study required
4	Kenderdine Road	115th Street	Collector - Collector	4 - way Stop	October 7, 2015	117	TBD, further study required
5	Stonebridge Boulevard	Wellman Crescent	Arterial - Local	2 - way Stop N/S	June 19, 2014	110	TBD, further study required
6	33rd Street	Northumberland	Arterial - Collector	Ped Act Signals	November 2015	56	Approved via 33rd St Study
7	Diefenbaker Drive	Centennial Drive	Arterial - Collector	1 - way Stop E	June 16, 2015	96	not recommended
8	33rd Street	7th Avenue	Arterial - Collector	4 - way Stop	July 2, 2014	77	not recommended
9	Confederation Drive	John A. MacDonald Drive	Arterial - Collector	1 - way Stop E	November 6, 2014	72	not recommended
10	Queen Street	7th Avenue	Collector - Collector	4 - way Stop	October 13, 2015	70	not recommended
11	Airport Drive	Robin Crescent	Arterial - Local	2 - way Stop E/W	August 11, 2015	69	not recommended
12	McKercher Drive	Acadia Drive	Arterial - Collector	1 - way Stop E	February 27, 2014	66	not recommended
13	Clarence Avenue	Main Street	Arterial - Collector	2 - way Stop E/W	October 7, 2015	65	not recommended
14	Pendygrasse Road	Fairlight Drive	Collector - Arterial	4 - way Stop	May 6, 2014	64	not recommended
15	Russell Road	Meilicke Road	Collector - Collector	3 - way Stop	October 13, 2015	52	not recommended

Previously Identified as Roundabout Locations

Rank	Intersection		Classification	Existing Control	Date of Traffic Data Used	Warrant Points	Status
	Road 1	Road 2					
1	Preston Avenue	Main Street	Arterial - Collector	4 - way Stop	March 12, 2013	137	TBD, further study required
2	Preston Avenue	7th Street	Arterial - Collector	2 - way Stop E/W	February 28, 2013	65	TBD, further study required
3	Spadina Crescent	33rd Street	Arterial - Arterial	3 - way Stop	October 13, 2015	53	TBD, further study required

Intersection Improvement Projects

TABLE: INTERSECTION IMPROVEMENT PRIORITY LIST

Rank	Intersection		Crash Rate per Million Trips	(a)	Average Delay (seconds)	Intersection Level of Service (LOS)	(b)	(a + b)	Comments
	Road 1	Road 2		Crash Rate Ranking			LOS Ranking	Ranking Points	
1	51st Street / Lenore Dr	Wauskewin Road / Warman Road	0.8193	1	79	E	5	6	Construction 2017
2	College Drive	Preston Avenue	0.5203	7	123	F	1	8	Integrate with future BRT planning, timing TBD
3	51st Street	Millar Avenue	0.6267	4	72	E	6	10	Functional design complete 2016
4	33rd Street	Idylwyld Drive	0.5605	5	69	E	7	12	Functional design complete 2016
5	Avenue C	Circle Drive	0.5182	8	89	F	4	12	Recommend functional plan in 2017 or 2018
6	22nd Street	Idylwyld Drive	0.5367	6	54	D	9	15	Idylwyld Drive Corridor Review 2016 / 2017
7	8th Street	McKercher Drive	0.6604	3	29	C	13	16	In-Service Safety Audit complete 2016
8	Circle Drive	Millar Avenue	0.3326	17	96	F	3	20	Recommend functional plan in 2017 or 2018
9	22nd Street	Confederation Drive / Fairmont Drive	0.4419	13	55	D	8	21	Functional design complete 2016
10	8th Street	Clarence Avenue	0.4834	11	31	C	12	23	Integrate with future BRT planning, timing TBD
11	8th Street	Preston Avenue	0.5061	10	28	C	14	24	Integrate with future BRT planning, timing TBD
12	22nd Street	Avenue W	0.3762	16	34	C	10	26	Integrate with future BRT planning, timing TBD
13	8th Street	Acadia Drive	0.4643	12	28	C	15	27	Integrate with future BRT planning, timing TBD
14	20th Street	Idylwyld Drive	0.4092	14	18	B	19	33	Upon completion of Idylwyld Dr corridor review
15	Circle Drive	Faithfull Avenue	0.2879	18	26	C	16	34	Future review
16	Circle Drive	Clarence Avenue S. Int.	0.3775	15	13	B	20	35	Future review
17	8th Street	Circle Drive E. Int.	0.261	19	25	C	17	36	Integrate with future BRT planning, timing TBD
18	Circle Drive	Idylwyld Drive W. Int	0.2262	20	24	C	18	38	Integrate with future BRT planning, timing TBD
	Attridge Drive	Central Avenue							Construction 2016
	22nd Street	Diefenbaker Drive							Construction 2016

