

Making the Connection from Pipe to Tap

Every time you turn on the tap, flush the toilet, or water the lawn, you are using water provided by the Region of Peel. The Region operates two water treatment facilities and two wastewater treatment facilities, as well as multiple pumping stations, reservoirs, feeder mains and water mains like those in this study, as well as sanitary sewers.

While we are improving the security and supply of water through the addition of the feeder main and water main, we are also encouraging water consumption reductions through the activities identified in the Water Efficiency Plan.

Stopping the Water Drip

Here are a few tips to help conserve water at home.



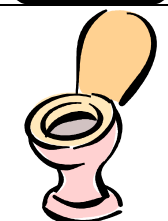
Kitchen/Laundry

Try to run your appliances, such as the washing machine and dishwasher only when full, using the energy saver or shortest cycle.



Shower

Take a shower instead of a bath – showers with low-flow showerheads often use less water than taking a bath. To compare, put the plug in while you shower, to see how much the tub fills up.



Toilet

Save money, save water. Stop flushing it all away! Replace your old, inefficient toilets with an efficient 6-litre or 3-litre/6-litre dual-flush toilet. You can reduce household water consumption by 20-30%, and can reduce your water bill by up to an average of 20%. Check out www.watersmartpeel.ca for information about the Region's toilet replacement rebate program.



Outdoors

Practice water conservation in your yard and use rainwater harvested with a rain barrel to water your gardens. Water collected in rain barrels can be used to water outside plants and wash cars, even during a watering ban. Rain barrels are available at all Region recycling centres.

How to Contact Us

The Region wants to hear your comments about the Hanlan Feedermain and MCC Watermain projects. Please contact one of the following team members with your remarks or if you have any questions or require additional information.

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For further project details and to view the ESRs please visit:
www.peelregion.ca/HanlanEA

Future Construction of the Hanlan Feedermain and Mississauga City Centre Watermain

Public Newsletter #2 - March 2010

Two New Water Pipes to Meet Our Water Supply Needs

A new large drinking water pipe called the “Hanlan Feedermain” needs to be built from the Lakeview Water Treatment Plant located at Lakefront Promenade to the Hanlan Reservoir and Pumping Station located north of Highway 401 at Britannia Road and Tomken Road. The Hanlan Feedermain is required to support future growth in Peel Region, including intensification in the City of Mississauga and water supply commitments to York Region. It will also provide a back-up supply for the existing feeder main. Around the same time, a new watermain called the “Mississauga City Centre (MCC) Watermain” will also be installed north of Burnhamthorpe Road. The MCC Watermain will help ensure adequate future water supply for the Mississauga City Centre.

Since the last newsletter, the project team has identified the preferred routes. The team has:

- Held two Public Open Houses in June 2009 to discuss recommended routes and planned mitigation measures with the community;
- Refined and confirmed the preferred routes for both water pipes; and
- Completed the Hanlan Feedermain ‘Environmental Study Report’.

The preferred Hanlan Feedermain route includes a combination of open cut and tunnel construction along Lakefront Promenade, Lakeshore Road, Dixie Road (including Cormack Crescent), Eastgate Parkway, Tomken Road and Britannia Road. An interconnection to the existing Hanlan Feedermain is also proposed along Burnhamthorpe Road. The recommended MCC Watermain route includes a combination of open cut and tunnel construction along Britannia Road, Tomken Road, Eastgate Parkway and Cawthra Road (see map on page 5).

www.peelregion.ca/HanlanEA

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Assessing Our Water Piping Options

What potential routes were identified and evaluated?

Three potential routes, along with some variation of each, were considered for both the feedermain and watermain. Due to the size of the study area and to aid in the evaluation, the study area was divided into three sub-sections – south, central and north. Routes within existing road rights-of-way and utility corridors were identified to:

- maximize the opportunity for open cut construction;
- optimize construction costs;
- minimize the impact to the natural, social and cultural environment and mitigate impacts;
- minimize conflicts with existing infrastructure and avoid utility relocation;
- maximize the length of north-south run;
- maintain security of supply; and
- provide adequate access for future maintenance of the pipe and valve chambers.

