



PATHWAYS & TRAILS MASTER PLAN & CYCLING MASTER PLAN

Development Services Committee

March 4, 2008

PRESENTATION OVERVIEW

1. Vision
2. Background
3. Public Consultation
4. Active Transportation Network
 - Cycling Master Plan
 - Pathways & Trails Master Plan
5. Short-term Priorities
6. Implementation Strategy
7. Recommendations



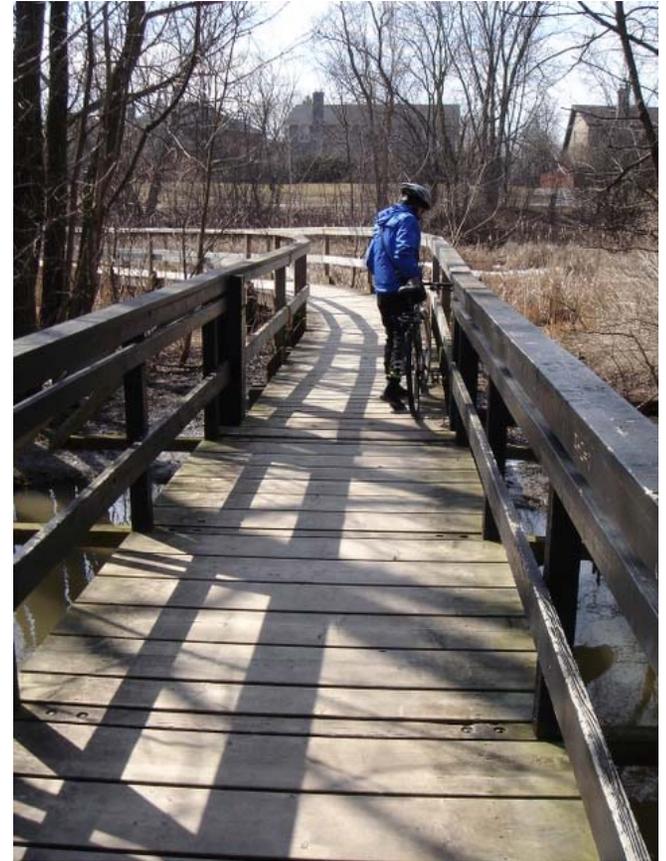
VISION

To develop a comprehensive network of 'Active Transportation' facilities comprised of; off-road multi-use pathways, on-road bicycle lanes and signed routes, and sidewalks that will facilitate a variety of recreation, fitness and commuter needs.



BACKGROUND

- 2004 - Cycling and Pedestrian Advisory Committee (CPAC) established by Council
- 2004 - Cycling Strategy updated and endorsed
- 2005 - Markham Cycling Master Plan Study
- 2006 - Town-wide Pathways and Trails Master Plan Study



Cycling and Pedestrian Advisory Committee (CPAC) - Role

- Consulted at all stages of studies
- Attendance at public information meetings
- Comment on policies, recommendations, design guidelines and network routes
- CPAC endorsed the draft Cycling Master Plan; and Pathways and Trails Master Plan at its January 10, 2008 meeting

Project Scope

- Develop 'Active Transportation' facilities across the Town
- Priority identified in the 2002 Transportation Planning Study and Parks, Recreation, Culture and Library Master Plan 2005-2021
- Established Town-wide cycling and pathway networks and implementation priorities
- Determine appropriate levels of funding (capital and operating)
- Visionary long term and detailed short term implementation projects



PUBLIC COMMENTS

- Basic elements of active transportation infrastructure need to be constructed now
- Ensure connectivity of routes and trails across the Town
- Design routes that are desirable for community use and that are accessible
- Need for on-going basic maintenance of routes and trails
- Bike route signs okay but bike lanes are preferred
- Safety education and awareness initiatives for cyclists and motorists is vital
- Public education and awareness of routes and trails is required



Pathways, Trails and Bicycle Network Master Plans

Find out about Markham's plans to build a connected system of pathways, trails, and bike lanes across our community. Review the selected routes and share your thoughts about the development of this active transportation network designed to accommodate a wide variety of users.

Attend an Open House in your neighbourhood to learn more. Meet and speak with members of Council, project coordinators (Shirley Marsh and Lorenzo Mele of the Town of Markham) and members of the Cycling and Pedestrian Advisory Committee.