Active Transportation Plan

- 80+ action items
- Grouped into Themes, Directions, and Actions
- Provides some information on river crossings
 - “Existing Bridges, Overpasses and Underpasses for Active Transportation and Recommended Access Upgrades”
 - “Proposed Bridges, Overpasses and Underpasses for Active Transportation”

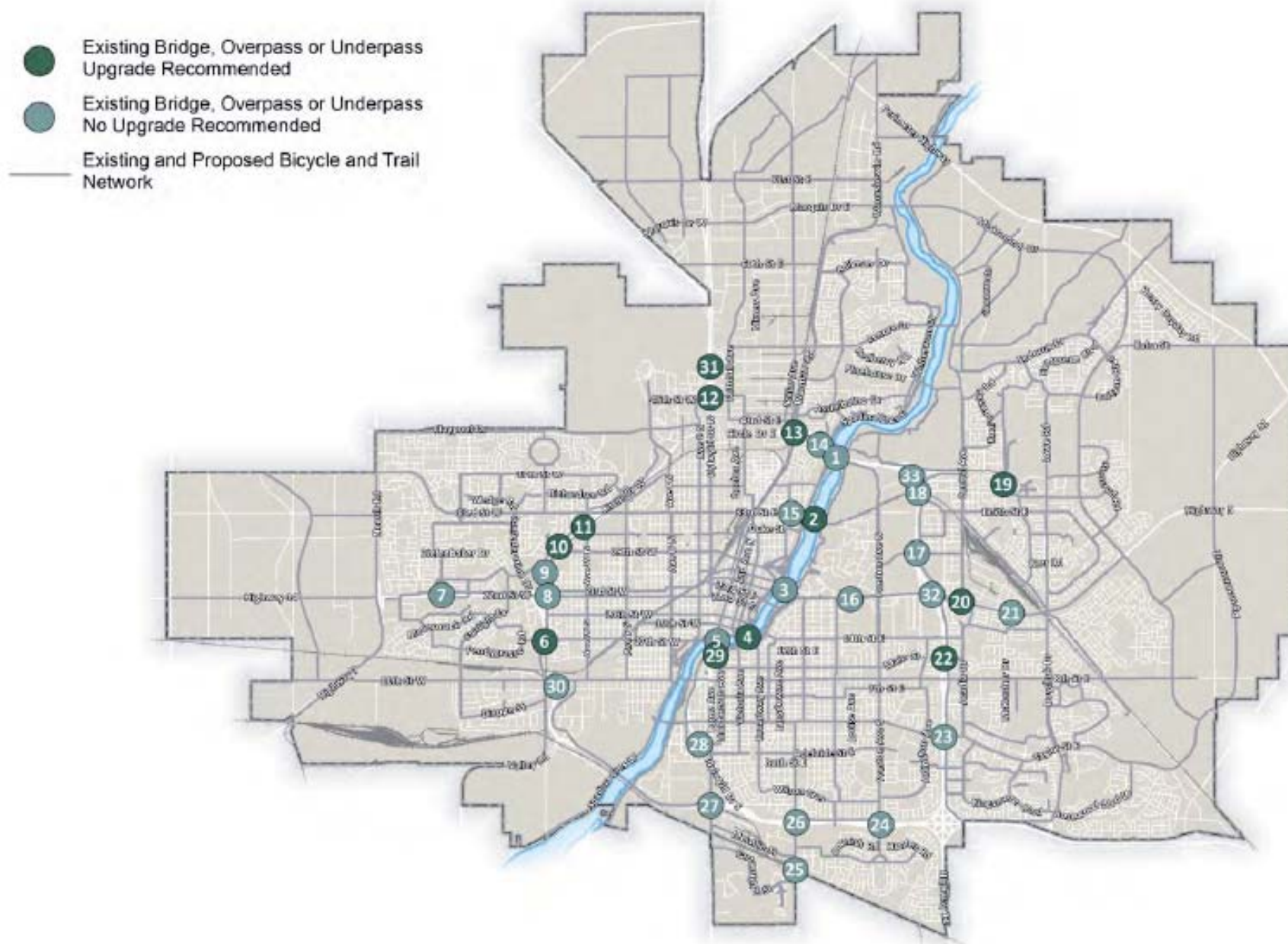


Figure 7 - Existing Bridges, Overpasses and Underpasses for Active Transportation

