

Aldergrove Area Flood Prevention Improvements

Public Consultation

May 29, 2007



Project History

- Extensive flooding in 2004
- Investigation during 2005 - 2006
- Concept Design 2006 - present



Project Objectives

1. Understand flooding mechanisms
2. Develop improvement strategies
3. Make recommendations





Where are we today?



Drainage Services Engineering Project Life Cycle


Every engineering project goes through a number of stages before it is finally constructed and completed. At certain points in the project life cycle we would like your input before proceeding to the next stage.



Where are we today?

- Good understanding of flooding mechanisms
- Improvement strategies have been developed

Proactive Steps:

- Sanitary manhole sealing
-  program launched in May 2005
- Home Flood Prevention Checkup; *Homeowners Guide to Flood Prevention*
- Public education (print, TV, and on the web)
- Education workshops: backwater valves and sump pumps
- Backwater valve subsidy program advice

Next Steps:

- Fine tune strategies with stakeholders
- Make recommendations



Flooding Mechanisms

- Water volume exceeded storm sewer capacity
- Stormwater got into sanitary system via:
 - Flooded manhole covers
 - Weeping tile connected to home's sanitary sewer
- Most flooded basements caused by sanitary sewer backup



Overview of Proposed Improvements






-  Study Area Boundary
-  Sanitary Sewer Improvements
-  Storm Sewer Improvements
-  Trail Surface Re-grading

Aldergrove Pond Area Improvements

1. Aldergrove Dual Use Dry Pond Retrofit.
2. Steinhauer Shallow Storm Improvement.
3. Decoteau Shallow Storm Improvement.
4. 182 Street Curb Regrade.
5. 87 Avenue Storm Surcharge Relief.
6. 86 Avenue & 178 Street Shallow Storm Improvement.
7. Pond Outlet.

Other Improvements

-  - 178 Street Sanitary Surcharge Relief.
-  - Summerlea Storm Surcharge Relief.
-  - Arrowhead Trail Regrading.



Improvement Strategy 1: Aldergrove Dual Use Dry Pond



1. Aldergrove Dual Use Dry Pond
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What is a dry pond?

- Low Area - collects storm water runoff
- Receives storm water from:
 - Surface drainage
 - Surcharged storm drain
- Usually takes 4 to 6 hrs to drain
- Landscaped to blend in
- Can be used for recreation when dry
- Common in many cities; some on school sites (incl. Regina, Red Deer & Calgary)
- 60 in Edmonton, mostly along roadways



How do dry ponds work?



Improvement Strategy 1: Aldergrove Dual Use Dry Pond

- Recreation Facilities: subject to final agreement with parks, community, school.
- Physical Dimensions
 - Slopes vary (6H:1V to 3H:1V)
 - Covers entire field
- Performance
 - Sees water during a 2-5 year event (less than 0.5 m)
 - Water depth during a 100 year event ~ 1.8 m



Aldergrove Park



Existing Tree Stand (south end)



Conceptual Landscape Plan



Improvement Strategy 2: Arrowhead Trail Regrading

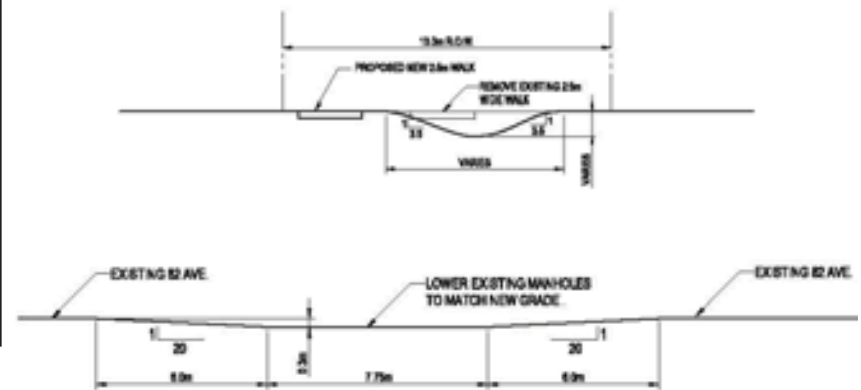


Park area to 82nd Avenue



82nd Avenue to Whitemud Drive

- Generates positive drainage.
- Provides an outlet for “trapped lows” within Thorncliffe

