



Comprehensive Sewer Planning Update Meeting

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Mustafa Emir, Village Engineer
Stephanie Walker, Finance Director
Village Board • December 12, 2011



Tonight's Agenda

- Recap of planning efforts
- Status of projects
- Financial review
- Discussion of next steps and implementation policies.

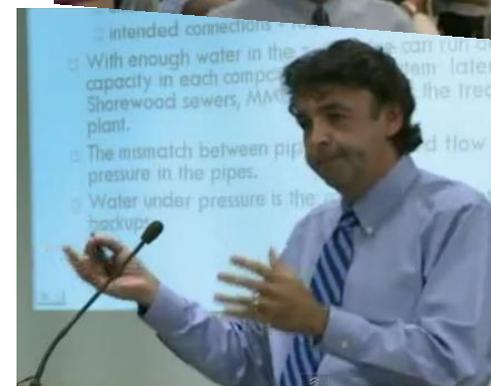
Facility Plan Goals

- GOAL 1 - Provide basement back-up protection for 2 inches of rain in 1 hour throughout the Village by 2015
- GOAL 2 - Reduce Inflow and Infiltration (I&I) in separated area by 40% by **2021** and 80% long-term, for back-up protection for 4 inches of rain in 1 hour
- GOAL 3 - Separation of the sanitary and storm sewer in the combined area will be completed by **2021**, resulting back-up protection against a minimum of 4 inches per 1 hour in this area
- GOAL 4 - Reduce street flooding throughout the Village to provide a minimum of 2 feet freeboard during 3 inch per hour rainfall by 2020.



Sewer Planning Recap

<p>July '10</p>	<ul style="list-style-type: none"> Nearly 1,000 homes damaged from flooding and basement back-ups caused by July 15 and July 22 storms.
<p>August '10</p>	<ul style="list-style-type: none"> Four public meetings Village made sewers a "top priority" Performance Goals Established. Village Engineer began developing "Comprehensive Sanitary Sewer, Stormwater and Drainage Facility Plan"
<p>Sept. '10 – Feb. '11</p>	<ul style="list-style-type: none"> Village Engineer completes a full study of Village's sewers; problems and solutions identified; initial plan was drafted Six public update meetings Village pre-qualified four firms for plan review and Pre-Design Memorandums



