



Millbourne Flood Prevention Recommendations

Millbourne Public Consultation
November 21, 2013

Drainage Services
Financial Services & Utilities





Today's Meeting

1. Provide an update on what the City and the Millbourne Flood Prevention Task Force has been doing since May
2. Discuss the recommended flood improvement projects for this area
3. Discuss the benefits and impact of these various projects, and the general timing
4. Outline next steps
5. Answer questions/get your input and feedback



After Today's Meeting

1. Summarize and share meeting input
2. Consider community input in work ahead
3. Report on progress and keep you informed

Please hold questions until after presentation



What has been our Plan of Action?

1. Find the main causes of the July 2012 flooding
2. Review any previously constructed and proposed upgrades in the on-going 2006 Flood Prevention Program
3. Develop viable solutions and obtain funding from City Council to reduce the risk of flooding in the future
4. Engage and work with the affected communities to implement the solutions



Public Consultation & Completed Studies

- Resident questionnaires sent out to gauge flooding impact, Fall 2012
- Two public open houses to solicit input in Millbourne: Fall 2012 & Spring 2013
- Three flood investigation studies completed in South Edmonton, one focusing specifically on Millbourne.
- Another report prepared prioritizing upgrades, updating costs



Millbourne Flood Prevention Task Force

- Established in May and met three times through the summer
- Detailed discussions on concerns and flood prevention options, including Tweddle Place Berm Removal & Pond Expansion
- Two written updates issued to residents on Task Force's work



Utility Committee Presentations

- Reports to UC in August and November
- Emphasized urgent need in at-risk neighbourhoods
- Good support for moving forward

Proposed Upgrades

- Based on flooding investigations, proposed upgrades prioritized and assigned costs
- Four phases of upgrades were identified:
 1. 2013: Tweddle Dry Pond Culverts, Manhole Plugging
 2. 2014: Select design and construction works in Richfield- Lee Ridge
 3. 2015-2018: Select projects in Tweddle Place & Richfield
 4. 2018+: Select projects in all four neighbourhoods