NO.	CROSSING LOCATIONS	BARRIER TYPE (ROAD/ RIVER/RAIL)	EXISTING STRUCTURE TYPE	ACCESS UPGRADE RECOMMENDED *	IDENTIFIED ISSUE
1	Circle Drive Bridge	River	Bridge (Multi-modal)	No	-
2	CPR Bridge	River	CPR Bridge	Yes	Accessibility
3	University Bridge	River	Bridge (Multi-modal)	No	-
4	Broadway Bridge	River	Bridge (Multi-modal)	Yes	Access from on-street facility
5	Senator Sid Buckwold Bridge	River	Bridge (Multi-modal)	No	
6	Clancy Drive & 18 th Street	Road – Circle Drive	Underpass	Yes	Access from on-street facility
7	Shaw Centre & Dickey Crescent	Road – 22 nd Street	Overpass	No	-
8	East of Circle Drive & 22 nd Street	Road – 22 nd Street	Overpass	No	-
9	Confederation Mall & Vancouver Avenue	Road – Circle Drive	Underpass	No	-
10	29 th Street & back lane (near Mackie Crescent)	Road – Circle Drive	Underpass	Yes	Accessibility – back lane access
11	Edmonton Avenue & Avenue W	Road – Circle Drive	Underpass	Yes	Pavement quality
12	Cynthia Street & Northridge Drive	Road – Idylwyld Drive N	Overpass	Yes	Accessibility
13	Warman Road	Road – Circle Drive	Overpass (Multi-modal)	No	-
14	Rupert Drive & Pembina Place	Road – Circle Drive	Overpass	No	-
15	33 rd Street & 10 th Avenue	Rail	Underpass	No	-
16	University of Saskatchewan - Campus Drive & Stadium Crescent	Road – College Drive	Overpass	No	-
17	108 th Street	Road – Circle Drive	Overpass	No	-
18	Adolph Crescent & Preston Crossing	Road – Circle Drive	Overpass	No	-
19	Rossmo Road & Forestry Farm Park Drive	Road - Attridge Drive	Underpass	Yes	Pavement quality
20	Central Avenue & Carleton Drive	Road – College Drive	Overpass	Yes	Accessibility

- Dedicated AT (Active Transportation Crossing)
- Multi-Modal Crossing
- Overpass or Underpass
- Future Grade Separation Investment
- Existing and Proposed Bicycle and Trail Network

