



WORKSHOP

ACTIVE TRANSPORTATION MASTER PLAN



Development Services Committee November 8, 2021





WORKSHOP AGENDA

- 1. Workshop Purpose and Recommended Outcomes
- 2. Next steps after Council endorsement of the ATMP
- 3. Critical Importance of Active Transportation and need for an ATMP Break for Questions and Discussion
- 1. Identification and selection of Active Transportation Facilities
- 2. Implementation process for individual projects

Break for Questions and Discussion

- 1. Draft ATMP recommendations
- 2. Financial implications and sustainability
- 3. Questions and Discussion





Workshop Purpose and Recommended Outcomes

<u>Purpose</u>

1. That the Active Transportation Staff Presentation be received to encourage questions, open dialogue and discussion.

Recommended Outcomes

- 1. That the Active Transportation Master Plan be endorsed in princple; and
- 2. That implementation funding of the Active Transportation Master Plan be assessed and included as part of the current Development Charges Bylaw update as appropriate.





Next Steps

Staff report to DSC (Q1/Q2 2022) on implementation & prioritization process for 10-year plan:

- Define project prioritization process
- Identify the draft short term projects within 10-year plan
- Identify first (5-year) project priorities
- Identify the capital and operating costs
- Identify funding sources for first 5-year projects
- Identify options to address any funding shortfall
- Identify resources required for implementation







PART 1:

Critical Importance of Active Transportation and Need for Active Transportation Master Plan





Critical Importance of Active Transportation Population and Employment Growth



Population Employment





Critical Importance of Active Transportation Roads - York Region's Historical Level of Service



Paved Lane Kilometres per Capita

 Downward trend in per capita road capacity not unusual or unique

Typical organic change for other modes of transport such as transit and active transportation
Necessary change to meet the needs of growing urban regions

Source: York Region's 2018 Development Charge Background Study, May 10, 2018





Critical Importance of Active Transportation City of Markham Official Plan Policies



Markham Official Plan Policy

7.1.4

...e) promoting a safe and comprehensive network of signed bike routes, bike lanes, cycling trails and multi-use paths for cyclists of all ages and abilities generally as identified in Appendix D – Cycling Facilities based on the Markham and York Region Cycling Master Plans;

f) implementing segregated bicycle lanes and/or off-road bicycle paths along arterial roads and major and minor collector roads where cycling safety is a foremost concern





Critical Importance of Active Transportation Markham's Transportation Strategic Plan

- Selective road capacity enhancements;
- Increased and enhanced transit services;
- Transit-supportive development;
- Transportation demand management (TDM); and
- Active transportation.













Critical Importance of Active Transportation Building Markham's Future Together Strategic Plan



2020-2023 STRATEGIC PLAN SUMMARY

BMFT Strategic Plan

Goal #3 -Safe, Sustainable & Complete Community

Strategic Action 3.1.5 - Implement an Active Transportation Master Plan, and first and last mile solutions (biking, walking and transit)".







The need for Active Transportation Master Plan Consolidating and Updating Old Plans

- 2009 Pathways and Trails MP
- 2010 Cycling MP







The need for Active Transportation Master Plan Support Other City Strategic Plans





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Markham's Active Transportation Master Plan



MARKHAM ACTIVE TRANSPORTATION



Pursue Pedestrian Network Improvements



Encourage & Engage our Community



Connect & Enhance the Cycling Network



Evolve Design & Maintenance for Active Transportation Facilities





PART 2: Active Transportation Facility Types and Selection Process





Active Transportation Facility Types (Pedestrian)

Sidewalks









Active Transportation Facility Types (Cycling)

Designated Bike Lanes

Buffered Bike Lanes

Protected Bike Lanes











Active Transportation Facility Types (Cycling)

Cycle Tracks









Active Transportation Facility Types (Cycling)









Active Transportation Facility Types (Cycling)

Off-road (Multi-use) Trails - MUTs







AT Facility Selection Process

	Shared Roadway	Neighbourhood Bikeway	Rural Paved Shoulder	Advisory Bicycle Lane	Bicycle Lane	Buffered Bicycle Lane	Separated Bicycle Lane	Cycle Track	Multi-Use Path
Motor vehicle speed									
30 km/h or less	\checkmark	\checkmark	?	?					
40 km/h	?	?	?	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
50 km/h			?	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
60 km/h			?			?	\checkmark	\checkmark	✓
70 to 90 km/h			?					\checkmark	\checkmark
Over 90 km/h		ĺ						\checkmark	\checkmark
Motor vehicle volumes									
<1,500 vehicles/day	\checkmark	\checkmark	?	?	?	?			
1,500 to 3,000 vpd	?	?	?	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
3,000 to 6,000 vpd			?	?	?	?	\checkmark	\checkmark	\checkmark
6,000 to 10,000 vpd			?				\checkmark	\checkmark	\checkmark
>10,000 vpd							?	\checkmark	1