- **Monday, June 18**
– Markham Museum, Church Building
9350 Hwy. 48, 2 km north of Hwy. 7
- **Wednesday, June 20**
– Heintzman House, 135 Bay Thorn Drive
- **Thursday, June 21**
– Council Chambers, Civic Centre
101 Town Centre Blvd.
- **Wednesday, June 27**
– Box Grove Community Centre, 7651 9th Line
- **Wednesday, July 4**
– Varley Art Gallery, 216 Main St., Unionville

All meetings are from 6:00 - 9:00 p.m. and are held in open-house format.
For more information, contact 905-477-5530 or jbright@markham.ca.

 www.markham.ca

Actions Resulting from Public Input

- Investigated and added new connections where possible
- Refined some routes to reflect the needs identified
- Adjusted network priorities where appropriate
- Followed up with clarifications, request for information, and answers to questions
- Introduced CAN-BIKE cycling safety program



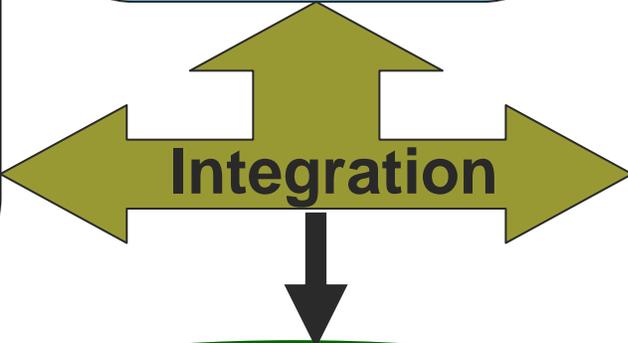
Cycling Master Plan



Pedestrian and Cycling Master Plan



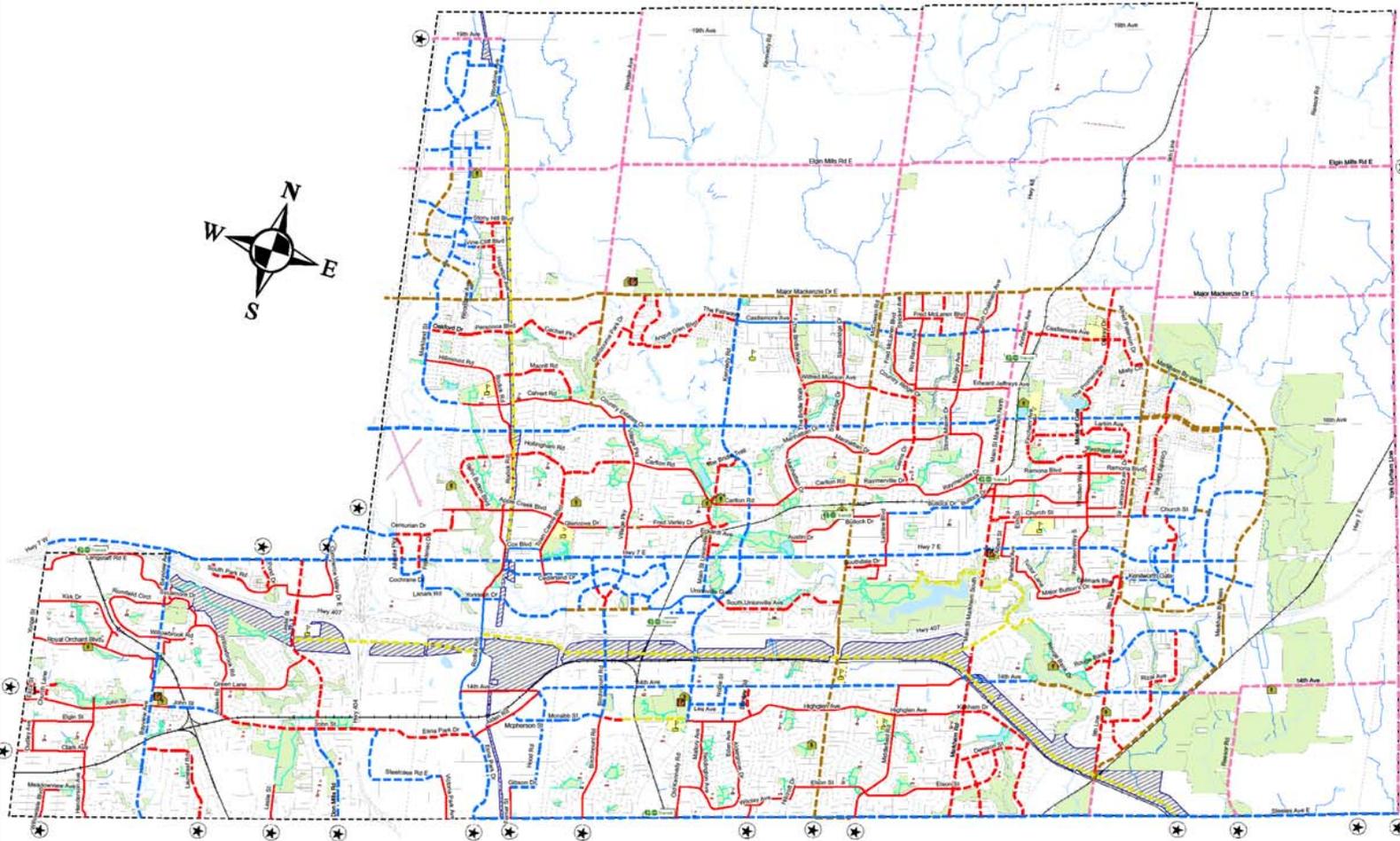
Pathways and Trails Master Plan



Active Transportation Implementation

Cycling Network

Figure 2-6
Draft Routes by
Facility Type



Legend

- Municipal Boundary
- Existing trail underpass
- Gateway to existing or proposed Municipal bike networks
- Roads
- Trails
- Railway
- Airport runway
- Park and Open Space
- Schools
- Hydro corridor
- High school
- Elementary school
- Community Centre
- Library
- Go Station