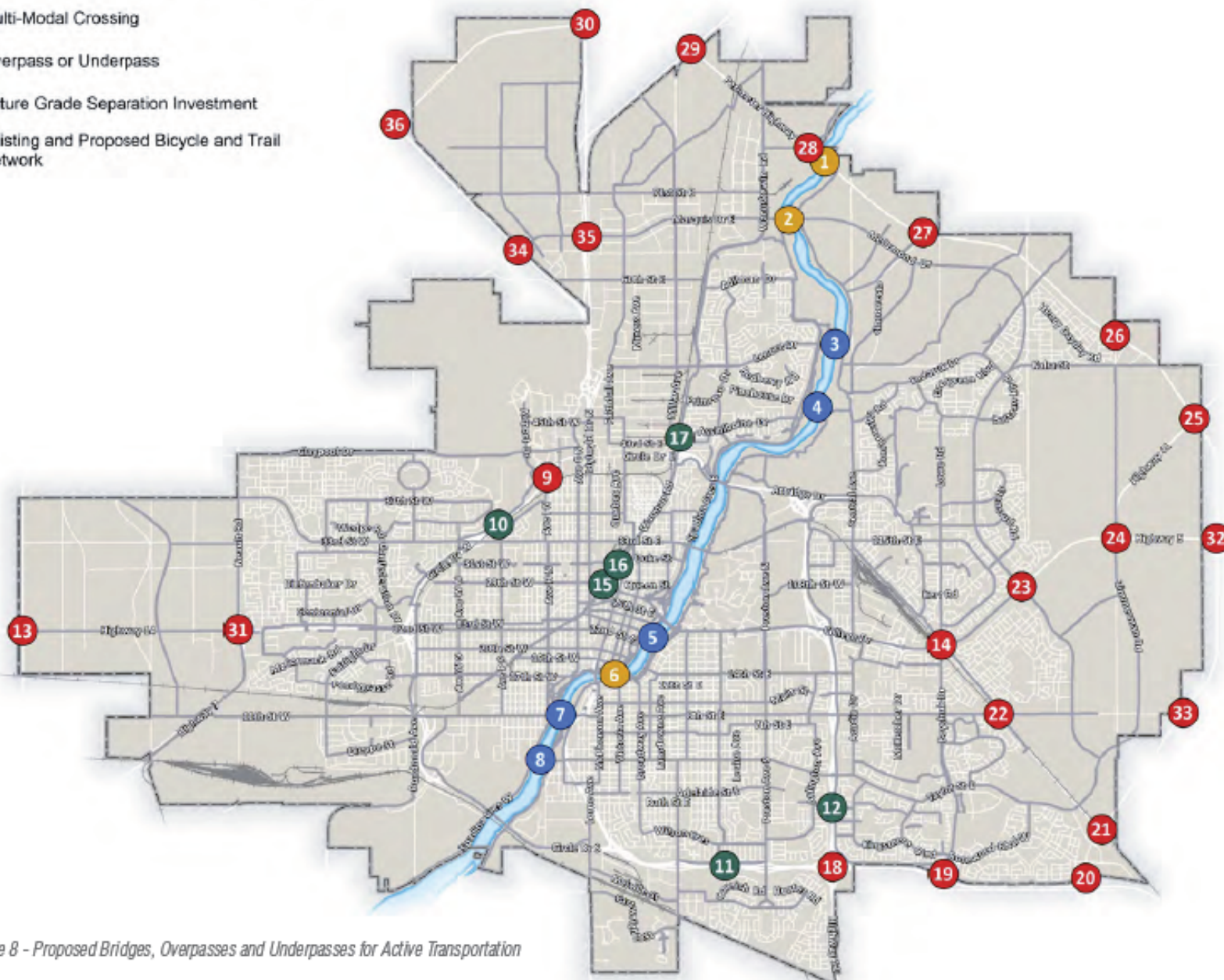


Figure 8 - Proposed Bridges, Overpasses and Underpasses for Active Transportation



NO.	CROSSING LOCATIONS	BARRIER TYPE (ROAD/ RIVER/RAIL)	PROPOSED STRUCTURE TYPE	PREVIOUSLY APPROVED PROJECT?
1	Future Saskatoon Freeway	River	Multi-Modal Crossing (Bridge)	Yes
2	Future North Commuter Parkway	River	Multi-Modal Crossing (Bridge)	Yes
3	North Active Transportation Crossing Option 1 – Lenore Drive*	River	Dedicated AT Crossings	No
4	North Active Transportation Crossing Option 2 – Assiniboine Drive**	River	Dedicated AT Crossings	No
5	City Centre Active Transportation Crossing**	River	Dedicated AT Crossings	No
6	Traffic Bridge Replacement	River	Multi-Modal Crossing (Bridge)	Yes
7	South Active Transportation Crossing Option 1 – 11 Street***	River	Dedicated AT Crossings	No
8	South Active Transportation Crossing Option 2 – Ruth Street ***	River	Dedicated AT Crossings	No
9	Avenue I to Airport Drive	Road – Circle Drive	Future Grade Separation Investment	Yes
10	Avenue P to Glenwood Avenue	Road – Circle Drive	Overpass or Underpass	No
11	Brown Crescent to Peter Zakreski Regional Park	Road – Circle Drive	Overpass or Underpass	No
12	East Heights crossing Circle Drive	Road – Circle Drive	Overpass or Underpass	No
13	Highway 14 and Perimeter Highway	Road – Perimeter Hwy	Future Grade Separation Investment	Yes
14	Moncton Place to Kenderdine Road	Rail	Future Grade Separation Investment	Yes
15	North Downtown Option 1****	Rail	Overpass or Underpass	No
16	North Downtown Option 2****	Rail	Overpass or Underpass	No
17	Assiniboine Drive to Millar Road	Road – Warman Road & Rail	Overpass or Underpass	No
18	Circle Drive and Highway 16	Road – Circle Drive	Future Grade Separation Investment	Yes
19	Boychuk Drive and Highway 16	Road – Highway 16	Future Grade Separation Investment	Yes
20	Highway 16 and Zimmerman Road	Road – Highway 16	Future Grade Separation Investment	Yes
21	Zimmerman Road Overpass of CP Railway	Rail	Future Grade Separation Investment	Yes