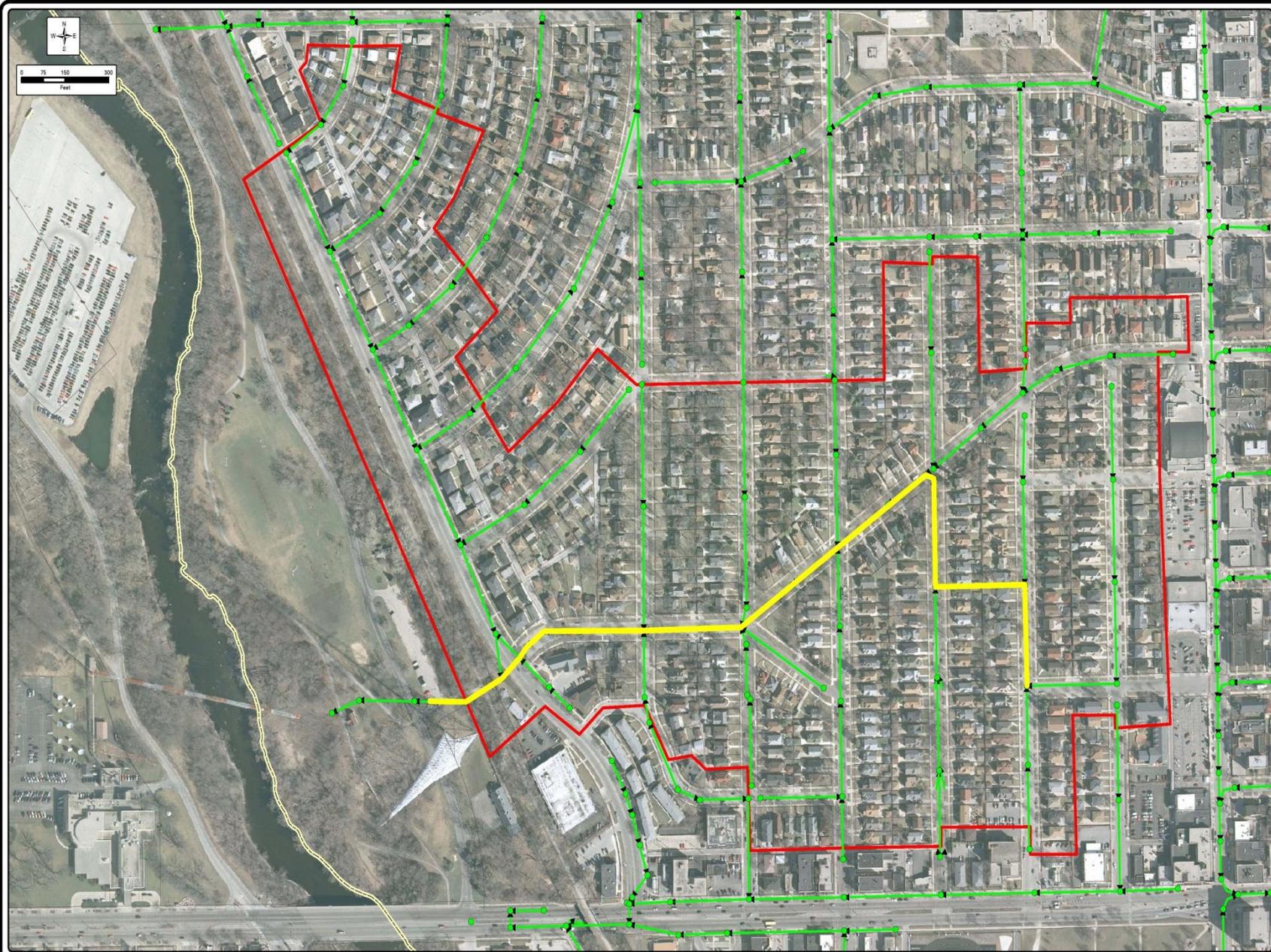


Sewer Planning Recap, continued...

March '11 – May '11	<ul style="list-style-type: none">• Four firms reviewed the plan and developed Pre-Design Memorandums.• The plan was revised to include recommendations from Pre-Design Memorandums.
May '11	<ul style="list-style-type: none">• Village Board approved the plan• Four firms were hired to complete design/engineering for initial sewer projects
June '11	<ul style="list-style-type: none">• Village approves contract modifications to incorporate sewer improvements into 2011 Downer Avenue road project
July '11	<ul style="list-style-type: none">• Surveys sent out to all Shorewood property owners to gauge support for a proposed funding plan for sewer projects
Sept. '11	<ul style="list-style-type: none">• Village receives survey results from UW-Milwaukee Center for Urban Initiatives and Research

Facility Plan Project Summary

- Basin 1 Sanitary and Storm Sewers
- Basin 6 Sanitary and Storm Sewers
- Combined Area North Improvements
- Combined Area South Storm sewer construction
- Inflow-Infiltration reduction in public and private sewers