Selecting a Cycling Facility

- Context-dependent and relies on practitioner knowledge and experience
 - Not a simple "yes" or "no"
- Design criteria and thresholds need to be flexible & accommodate site characteristics and must balance:
 - land use
 - traffic volumes and speed
 - right-of-way availability
 - facility cost
 - value of safety improvements





Selection Process- Context Dependent

enaration			Resource visition	more separation					most separation							
	Shared Bics	cle Eacility					Searea	ated Bike Fa	cility				In-Bould	ward Bievel	Eacility	
0	onared biog	Cieraciity		0	0		Cogreg		(Intry		(12)	(1)	(III)	svaru Bicych	16	(17)
0	(2)	3	4	6	6	0	(8)	9	(10)	0	(12)	(13)	(14)	Ture Mary Cruele		Of Deed
Route	Lane: SLM	Lane: Signed	Wide Curb Lane: SLM	Shoulder	Bicycle Lane	Lane	Lane	Lane with Flex Bollards	protected, with parking	protected with barrier	cycle Track: raised and curb separated	Cycle Track	Cycle Track with sidewalk	Track with	Boulevard Trail	Multi-Use T
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UTE						Gripter			- A		700					
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sign Specification	Should not be placed on reachemes	Travelane widths (York Resson	Should not be placed an madways	The performed maninum width is	Ecrease width based on speed	Lanes should not exceed 2.0 m	Guidelines for buffer width varies:	Guidelines for huffer width varies:	2.5 m width	2.5 m width	2.5 m with	4.3 m recommended width (New	3.0 m width	4.0 m or greater - recommended	6.0 m or greater - recommended	Preferred Design Spe 4.0 m or greater- record
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ria triman with: X0 m	These markings are offers used or	3.75 - 4.0 m wide kean	These markings are often used on	Should an bike ways and	Most appropriate on urbon arterial	Reserved bicycle lane signs should	Designed to increase the space	Designed to increase the space	Use allong roadways with high	Use along roadways with high	Use along readways with high	Desirable when there are more	Use along roadways with high	Recommended for areas with high	Ideal for families and recreational	Typice Most for families and v
e streets iks than thiltitie or no truck net signs are d	Uppets where devicated bicycle lanes are devicable buc an not possible due to physical or other constraints.	Larves should be sufficiently wide to allow motor vehicles to pass cyclists mitrocal encouching on an adjacent travellarve	streets where dockated bicyde lanes are desiated but are not penilole due to physical or other constraints.	appropriate bicycle fad Nets on noral enade with a Barge should be and where three is no carls and guitte. Fad Nets are typically used by experieoced commuters rather than transpertenced riders.	and collectio streets where higher traffic volumes and speeds warrant user separation.	be provided either directly allow or adjacent to the bicycle flow after each interaction and spaced at least every 200 m.	between the bicycle lares and the travel lare or bicycle fains, and Appropriate where bids lares are for abed on smoots with high speeds (>50 km/h).	between the biogde lane and the travel lane or partied cars. Appropriate where bike lanes are lacated an operativity high speeds © 30 km %.	motor vehicle volumes aud/or apoeds (050 km/h) liest on streets with paking lines with a high occupancy rate	motor which volumes and/or speeds (>50 km/b). Best on streets with long blocks and few driveways or mid-block access points for whiches.	motor vehicle volumes and/or speeds (>50 km/h). Where cyclais may enter/howe , or where motoints (rots at a driverary, the curb should be railed with a small 45 degree range	destinutions on one side of a utreen or if the cycle tack will connect will be used one path or bicycle facility on one side of the stores.	motor which volumes and/or speeds. Where cyclists may enter/leave . or where notatists cross at a trinnway, the curb sheald be missimable with a small 43 degree range.	volumes of pedesman and hicycle traffic to reduce cenflict.	users. Suggested when unvested improvements are not feasible along sociology, and when ample ROW's available.	snevs. Suggested when on-ec improvements are not along readways, and w ROW is workable.
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ed Corridors a to the presence of	Encourage bicyclists to ride an appropriate distance away from the 'loor acces' un iterats with parking.	"Share the Road" signs can be added to increase driver awareness.	Markings can be as little as 0.75 m from the cort or streets without on-street parking.	B available within less than 50% of the descalable bicycle lare within AMSHIO allows stepping the shoulder in less of bire lares	1.2 m acceptable where road width is Bented not suitable for roads with high ACD Sand commercial whicles.	Bicycle lane widths less than 1.8 m makes it challenging for bicyclists to pass each other without leaving the bicycle lane.	1.2 m bike lane is acceptable.	1.2 m bita larse la acceptable.	1.5 m bike line is acceptable.	Width should never be taken from the pedestrian pene to make room for a cycle track.	Change In level clearly demandates space for different users and reduces conflicts between bicydiots and pedestrians.	Parking should be transed on the side of the street with the cycle track to ensure advance site distances for motions; crossing	Change inlevel and planted hafter deally democrates space for different users and enhans conflicts between bicyclists and	3.0 m is the minimum allowed for a two-way therefore facility and is only recommended for low traffic shuttions.	3.0 m is the minimum allowed for a tensway shared-use facility and is only encommended for low traffic displays.	In Constrained Typically incorporated parkland and valicy la may choose to remain readway.