Cycling Network

- Existing**
 - Existing Signed-only Route
 - Existing Bike Lane
- Proposed**
 - Paved Shoulder Bikeway
 - Signed-only Route
 - Bike Lane*
 - Off Road (Boulevard Trail)
 - Trail in Utility/Greenway Corridor

Note:
All Off-Road trail alignments outside of road rights-of-way to be confirmed through Town's Recreational Trail and Pathway Study.
* The proposed bike facility on Steeles Ave. falls under the jurisdiction of the City of Toronto and is displayed for information purpose only.

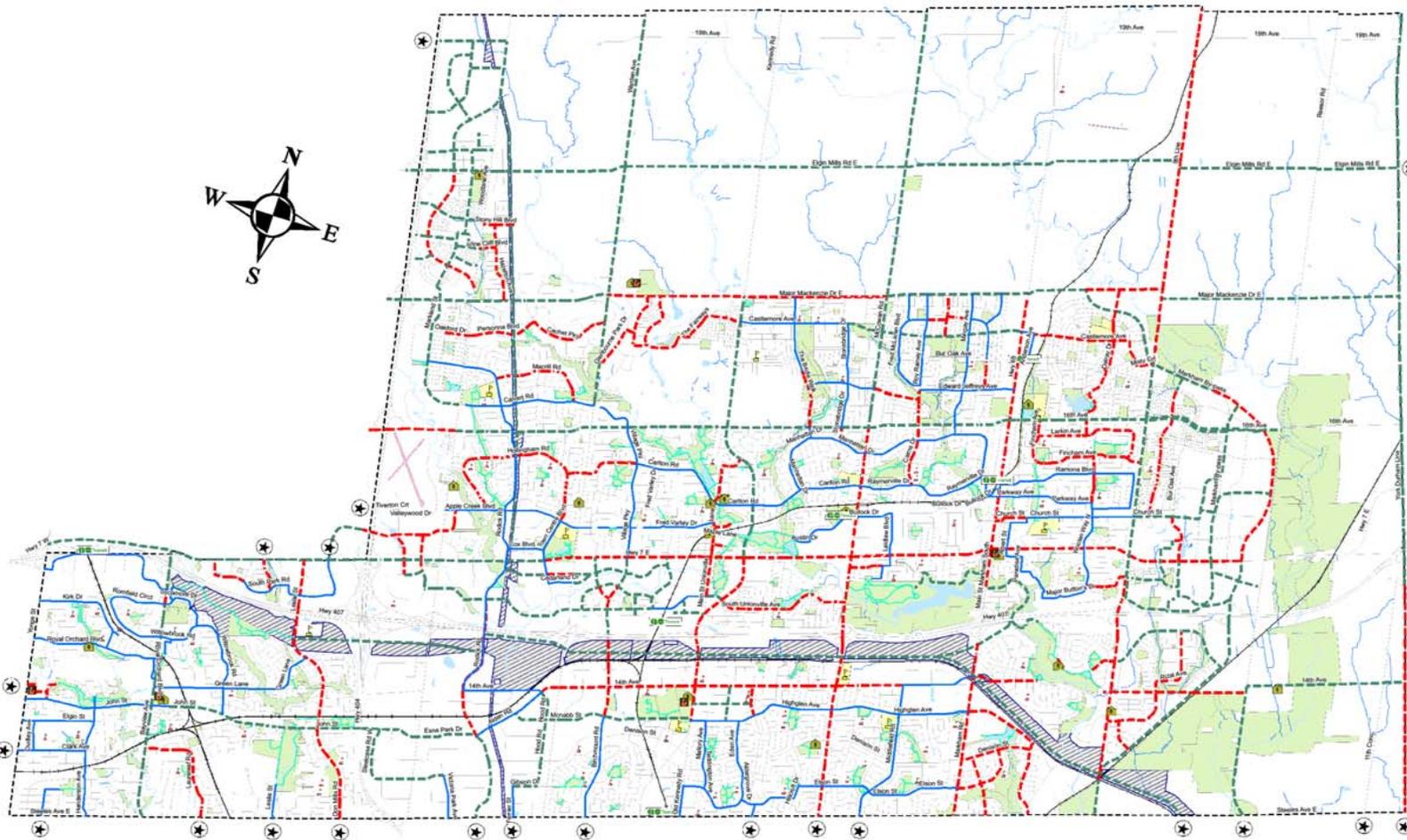
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April, 2007

Cycling Network Implementation Plan



**Figure 4-1:
Draft Network
Implementation
Schedule**



Existing

- Municipal Boundary
- Existing trail underpass
- Gateway to existing or proposed Municipal bike networks
- Roads
- Trails
- Railway
- Airport runway
- Park and Open Space
- Schools
- Hydro corridor
- High school
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- Go Station

Proposed Network Implementation

- Existing**
- 2006 / 2007
- Short Term**
- 2007 to 2012
- Long Term**
- 2013 to 2022

Note:
All Off-Road trail alignments outside of road rights-of-way to be confirmed through Tower's Recreational Trail and Pathway Study.