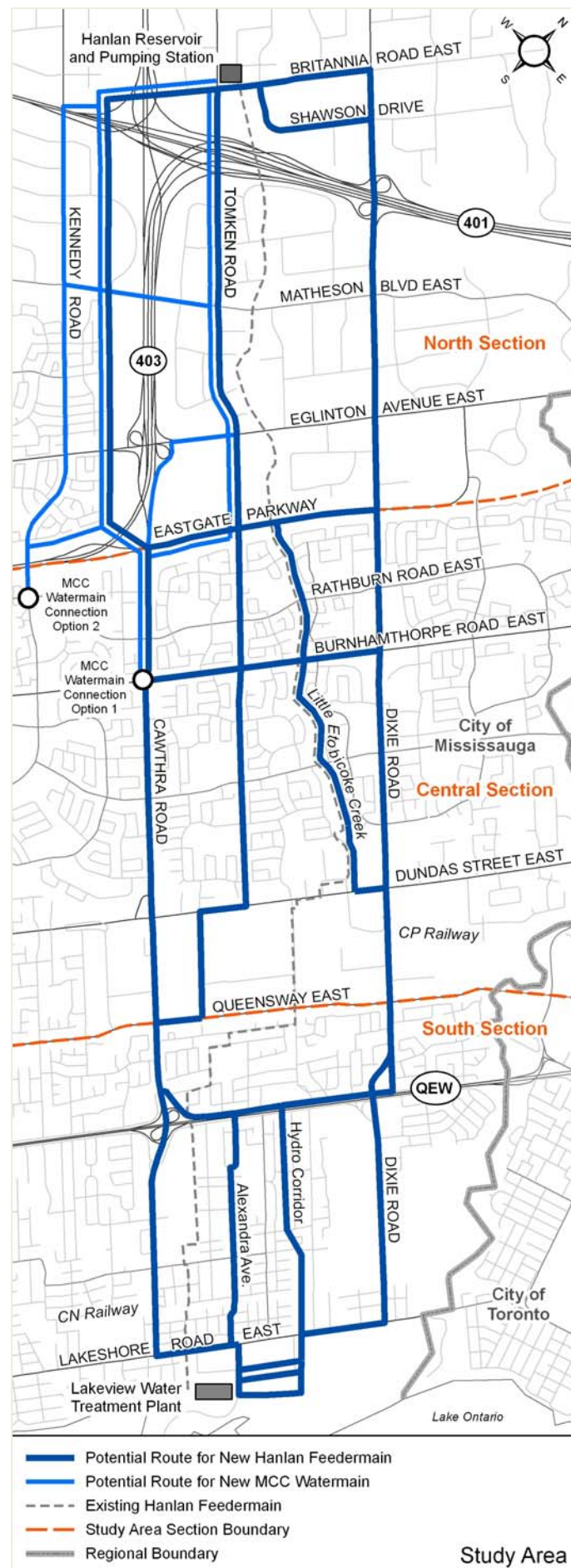
Evaluation criteria, as presented at the first Public Open Houses in June 2008, were applied to each alternative route or route option based on the following five categories:

- Natural environmental;
- Social-cultural;
- Technical;
- Legal-jurisdictional; and
- Economic-financial.

Each alternative route within the south, central and north study area sections was evaluated from “least preferred” to “most preferred,” based on qualitative and objective evaluation. One continuous route, made up of the best possible combination of segments with the lowest possible adverse effects, was identified (see page 4 for details). The Environmental Study Report (ESR) prepared as part of the environmental assessment study describes the evaluation and the rationale behind ranking.

The Class EA Process and Schedule

This project is following the Municipal Class Environmental Assessment (Class EA) planning process for Schedule ‘C’ projects. Planning and design of all municipal infrastructure (water supply, sewage, and transportation systems) must meet the requirements of the *Environmental Assessment Act*. The Municipal Class EA process ensures that all projects follow the same key steps, including public consultation,



Environmental and Social Impacts to be Mitigated

The Region has developed mitigation plans to address environmental and social impacts resulting from feedermain and watermain installation:

Impacts to	Mitigation Plans
Property Access	<ul style="list-style-type: none"> • Provide an alternative means of accessing a property (in addition to advanced notification) if access to a property is temporarily disrupted.
Pedestrians and Other Road Users	<ul style="list-style-type: none"> • Leave a sidewalk open on at least one side of the road during construction. • Detour cyclists to other parallel routes to bypass the construction areas. • If a sidewalk is closed, instruct pedestrians, through signage, to cross the roadway at the nearest safe crossing point adjacent to the construction area.
Water Crossings and Floodplain Management	<ul style="list-style-type: none"> • Use trenchless technology at watercourse crossings. • Follow fisheries construction timing windows. • Follow erosion/sedimentation control plans. • Restore disturbed areas/habitat to natural or better conditions.
Trees and Vegetation	<ul style="list-style-type: none"> • Minimize tree and vegetation removal and prepare a Tree Relocation and Protection Plan.
Groundwater Management	<ul style="list-style-type: none"> • Minimize dewatering, and where dewatering is needed, follow the recommendations of the hydrogeological assessment and Ministry of the Environment approvals.
Contaminated Soils through Spills	<ul style="list-style-type: none"> • Avoid soil contamination from spills by focusing on proper handling/maintenance of construction equipment. • Prepare and follow contingency plans for control and cleanup should a spill occur.
Noise / Vibration / Dust	<ul style="list-style-type: none"> • Ensure that construction occurs only during the day in residential and commercial areas and adheres to noise by-laws. • Complete preconstruction building structure surveys to ensure vibrations from construction are not dangerous to building structures. • Control dust by spraying water and sweeping streets. • Install fences along construction sites.