Implementation Process for AT Projects

- 1. AT project identified from 10-year Capital Plan
- 2. Preliminary facility type identified through Selection Process
- 3. Public/community consultation
- 4. Committee and Council report and approval
- 5. Budget approval for detailed design
- 6. Construction budget approval
- 7. Construction timelines





Implementation Process for AT Projects







PART 3: ATMP recommendations and Financial implication



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Active Transportation Master Plan



MARKHAM ACTIVE TRANSPORTATION



Pursue Pedestrian Network Improvements



Encourage & Engage our Community



Connect & Enhance the Cycling Network



Evolve Design & Maintenance for Active Transportation Facilities





ATMP Network Recommendations

- Infrastructure network plans
 - Sidewalk Network Completion Program
 - 10-year cycling & trails network plan
 - Ultimate cycling & trails network plan
- Supporting programs and initiatives
 - Existing, enhancements and new
 - Covers safety public information and communications





Sidewalk Network Completion Program







Short-Term Cycling & Trails Network Plan







Ultimate Cycling & Trails Network Plan







ATMP Network Recommendations

	Existing (km)	Short-Term (10 yrs) (km)	Long-Term (beyond 25 yrs) (km)	Ultimate (km)
Shared Roadways	66.1	45	6.8	117.9
Multi-use Paths	31.1	20.5	58.8	110.4
Bike lanes & Buffered Bike Lanes	49.4	93.7	5.7	148.8
Cycle Tracks & Protected Bike Lanes	2.4	24.3	120.3	147.0
Off-road Trails	16.8	31.5	135.9	184.2
TOTAL	165.8	215	327.5	708.3





Financial Implications and Sustainability

- Capital cost estimates
- Operating cost estimates
- Potential funding sources
- Financial sustainability process







ATMP Short-Term Capital Costs

Theme	Short-Term Infrastructure Capital Costs (10 years)
Pursuing Pedestrian Network Improvements	\$13,050,000
Connecting & Enhancing the Cycling Network	\$50,000,000
TOTAL	\$63,050,000





AT Facility Annual Operating Costs

Facility	Unit cost (\$/linear m)	Short-Term Plan				
		Length (km)	Annual Operating Cost (\$/yr) Lifecycle costs not included			
Sidewalk	\$ 6.25	60	\$ 375,000 already anticipated as part of the Sidewalk Program			
Multi-Use Path (MUP) on boulevard	\$2.00- \$6.25	20	\$40,000- \$128,000 Range dependent on operation			
 Cycle tracks & bike lanes Without snow load and hauling With snow load and hauling 	\$ 10.01 \$ 19.58	24	\$ 0 - \$ 486,000 \$ 0 - \$ 950,000 Range dependent on facility selection			
Anticipated Total Incremental Increase in Operating Costs over 10 years		104	\$40,000 - \$1,078,000			





Financial Implications and Sustainability

Potential capital funding sources for Short-Term (10-year) Plan

- Development charges (full cost being considered in current DC Bylaw Background Study)
- Community Benefit Charges (CBC) also being considered as part of any potential funding shortfall
- Provincial and Federal grant programs (e.g. National Active Transportation Strategy, Ontario Municipal Commuter Cycling program, York Region's Pedestrian & Cycling Municipal Partnership Program, etc)

Financial sustainability process

- Short-term capital plan will be subject to funding/budget availability
- Council approval for annual capital plan





ATMP – Summary of Expected Outcomes

- Improved protection & safety for vulnerable road users
- Completing gaps in our existing sidewalk, trails and cycling networks
- Facilitating movement of growing volumes of pedestrians and cyclists
 - First/last km of transit trips
 - Active school travel needs
 - Recreational and public health needs
- Ensuring that our intensification and growth areas are connected by AT to amenities and the rest of Markham









Questions & Answers