Syd Buckwold Bridge Walkway Request

East Side Expansion : Expanding the walkway from the Current 1.5 m width to 3 m wide

- The total Estimated cost is ~1.9 Million (Estimate Attached)
- Concept sketch attached
- The cost assumes additional girder strengthening but a relatively unknown until a more detailed design is completed at an added cost



Sid Buckwold Bridge
Sidewalk Widening Opinion of Probable Cost

Division 1 - General Requirements							
Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
	Contingency	Conceptual	%	20%	\$ 1,555,831	\$ 311,166	
							\$311,166

Division 2 - Site Work							
Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
Barrier, Sidewalk & Curb	Demolition	Easy Access Mass Removal (Man)	m3	\$ 1,250	117	\$ 146,250	
Bridge Railing	Demolition	Barrier Railing Removal	l.m.	\$ 50	416	\$ 20,813	
Bridge Railing	Demolition	Handrail Removal	l.m.	\$ 35	416	\$ 14,569	
Special Access	Temporary Works	Overhang Brackets	m2	\$ 350	520	\$ 182,112	
Landscaping	Site Restoration		lsum	\$ 20,000	1	\$ 20,000	
Remove existing Stairways	Demolition	Easy Access Mass Removal (Man)	lsum	\$ 10,000	2	\$ 20,000	
							\$403,743

Division 3 - Concrete							
Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
Barrier	Cast-in-place Concrete	High_Performance_Concrete	m3	\$ 1,350	65	\$ 87,750	
	Reinforcement	Black Steel	kg	\$ 3	6000	\$ 18,000	
	Concrete Formwork	Barrier Formwork	m2	\$ 250	375	\$ 93,657	
	Concrete Finishing	Hand Finishing	m2	\$ 20	94	\$ 1,873	
Sidewalk & Curb	Cast-in-place Concrete	High_Performance_Concrete	m3	\$ 1,350	167	\$ 225,450	
	Reinforcement	MMFX	kg	\$ 6	16000	\$ 96,000	
	Concrete Formwork	Curb Formwork	m2	\$ 200	125	\$ 24,975	
	Concrete Finishing	Hand Finishing	m2	\$ 20	104	\$ 2,081	
Stairs	Cast-in-place Concrete	High_Performance_Concrete	lsum	\$ 25,000	2	\$ 50,000	
							\$599,787

Division 5 - Metals							
Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
Pedestrian Handrailing	Handrailing	Ped_Complex_Galv_Steel	l.m.	\$ 650	208	\$ 135,283	
Barrier Railing	Bridgerail	Bridge Rail (vehicles and pedestrians)	l.m.	\$ 500	208	\$ 104,064	
Girder Strengthening **to be confirmed post analysis - \$250K allowance included for estimate**			lsum	\$ 250,000	1	\$ 250,000	
							\$489,347

Division 7 - Thermal & Moisture Protection							
Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
Barrier	Bridge Sealers	Penetrating Silane	m2	\$ 35	416	\$ 14,569	
Sidewalk & Curb	Bridge Sealers	Penetrating Silane	m2	\$ 35	811	\$ 28,385	
							\$42,954

Engineering							
Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
Design and Drawings			lsum	\$ 20,000	1	\$ 20,000	
							\$20,000

Sub-Total = \$1,555,831

Total = \$1,866,997



Sid Buckwold Bridge
Sidewalk Widening Opinion of Probable Cost (w/o Barrier Replacement Costs)

Division 1 - General Requirements

Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
	Contingency	Conceptual	%	20%	\$ 1,271,232	\$ 254,246	
							\$ 254,246