Draft

April, 2007



Unit Costs for Selected Features for Off and On Road Cycling Facilities

- **On-road signed route = \$1,650 /km**
- **1.5 M Bicycle lane (marking) = \$10,000 /km**
- **1.5 M Bicycle lane (widen) = \$150,000 /km**
- **1.5 M paved shoulder = \$55,000 /km**
- ***3.0 M Multi-use paved pathway = \$110,000 /km**

** Blended rate for multi-use trail in an established road boulevard.*

Cycling Master Plan Implementation Costs

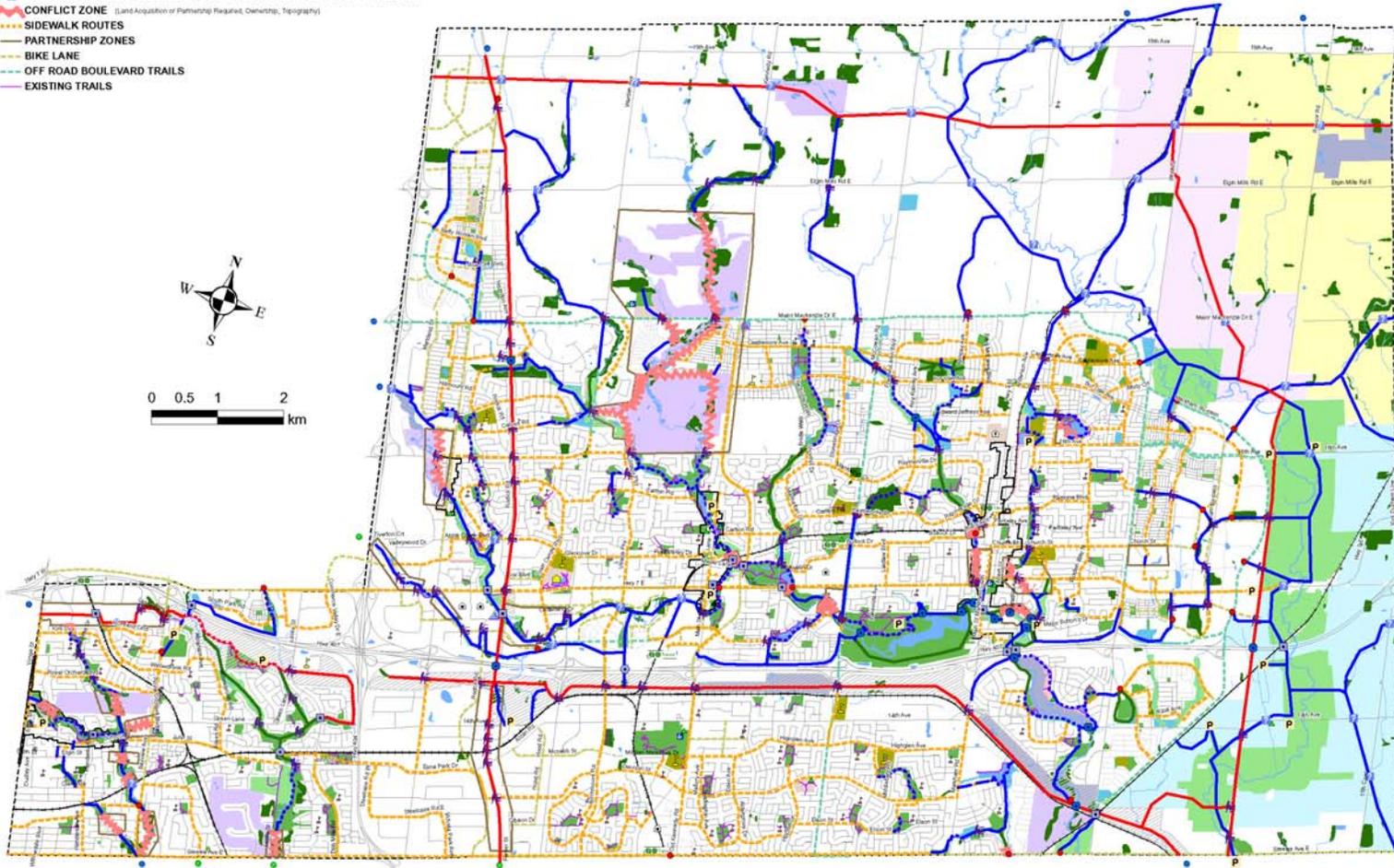
Jurisdiction	Cost			
	Short Term (2007-2012)	Long Term (2013-2022)	Total	(%)
Town of Markham	\$2,011,687	\$6,055,605	\$8,067,292	41.5%
Region of York	\$3,411,233	\$4,806,140	\$8,217,373	42.3%
Other*	\$2,016,300	\$1,139,600	\$3,155,900	16.2%
Total	\$7,439,220	\$12,001,345	\$19,440,565	
(%)	38.3%	61.7%		

