

Appendix A

BUMP and BUDS Recommendation Comparison

Bicycle Use Development Study (BUDS) Recommendations	Bicycle Use Master Plan (BUMP) Recommendations
<p>In order for Windsor to justify expenditures on specific programs and new facilities, it must be prepared to further foster or create demand for using bicycles by as many of it's citizens as possible. It must encourage non-bicyclists to become bicyclists and current bicyclists to ride more frequently.</p> <ul style="list-style-type: none"> • Create opportunities for new bicyclists to have positive first bicycling experiences. • Actively promote City programs, events and the benefits bicycling generally. • Support all forms of legitimate bicycle use whether the purpose is recreational or utilitarian. • Promote the implementation of high standard, high visibility facilities for bicycle use. 	<p>Refer to BUMP recommendations 1 through 4 and 10 through 15.</p>
<p>Commit to the on-going development of a compact network of high profile bicycle facilities as identified in the Master Plan appended to this study.</p> <ul style="list-style-type: none"> • Introduce Windsorites to the system of off-road recreationways and on-road bikeways. In 1991, the development of 15.6 kilometres of facilities primarily on the west side of the City has been recommended. The West Bikeway and the South Windsor Neighbourhood Bikeway will be fully implemented. They will demonstrate important features of the new system to the City - exclusive bike lanes and designated bike routes. Two sections of the West Recreation way will be fully implemented, as will signage on the East Recreationway. These multi-use facilities are intended for pedestrians and bicyclists. They incorporate a number of existing pathways, some of which were constructed originally in 1976. • As funds become available, build onto these two east and west initiatives. Development costs for the proposed network of facilities involve linear treatment costs (e.g., pavement, signage) and costs associated with required development features (e.g., bridges, easements). 	<p>Refer to BUMP recommendations 1 through 4, 15 and 24 through 42.</p>



Bicycle Use Development Study (BUDS) Recommendations	Bicycle Use Master Plan (BUMP) Recommendations
<p>Recognize that concentrating on the construction of facilities is not an adequate approach to bicycle transportation. The four recognized principles for improving bicycle use are engineering, education, enforcement and encouragement solutions. None is more or less important than the others. In order to access destinations (and recreationways for that matter), most bicyclists will use public roadways. These streets are regulated by established traffic laws common to all vehicles; therefore, an effort to educate users and enforce laws is vital.</p> <ul style="list-style-type: none"> • Improve the awareness and competence of bicyclists by making educational programs available to adults and <u>all</u> children. • Improve the awareness of bicyclists by motorists with a "Share the Road" campaign. • Increase the effective enforcement of traffic laws. Establish "vehicular bicycling" as the only acceptable approach to on-road bicycling. • Encourage the use of bicycle helmets. 	<p>Refer to BUMP recommendations 8 and 10 through 22.</p>
<p>Since the Province has deferred responsibility for the development of bicycle use programs and facilities to municipalities, Windsor must take action to improve its policies and planning initiatives.</p> <ul style="list-style-type: none"> • Hire a staff person initially in the Parks and Recreation Department to become an inter-departmental liaison for bicycling issues. • Develop a comprehensive City bicycling policy. • Recognize that although bicycling issues are currently focused in the Parks and Recreation Department, responsibility may shift in the future as on-road facilities are developed. • Improve the effectiveness and representativeness of the Ad Hoc Bicycle Committee by encouraging the formation of a citizens' support group. • Establish a requirement that new and existing arterial roads and major collectors, to be rebuilt, be evaluated, in every instance, to incorporate in their construction or lane re-stripping, 4.25 metre wide curb lanes or 1.5 metre wide bike lanes. Where conditions are favourable to carry out this work, it will improve the perceived safety and convenience of bicycle travel. 	<p>Refer to BUMP recommendations 5, 8 and 10 through 15. See also the Implementation Chapter.</p>
<p>Prior to their development as designated bikeways, upgrade proposed road by repairing pavement and ensuring that grates are bicycle compatible.</p>	<p>Refer to BUMP recommendation 8.</p>



Bicycle Use Development Study (BUDS) Recommendations	Bicycle Use Master Plan (BUMP) Recommendations
Determine a preferred standard bicycle parking device. Install at all major destinations, institutions and work places.	Refer to BUMP recommendations 19 and 20.
Build on the initiatives started in Sandwich and initiate the formation of a bicycle force within the police department that would encourage the proper use of bicycles and enforce traffic regulations as part of a selective enforcement program. Identify one highly motivated officer to be the co-ordinator.	Refer to BUMP recommendations 10 through 12. Note that the Windsor Police Service has a City Centre Patrol Unit on bicycles.
Set a good example for other businesses and institutions by creating incentives for City Employees to bicycle to work.	Refer to BUMP recommendation 15.
Initiate a mass ride in addition to the "Bike-to-Work Week" ride. One possibility would be to use the trans-city network (the completed East and West Recreationways and the West, Grand and Riverside Bikeways), and have five simultaneous starts. Participants could tailor the length of their ride according to their interests. 45 kilometres would be the approximate length of the longest ride.	Refer to BUMP recommendation 15.