Division 2 - Site Work

Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
Sidewalk & Curb	Demolition	Easy Access Mass Removal (Man)	m3	\$ 1,250	54	\$ 67,500	
Bridge Railing	Demolition	Barrier Railing Removal	l.m.	\$ 50	416	\$ 20,813	
Bridge Railing	Demolition	Handrail Removal	l.m.	\$ 35	416	\$ 14,569	
Special Access	Temporary Works	Overhang Brackets	m2	\$ 350	520	\$ 182,112	
Landscaping	Site Restoration		lsum	\$ 20,000	1	\$ 20,000	
Remove existing Stairways	Demolition	Easy Access Mass Removal (Man)	lsum	\$ 10,000	2	\$ 20,000	
							\$ 324,993

Division 3 - Concrete

Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
Sidewalk & Curb	Cast-in-place Concrete	High_Performance_Concrete	m3	\$ 1,350	167	\$ 225,450	
	Reinforcement	MMFX	kg	\$ 6	16000	\$ 96,000	
	Concrete Formwork	Curb Formwork	m2	\$ 200	125	\$ 24,975	
	Concrete Finishing	Hand Finishing	m2	\$ 20	104	\$ 2,081	
Stairs	Cast-in-place Concrete	High_Performance_Concrete	lsum	\$ 30,000	2	\$ 60,000	
							\$ 408,507

Division 5 - Metals

Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
Pedestrian Handrailing	Handrailing	Ped_Complex_Galv_Steel	l.m.	\$ 650	\$ 208	\$ 135,283	
Barrier Railing	Bridgerail	Bridge Rail (vehicles and pedestrians)	l.m.	\$ 500	\$ 208	\$ 104,064	
Girder Strengthening **to be confirmed post analysis - \$250K allowance included for estimate**				lsum	\$ 250,000	\$ 250,000	
							\$ 489,347

Division 7 - Thermal & Moisture Protection

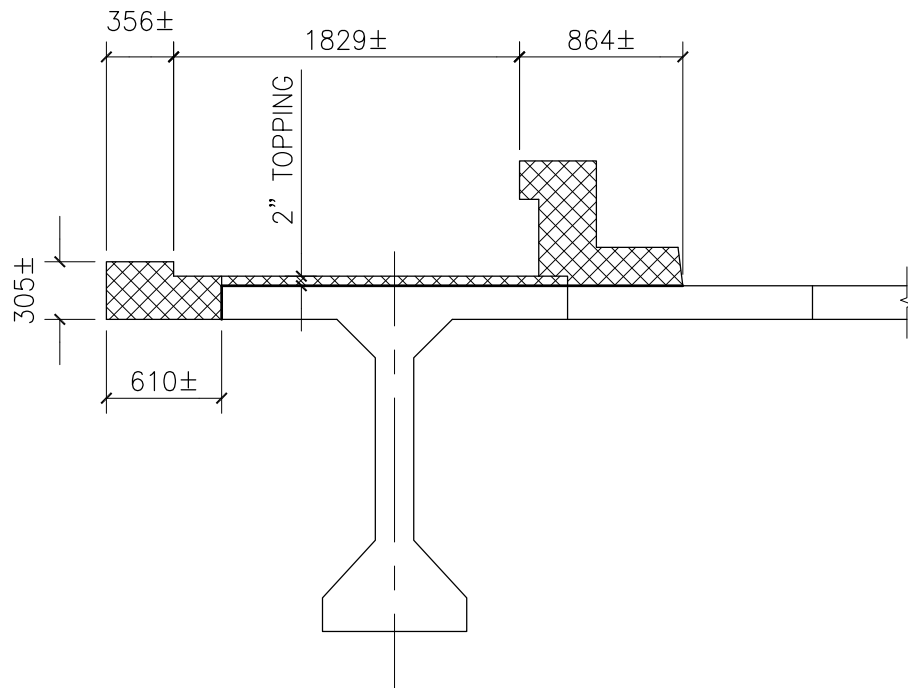
Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
Sidewalk & Curb	Bridge Sealers	Penetrating Silane	m2	\$ 35	811	\$ 28,385	
							\$ 28,385