BASIN 1 - PROPOSED SANITARY IMPROVEMENTS

VILLAGE OF SHOREWOOD
MILWAUKEE COUNTY, WISCONSIN

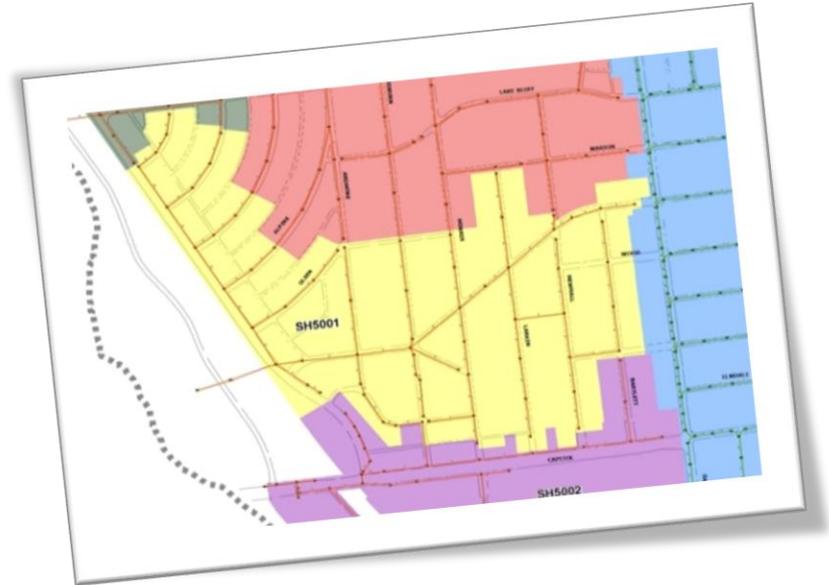


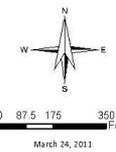
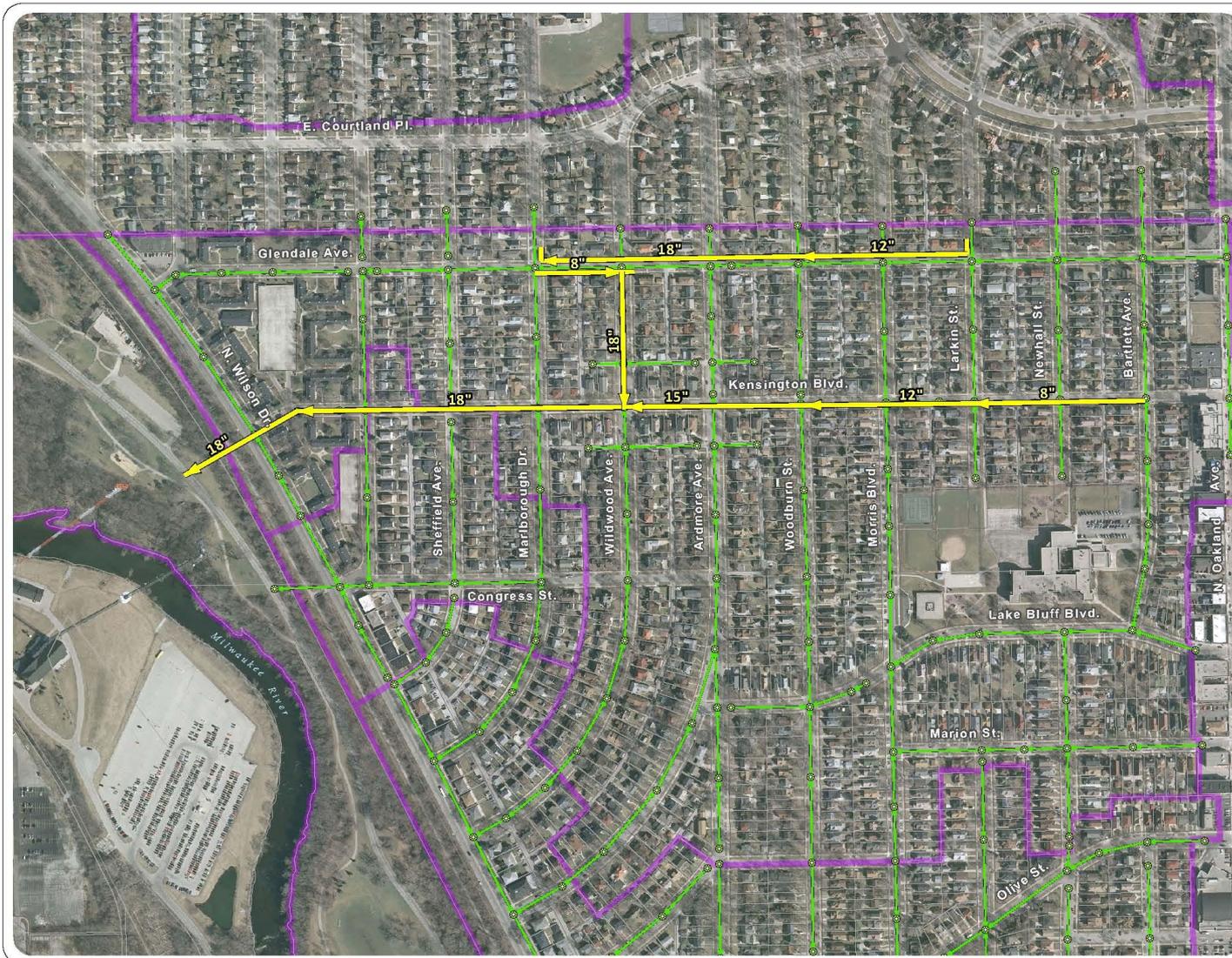
FIGURE 1
3646.002



Projects Status

- Basin 1
 - Strand Associates is designing upsize of current **sanitary pipe** that runs from Newhall to Olive to Wilson.
 - Strand Associates is designing new **storm sewer** that drains Newhall to Capitol.
 - Design of both projects to be completed by early 2012. Construction proposed for Summer 2012.





- Legend**
- Proposed Improvements
 - Sanitary Pipes
 - Existing Sanitary Sewer
 - Sanitary Pipes
 - Sanitary Manholes
 - Sewer Shed Basins