Construction Schedule

Anticipated start date: 2012

Earlier start on some sections may occur if linked to other capital works projects

Duration: Approximately 2 years

Construction of the interconnection along Burnhamthorpe Road East: 2010 - Coordinated with the City of Mississauga's Burnhamthorpe Road East improvements.

Construction of the interconnection chamber at the Burnhamthorpe Library: 2010 – Coordinated with the City of Mississauga's planned library closure for major renovations.

Permanent and Temporary Easements along Preferred Route Anticipated

Where the Hanlan Feedermain, MCC Watermain and tunnel shaft construction compounds are proposed outside of an existing road right-of-way, permanent easements from either public agencies (e.g., the City of Mississauga, ORC) or private landowners will be required. In addition, temporary easements will be required to accommodate construction truck and equipment access at tunnel shaft locations and where the existing road right-of-way width is insufficient to accommodate construction access. Property owners from whom easements will likely be required have already been contacted as part of the Class EA process.

Traffic Management and Property Access During Construction

Construction is expected to impact transportation operations along the recommended route and, to a lesser degree, possibly at intersecting roadways. For example, open cut construction will cause temporary traffic disruptions, including lane reductions and optional detours. Similarly, tunnel shaft compound construction within the road right-of-way (e.g., at Tomken Road north of Timberlea Boulevard and Dixie Road north of the CN railway overpass) will also impact traffic and other roadway users.

Preliminary Traffic Management Plans (TMPs) have been developed to provide a visual reference as to how construction is proposed to proceed along key sections of the recommended route. A traffic impact assessment has also been prepared to identify the potential impacts to traffic operations at key locations along the preferred route, including major intersections.

Highlights of the Traffic Management Plans include:

- Closing 100 to 200 metre sections of roadway where open cut construction is occurring. The lane closures will move with pipe installation;
- Maintaining or providing alternate access to properties;
- Using traffic detours to maintain traffic flow;
- Ensuring construction under Highway 401 (and other critical areas) happens at off-peak hours;
- Ensuring advance-warning signs are posted so drivers can alter routes if they choose; and
- Notifying the community throughout the detailed design and construction phases to keep you informed of what will be happening and when.

The TMPs were presented at Public Open House #2 in June 2009 and are available for review on the project website at www.peelregion.ca/HanlanEA. Similarly, the findings of the traffic impact assessment are summarized in the ESR.

Costs & Funding

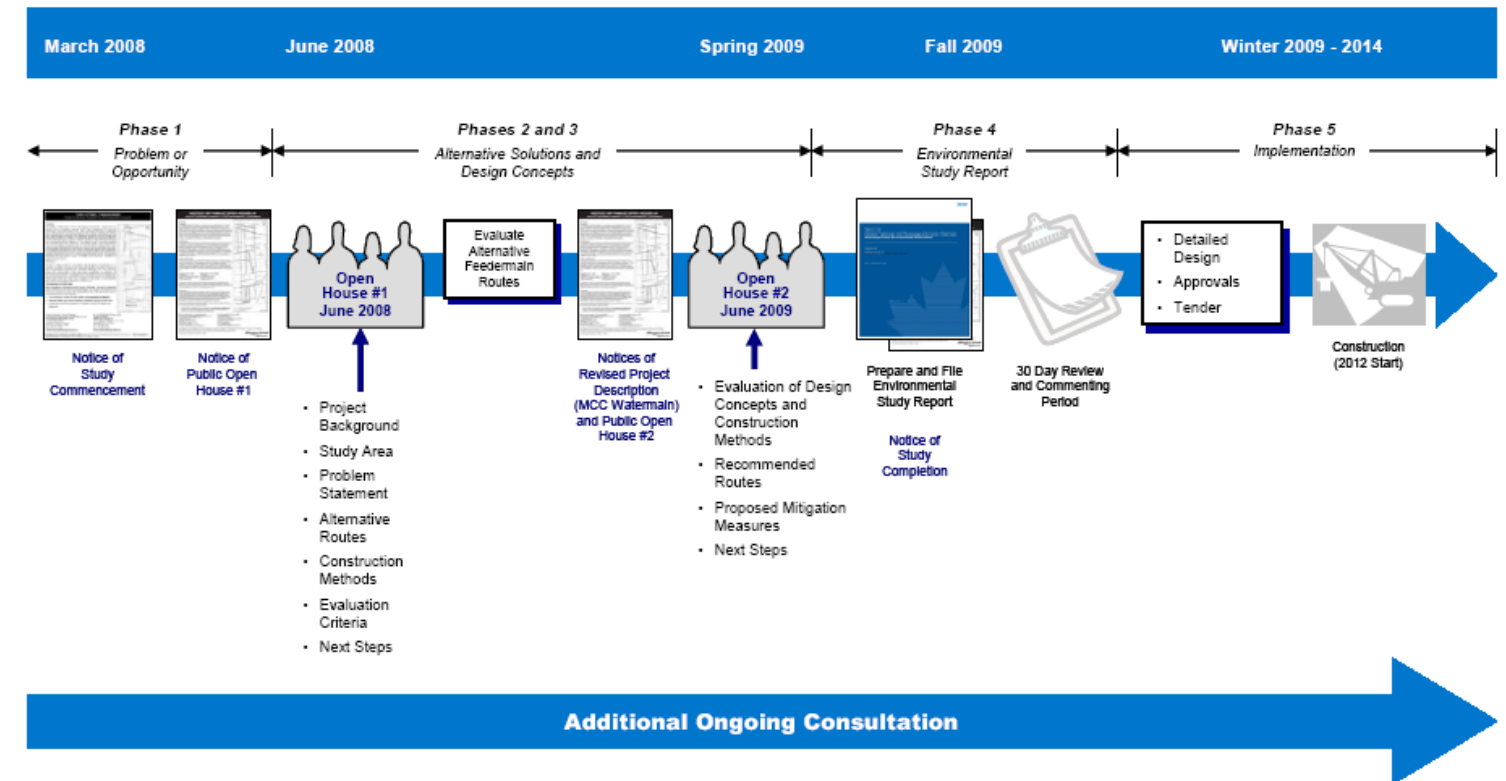
- *Hanlan Feedermain construction costs:* Approximately \$230 million
- *MCC Watermain construction costs:* Approximately \$55 million
- *Open cut construction costs:* Approximately \$8,000 – \$10,000/ metre
- *Tunnel construction costs:* Approximately \$13,000 - \$16,000/ metre