**Appendix B - BUMP Implementation Schedule
(0 - 5 years)**

ROAD/ROUTE NAME	FROM	TO	Proposed Trail Type	Timing	Length (m)	SR	SR	BLRecon	BLRecon	BLStripe	BLStripe	AT	AT
						length (m)	cost @ \$2.00/lm	length (m)	cost @ \$180.00/lm	length (m)	cost @ \$20.00/lm	length (m)	cost @ \$100.00/lm
Academy	Grand Marais Road West	Northwood Street	SR	0-5 Years	960	960	\$1,920.00						
Adstoll Ave.	Rivard Avenue	Pilette Road	BL	0-5 Years	777					777	\$15,540.00		
Adstoll Ave.	George Avenue	Pilette Road	SR	0-5 Years	608	608	\$1,216.00						
Armanda St	Matchette Road	Malden Rd	SR	0-5 Years	1167	1167	\$2,334.00						
Broadway Street	Sandwich Street	Ojibway Pkwy	BL	SR 0-5, BL 5-20	1013	1013	\$2,026.00						
Broadway Street	Ojibway Parkway	Matchette Road	BL	SR 0-5, BL 5-20	1021	1021	\$2,042.00						
Brock Street	College Avenue	Russell Street	Existing Route	0-5 Years	920								
Bruce Avenue	West Grand Blvd	Grand Marais Rd	SR	0-5 Years	138	138	\$276.00						
Bruce Avenue	Tecumseh Road	Riverside Drive	BL	0-5 Years	2855					2855	\$57,100.00		
Byng/Turner	North Service Road	Grand Marais Rd	SR	0-5 Years	753	753	\$1,506.00						
Cabana Road	West City Limit	Division St.	BL	0-5 Years	3429			3429	\$617,220.00				
California Ave.	Pulford Street	Grand Marais Road West	BL	0-5 Years	625					625	\$12,500.00		
California Ave.	Totten Street	Riverside Drive	SR	0-5 Years	2918	2918	\$5,836.00						
Campbell Ave.	Riverside Drive	Tecumseh Rd.	SR	0-5 Years	2341	2341	\$4,682.00						
Clemenceau	Queen Elizabeth Drive	North Service Rd	SR	0-5 Years	611	611	\$1,222.00						
College Ave	Brock Rd.	Crawford Ave.	BL	0-5 Years	2496					2496	\$49,920.00		
Conservation Dr.	South Service Road	Foster Avenue	SR	0-5 Years	1052	1052	\$2,104.00						
Conservation Dr.	South Service Road	Bridge	BL	0-5 Years	396					396	\$7,920.00		
Cora Greenwood Dr.	Riverside Drive	Little River Rd	SR	0-5 Years	692	692	\$1,384.00						
Daytona Ave	Kenora Street	Northwood Street	BL	0-5 Years	1119					1119	\$22,380.00		
Devonshire Road	Richmond Street	Riverside Drive	SR	0-5 Years	1265	1265	\$2,530.00						
Dezeil Dr	Proposed Off-Road Multiuse	Central Avenue	BL	0-5 Years	351					351	\$7,020.00		
Division Road	Howard Avenue	City Limits	BL	0-5 Years	2554			2554	\$459,720.00				
Dominion Blvd	Cabana Road	West Grand Blvd	SR	0-5 Years	1532	1532	\$3,064.00						
Dominion Blvd	West Grand Blvd	Northwood Street	BL	0-5 Years	1227					1227	\$24,540.00		
Dougall Ave	Cabana Road	West Grand Blvd	BL	0-5 Years	2027					2027	\$40,540.00		
Ducharme St.	Holborn Street	6th Concession	SR	0-5 Years	680	680	\$1,360.00						
Edgar Ave.	Jefferson Boulevard	Virginia Avenue	SR	0-5 Years	869	869	\$1,738.00						
Edgar Ave.	Virginia Avenue	Lauzon Road	BL	0-5 Years	908					908	\$18,160.00		
Edinborough	Howard Avenue	Remington Park	SR	0-5 Years	1411	1411	\$2,822.00						
Erie St	Janette Avenue	Lincoln Avenue	BL	0-5 Years	2591					2591	\$51,820.00		
Esplanade	Lauzon Road	Forest Glade Drive	SR	0-5 Years	1119	1119	\$2,238.00						
Eugenie	Ouellette Avenue	Remington Ave.	BL	0-5 Years	898					898	\$17,960.00		
Forest Glade Drive	Tecumseh Road	Lauzon Parkway	BL	0-5 Years	2688					2688	\$53,760.00		
Foster Ave	Riberdy Road	Conservation Drive	SR	0-5 Years	1055	1055	\$2,110.00						
George Ave	Adstoll Avenue	Riverside Drive	SR	0-5 Years	3200	3200	\$6,400.00						
Galdstone Ave	Shepherd Street	Riverside Drive	BL	0-5 Years	2141					2141	\$42,820.00		
Grand Blvd	Rivard Avenue	Pilette Road	SR	0-5 Years	695	695	\$1,390.00						
Grand Marais Road West	California Avenue	Dominion Blvd	BL	0-5 Years	1045					1045	\$20,900.00		
Grand Marais Road West	Dominion Boulevard	Bruce Avenue	SR	0-5 Years	972	972	\$1,944.00						
Hawthorne	West Of Lauzon Road		BL	0-5 Years	1303					1303	\$26,060.00		
Holborn	6th Concession	Macguire Street	SR	0-5 Years	2484	2484	\$4,968.00						
Howard Ave	Cabana Road	South Cameron Blvd.	BL	0-5 Years	1494					1494	\$29,880.00		
Janette Ave	Tecumseh Road	Riverside Drive	BL	0-5 Years	2844					2844	\$56,880.00		
Jefferson Blvd	Tecumseh Road	RR tracks	BL	0-5 Years	1082			1082	\$194,760.00				
Jefferson Blvd	RR Tracks	Wyandotte Street	BL	0-5 Years	1189			1189	\$214,020.00				
Jefferson Blvd	Rose Blvd	Rhodes Drive	BL	0-5 Years	2259			2259	\$406,620.00				
Kennedy Dr	North Talbot Road	Dougall Drive	SR	0-5 Years	1518	463	\$926.00						
Kildare Road	Ypres Boulevard	Richmond St	SR	0-5 Years	2487	2487	\$4,974.00						
Kildare Road	Memorial Drive	Ypres Boulevard	SR	0-5 Years	637	2090	\$4,180.00						