** Assumed provincial cost of a multi-use trail adjacent to a new transit facility in the Highway 407/Hydro Corridor.*

Pathways and Trails – Facility Types

Field Work Legend: (Draft Facility Types)

- TYPE 1 - PRIMARY MULTI-USE TOWN WIDE PATHWAY
- TYPE 1 - ON EXISTING TRAILS
- TYPE 2 - SECONDARY TOWN WIDE PATHWAY
- TYPE 2 - ON EXISTING
- TYPE 4 - TRAILS
- P PROPOSED TRAIL HEAD
- ⊗ AT GRADE CROSSING
- ⊗ TRAIL UNDER EXISTING BRIDGE
- ⊗ PROPOSED UNDERPASS
- ⊗ PROPOSED BRIDGE CROSSING
- ⊗ CROSSING TO BE DETERMINED BASED ON FUTURE ROAD PLANS / UNKNOWN
- ⊗ CONFLICT ZONE (Land Acquisition or Partnership Required, Ownership, Topography)
- SIDEWALK ROUTES
- PARTNERSHIP ZONES
- BIKE LANE
- OFF ROAD BOULEVARD TRAILS
- EXISTING TRAILS



PATHWAY AND TRAILS MASTER PLAN

Draft Facility Types

Legend

- Railway
- Roads
- Proposed Future Roads
- Green Park
- Light Green Open Space
- Dark Green Woodlot
- Blue Storm Water Management Facility
- Yellow School
- Red Buffer
- Orange Town Facilities
- Grey Golf Course - Public
- Light Blue Golf Course - Private
- White Heritage Districts
- Yellow Federal Airport Land
- Light Blue Federal Open Space
- Light Blue Provincial Open Space
- Blue Hydro Corridor
- Red On Road/ Off Road Access Points
- Green Gateway to Other Regional Trails & Pathways
- Blue Potential Connections to Other Regional Trails & Pathways
- GO Station