This project is being funded through the Capital Works budgets of the Region of Peel and the Region of York. There will be no tax or rate increases directly caused by this project. The cost of construction is already part of the Region's current Capital Works budget. There will be no impact on water rates because of these projects.

consideration and evaluation of alternatives, assessment of potential impacts (environmental, social, cultural and economic), and identification of reasonable measures to mitigate any adverse impacts that may result. This Municipal Class EA also addresses the requirements of the Ontario Realty Corporation (ORC) Class EA process with respect to anticipated land acquisitions/easements required from the ORC.

What is a Schedule 'C' Project?

By planning the project as a Schedule 'C' project, the maximum detail of study is ensured, including examination of alternative routes and public and agency consultation and review.



Community Input Helped Shape Recommended Routes

At the Public Open Houses on June 2 and June 3, 2009, participants provided input to the recommended routes and mitigation measures. Participants recommended that the Region:

- ensure construction activities do not negatively impact businesses;
- communicate construction timing to businesses along the route;
- ensure Dixie Road construction is expedited;
- ensure access for trucks along Britannia Road;
- ensure lane reductions do not compromise safety;
- ensure no negative effects on Little Etobicoke Creek;
- provide wheelchair access to buildings and bus stops; and
- provide alternative parking during construction at the Burnhamthorpe Library and Theatre.



Preferred Routes

Hanlan Feedermain

Extending northerly from the Lakeview Water Treatment Plant to the Hanlan Reservoir and Pumping Station, the preferred Hanlan Feedermain route measures approximately 14.5 kilometres in length. The following tables provide a description of the route segments, as well as the type, timing and duration of construction activities. Each segment is numbered and corresponds to the numbers on the map on page 5.

South Section

#	Route Segment	Approximate Duration (months)	What to Expect During Construction
1	Lakefront Promenade O ❄️	1 – 2	<ul style="list-style-type: none"> Temporary lane restrictions and closure of the Waterfront Trail along Lakefront Promenade.
2	Lakeshore Road East T	4 – 6	<ul style="list-style-type: none"> A tunnel shaft for entry of the Tunnel Boring Machine (TBM) and muck removal near the corner of Lakeshore Road East and Dixie Road. A tunnel shaft for removal of the TBM at the southwest corner of Lakeshore Road East and Lakefront Promenade.
3	Dixie Road north to CN railway overpass T	2 – 4	<ul style="list-style-type: none"> A tunnel shaft for removal of the TBM on the east side of Dixie Road just north of the Toronto Golf Club maintenance yard entrance.
4	Dixie Road north to Rometown Drive O 🍁 ❄️	5 – 7	<ul style="list-style-type: none"> Moving lane closures for three of four existing traffic lanes within the approximately 200-metre long construction zone. Alternating one-way traffic through construction zone to be controlled by traffic control/flag persons or portable traffic control signals operated by a traffic control person.
5	Cormack Crescent O ☀️	2 – 3	<ul style="list-style-type: none"> Tunnel shaft at the southeast corner of Cormack Crescent and the South Service Road. Moving roadway closures along Cormack Crescent, necessitating a local traffic only scenario. Property access to be maintained.
6	Dixie Road north to The Queensway East O	3 – 4	<ul style="list-style-type: none"> Temporary removal of median and street lights and moving closures of traffic lanes. One lane of traffic to be maintained in each direction on either side of the construction work zone.
<p>O = open cut construction T = tunnel construction ❄️ = winter construction 🍁 = late fall construction ☀️ = summer construction</p>			