Appendix B - BUMP Implementation Schedule

ROAD/ROUTE NAME	FROM	TO	Proposed Trail Type	Timing	Length (m)	SR length (m)	SR cost @ \$2.00/m	BLRecon length (m)	BLRecon cost @ \$180.00/m	BLStripe length (m)	BLStripe cost @ \$20.00/m	AT length (m)	AT cost @ \$100.00/m
LaBelle St	Huron Church Rd	Academy Dr	SR	0-5 Years	1832	1832	\$3,664.00						
Lauzon Parkway	Forest Glade Drive	Tecumseh Road	MU	0-5 Years	1921							1921	\$192,100.00
Lincoln road	Shepherd Street	Riverside Drive	BL	0-5 Years	2088					2088	\$41,760.00		
Little River Road	Lauzon Road	Kiwanis Park	SR	0-5 Years	1027	1027	\$2,054.00						
Macguire	Holborn Street	Howard Avenue	SR	0-5 Years	753	753	\$1,506.00						
Malden Road	City Limits	Prince Road	SR	0-5 Years	3719	3719	\$7,438.00						
Mark Ave	Grand Marais Road West	Northwood Street	SR	0-5 Years	1091	1091	\$2,182.00						
Matthew Brady	Clairview Ave.	Mchugh Drive	SR	0-5 Years	1922	1922	\$3,844.00						
Memorial Dr	Walker Road	Gladstone Avenue	MU	0-5 Years	875							875	\$87,500.00
Mount Royal Dr	Cabana Road	Cousineau Road	SR	0-5 Years	1384	1384	\$2,768.00						
Mulberry Dr	Robinet Lane	Forest Glade Drive	SR	0-5 Years	722	722	\$1,444.00						
Norfolk St	California Avenue	Dougall Drive	SR	0-5 Years	2204	2204	\$4,408.00						
North Service Road	West Of Pilette	East Of RR Tracks	BL	0-5 Years	1911					1911	\$38,220.00		
North Service Road	Howard Avenue	Byng Rd	BL	0-5 Years	2027					2027	\$40,540.00		
Northwood St	Daytona Ave.	South Cameron Blvd.	BL	0-5 Years	3042					3042	\$60,840.00		
Off-road	Lillian	Ouellette Ave	MU	0-5 Years	1189							1189	\$118,900.00
Off-road	South Cameron Blvd	Grand Marais	MU	0-5 Years	1164							1164	\$116,400.00
Off-road	Lauzon Rd	CNR Line	MU	0-5 Years	988							988	\$98,800.00
Off-road (Rail crossing at Caboto C	North Side Of Tracks	South Side Of Tracks	MU	0-5 Years	46							46	\$4,600.00
Parent Ave.	Riverside Drive	Erie Street	SR	0-5 Years	1021	1021	\$2,042.00						
Parent Ave.	Erie Street	Tecumseh Road	BL	0-5 Years	1814					1814	\$36,280.00		
Parent Ave.	Tecumseh Road	RR tracks	SR	0-5 Years	104	104	\$208.00						
Parent Ave.	RR Tracks	Ypres Blvd	SR	0-5 Years	655	655	\$1,310.00						
Parent Ave.	Optimist Park	Grand Marais Rd	SR	0-5 Years	951	951	\$1,902.00						
Pilette Road	Wyandotte Street	Plymouth Drive	BL	0-5 Years	3536					3536	\$70,720.00		
Pilette Road	Plymouth Drive	Grand Boulevard	SR	0-5 Years	311	311	\$622.00						
Plymouth Road	Pilette Road	Walker Road	MU	0-5 Years	2374							2374	\$237,400.00
Provincial Road	Division Rd	Cabana Road	BL	0-5 Years	747					747	\$14,940.00		
Queen Elizabeth Drive	Rivard Avenue	Clemenceau Rd	SR	0-5 Years	640	640	\$1,280.00						
Remington	Eugenie	Grand Marais	BL	0-5 Years	1044					1044	\$20,880.00		
Rhodes Drive	Jefferson Boulevard	Central Avenue	BL	0-5 Years	2835					2835	\$56,700.00		
Rivberdy Road	Division Street	South Service Road	SR	0-5 Years	2399	2399	\$4,798.00						
Richmond Street	Gladstone Avenue	Walker Road	BL	0-5 Years	780					780	\$15,600.00		
Rivard Ave.	Queen Elizabeth Drive	Rose Ave.	SR	0-5 Years	1332	1332	\$2,664.00						
Rivard Ave.	Rose Ave.	Adstoll Ave	BL	0-5 Years	274					274	\$5,480.00		
Riverdale Ave.	Little River Rd.	Clairview Avenue	SR	0-5 Years	1244	1244	\$2,488.00						
Riverside Drive	Lincoln Rd	Strabane	BL	0-5 Years	1894					1894	\$37,880.00		
Robinet Lane	Mulberry Drive	Tecumseh Road	SR	0-5 Years	655	655	\$1,310.00						
Rose Ave	Rivard Avenue	Thornberry Cr.	BL	0-5 Years	951					951	\$19,020.00		
Roseland Drive w.	Neal Drive	Macgregor Pl	SR	0-5 Years	2341	2341	\$4,682.00						
Sandwich St	Broadway Street	Brock Street	SR	0-5 Years	3152	3152	\$6,304.00						
Seminole St	Walker Road	Pilette Road	BL	0-5 Years	2292					2292	\$45,840.00		
Sheppard St.	Janette Avenue	Kildare Rd	SR	0-5 Years	2844	2844	\$5,688.00						
South Cameron	West Grand Blvd	Howard Avenue	BL	0-5 Years	783					783	\$15,660.00		
South National	Pilette Road	Jefferson Blvd.	BL	0-5 Years	1609					1609	\$32,180.00		
Southdale Dr.	Park/Off Rd	Grand Marais	SR	0-5 Years	290	290	\$580.00						
Strabane	Riverside Drive	Wyandotte Street	BL	0-5 Years	259					259	\$5,180.00		
Sydney Ave	Division Rd	Marentette Ave	BL	0-5 Years	497					497	\$9,940.00		
Tecumseh Road	Prince Road	Crawford Avenue	BL	0-5 Years	2658					2658	\$53,160.00		
University Ave.	Huron Church Road	Partington Ave.	BL	0-5 Years	823					823	\$16,460.00		
University Ave.	Partington Ave.	Bridge At Salter	BL	0-5 Years	1234					1234	\$24,680.00		