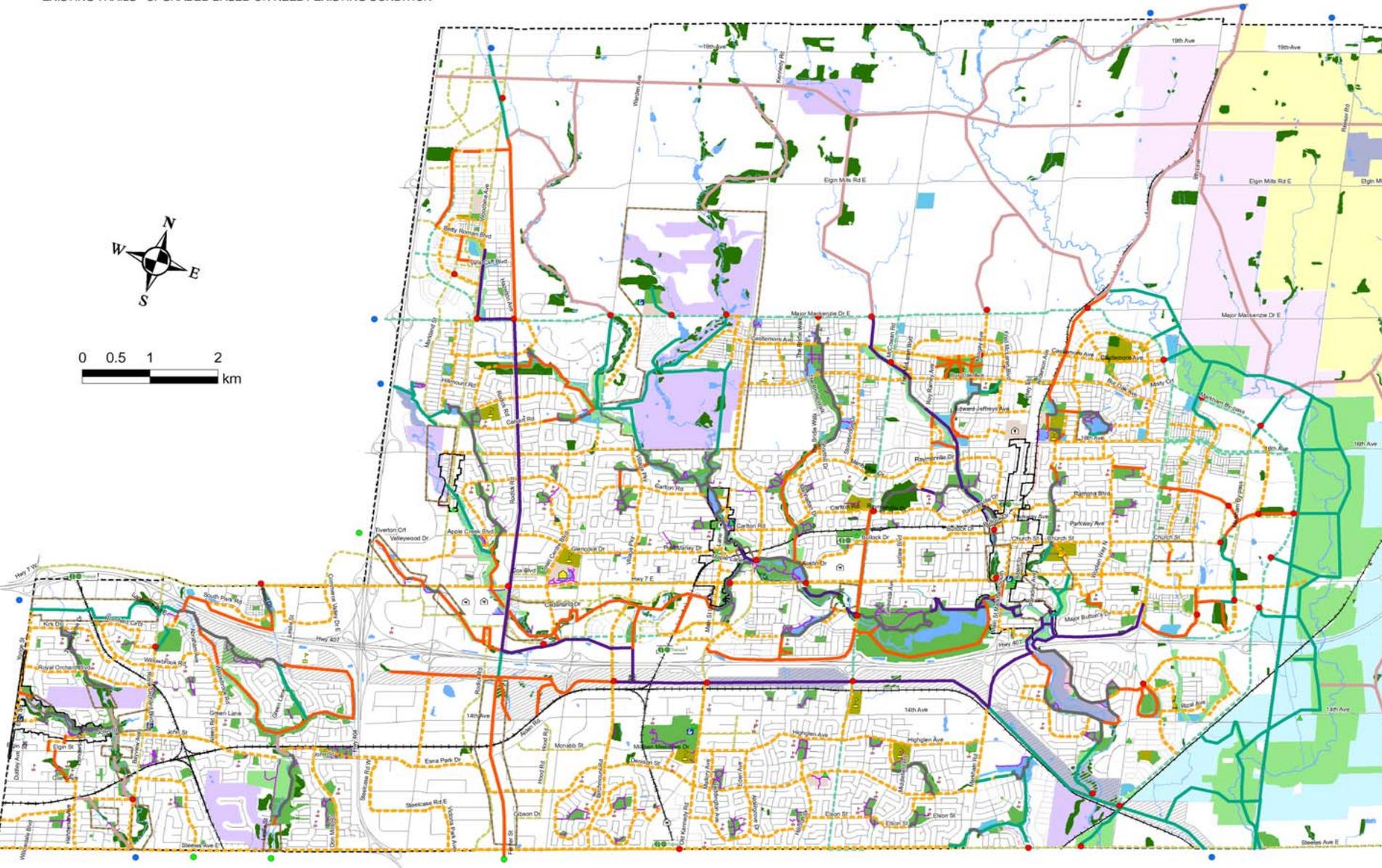
January 2007



Priority / Phasing Legend:

- SHORT TERM (0-5 YEARS) - HIGH PRIORITY
- MID-TERM (5 TO 10 YEARS) - MEDIUM PRIORITY
- LONG TERM (10 TO 20 YEARS) - LOW PRIORITY
- ULTIMATE (20 TO 50 YEARS) - FOR FUTURE PLANNING / DEVELOPMENT PURPOSES
- EXISTING TRAILS - UPGRADED BASED ON NEED / EXISTING CONDITION

Pathways and Trails – Priority / Phasing



Unit Costs for Selected Features for Off-Road Pathways and Trails

- **Asphalt Pathway** = **\$192,000 /km**
 - **Limestone Pathway** = **\$132,000 /km**
 - **Signalized Pedestrian** = **\$75,000 each**
- Mid-Block Road Crossing**
- **Steel Truss Pedestrian** = **\$2,800 /m**
- Bridge**

Notes: Pathway costs include clearing & grubbing, rough grading, compaction, legal surveying and material removal in valley conditions

Off-road Pathways and Trails

Order of Magnitude Costs

- Existing Trails = 32kms
- Short Term (0-5 YRS) = 25kms, \$10.4 Million
- Med Term (5-10 YRS) = 65kms, \$19.4 Million
- Long Term (10-20 YRS) = 42kms, \$22.3 Million
- Ultimate (20-50 YRS) = 33kms, \$11.4 Million

Total New Network = 175kms, \$63.5 Million

Operations / Maintenance Costs

Research indicates a range in maintenance from \$2,200 per km annually to as high as \$14,000 for a highly maintained pathway (i.e. lighting, snow plowing, paving surface upgrade, repainting and sweeping bike lanes, etc.)

Ultimate - once fully implemented

- Pathways and Trails Master Plan = 175 km

(Operations budget from \$385,000 to \$2.5 million* annually)

- Cycling Master Plan = 165 km (paved shoulder and lanes) (Operations budget from \$330,000 to \$2.3 million* annually)

Life cycle for trails and pathways is 15-20 years. Need to allocate Reserve Funds for rehabilitation.

** Cost range depends on level of service/maintenance provided*



Criteria for Prioritization:

Primary Factors:

1. The route is a critical link between two existing cycling routes, pathway & trail / park systems
2. The development of the route would yield the most benefit (i.e. environmental, high pedestrian traffic route connection, open space connection)
3. The property is primarily in public ownership or the other property owners are willing partners (minimizing costs)
4. The route is an extension of an existing pathway / trail system

Secondary Factors:

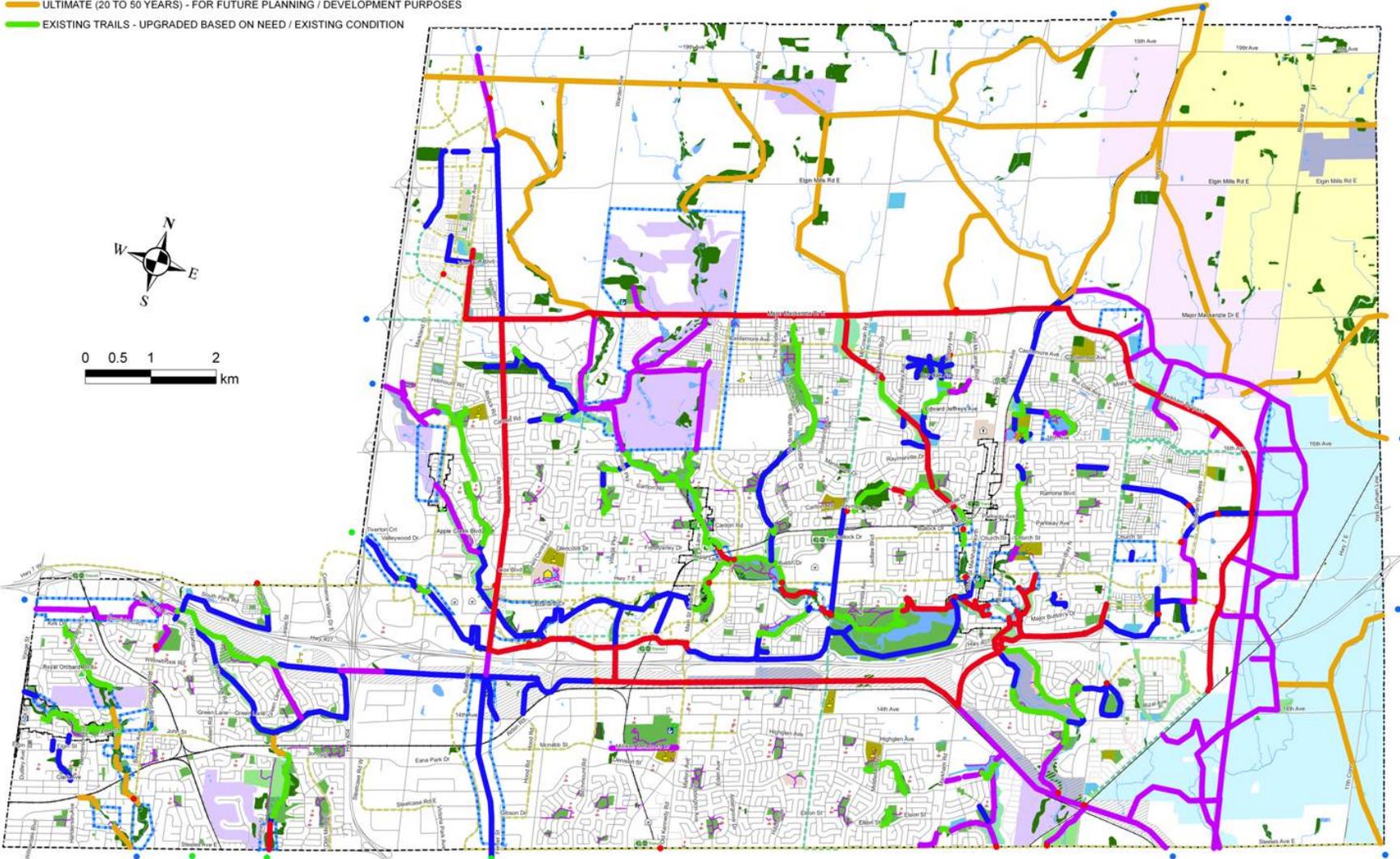
- the route is physically possible with few major barriers in its current condition
- the route could provide commuter linkages to business and commercial areas
- the route is accessible from multiple neighbourhoods / areas
- the route has a significant experiential / interpretive opportunities
- the route will not significantly impact ecological areas

SHORT TERM (5 YEAR) PRIORITIES NETWORK

Priority / Phasing Legend:

Layer

- SHORT TERM (0 TO 5 YEARS) - HIGH PRIORITY
- MID-TERM (5 TO 10 YEARS) - MEDIUM PRIORITY
- LONG TERM (10 TO 20 YEARS) - LOW PRIORITY
- ULTIMATE (20 TO 50 YEARS) - FOR FUTURE PLANNING / DEVELOPMENT PURPOSES
- EXISTING TRAILS - UPGRADED BASED ON NEED / EXISTING CONDITION



Implementation Strategy

1. Establish inter-departmental implementation team; capital works, operations (roads and parks), planning, real property manager and transportation.
2. Appoint a staff person to manage and monitor implementation.
3. Establish a phased, multi-year, inter-department budget for implementation of cycling, pathways and trails infrastructure.
4. Take advantage of immediate funding opportunities.
5. Strategize spending to implement and maintain facilities across the Town.
6. Continue to promote and market the 'Active Transportation' network to increase awareness and use.

Annual Implementation Factors

1. Review opportunities based on development applications, Capital Works Program (Town and Region), road rehabilitation program and CPAC.
2. Work with Development District Teams to implement Master Plan networks through development applications, where possible.
3. Work with Legal on Land Acquisition/ Easement Availability Issues.
4. Prepare annual budget for implementation and maintenance.
5. Pursue grants and funding from various sources.
6. Select priority projects for implementation each year.
7. Develop detailed design using Master Plan facility design guidelines and industry best practices.
8. Confirm detailed design and associated costs.
9. Schedule into Capital Works Program and tender construction.