Installing the Pipes

Open cut and tunnel construction methods will be used to install the new pipes. Most of the Hanlan Feedermain and MCC Watermain will be constructed by open cut methods using standard backhoes and cranes. Construction crews can typically install 15 to 20 metres of pipe per day depending on the site conditions. In areas where open cut construction is used, the team will make every effort not to impact natural features or existing infrastructure and utilities. Any trees or vegetation damaged or removed during construction will be replaced with suitable native species.



Typical open cut construction

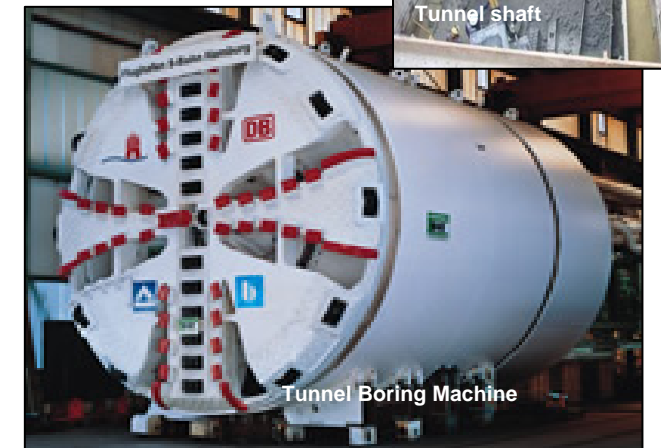
Where open cut construction is not recommended, such as for crossing of the QEW, the feedermain will be constructed in a tunnel using a Tunnel Boring Machine (TBM) or other trenchless method. The only work at the surface required for tunnel construction involves the areas where entrance and exit shafts are located at either end of the tunnel.

In this case, tunnel shaft construction is needed near the intersections of:

- Lakefront Promenade and Lakeshore Road East;
- Dixie Road and Lakeshore Road East;
- Dixie Road and the CNR;
- Dixie Road and the QEW;
- Dixie Road and Dundas Street;
- Dixie Road and Golden Orchard Drive;
- Eastgate Parkway and Little Etobicoke Creek;
- Eastgate Parkway and Tomken Road;
- Tomken Road and Timberlea Boulevard, just north of Eglinton Avenue; and
- Britannia Road and Tomken Road.



Tunnel shaft



Tunnel Boring Machine

Tunnelling crews can typically tunnel 10 to 15 metres per day depending on the site conditions. At an average rate of 15 metres per day, removal of excavated material requires 20 to 30 truck round trips per day. Each entrance shaft will require a staging area where construction equipment can be stored and excavated material can be brought to the surface and hauled away in trucks. Staging areas are typically 30 by 30 metres in size, are fenced for safety purposes, and are on site for about 6 to 18 months depending on the tunnel length.

Pipe Facts

- **New Hanlan Feedermain size:** 2.4 metres (8 feet) in diameter
- **Existing Hanlan Feedermain size:** 2.1 metres in diameter
 - **Burnhamthorpe Interconnection size:** 1.8 metres (6 feet) in diameter
 - **MCC Watermain size:** 1.2 metres (4 feet) in diameter
- Each 20-foot long segment of pipe weighs about 24 tonnes.
- The life expectancy of the pipe is about 80 to 100 years.
- Feedermain to be made of a concrete pressure pipe with a steel core.
- These types of pipes are available from manufacturers in Ontario.

- Allows open cut construction under the Highway 401 bridge overpasses and avoids crossing of Highway 403/410, resulting in significant cost savings; and
- Provides opportunity to coordinate feedermain construction with MCC Watermain construction on Tomken Road.

MCC Watermain

The recommended MCC Watermain route includes a combination of open cut and tunnel construction along Britannia Road, Tomken Road, Eastgate Parkway and Cawthra Road (see map). The MCC Watermain will then connect to the existing distribution system at the Cawthra Road-Burnhamthorpe Road East intersection.