ROAD/ROUTE NAME	FROM	TO	Proposed Trail Type	Timing	Length (m)	SR length (m)	SR cost @ \$2.00/m	BLRecon length (m)	BLRecon cost @ \$180.00/m	BLStripe length (m)	BLStripe cost @ \$20.00/m	AT length (m)	AT cost @ \$100.00/m
University Ave.	Bridge At Salter	Caron	BL	0-5 Years	61					61	\$1,220.00		
University Ave.	Caron	Ouellette Ave.	BL	0-5 Years	739					739	\$14,780.00		
University Ave.	Ouellette Ave.	Goyeau	BL	0-5 Years	192					192	\$3,840.00		
University Ave.	Goyeau	McDougall	BL	0-5 Years	253					253	\$5,060.00		
West Grand Blvd	Dominion Boulevard	South Cameron Blvd.	BL	0-5 Years	1484					1484	\$29,680.00		
Woodland Ave	Cabana Road	Grand Marais Drain	SR	0-5 Years	2112	2112	\$4,224.00						
Wyandotte Street	Matthew Brady	Isabelle	BL	0-5 Years	210					210	\$4,200.00		
Wyandotte Street	Isabelle Pl.	St. Rose	BL	0-5 Years	241					241	\$4,820.00		
Wyandotte Street	St. Rose	Jefferson Blvd.	BL	0-5 Years	1058			1058	\$190,440.00				
Wyandotte Street	Jefferson Boulevard	Thompson	BL	0-5 Years	634					634	\$12,680.00		
Wyandotte Street	Thompson	Pilette	BL	0-5 Years	747			747	\$134,460.00				
Wyandotte Street	Pilette	Strabane	BL	0-5 Years	1204					1204	\$24,080.00		
Wyandotte Street	Devonshire	Parent Avenue	BL	SR 0-5, BL 5-20	1106	1106	\$2,212.00						
Wyandotte Street	Parent Avenue	Mercer	BL	SR 0-5, BL 5-20	704	704	\$1,408.00						
Wyandotte Street	Mercer	McDougall Street	BL	SR 0-5, BL 5-20	137	137	\$274.00						
Wyandotte Street	McDougall Street	Windsor Ave	BL	SR 0-5, BL 5-20	131	131	\$262.00						
Wyandotte Street	Windsor	Pellisier	BL	SR 0-5, BL 5-20	375	375	\$750.00						
Wyandotte Street	Pellisier	Janette	BL	SR 0-5, BL 5-20	527	527	\$1,054.00						
Wyandotte Street	Janette	Overbridge At Caron	BL	SR 0-5, BL 5-20	198	198	\$396.00						
Wyandotte Street	Bridge At Caron	East Of Campbell	BL	SR 0-5, BL 5-20	1015	1015	\$2,030.00						
Wyandotte Street	East Of Campbell	Bridge	BL	SR 0-5, BL 5-20	207	207	\$414.00						
Wyandotte Street	Bridge Ave.	California	BL	SR 0-5, BL 5-20	491	491	\$982.00						
Ypres Blvd	George Avenue	Parent Avenue	SR	0-5 Years	1981	1981	\$3,962.00						
Totals					162469	75173	\$150,346.00	12318	\$2,217,240.00	65901	\$1,318,020.00	8557	\$855,700.00