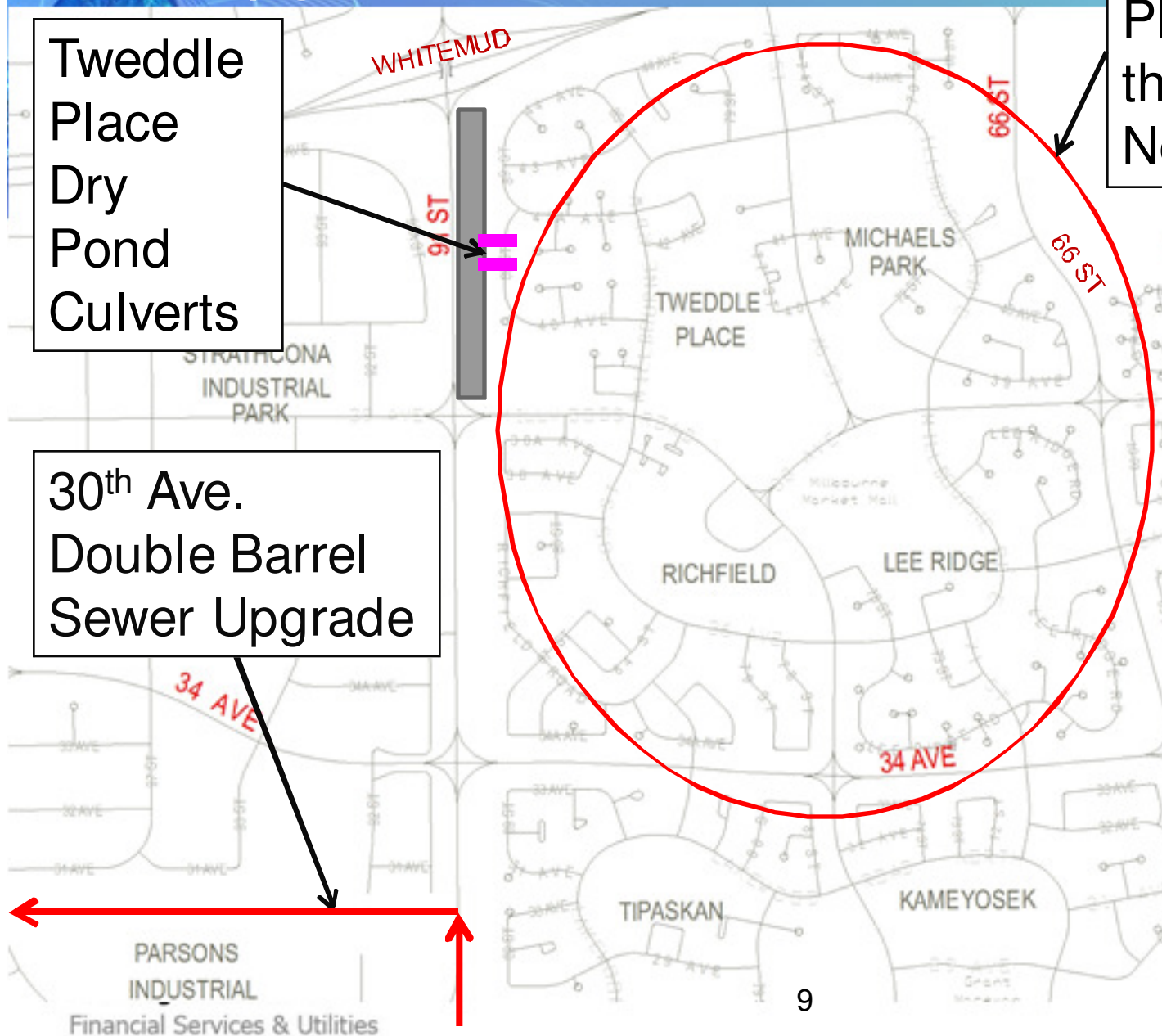
2013 Upgrades

Tweddle
Place
Dry
Pond
Culverts

Manhole
Plugging
throughout
Neighbourhoods

30th Ave.
Double Barrel
Sewer Upgrade

All upgrades
implemented
as of Summer
2013.



Upgrades – Tweddle Place



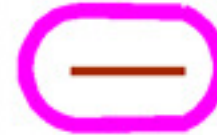
Legend



NEIGHBOURHOOD
BOUNDARY



NEIGHBOURHOOD
STUDY AREA



SANITARY UPGRADES (MH
SEALING, IN-LINE STORAGE)