VILLAGE OF SHOREWOOD, WISCONSIN

**BASIN 6
PRELIMINARY DESIGN
MEMO**

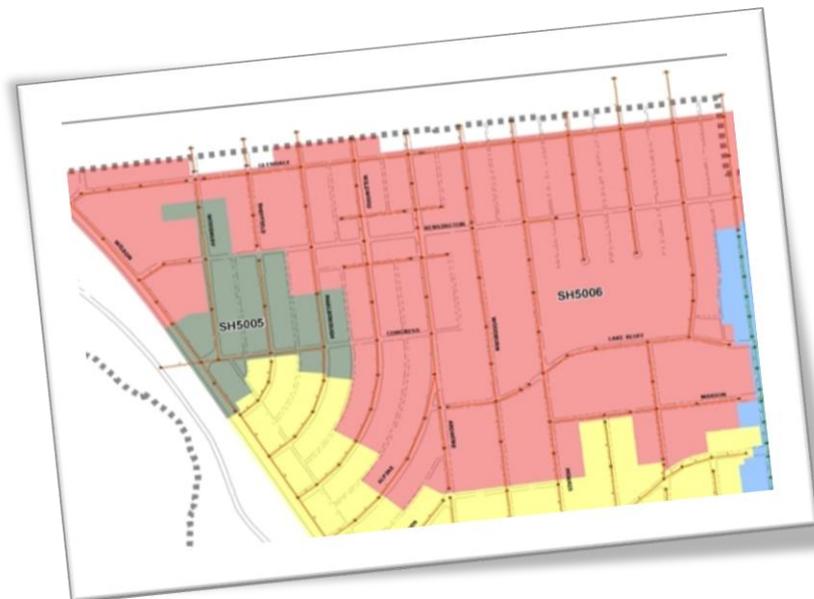
**FIGURE 3
KENSINGTON
ALTERNATE ROUTE**





Projects Status

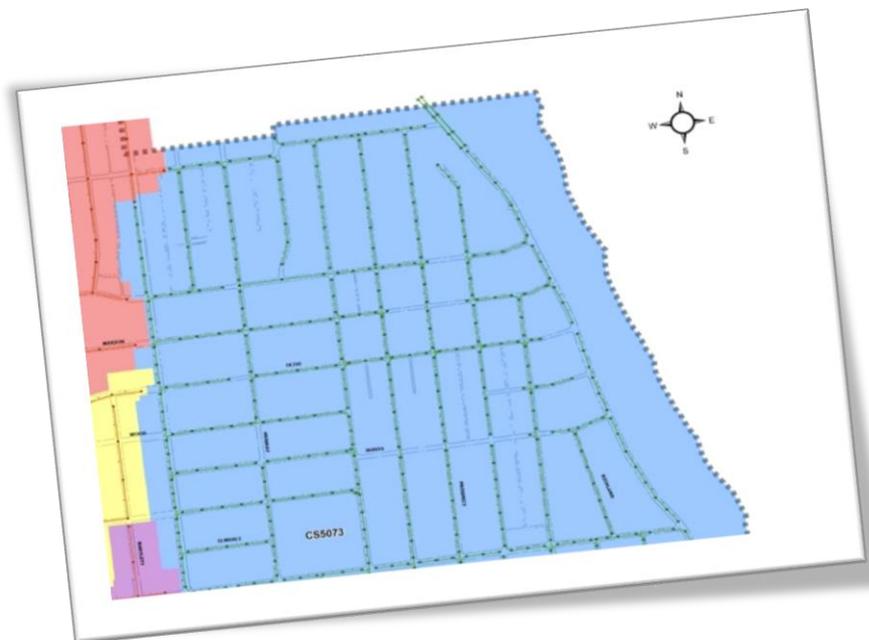
- Basin 6
 - Baxter & Woodman is designing new **sanitary sewer pipes** in two phases :1 Kensington; 2) Glendale
 - Baxter & Woodman is also designing a new **storm sewer outfall for phase 1** draining Glendale Ave. directly to the Milwaukee River.
- Cost share with Whitefish Bay is proposed.
- Design of both projects to be completed by Spring 2012. Construction proposed in two phases – 2012 and 2014.
- Basin 6 Sewer Design is coordinated with Pavement Management Plan and road reconstruction.





Projects Status

- Combined - North
 - Sewer improvements were constructed as part of 2011 Downer Ave. project.
 - Combined Sewer at Richfield Circle and Jarvis and storm sewer on Richfield Circle planned for 2012.
 - Flood Control :Ruekert Mielke is evaluating feasibility of a **combined sewer overflow** at E. Wood Pl. to Lake Michigan. Construction is recommended for 2013.
 - Clark Dietz will design **combined pipe upgrades** along Lake Bluff, Murray, Kensington and Prospect. Construction is proposed for 2015 and 2016.





Projects Status

- Combined - South
 - Ruekert Mielke is doing preliminary design of a **storm sewer outfall** from Menlo to the Milwaukee River and a **network of storm sewers** connecting to the outfall.
 - Outfall proposed to be constructed in 2013-2014
 - Network of pipes proposed for 2015-2019
 - Ruekert Mielke has designed a **drainage way** for overland flow from Edgewood & Oakland to the Milwaukee River. Design will be complete early 2012 and proposed for 2012 construction.





Inflow/Infiltration Reduction Timeline

- 2012-2021 – lateral rehab program, 50 laterals to be lined or replaced per year, beginning with Wildwood Ave. (See Exhibit A)
- 2011-2020 – ONGOING public sanitary sewer pipe lining program (storm sewer program pending results of study). (See exhibit B).
- 2011 and forward – provide secondary drainage collection system whenever road is reconstructed
- 2022 and forward – foundation drain disconnection incentive