Assumptions

- Prices in 2000 dollars, and do not include taxes
- Budget figures reflect basic costs to add the facility only and not additional costs listed in assumption 4 below
- Does not include costs for property acquisition or utility relocations
- Other major site specific items (bridges, mid block pedestrian activated signal etc. are not included)
- Current EA (cost of network segment would be accounted for in road reconstruction budget)

Total (Years 1-5) \$4,541,306.00

NOTE: All unit prices should be confirmed by Windsor Parks and Recreation and Works Departments to reflect current local market pricing.

**Appendix B - BUMP Implementation Schedule
(5 - 20 years)**

Road/Route Name	From	To	Proposed Trail		Length (m)	SR		BLRecon		BLStripe		AT	
			Type	Timing		length (m)	cost @ \$2.00/lm	length (m)	cost @ \$180.00/lm	length (m)	cost @ \$20.00/lm	length (m)	cost @ \$100.00/lm
6th Concession	North Talbot Road	Division And Cabana	Bike Lane	Years 5-20	2109			2109	\$379,620.00				
Banwell Road	South Of Little River Blvd	Tecumseh Rd	MU	0-5 Years	1486							1486	\$148,600.00
Banwell Road	Tecumseh Road	Mulberry Rd.	MU	0-5 Years	643							643	\$64,300.00
Broadway Street	Sandwich Street	Ojibway Parkway	Bike Lane	SR 0-5, BL 5-20	1013			1013	\$182,340.00				
Broadway Street	Ojibway Parkway	Matchette Road	Bike Lane	SR 0-5, BL 5-20	1021			1021	\$183,780.00				
Calderwood Road	Foster Avenue	Riberdy Road	Signed Route	Years 5-20	1463	1463	\$2,926.00						
Clover Street	Tecumseh Road	CNR Line	Multi-use	Years 5-20	232							232	\$23,200.00
Clover Street	Mchugh Street	Riverside Drive	Bike Lane	Years 5-20	2400			2400	\$432,000.00				
Conservation Drive	Bridge	Grand Marais Road	Bike Lane	Years 5-20	76			76	\$13,680.00				
Country Club	Cousineau Road	Howard Ave	Bike Lane	Years 5-20	756			756	\$136,080.00				
Cousineau Road	Country Club	City Limits	Bike Lane	Years 5-20	1097			1097	\$197,460.00				
Daytona Avenue	Totten Street	Kenora Street	Bike Lane	Years 5-20	335			335	\$60,300.00				
Dezeil Drive	St. Etienne	Proposed Multi-Use	Signed Route	Years 5-20	189	189	\$378.00						
Dominion Boulevard	Northwood Street	South Cameron Blvd	Bike Lane	Years 5-20	1280			1280	\$230,400.00				
Dougall Avenue	Ouellette Ave	Sheppard St	Bike Lane	Years 5-20	1745			1745	\$314,100.00				
Ducharme Street	6th Concession	Walker Road	Bike Lane	Years 5-20	1652			1652	\$297,360.00				
Extension of Ducharme Street	Walker Road	City Limits	Multi-use	Years 5-20	198							198	\$19,800.00
Foster Avenue	Conservation Drive	St Etienne	Signed Route	Years 5-20	387	387	\$774.00						
Grand Marais Road	Howard Avenue	Walker Road	Bike Lane	Years 5-20	2210			2210	\$397,800.00				
Howard Avenue	City Limits	Cabana Road	Bike Lane	Years 5-20	2713			2713	\$488,340.00				
Jefferson Boulevard	Wyandotte Street	Riverside Drive	Bike Lane	Years 5-20	268			268	\$48,240.00				
Jefferson Boulevard	Tecumseh Road	Rose Blvd	Bike Lane	Years 5-20	465			465	\$83,700.00				
Kamloops	Division Road	Calderwood	Signed Route	Years 5-20	930	930	\$1,860.00						
LaBelle Street	Malden Road	Huron Church Road	Signed Route	Years 5-20	1280	1280	\$2,560.00						
Lauzon Road	Forest Glade Drive	Hawthorne Dr.	Bike Lane	Years 5-20	1320			1320	\$237,600.00				
Little River Road	Kiwanis Park	Banwell Road	Multi-use	Years 5-20	2033							2033	\$203,300.00
Maplewood Road	City Limits	Broadway Street	Signed Route	Years 5-20	2640	2640	\$5,280.00						
Marentette Avenue	South Service Road	Sydney Road	Bike Lane	Years 5-20	556			556	\$100,080.00				
Marentette Avenue	Sydney Ave	Kamloops	Signed Route	Years 5-20	747	747	\$1,494.00						
Matchette Road	City Limits	Prince Road	Bike Lane	Years 5-20	3947			3947	\$710,460.00				
McDougall Street	University Ave	Wyandotte St	Bike Lane	Years 5-20	323			323	\$58,140.00				
McDougall Street	Wyandotte Street	Erie St	Bike Lane	Years 5-20	646			646	\$116,280.00				
McDougall Street	Erie Street	Giles Blvd	Bike Lane	Years 5-20	405			405	\$72,900.00				
McDougall Street	Giles	Tecumseh Road	Bike Lane	Years 5-20	1216					1216	\$24,320.00		
McDougall Street	South Of Tecumseh Road	Railroad Tracks	Bike Lane	Years 5-20	771			771	\$138,780.00				
McDougall Street	RR Tracks	Eugenie	Bike Lane	Years 5-20	381					381	\$7,620.00		
McHugh Road	Lauzon Parkway	Little River Corridor	Bike Lane	Years 5-20	1113			1113	\$200,340.00				
McHugh Road	Little River Corridor	City Limits	Multi-use	Years 5-20	2903							2903	\$290,300.00
Mulberry Drive	Forest Glade Drive	City Limits	Signed Route	Years 5-20	390	390	\$780.00						
North Service Road	West Of Pilette	Jefferson Boulevard	Bike Lane	Years 5-20	1881			1881	\$338,580.00				
North Talbot Road	Entire Length		Bike Lane	Years 5-20	1774			1774	\$319,320.00				
Off-road	Byng	North Service Rd	MU	0-5 Years	1948							1948	\$194,800.00
Off-road	Forest Glade Drive	Little River	MU	0-5 Years	500							500	\$50,000.00
Off-road (East of Huron Church)	Cabana Road	Northwood Street	MU	0-5 Years	2777							2777	\$277,700.00
Off-road (West of Huron Church)	Cabana Road	Malden Rd	MU	0-5 Years	3170							3170	\$317,000.00
Off-road	Huron Church Rd	California Ave	MU	0-5 Years	442							442	\$44,200.00
Off-road	McDougall Street	Bruce Ave	Multi-use	Years 5-20	922							922	\$92,200.00
Off-road	South Cameron Woodlot		Multi-use	Years 5-20	290							290	\$29,000.00
Off-road	Rhodes Drive	Digby	Multi-use	Years 5-20	1021							1021	\$102,100.00
Off-road (Wellington-Cameron area)	Wyandotte Street	Riverfront	MU	0-5 Years	1006							1006	\$100,600.00