OVERLAND & HYDRAULIC
CAPACITY UPGRADES



POTENTIAL DRY POND
LOCATIONS

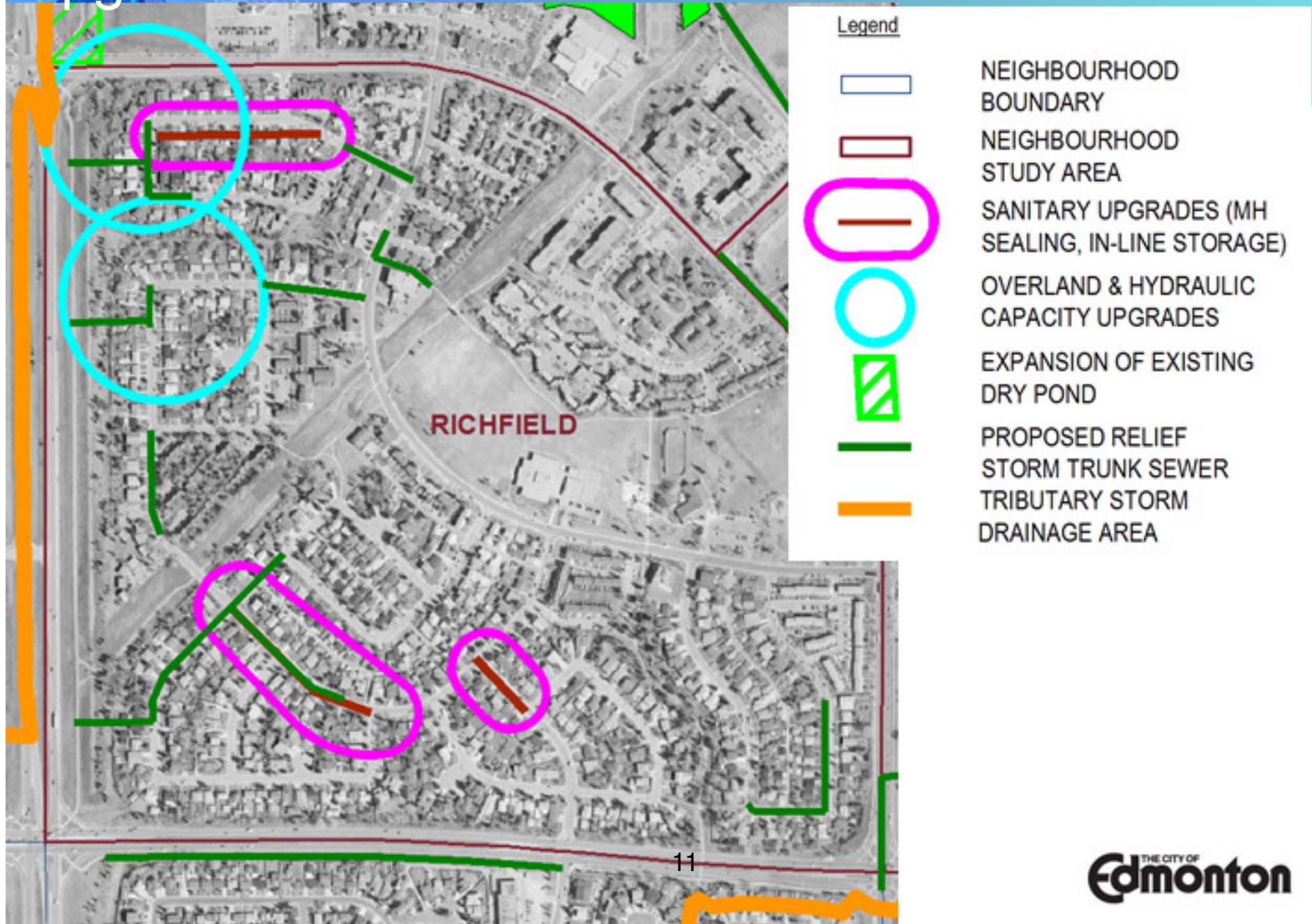


EXPANSION OF EXISTING
DRY POND



PROPOSED RELIEF
STORM TRUNK SEWER

Upgrades – Richfield



Upgrades – Michaels Park



Legend



NEIGHBOURHOOD
BOUNDARY



NEIGHBOURHOOD
STUDY AREA



SANITARY UPGRADES (MH
SEALING, IN-LINE STORAGE)