Portions of the MCC Watermain will need to be constructed and fully operational prior to construction of the Hanlan Feedermain along Tomken Road. Therefore, the MCC Watermain will be installed first. The existing watermain will then be abandoned to make room for the Hanlan Feedermain. Exact timing will be determined during detailed design, however the two projects will be staged together as close as possible to reduce impacts on Tomken Road.

Coordinated construction of both the MCC Watermain and the Hanlan Feedermain along Tomken Road is recommended for the following reasons:

- Confines temporary construction impacts to one north-south corridor (i.e., Tomken Road), thereby reducing impacts to the travelling public;
- Provides opportunity to replace the aging 750-mm diameter watermain on Tomken Road, thereby avoiding the need for future maintenance/repairs and construction impacts on Tomken Road; and
- Tunnelling of the Hanlan Feedermain from Eastgate Parkway to north of Eglinton Avenue East allows for open cut construction of the MCC Watermain.

The ESR for the MCC Watermain will be completed in early 2010. A public notice (Notice of Completion) will be published in the Mississauga News to announce commencement of the review period.

Burnhamthorpe Road East Interconnection

An interconnection between the existing Hanlan Feedermain and the new Hanlan Feedermain is proposed along Burnhamthorpe Road East. This work will involve construction of a 1.8-metre diameter interconnection main along Burnhamthorpe Road East between Dixie Road and Little Etobicoke Creek. Construction of connection chambers at both ends of the interconnection main will also be required. A connection chamber is proposed in the parking lot of the Burnhamthorpe Library and Theatre. This chamber will likely be constructed sometime between March 2010 and September 2010 when the library will be closed for major renovations.

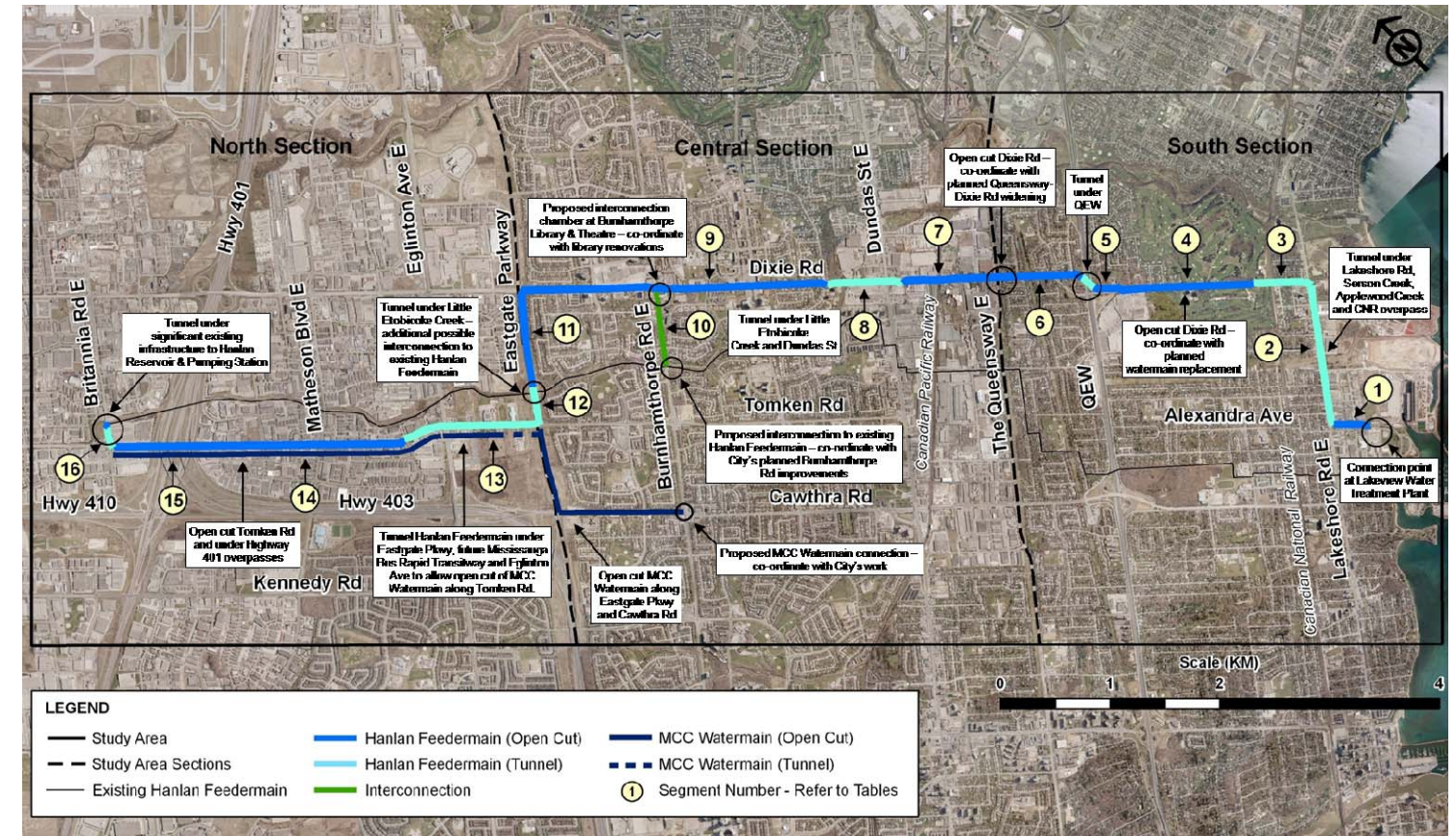
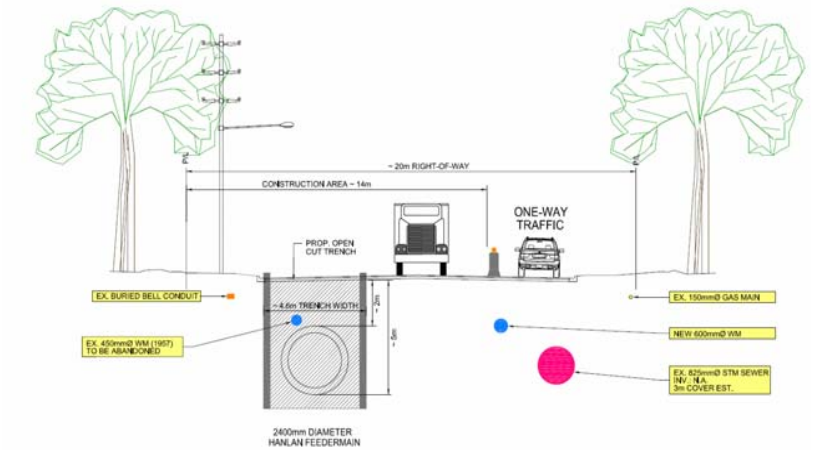
Construction of a connection chamber with the existing Hanlan Feedermain near Little Etobicoke Creek is proposed within the vacant city land just north of Burnhamthorpe Road East. Re-routing of park/trail users will be required around the construction zone but a full closure of the park/trail is not anticipated.