Appendix B - BUMP Implementation Schedule

Road/Route Name	From	To	Proposed Trail Type	Timing	Length (m)	SR length (m)	SR cost @ \$2.00/lm	BLRecon length (m)	BLRecon cost @ \$180.00/lm	BLStripe length (m)	BLStripe cost @ \$20.00/lm	AT length (m)	AT cost @ \$100.00/lm
Ojibway Parkway	Broadway Street	City Limits	MU	0-5 Years	2518							2518	\$251,800.00
Ojibway Parkway	Sandwich Street	Broadway Street	Multi-use	Years 5-20	1417							1417	\$141,700.00
Ouellette Avenue/Dougall Ave.	Eugenie Street	West Grand Blvd	Bike Lane	Years 5-20	1600			1600	\$288,000.00				
Pillette Road	Wyandotte Street	Riverside Drive	Bike Lane	Years 5-20	229			229	\$41,220.00				
Prince Road	Sandwich Street	Huron Church Road	Bike Lane	Years 5-20	2198			2198	\$395,640.00				
Provincial Road	Cabana Road	6th Concession	Bike Lane	Years 5-20	305			305	\$54,900.00				
Provincial Road	6th Concession	Chrysler Canada Greenway	Bike Lane	Years 5-20	1811			1811	\$325,980.00				
Quality Way	Jefferson Blvd.	Lauzon Parkway	Bike Lane	Years 5-20	1707			1707	\$307,260.00				
Radcliffe Street	McHugh St	Little River Boulevard	MU	0-5 Years	1067							1067	\$106,700.00
Randolph Avenue	Northwood Street	South Cameron Woodlot	Signed Route	Years 5-20	692	692	\$1,384.00						
Randolph Avenue	South Cameron Woodlot	Totten Street	Signed Route	Years 5-20	1036	1036	\$2,072.00						
Richmond Street	Walker Road	St. Luke Road	Bike Lane	Years 5-20	274			274	\$49,320.00				
Riverside Drive	Lincoln Road	Brock Street	Bike Lane	Years 5-20	6066			6066	\$1,091,880.00				
Riverside Drive	Fairview Area	Lauzon Road	Bike Lane	Years 5-20	1731			1731	\$311,580.00				
Riverside Drive	Lauzon Road	City Limits	Bike Lane	Years 5-20	4641			4641	\$835,380.00				
Riverside Drive	Strabane	Jefferson Boulevard	Bike Lane	Years 5-20	2701			2701	\$486,180.00				
Russell Street	Brock Street	Ambassador Bridge	Multi-use	Years 5-20	1204							1204	\$120,400.00
South Service Road	Marentette Road	Byng Street	Bike Lane	Years 5-20	1615			1615	\$290,700.00				
Sprucewood Avenue	Ojibway Parkway	Matchette Road	Bike Lane	Years 5-20	1033			1033	\$185,940.00				
Sprucewood Avenue	Maplewood Drive	Ojibway Parkway	Signed Route	Years 5-20	1012	1012	\$2,024.00						
Tecumseh Road	Forest Glade Drive	Robinet Lane	Multi-use	Years 5-20	881							881	\$88,100.00
Totten Street	Huron Church Road	South Cameron Blvd.	Bike Lane	Years 5-20	1420			1420	\$255,600.00				
Wyandotte Street	Greenpark	City Limits	Signed Route	Years 5-20	1119	1119	\$2,238.00						
Wyandotte Street	Matthew Brady	Greenpark Blvd.	Bike Lane	Years 5-20	3261			3261	\$586,980.00				
Wyandotte Street	Devonshire	Parent Ave.	Bike Lane	SR 0-5, BL 5-20	1106			1106	\$199,080.00				
Wyandotte Street	Parent Avenue	Mercer	Bike Lane	SR 0-5, BL 5-20	704			704	\$126,720.00				
Wyandotte Street	Mercer	McDougall Street	Bike Lane	SR 0-5, BL 5-20	137			137	\$24,660.00				
Wyandotte Street	McDougall Street	Windsor Avenue	Bike Lane	SR 0-5, BL 5-20	131			131	\$23,580.00				
Wyandotte Street	Windsor	Pellissier	Bike Lane	SR 0-5, BL 5-20	375			375	\$67,500.00				
Wyandotte Street	Pellissier	Janette	Bike Lane	SR 0-5, BL 5-20	527			527	\$94,860.00				
Wyandotte Street	Janette	Over Bridge At Caron	Bike Lane	SR 0-5, BL 5-20	198			198	\$35,640.00				
Wyandotte Street	Bridge At Caron	East Of Campbell	Bike Lane	SR 0-5, BL 5-20	1015			1015	\$182,700.00				
Wyandotte Street	East Of Campbell	Bridge	Bike Lane	SR 0-5, BL 5-20	207			207	\$37,260.00				
Wyandotte Street	Bridge Avenue	California	Bike Lane	SR 0-5, BL 5-20	491			491	\$88,380.00				
Totals					107,498	11,885	\$23,770.00	67,359	\$12,124,620.00	1,597	\$31,940.00	26,658	\$2,665,800.00