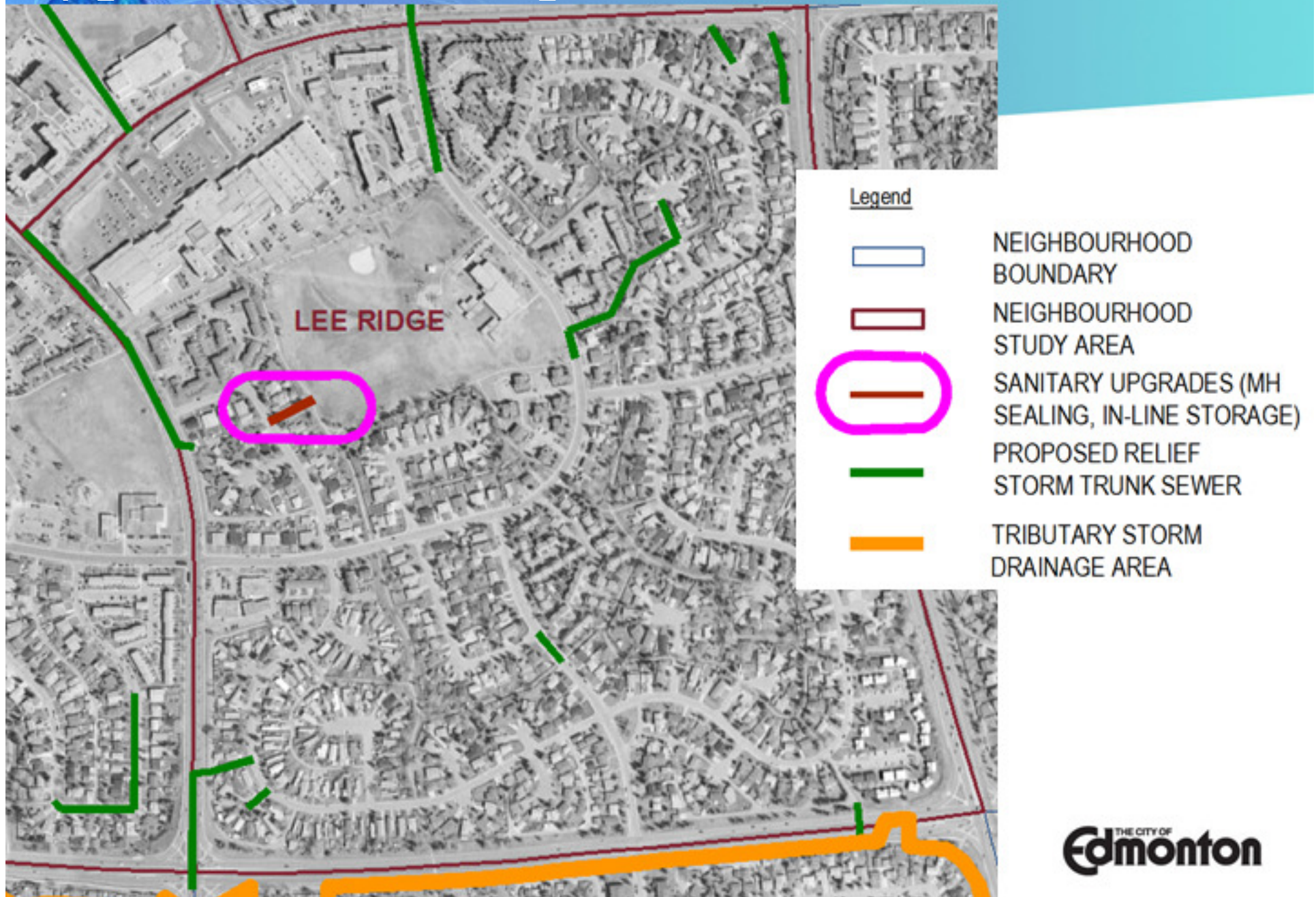


PROPOSED RELIEF
STORM TRUNK SEWER



TRIBUTARY STORM
DRAINAGE AREA

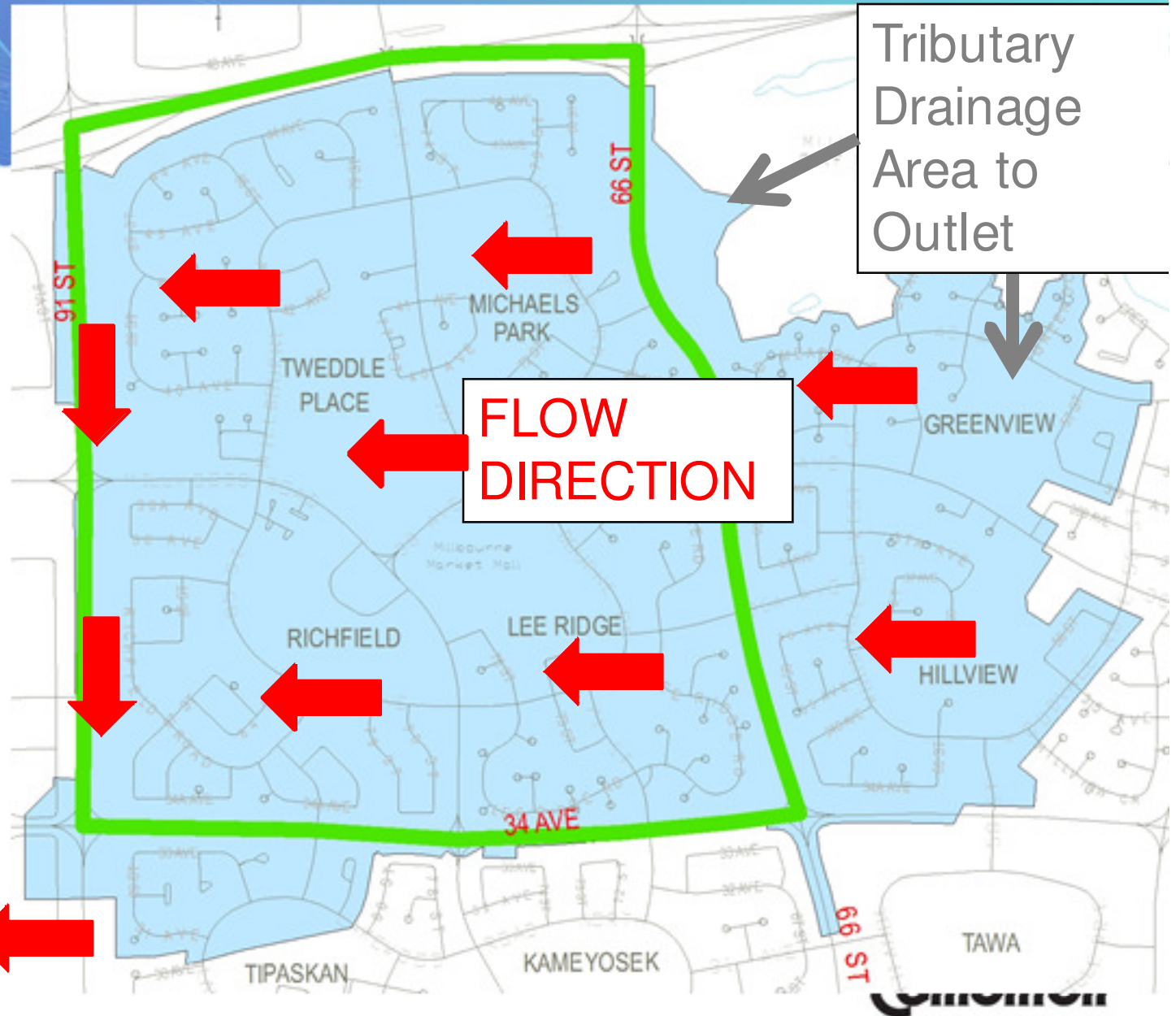
Upgrades – Lee Ridge



General Drainage Patterns



Stormwater flows east to west, then south along 91st Street to a large sewer on 30th Ave.