Key Advantages of Routes in South Section

Key advantages provided by this combination of routes in the south section of the study area include the following:

- Largely avoids business impacts and the need to relocate utility and municipal infrastructure on Rangeview Road;
- Avoids land fragmentation of the former Lakeview Generating Plant property;
- Avoids vegetation removal and social disruption along the Waterfront Trail through Lakeview Park;
- Avoids impacts to natural heritage features such as Cawthra Woods;
- Avoids significant social disruption, construction of temporary haul roads, the use of residential side streets and significant tunnelling and land requirements associated with construction through the hydro corridor; and
- Provides opportunity to coordinate feedermain construction with other planned projects on Dixie Road.

Dixie Road from Lakeshore Road East to the QEW



Central Section

#	Route Segment	Approximate Duration (months)	What to Expect During Construction
7	Dixie Road from The Queensway East to just south of Dundas Street East O	2 – 4	<ul style="list-style-type: none"> Temporary removal of the median and street lights. Moving closures of two lanes of traffic through the construction zone. Two lanes of traffic will be maintained in each direction. All business accesses will be maintained.
8	Dixie Road from just south of Dundas Street East to Golden Orchard Drive T	3 – 4	<ul style="list-style-type: none"> Tunnel entrance shaft proposed just south of Dundas Street East. Tunnel exit shaft proposed at the southwest corner of Dixie Road and Golden Orchard Drive.
9	Dixie Road from Golden Orchard Drive to Eastgate Parkway O	7 – 10	<ul style="list-style-type: none"> Removal of the median and street lights. Moving closures of two lanes of traffic through the construction zone. Two lanes of traffic will be maintained in each direction along Dixie Road. All business accesses will be maintained.
10	Burnhamthorpe Road from Dixie Road to Little Etobicoke Creek O	2 – 4	<ul style="list-style-type: none"> Moving closures of one westbound lane of traffic through the construction zone (co-ordinated with the City of Mississauga's Burnhamthorpe Road East improvements).