Assumptions

- Prices in 2000 dollars, and do not include taxes
- Budget figures reflect basic costs to add the facility only and do not include items listed in assumption 4 below
- Does not include costs for property acquisition or utility relocations
- Other major site specific items (bridges, mid block pedestrian activated signal etc. are not included)
- Current EA (cost of network segment would be accounted for in road reconstruction budget)

Total (Years 5-20) \$14,846,130.00

NOTE: All unit prices should be confirmed by Windsor Parks and Recreation and Works Departments to reflect current local market pricing.

Appendix C

On-Road Routes

Item	Unit	Unit Price ¹	Comments/Assumptions
1. Pave existing shoulders	Linear m	\$120.00	price for two sides
2. Construct new shoulder and pave	Linear m	\$300.00	price for two sides
3. Pave shoulder as part of road reconstruction	Linear m	\$180.00	price for two sides
4. Construct Bike Lane – new Construction	Linear m	\$360.00	price for two sides
5. Construct bike lane as part of road reconstruction	Linear m	\$180.00	price for two sides
6. Paint bike lane on existing road	Linear m	\$20.00	price for two sides, includes signing
7. Construct wide shared lane – new construction	Linear m	\$360.00	price for two sides
8. Minor spot repairs on existing asphalt road	Linear m	\$1.00	minor spot repairs of existing asphalt (pothole filling) prior to designation for cycling route
9. Construct wide shared lane as part of road reconstruction	Linear m	\$180.00	price for two sides
10. On-road signed route	Linear m	\$2.00	price for two sides, assumes signs at corners (100m on average)
11. Replace catch basin covers with bicycle friendly model	each	\$260.00	
12. Traffic Control sign	each	\$200.00	(MTO standard)
13. Construct Pedestrian Refuge	each	\$20,000.00	
14. Construct Pedestrian actuated traffic signal	each	\$60,000.00	varies depending on number of signal heads required
15. Construct Concrete sidewalk	Linear m	\$75.00	one side of street only
16. Construct pedestrian overpass of major arterial/highway	each	\$750,000.00	
17. Route Sign	each	\$100.00	or average \$1000.00/km

¹ All unit prices should be confirmed by Windsor Parks and Recreation and Works Departments to reflect current local market pricing.