Tributary
Drainage
Area to
Outlet

FLOW
DIRECTION

Outlet,
30th Ave.
Trunk Sewer

Drainage Services
Financial Services & Utilities

Malcolm Tweddle – Edith Rogers Pond



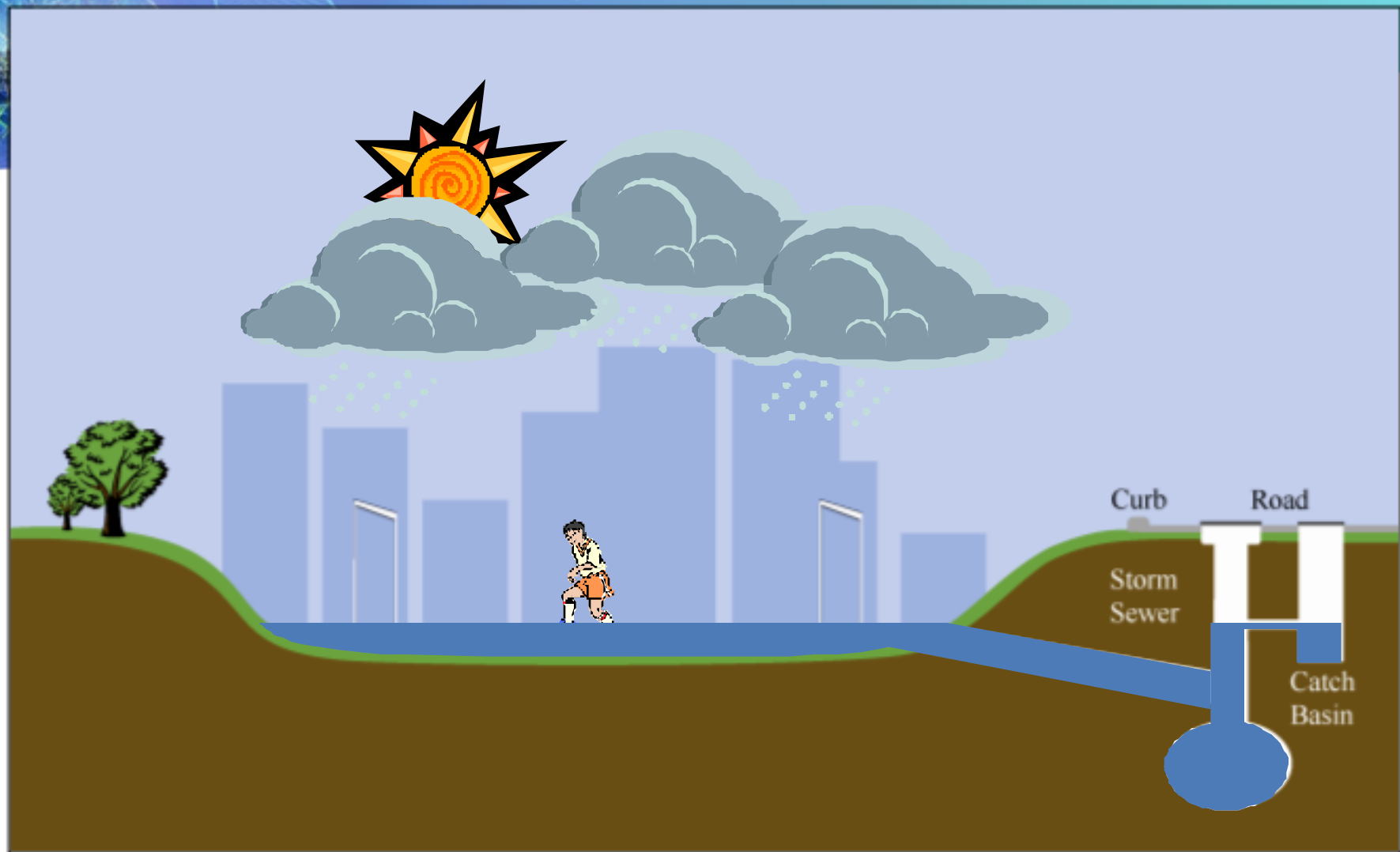
- Reduces flooding in Michaels Park and on 66 Street
- Helps reduce flood volume reaching downstream areas in Tweddle Place and Richfield along 91 St. berm
- Existing parks would be re-designed and rehabilitated to provide dual use as sports fields & surge ponds
- Currently in consultations with EPSB on the use of these sites

Examples of Dry Ponds in the City



These ponds are landscaped to fit into the surrounding communities and are used for recreation when dry

