



Prince Rupert Stormwater Management Facility and Storm Sewer Improvements

Public Consultation – December 4th, 2013



Introduction

- Introduction of project team
- Housekeeping items
- Presentation
- Question period
- Information boards
- Exit Survey

Please hold questions until after presentation



Today's Meeting

- Share information on the Prince Rupert Stormwater Management Project
- Present the overall storm upgrade proposal
- Discuss pond design options and seek community input on the preferred option
- Present benefits of the project and scheduling
- Answer questions



After Today's Meeting

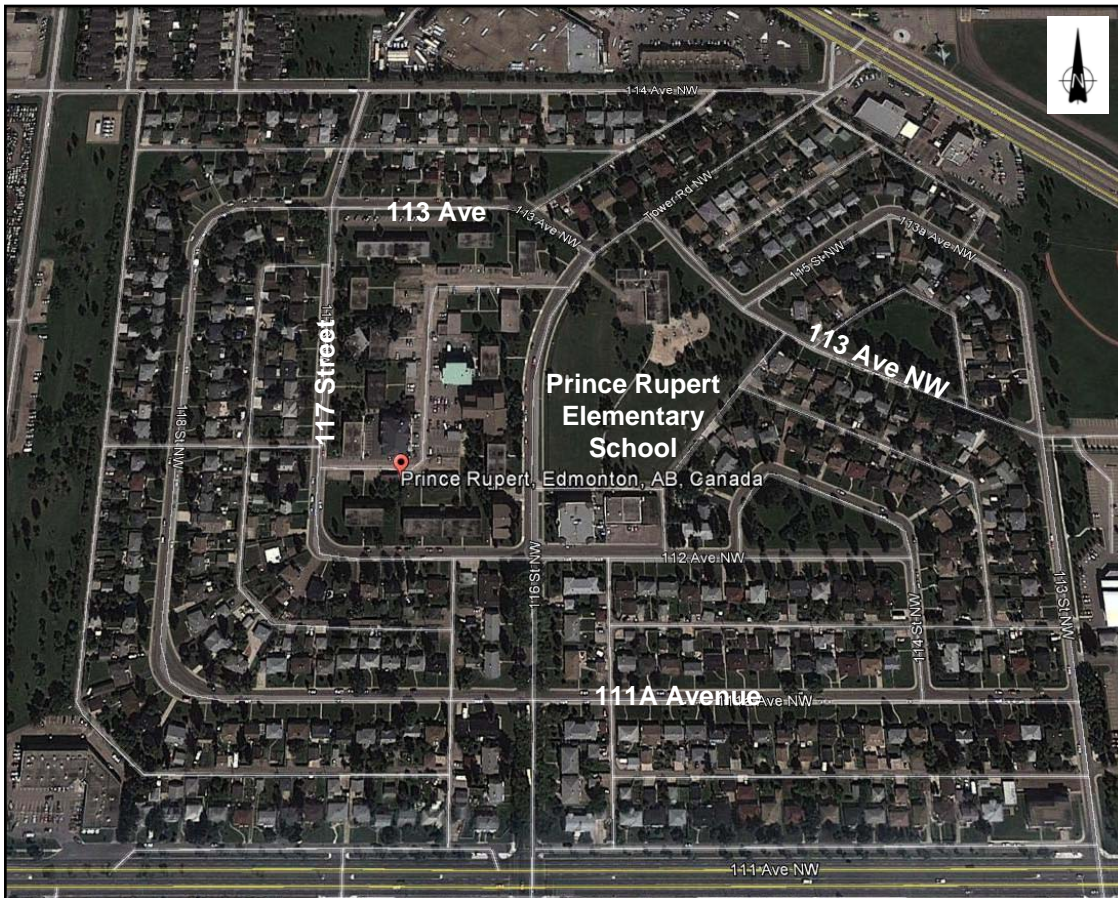
- Summarize and share community input
- Consider community input in work ahead
- Report progress and keep you informed
- Return to the community prior to construction



How Did We Get Here?

- The City established an Opportunistic Flood Prevention Program in 2011:
 - Proactive program to improve the level of service in high risk mature neighbourhoods.
 - Program depends on availability of suitable surplus school site or community parks.
- The Prince Rupert Neighbourhood is the first to be approved by City Council.

Project Location – Prince Rupert



Residential area of
Neighbourhood covers
50.6 ha.