Transition Area (On-road to Off-road)

Item	Unit	Unit Price	Comments/Assumptions
1. Trail/Road transition	each	\$2,500.00	typically includes 3 bollards warning signs, curb cuts and minimal restoration (3.0m trail)
2. Trail/Road transition at existing signalized intersection	each	\$3,000.00	(at intersection with pedestrian crosswalk) typically includes 6 bollards, warning signs and minimal restoration
3. At-grade mid-block crossing	each	\$5,000.00	typically includes pavement markings, 6 bollards, warning signs, curb cuts and minimal restoration
4. At-grade railway crossing	each	\$64,000.00	flashing lights, motion sensing switch (CN estimate)
5. Below grade railway crossing	each	\$500,000.00	3.0m wide, unlit culvert style approx. 10 m long for single elevated railway track
6. Multi use subway under 4 lane road	each	\$1,200,000.00	3.3 m wide, lit



Off Road Routes - Trail Surfacing

Item	Unit	Unit Price	Comments/Assumptions
1. Rough Grading	Linear m	\$12.00	includes levelling and packing after levelling (3.5m wide)
2. Construct new granular surface trail	Linear m	\$45.00	normal site conditions (3.5m wide)
3. Construct new asphalt trail ²	Linear m	\$100.00	normal site conditions (3.5m wide)
4. Upgrading gravel to tar and chip	Linear m	\$12.00	includes 1 coat primer and 2 coats surface (areas requiring "trail hardening"-3.5m wide)
5. Upgrading gravel trail to Asphalt	Linear m	\$45.00	price includes some upgrades to the base (3.5m wide)
6. Construct woodchip trail	Linear m	\$25.00	3.0m wide
7. Construct single track trail	Linear m	\$10.00	includes clearing and grubbing with minor regrading to eliminate high and low points (1.5m wide)

² Average unit price of \$100.00 per linear metre assumed. Unit price may range from \$80.00 – \$120.00 per linear metre. Additionally, the unit price of constructing a new *concrete* trail would be approximately \$200.00 per linear metre.

Off Road Routes - Signage

Item	Unit	Unit Price	Comments/Assumptions
1. Regulatory and Caution Signage - Off-road Trail	each	\$75.00	trailside sign, 300mm x 300mm c/w metal post
2. Traffic Signs - On-road	each	\$200.00	per MTO specs
3. Regulatory Signs	each	\$75.00	same as 1 above
4. Interpretive Sign	each	\$800.00	painted wood, 1m x 1.2m, sign only
5. Trailhead kiosk	each	\$3,000.00	
6. Signboards for trailhead kiosk	each	\$2,000.00	
7. Directional Sign Markers	each	\$50.00	bollard/post /w 100mm x100mm marker



Off Road Routes - Barriers and Access

Item	Unit	Unit Price	Comments/Assumptions
1. Lockable Gate (2 per road crossing)	each	\$2,000.00	price indicated for one side of road (2 required per road crossing)
2. Berming/boulders at road crossing	each	\$500.00	price indicated for one side of road (2 required per road crossing)
3. Granular Parking Lot at staging area (15 car capacity-gravel)	each	\$10,000.00	
4. Chain Link Fencing	Linear m	\$50.00	range of \$35.00-\$65.00/lm depending on height, gauge and site conditions
5. Post and wire fencing	Linear m	\$35.00	
6. Armourstone retaining wall	face m ²	\$180.00	
7. Timber retaining edge	Linear m	\$20.00	
8. Metal offset gates	each	\$1,200.00	provide 4 (\$4,800.00) per crossing to create maze-type barrier
9. Shoreline stabilization	Linear m	\$400.00	2 stacked rows of armourstone retaining wall with filter cloth and gravel backfill



Off Road Routes - Structures

Item	Unit	Unit Price	Comments/Assumptions
1. Culvert repair (major)	each	\$2,500.00	
2. Culvert Repair (minor)	Linear m	\$90.00	Corrugated steel pipe (CSP) culvert, 300mm diameter, normal site conditions
3. New Concrete Box Culvert (walkthrough)	each	\$10,000.00	assumes length of 10m+/- with good access for construction
4. 450mm diameter CSP culvert	each	\$1,500.00	assumes length of 10m+/- with good access for construction
5. Pedestrian Bridge (light duty)	Linear m	\$500.00	complete with handrails (3.0m wide)
6. Self weathering steel truss pedestrian bridge	Linear m	\$2,800.00	3.5 m wide
7. Self weathering steel truss pedestrian bridge	Linear m	\$1,800.00	1.8m wide
8. New boardwalk (pedestrian-light duty)	Linear m	\$600.00	new construction-includes footings and decking 2.5m wide (wood structure)
9. New boardwalk (heavy duty)	Linear m	\$1,200.00	new construction-includes footings and decking 3.0m wide (wood structure)
10. Bridge abutments	each	\$5,000.00	
11. Pile footings	each	\$14,000.00	
12. Timber stairs and hand railing	vertical m	\$1,500.00	1.2m wide
13. Metal stairs with hand railing and gutter to roll bicycle	vertical m	\$3,000.00	1.8m wide, galvanized steel stairs



Site Furnishings

Item	Unit	Unit Price	Comments/Assumptions
1. Benches	each	\$600.00	can be as low as \$250.00 for "low tech" bench
2. Garbage Container	each	\$150.00	
3. Bicycle Rack	each	\$70.00	post and ring style stand
4. Bicycle Rack	each	\$500.00	holds 6 bicycles, price varies depending on manufacturer
5. Bicycle Locker	each	\$2,500.00	price varies depending on manufacturer
6. Construct washroom building	each	\$3,500.00	wood structure with concrete holding tank

Lighting

Item	Unit	Unit Price	Comments/Assumptions
1. Power pedestal	each	\$2,100.00	typically one required per circuit
2. Light standard	each	\$1,800.00	4.5m high, with wiring and photocell (typically set at 40m intervals)
3. Bicycle Rack	each	\$70.00	post and ring style stand