Sewers Lined since 1999



Exhibit A- Private Lateral Rehab Schedule

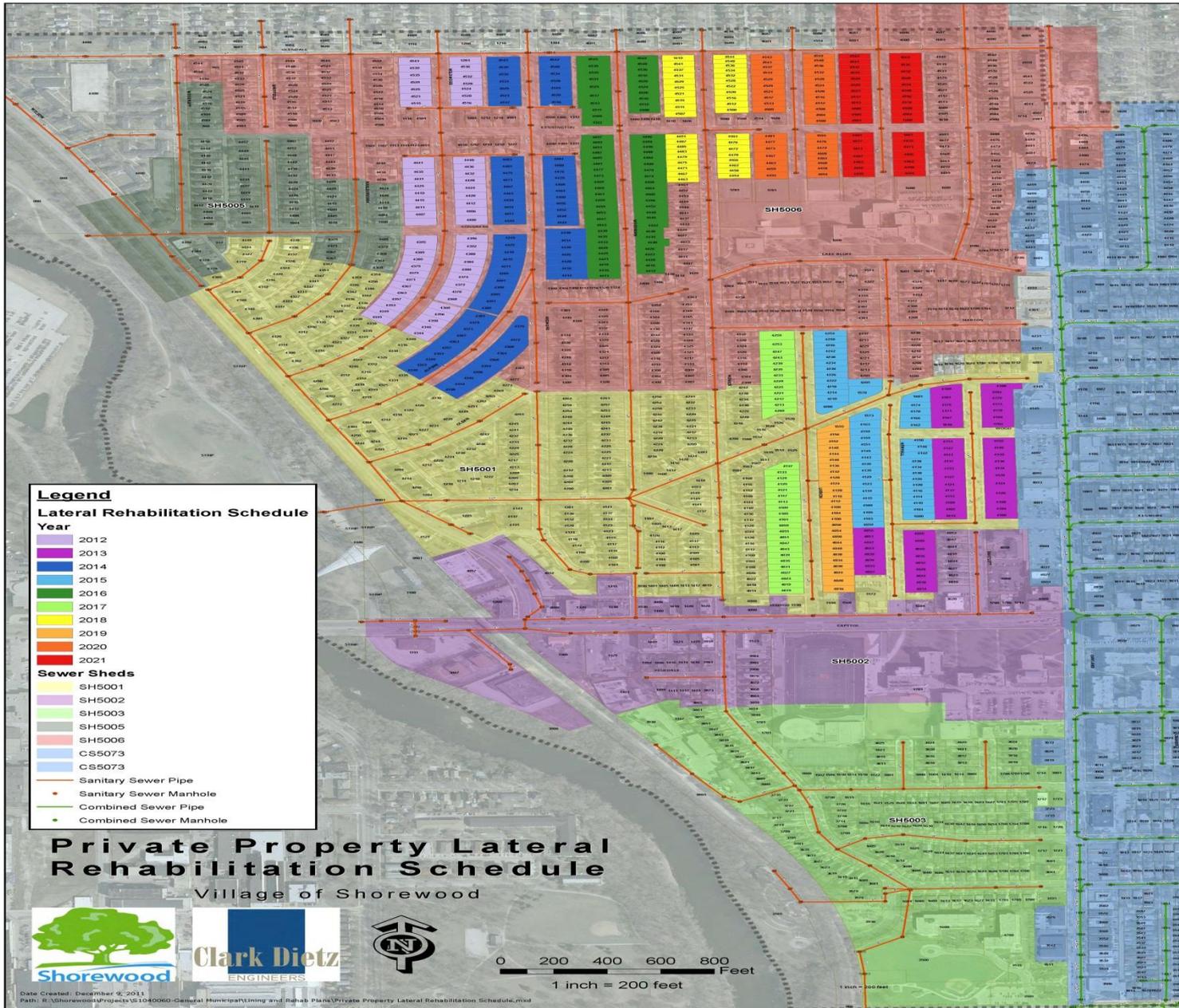
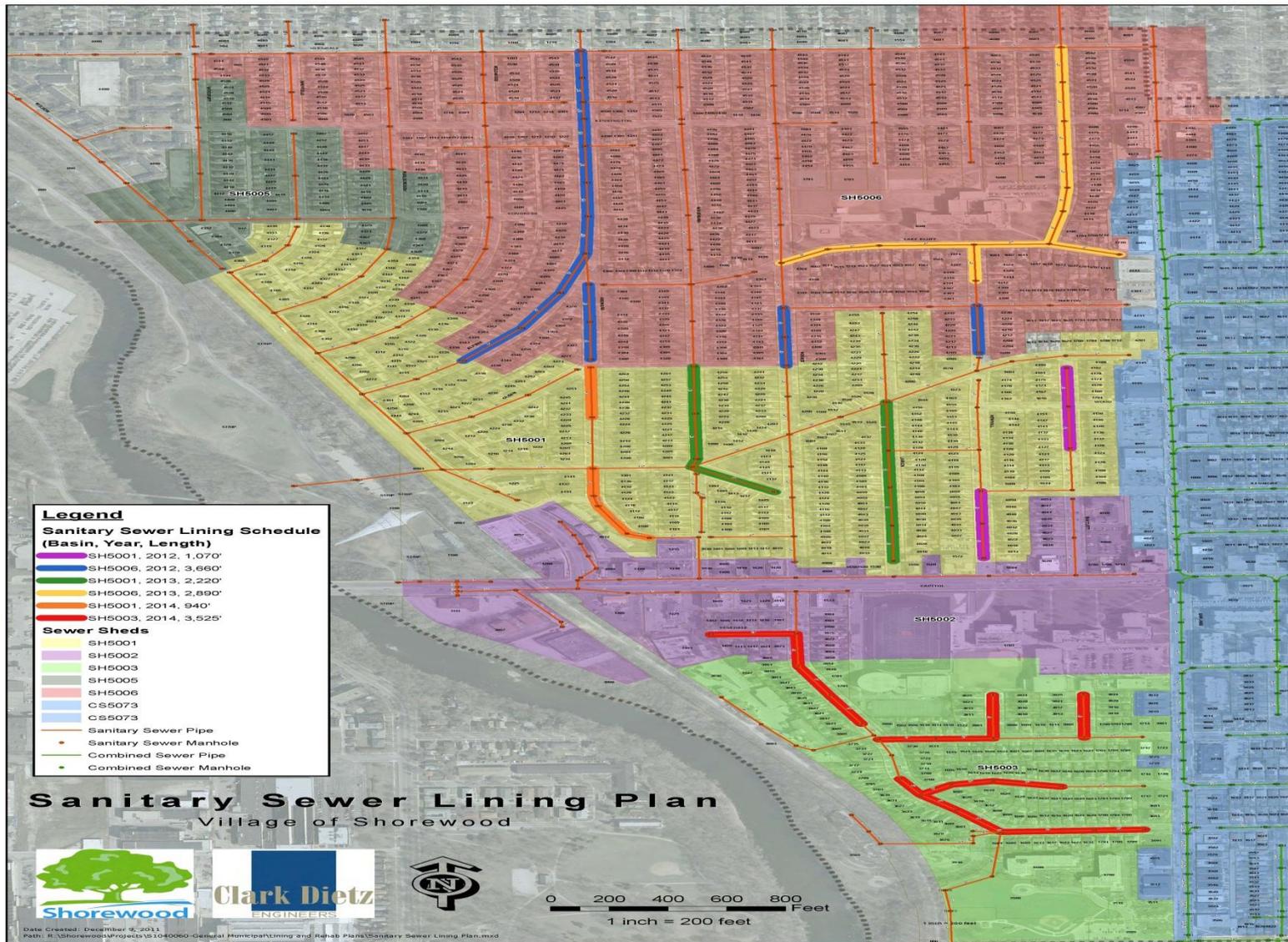