How Dry Ponds will Work



Existing Tweddle Place Dry Pond, Proposed Expansion

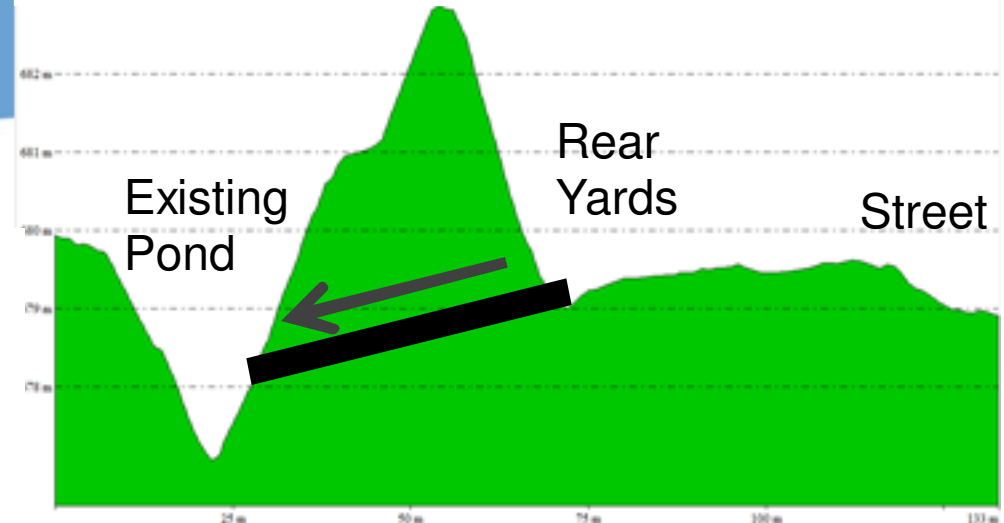


- Remove existing berm and widen existing Dry Pond bottom
- Replace berm with noise barrier to provide noise protection
- This increases storage volume and places it at a lower elevation, helping to reduce peak water levels in the pond and sewers

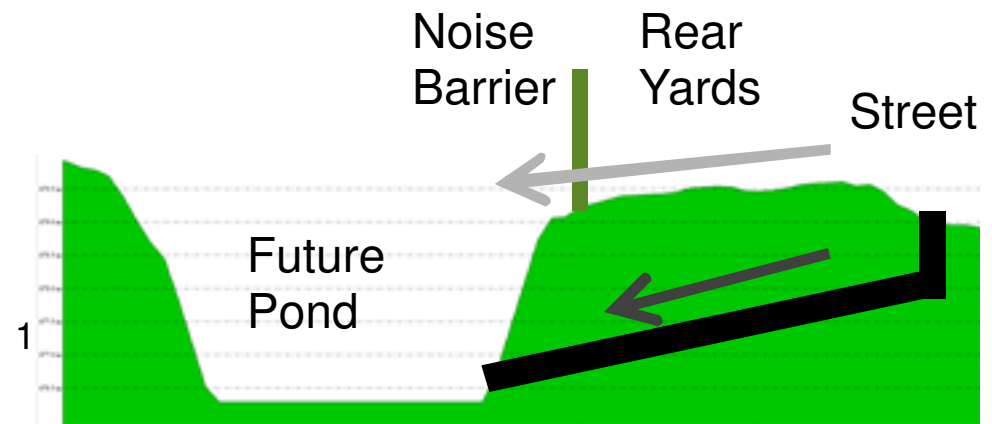
Existing Tweddle Place Dry Pond Expansion

- Culverts already constructed
- Berm to be removed and pond expanded
- Multi-use pathway to be re-instated after construction

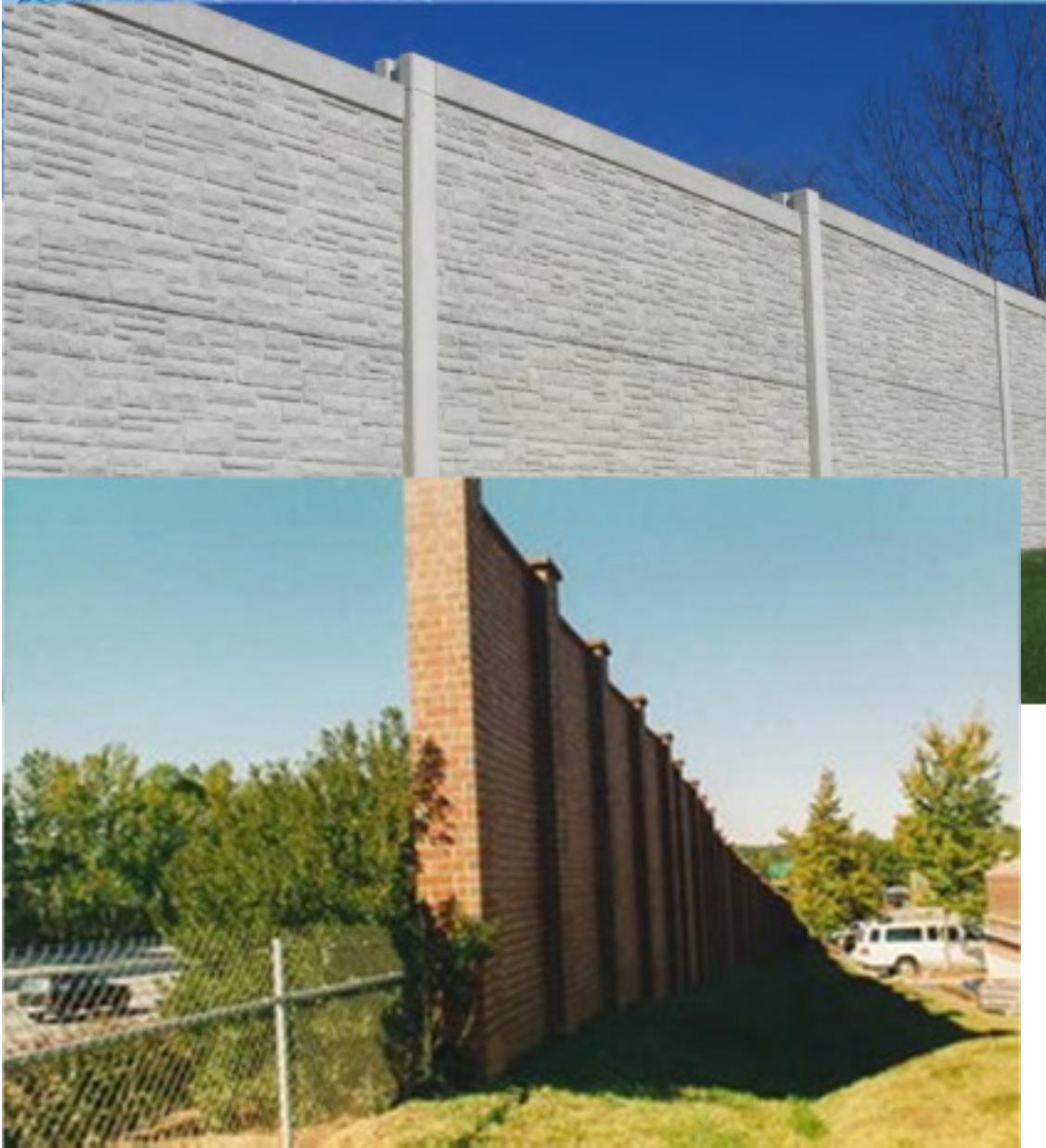
Existing Berm & Dry Pond Along 91 St., with Constructed Culverts