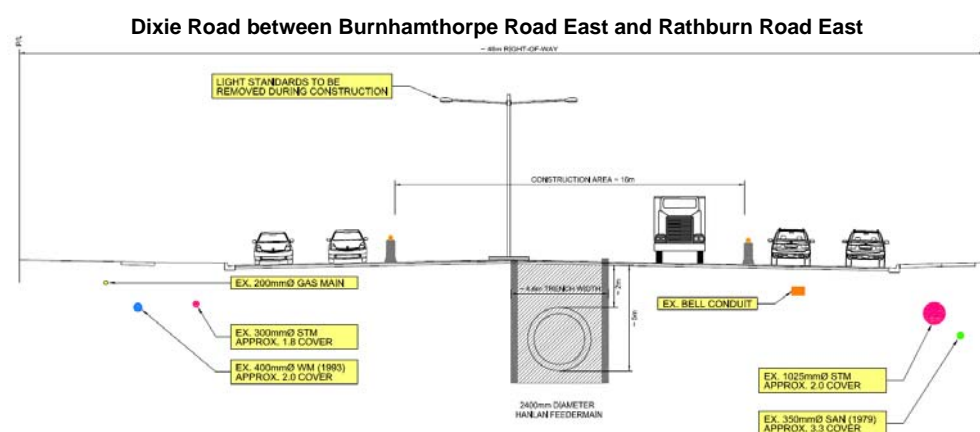
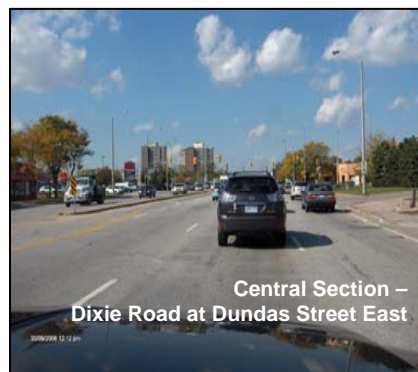
O = open cut construction

T = tunnel construction

Key Advantages of Routes in Central Section

Key advantages provided by Dixie Road in the central section include:

- Minimizes traffic impacts when compared to Cawthra Road (i.e., Dixie Road in the central section of the study area has relatively few residential side streets and is not a major thoroughfare for the QEW or Highway 403);
- Avoids the significant vegetation removal and technical complexities associated with routing of the feedermain along the Little Etobicoke Creek valley;
- Avoids construction of temporary haul roads and the use of residential side streets;
- Allows efficient feedermain installation via predominantly open cut methods due to the large right-of-way and infrastructure 'clear zones'; and
- Provides opportunity to coordinate feedermain construction with other planned projects on Dixie Road.



North Section

#	Route Segment	Approximate Duration (months)	What to Expect During Construction
11	Eastgate Parkway from Dixie Road west to Little Etobicoke Creek O	3 – 4	<ul style="list-style-type: none"> Moving closures of one existing eastbound lane of traffic through the construction zone. Temporary excavation of the existing berm (co-ordinated with Mississauga Bus Rapid Transitway work).
12	Eastgate Parkway under Little Etobicoke Creek to Tomken Road T	3 – 5	<ul style="list-style-type: none"> Tunnel shafts within the Eastgate Parkway road right-of-way just east of Little Etobicoke Creek, and at the southeast corner of Eastgate Parkway and Tomken Road.
13	Tomken Road between Eastgate Parkway and just north of Eglinton Avenue East O T	6 – 9	<ul style="list-style-type: none"> Tunnel shaft for removal of the TBM within the Tomken Road right-of-way just north of Timberlea Boulevard. Also includes open cut construction of the MCC Watermain (tunnel under Eglinton Avenue) as described on page 8.
14	Tomken Road from just north of Timberlea Boulevard to Highway 401 O	4 – 7	<ul style="list-style-type: none"> Moving closure of two lanes of traffic through the construction zone. As the construction zone progresses along Tomken Road, one lane of traffic will be maintained in each direction.
15	Tomken Road under Highway 401 O ☀	4 – 6	<ul style="list-style-type: none"> Lane restrictions to only one-lane (i.e., alternating one-way traffic controlled by temporary signals or flag persons). Night-time construction only is recommended. One additional lane will be re-opened before the morning rush hour to allow two-lane operations (i.e., one lane in each direction) during daytime business hours.
16	Tomken Road from Highway 401 to Britannia Rd East O T	3 – 5	<ul style="list-style-type: none"> As the construction zone progresses along Tomken Road, one lane of traffic will be maintained in each direction. Tunnel shaft for entry of the TBM at the southwest corner of Tomken Road and Britannia Road East. Tunnel shaft for removal of the TBM and connection to the Hanlan Reservoir & Pumping Station within the Britannia Road right-of-way.

O = open cut construction

T = tunnel construction

Key Advantages of Routes in North Section

Key advantages provided by this combination of routes in the north section of the study area include:

- Minimizes traffic impacts when compared to Dixie Road;
- Minimizes social disruption by avoiding construction of temporary haul roads and the use of residential side streets;
- Avoids significant natural areas, wetlands and artesian conditions (flowing groundwater) during construction and future maintenance;
- The feedermain elevation below ground remains below the top water level at the Hanlan Reservoir (i.e., hydraulically preferred);
- Does not require deep bury under Eastgate Parkway and the future Mississauga Bus Rapid Transitway;