Exhibit B- Sanitary Sewer Lining Plan





Original Project Cost Estimates

Location	Project(s)	Cost
Basin 1	Storm and sanitary improvements	\$1.74 million
Basin 6	Storm and sanitary improvements	\$5.50 million
Separated Area	Sewer pipe lining and lateral rehabs	\$4.90 million
Combined North	Pipe upgrades and Wood Pl. outfall	\$5.22 million
Combined South	Storm sewer construction and drainage way	\$15.05 million
Total		\$32.41 million



Proposed Funding Plan

- Developed in Winter/Spring 2011
- Mixture of funding sources:
 - Property taxes
 - Sewer utility fees (“sanitary sewer”)
 - Proposed creation of stormwater utility fees
 - MMSD grants for 25% of lateral rehab program
 - No special assessments planned
- Mixture of General Obligation and Revenue Bonds
 - 15, 20 and 25 year bond periods proposed



Proposed Funding Plan – Current Implementation Homeowner Cost

**Estimated Annual Homeowner Costs (Owner of Home Assessed at \$300,000)
(Increases in amounts beyond 2011 are due to Sewer Projects only)**

Year	Property Tax Bill - Village Share	Sanitary Sewer Utility Fee	Stormwater Utility Fee	Total	Change from Base Year (2011)
2011 – Base	2,048	343	\$ -	2391	\$ -
2012	2,058	344	12	2,414	23
2013	2,068	346	14	2428	37
2014	2,074	378	71	2,523	132
2015	2,084	417	193	2694	303
2016	2,099	433	209	2,741	350
2021	2,160	499	344	3003	612
Peak 2025	2,188	523	347	3,058	667
2031	2,230	486	206	2922	531
2036	2,194	343	191	2,728	337