Proposed Berm Removal & Expanded Pond, with Permanent Overland Relief Pipes



Types of Noise Barriers



- Noise barrier will absorb some traffic sound from 91 Street and provide privacy screening for residences in Tweddle Place
- Traditional noise wall types were considered, including typical concrete noise wall
- Consultations were held with Millbourne Flood Prevention Task Force
- There is an alternative noise barrier type called a 'Living Wall'

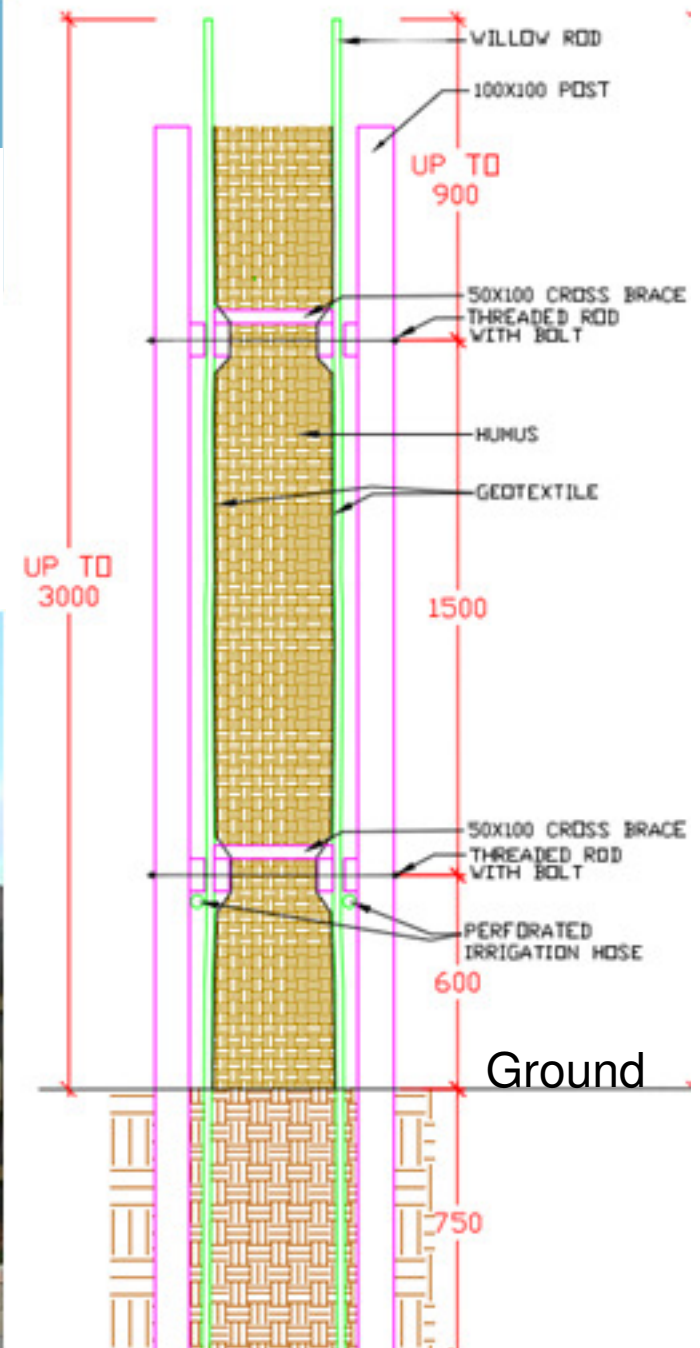
Living Wall

- Made of willow stands. Noise-absorptive, graffiti-resistant, natural aesthetics, low maintenance, less expensive than concrete, cold weather compatible, environmentally sustainable.
- Leaves drop in winter, re-grow in spring