Project Goals

- Reduce risk of flooding
- Reduce combined sewer overflows
- Improve City's runoff water quality













Prince Rupert Neighbourhood Sewers

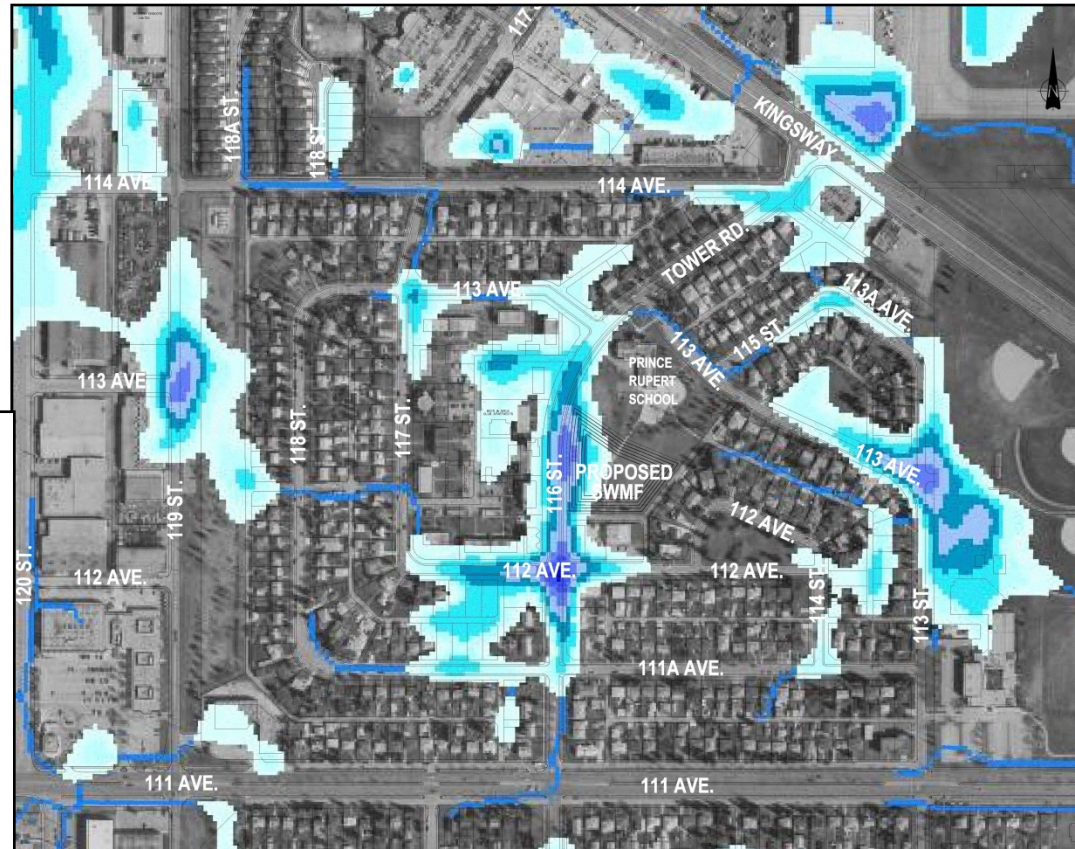
- About 85% of the residential area of Prince Rupert Neighbourhood was developed from 1949 to 1955
- The remaining 15% developed from 1962 to 1964.
- Sewer upgrades were completed in 1965.
- All of the sewers are combined.

What could contribute to flooding?

- Intense rainfall
- Flows exceeding sewer capacity
- Water ponding in low areas
- Water infiltrating into sanitary sewers
- Plugging of catchbasins



- | | |
|---|-----------|
|  | 0.0-0.1 m |
|  | 0.1-0.2 m |
|  | 0.2-0.3 m |
|  | 0.3-0.4 m |
|  | 0.4-0.5 m |
|  | 0.5-0.6 m |
|  | 0.6-0.7 m |
|  | 0.7-0.8 m |



From Bob McMillan's LandMapper Study (2008)