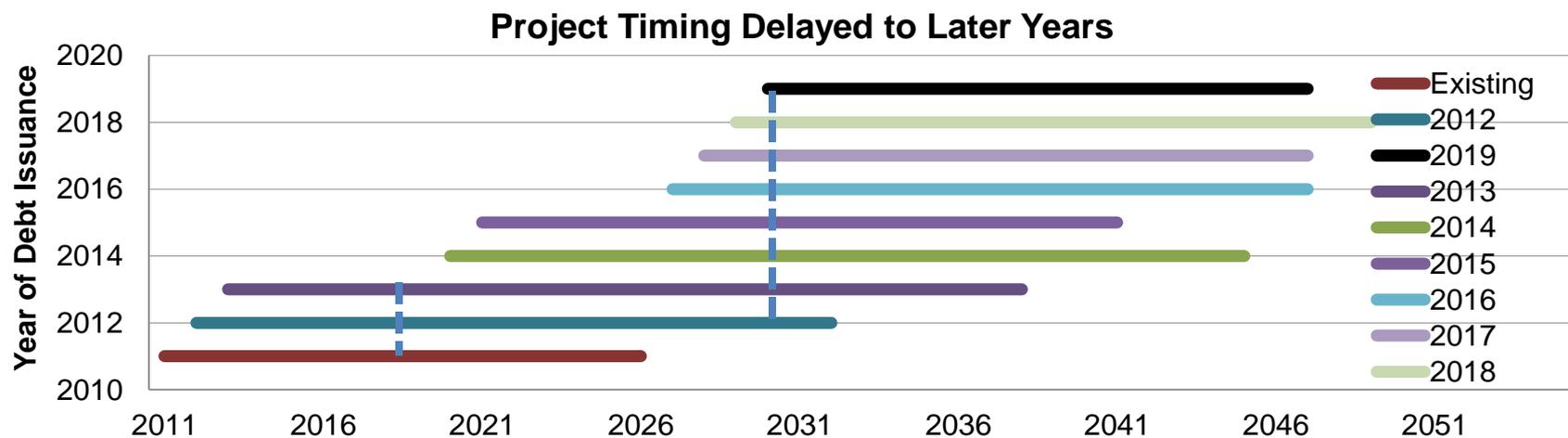
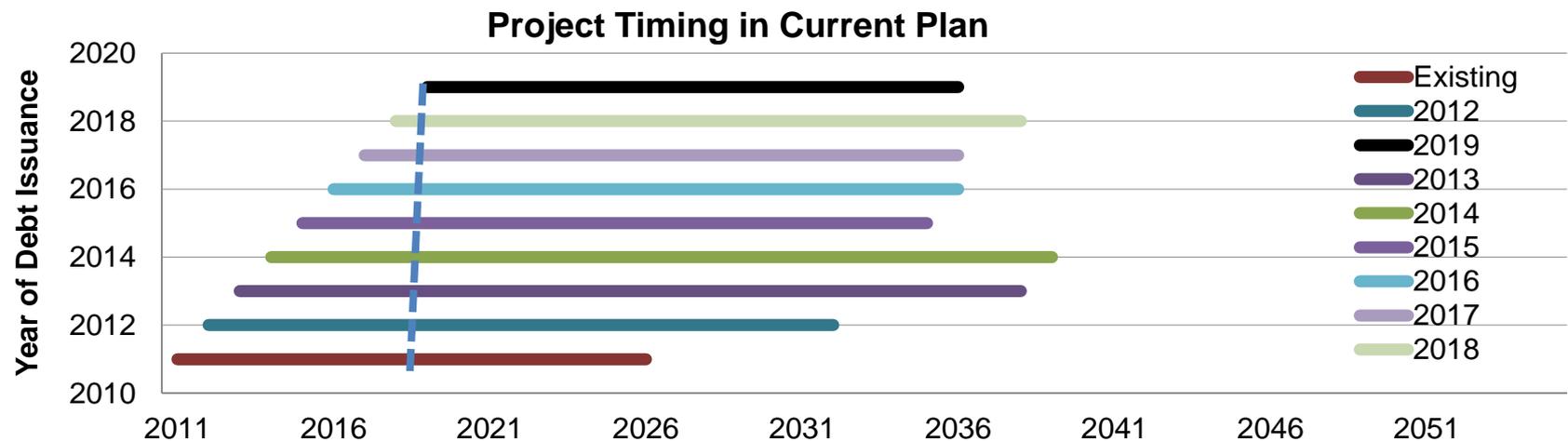


Ways to Affect Homeowner Cost

- Individual homeowner costs are a factor of:
 1. Debt structure, interest rates, length of borrowing, debt type (**How do we repay it?**)
 2. Methods used to fund the debt service, tax levy or user fee, called the funding mix. (**How will we share those costs?**)
 3. Project timing (**When is the money needed?**)
- Of these three, the project timing is the most significant way to affect homeowner costs.