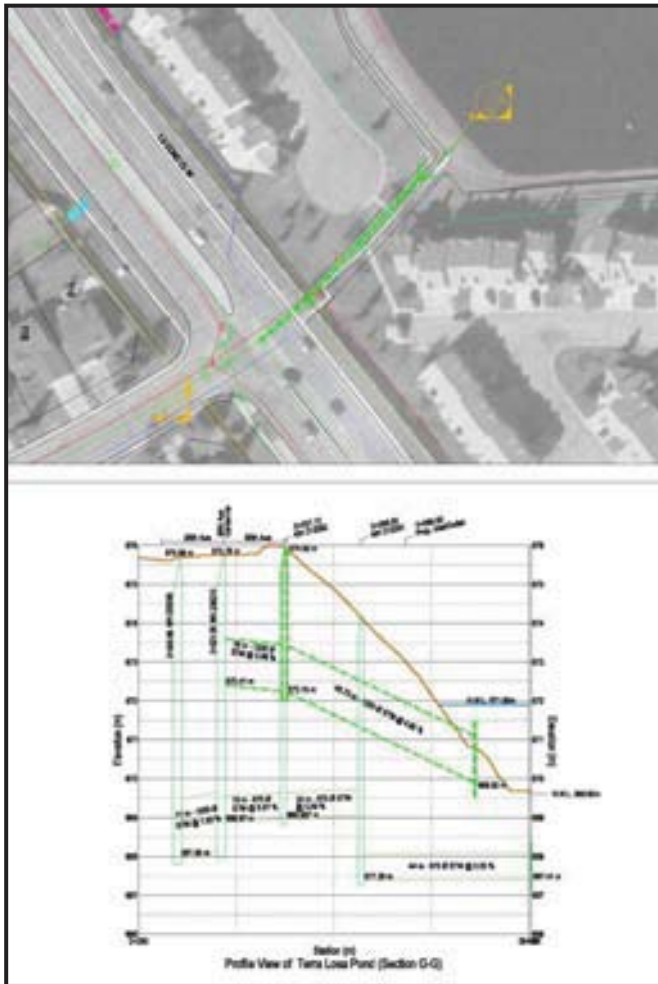


Arrowhead Trail



82nd Avenue Crossing

Improvement Strategy 3: Summerlea Storm Surge Relief



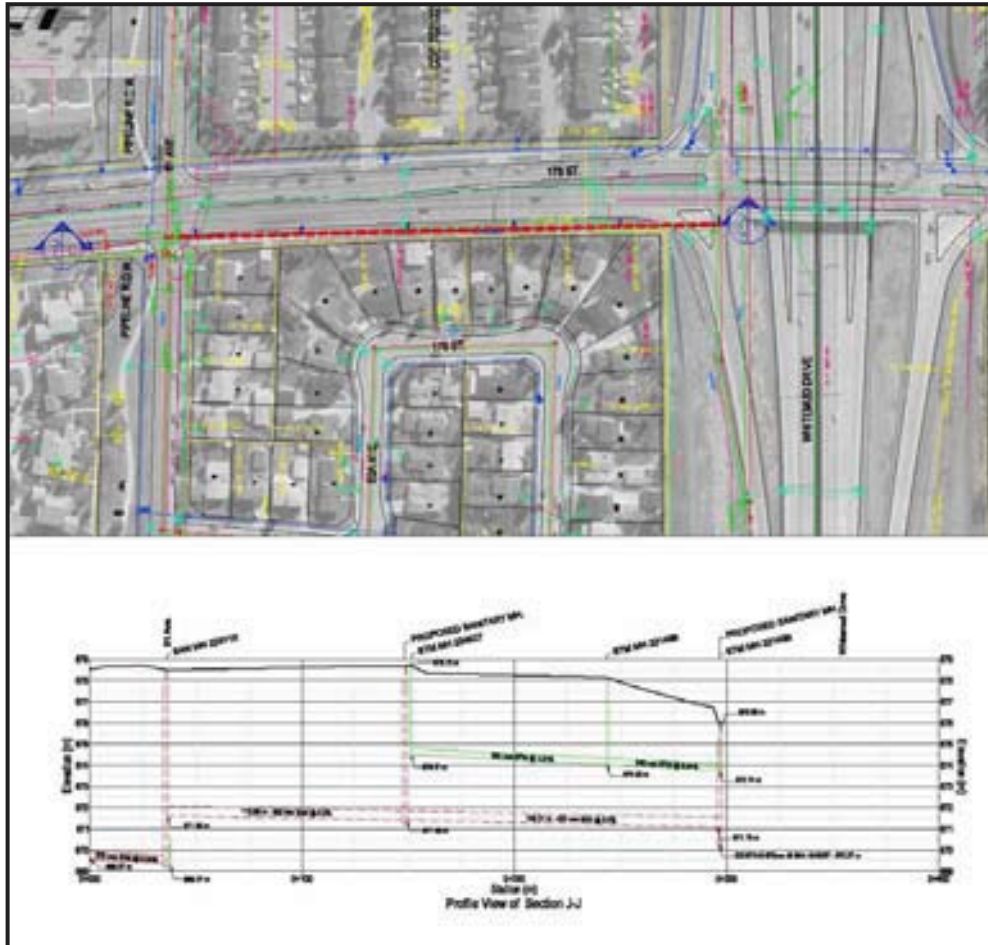
- Stormwater diversion to Terra Losa Pond during large events.
- Reduces surcharging in downstream trunks; removes standing water in Summerlea.
- Control structure will limit maximum water level within the pond.



Terra Losa Pond



Improvement Strategy 4: 178 Street Sanitary Surcharge Relief



- Relieves pressure in 81 Avenue sanitary trunk.
- Diverts surcharge flow directly to Quesnell trunk.



Improvement Strategy 5: La Perle Stormwater Diversion



- Diverts flow from La Perle and 178 Street to Terra Losa Pond
- Relieves surcharging in local sewers



Tentative Timelines

Construction Start	Project
2009-2010	<ul style="list-style-type: none">• Aldergrove Dual Use Dry Pond• Steinhauer Shallow Storm Improvement• Decoteau Shallow Storm Improvement• 182 Street Curb Regrade• 87 Avenue Storm Surcharge Relief• 86 Avenue & 178 Street Shallow Storm Improvement
2014-2015	<ul style="list-style-type: none">• Summerlea Storm Surcharge Relief• 178 Street Sanitary Surcharge Relief
2020	<ul style="list-style-type: none">• Arrowhead Trail Regrading• La Perle Stormwater Diversion