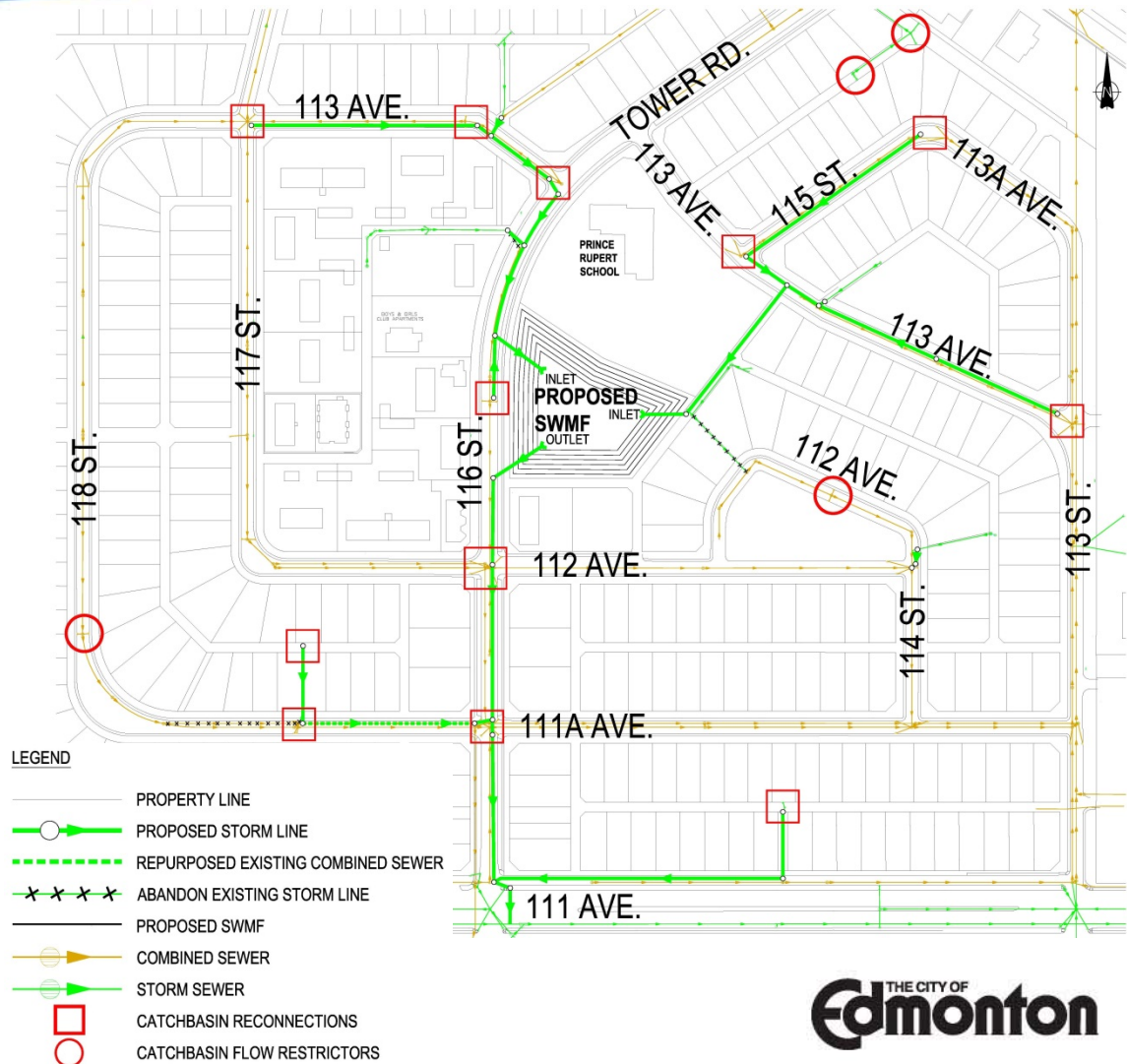


Proposed Storm Drainage Improvements

- Create a stormwater management pond at the surplus school site of Prince Rupert Elementary.
 - design of the stormwater management facility (SWMF) would be subject to public input.
- Provide sewer separation and drain to the new SWMF.
- Connect the proposed SWMF to existing storm trunk on 111th Avenue which discharges directly to the North Saskatchewan River.

Proposed Storm Sewer Improvements

- SWMF at Prince Rupert Elementary Park
- New storm sewers on 113 Avenue and 115 Street.
- New storm sewers on 113 Avenue and 116 Street.
- New storm sewer to collect back-lane trap low north of 111 Avenue.
- Upgraded storm sewer to collect trap lows on 111a Avenue and at back-lane.
- Catchbasin reconnections
- Catchbasin flow restrictors



Proposed Stormwater Management Facility at Prince Rupert Elementary School Site

Existing Condition:

- School site with building, park and recreation areas.

Proposals for the Site:

- Stormwater management facility occupying southern portion of the site. (This Project)
- Community Facility being planned for the northern portion of the site by Prince Rupert Community League, Terra Association, Alberta Thai Association.



Google Maps (Acquired November 2013)

Prince Rupert Stormwater Management Facility Design Option 1 – Shape 1 and Bioswale

- Landscaped with trees and pond vegetation
- Bioswale to improve stormwater quality
- Open play area provides room for sports net
- Picnic tables and viewpoint/ interpretive sign
- Provides space for skating rink at NE corner of site.



Prince Rupert SWMF– Landscaping Option 2 – Shape 1 and Wet Meadow

- Landscaped with trees and pond vegetation
- Bioswale in connection to permanent wet meadow design to improve stormwater quality
- Picnic tables and viewpoint/ interpretive sign
- Provides space for skating rink at NE corner of site.