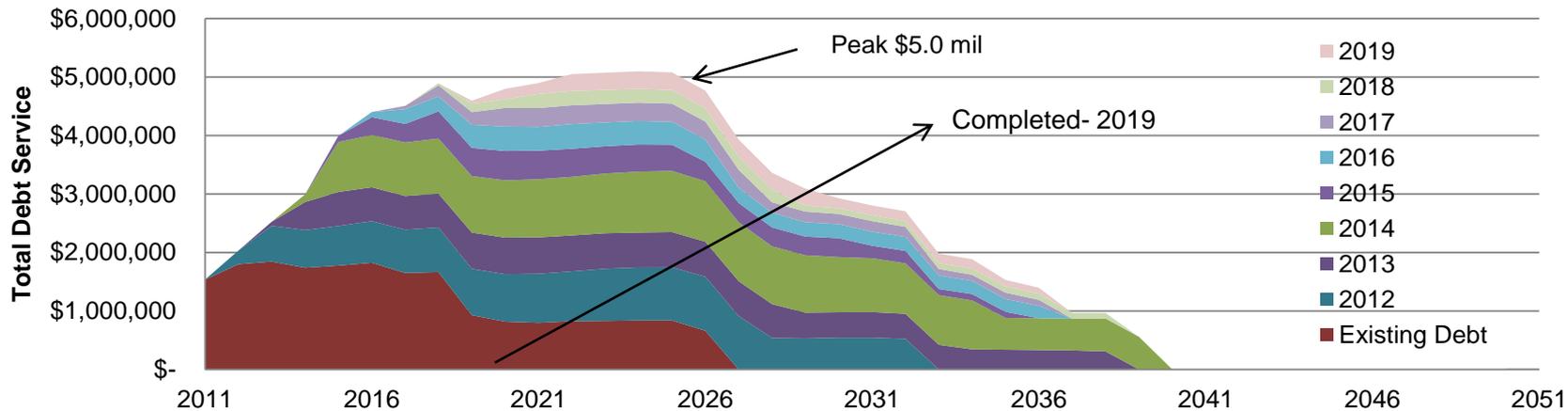
The Layering Effect of Debt Issuance



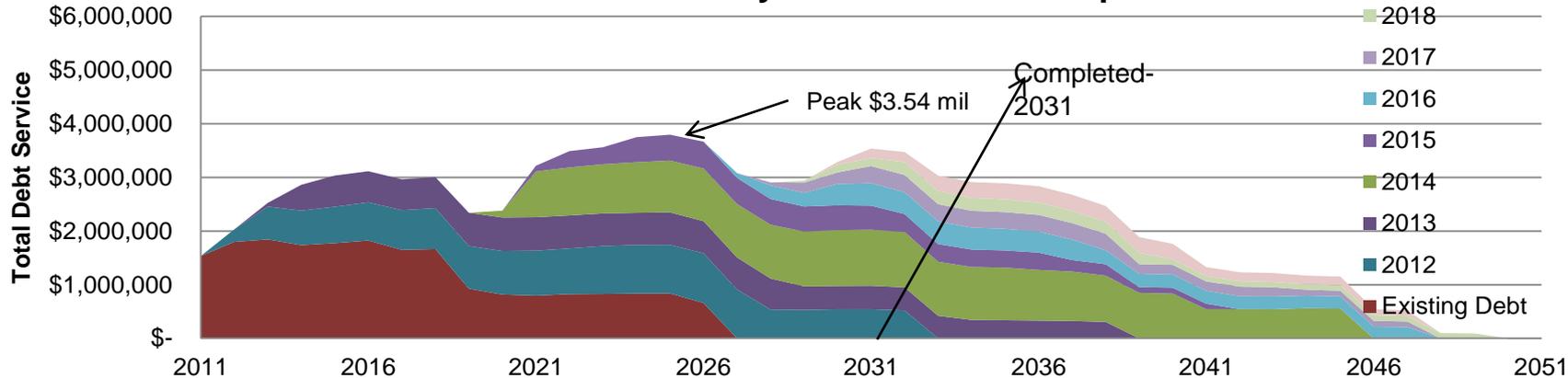


Debt Service Peak Current Plan vs. Delayed

Debt Service Based on Current Project Timeline - Completed 2019



Debt Service based on Delayed Timeframe- Completed 2031





Implications

- The previous slides show how the Peak annual debt service could be decreased by changing the timing of projects.
- In the example given, peak debt service goes from \$5.0 million to \$3.54 million.
- The trade off: the final year of projects moves from 2019 to 2031.
- For every \$1.0 million in annual debt service the annual homeowner cost would change by \$175-\$215 depending on funding mix used.

Storm Water Utility



One of the most important potential funding tools would be the institution of a storm water utility fee. This fee, when combined with other sources, is a very effective financial tool. The storm water utility fee is a very effective method of financing storm water projects because:

- Fees are charged against all developed parcels
- Fees are based on runoff volume generated
- Revenues are kept in separate, dedicated fund
- Applicable to operations as well as debt service
- Dependable and predictable source of revenue
- Does not rely on property value

Storm Water Utility Options



The Board can consider two storm water utility fee options, both of which could potentially take effect in 2013-2014 :

- 1. An annual single flat rate of \$196 or
- 2. A graduated annual rate based on annual debt service and operational costs.

The breakdown of a potential flat rate versus the potential graduated rate, as well as residential vs. commercial, is broken down in the table on the next slide.



Annual Storm Water Utility Fees: Residential vs. Commercial

	Residential	Commercial
Flat Rate	\$196	\$3,907
Graduated Rate: 2013	\$17	\$337
Graduated Rate: 2015	\$67	\$1,327
Graduated Rate: 2020	\$257	\$5,127
Graduated Rate: 2023	\$315	\$6,281
Graduated Rate: 2030	\$197	\$3,922
Graduated Rate: 2035	\$163	\$3,235
Graduated Rate: 2040	\$109	\$2,153



Policy Considerations

- I. Decide if improvements are still a priority
 1. If so, decide on implementation time line and how it affects:
 - a) When flood protection is provided
 - b) The year of peak cost
 - c) The amount of peak cost
 - d) The total cost



Policy Considerations

II. Should the Timetable be:

1. Condensed
2. Extended
3. Individual Projects reconfigured as is:
 - a) Condensed
 - b) Extended



Policy Considerations

III. Financing

1. As planned
2. More emphasis
 - a) Taxes
 - b) User Fees
 - c) Special Assessments
3. If user fees, should a storm water utility be established, if yes
 - a) As illustrated in the plan
 - b) Less
 - c) More



Policy Considerations

IV. Basin I Sanitary Sewer: should it be funded in 2012 as described in plan.

V. Basin 6 Phase I: Should it be funded in 2012 as described in plan.

- Cost of Basin I/ Basin 6 Sanitary Sewer Utility Implementation per plan for the average user is on the next slide.

Proposed 2012 Project Costs

Location	Project(s)	Cost 2012
Basin 1	Sanitary	\$2.0 million
Basin 6	Sanitary Phase 1	\$2.10 million
Basin 1 and 6	Lining projects and Lateral	\$300,000
Total		\$4.4 million



Sewer Utility Increase

To fund the \$4.4 Million debt service for this project, it will be necessary to increase the annual sewer utility fee for residents. The annual estimated increase is represented in the chart below:

Cost of Borrowing \$4.4 Million on Average Sewer Bill	
Year	Increase in Sewer Charge
2013	\$50.14
2014	55.54
2015	59.98
2016	65.27
2021	69.51
2025	79.45
2031	84.63
2032*	88.94
Total	1,458
*Peak Year	



Further questions/discussion...