Living Wall

- Willow shrub pieces are threaded between two wood frames embedded in ground.
- Natural soil mix used to fill void between two sides of fence; soil absorbs sound.
- Willow stands grow leaves quickly



Cross-Section View

Relief Trunk Sewer, 66 St. to Tweddle-Rogers Pond



- Reduces flooding in Michaels Park and on 66 Street.
- Collects drainage along route

Cost & Schedule

- Cost of all proposed upgrades Mill Woods, including Millbourne & South Edmonton: \$162 million
- Construction of proposed upgrades to be spaced over ten years
- Design and construction of high priority projects to begin in 2014



Next Steps

- Consult and work with stakeholders on the use of the identified land parcels for stormwater management dry ponds
- Budget to Utility Committee as part of the 2015-2018 financial plan
- Budget for the design and construction of highest priority projects submitted to Utility Committee to start in 2014
- Consult/inform communities and others on design and construction progress

Questions, comments, concerns?

Contact: Todd Wyman, Director of Drainage Planning
todd.wyman@edmonton.ca, 780-495-1948

For More information:

- Call the City Information line, 3-1-1
- Visit www.edmonton.ca/floodprevention and look under “Public Consultations”
- Visit www.edmonton.ca/, Council & Committee Meetings, Utility Committee Minutes



Other Storm Sewer Upgrades



Additional
Sewer
Upgrades

- Additional sewer upgrades could include catchbasin size increases, additional catchbains, additional sewers, or replacement of sewers.



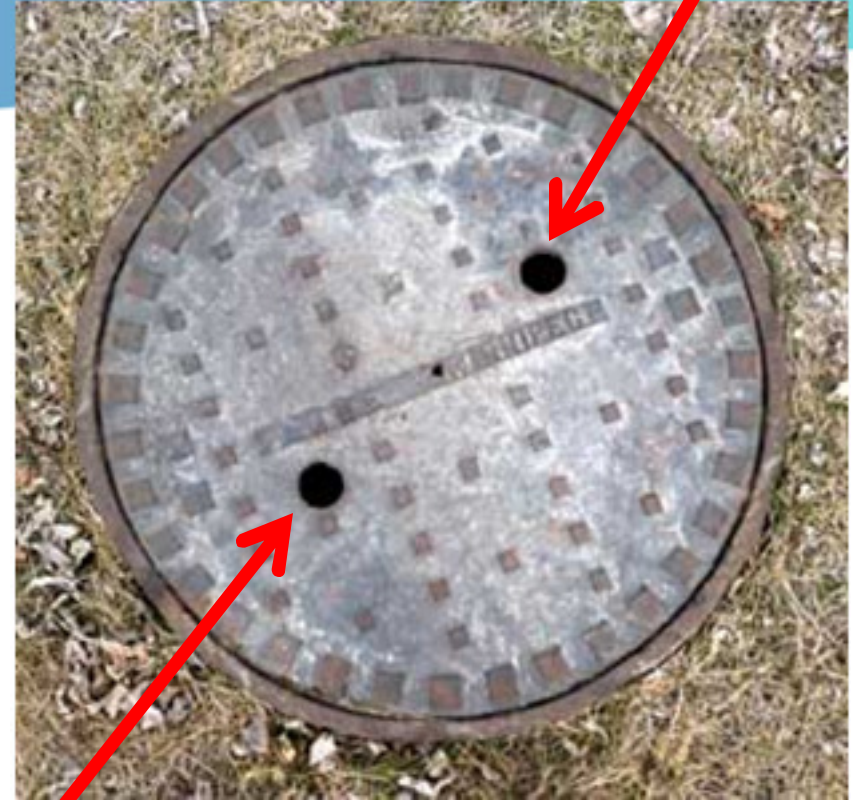
Sanitary System Upgrades

- Wet Weather Storage Pipes (“Super Pipes”): These pipes will store water until sewer capacity becomes available
- Sanitary Manhole Sealing: These will prevent stormwater ponding on streets from entering the sanitary sewer system
- Diversion pipes to redirect sanitary flows

Sanitary Manhole Sealing



This is a catchbasin – these will NOT be sealed. Runoff enters the storm sewer through these catchbasins.



This is a sanitary sewer manhole. Runoff should NOT enter this manhole as it can flood the sanitary sewer and could cause basement backups. These holes HAVE been plugged.

Sewer Construction Examples



Sewer Construction Examples



The Living Wall - Roots



The Living Wall - Roots



The Living Wall – Wintertime, Montreal



The Living Wall – Autumn



The Living Wall – View from On Top



The Living Wall – View from On Top



The Living Wall – View from On Top



The Living Wall – Construction