Prince Rupert SWMF– Landscaping Option 3 – Shape 2 and Bioswale

- Landscaped with trees and pond vegetation
- Bioswale to improve stormwater quality
- Open play area provides room for sports net
- Picnic tables and viewpoint/ interpretive sign
- Picnic tables and viewpoint/ interpretive sign
- Provides space for social skating area at center of site



Prince Rupert SWMF– Landscaping Option 4– Shape 2 and Wet Meadow

- Landscaped with trees and pond vegetation
- Bioswale in connection with permanent wet meadow design to improve stormwater quality
- Picnic tables and viewpoint/ interpretive sign
- Provides space for social skating area at center of site



Examples of Similar SWMF



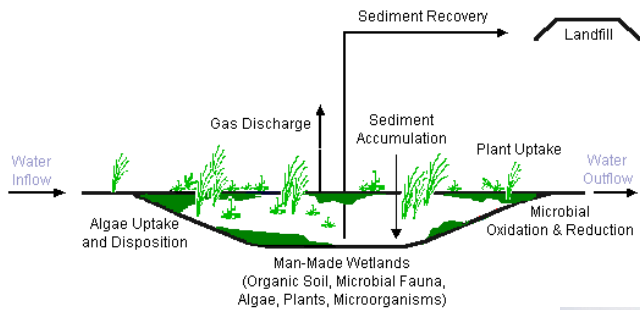
Bioswale in parking lot.



Terwillegar Recreation Centre
Bioswale



Examples of Similar SWMF



Hawkstone-Jamieson

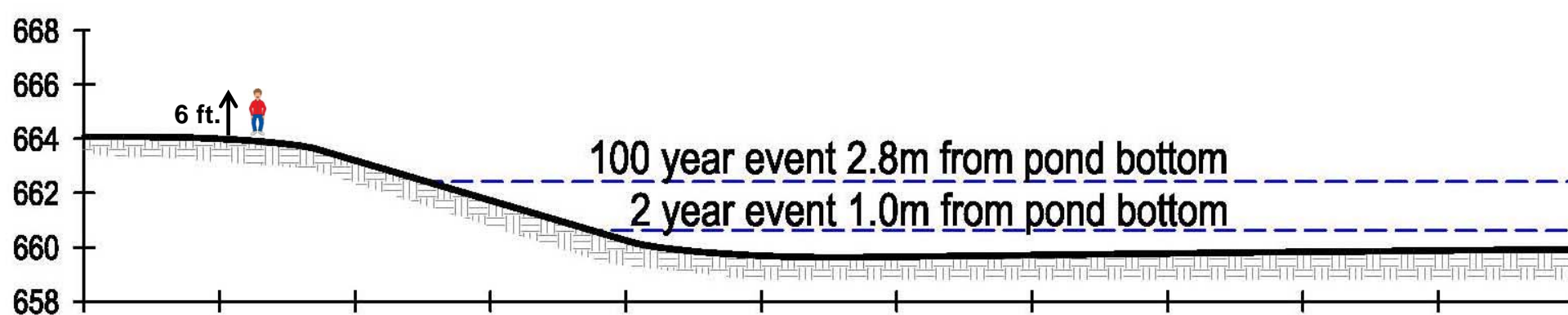
Constructed: 1998
Watershed: 32 ha
Wetland: 1.4 ha
Storage: 25,000 m³

Elmjay Wetland

Constructed: 2005
700 ha U/S watershed
Wetland PUL: 4.2 ha
Wetland NWL: 1.2 ha
Storage: 111,000 m³

Performance Characteristics of Proposed SWMF

Rainfall Event	Water Depth (m)	Storage Volume (m ³)	Time to Fill (hours)	Time to Drain (hours)
100 year	2.8	12500	4	35
25 year	2.0	7500	4	26
10 year	1.7	5500	4	22
5 year	1.4	4300	4	18





What are the Benefits?

- Reduced surface ponding and flooding
- Reduced likelihood of sanitary backups
- Provides sewer separation to approximately:
 - 50% comp. separation, and 68% during large rainfall events
 - Reduced combined sewer overflows to the River
 - Improved the quality of stormwater being discharged to storm sewers and then the River
- Less property damage during flood events
- Savings of time and money



Project Schedule

- **Where we are now:** Preliminary Design
- **Pre-Construction Public Information Session #2:**
Spring 2014
- **Construction:** Proposed to commence in Spring 2014
with construction completion in Fall 2014
- **Final Commissioning:** Anticipated in September 2015



Recommendations for Homeowners

- Install and routinely check backwater prevention valve
- Ensure that sump pump is functioning properly
- Improve lot grading to get surface water away from house
- Install/maintain adequate eavestroughs and downspouts
- Check foundations for cracks and leaks
- Flood Prevention Checkup Program (for advice call: 780-944-7777)
- **See the Flood Prevention Program Team for more information**





Discussion and Feedback

Clarifying Questions?



Issues, comments, concerns?



Additional information needs?