Engineering

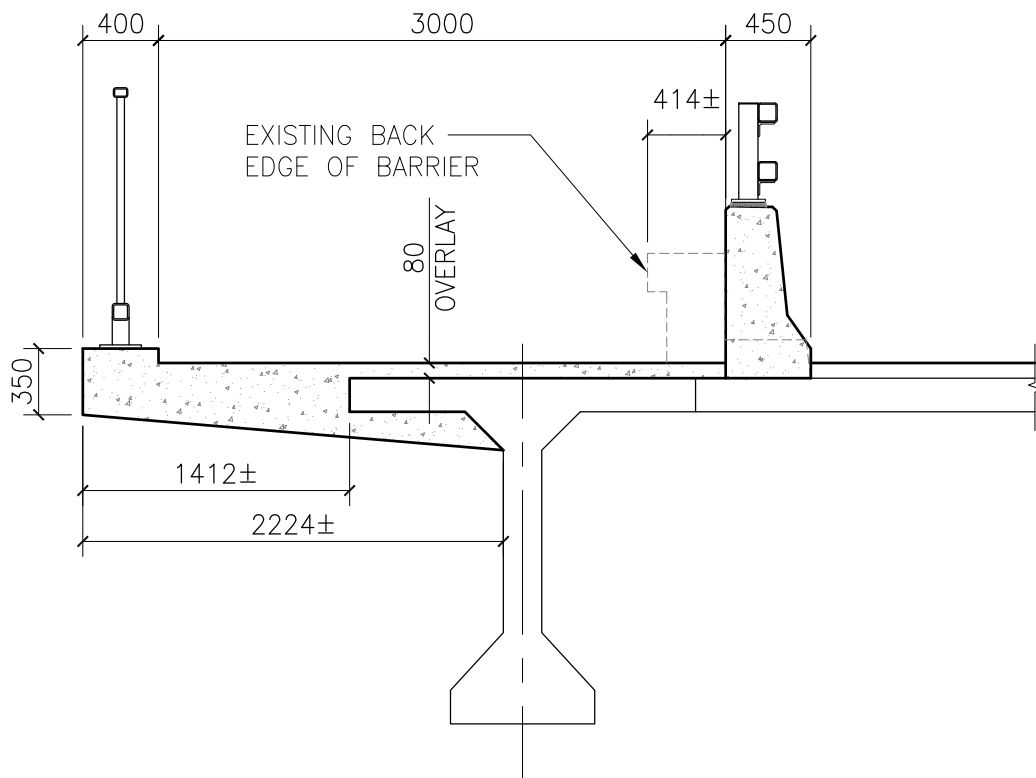
Component	Element	Sub-element	Unit	Unit Costs	Quantity	Element Total	Division Total
Design and Drawings			lsum	\$ 20,000	1	\$ 20,000	
							\$ 20,000

Sub-Total =	\$ 1,271,232
Total =	\$ 1,525,478

U:\11000205\transportation\predesign\drawing\dwgs\sidewalk_widening.dwg
 2017/03/01 10:51 AM By: Schneider, Julie Anne



EXISTING/DEMOLITION



PROPOSED

ORIGINAL SHEET - ISO A4

March, 2017
 111000205



400 - 1820 Hamilton Street
 Regina SK
 www.stantec.com

Client/Project

CITY OF SASKATOON
 SID BUCKWOLD BRIDGE
 REHABILITATION

Figure No.

1.0

Title

SIDEWALK WIDENING

Syd Buckwold Bridge Walkway Request

West Side : Adding a 3 m walkway to the structure on West Side

- This option was not explored in great details since a girder line does not exist for a walkway and it would require extensive design to gather a detailed price.
- However, based on current pricing for new structures I would assume a high level budget price of approximately 6.3 million, if in river work was not required

Syd Buckwold Bridge Walkway Request

- If this is further requested to be explored, additional design funding will be required to determine the feasibility and provide more detailed calculations to determine the structural capacity since it would be a major modification.

Syd Buckwold Bridge Walkway Request

- The preservation funding does not include funding for walkway upgrade and a funding source would be required for the walkway
- The design is going to be completed this summer with the Tender expected January 2018 (Pending 2018 Budget approval) so a decision on the plan moving forward should be determined early in the summer
- Original design includes increasing barrier and railing height at existing walkway to elevate some splashing and safety concerns