***Note: \$1.1 million allocated for 2008
(DC \$385K and Gas tax \$715K)***

2008 NETWORK IMPLEMENTATION



Cycling Master Plan (2007)

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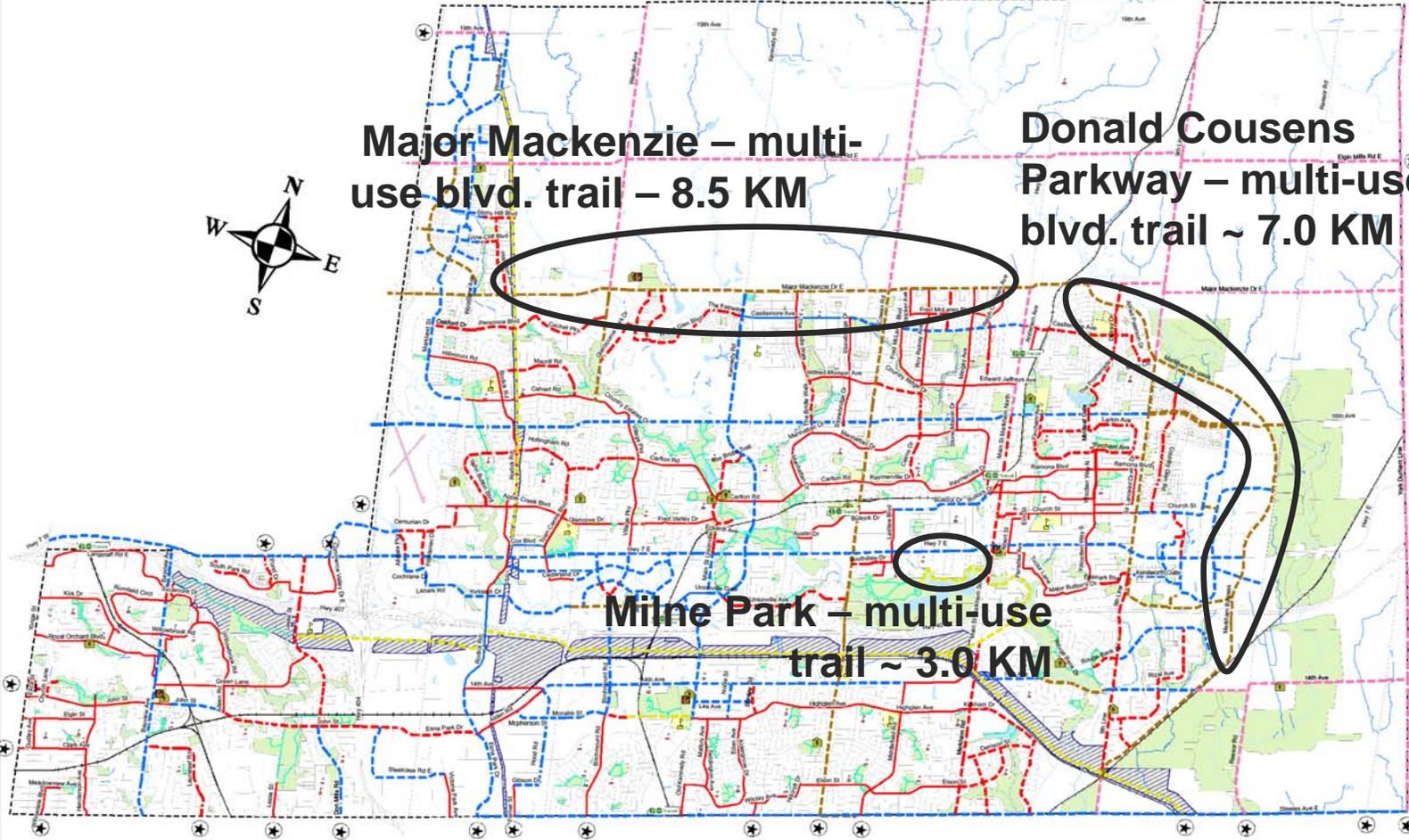
April, 2007



Major Mackenzie – multi-use blvd. trail – 8.5 KM

Donald Cousens Parkway – multi-use blvd. trail ~ 7.0 KM

Milne Park – multi-use trail ~ 3.0 KM



Full implementation subject to Municipal Infrastructure Investment Initiative approval (\$4.5 million)



RECOMMENDATIONS

- That this presentation be received;
- And that Council review the Master Plans and provide staff with final comments by March 21, 2008;
- And that staff prepare a final report in spring 2008 recommending the adoption of the Master plans including; 2008 spending and 5 year implementation plan.

THANK YOU



QUESTIONS ?

Get on
route to a
healthier
Markham.

