THE VILLAGE OF Wilmette

EST. 1872

Long Term Capital Planning Workshop 3

Sewers, Roads, Facilities & Water

October 20, 2016

Summary of Previous Capital Discussions

- The Village Board has been discussing critical capital improvements for the last several years; a number of large projects have been deferred or reduced in scope to reduce costs to the community:
  - Facilities- Critical repairs have been deferred since 2008
    - Police Station rebuild deferred to 2025 to allow existing debt service to peel off to ensure least possible impact to the property tax levy
  - Road Program- Reduced annual funding request from $2.75M to $2M
  - Water Main Replacement- An annual water main replacement program ($1.3M/year) has been deferred until 2020 when new wholesale water revenue will allow the program to proceed without increasing the water rate

Goals for Tonight's Meeting

- Continue discussion of $77M Stormwater Improvement Project
  - Current Decision Point: Determine whether to engage a third party engineering firm to conduct a value-engineering review to validate the results, analysis and cost estimates of the CBBEL report
- Determine whether to budget the following in FY 2017:
  - Increase to annual road program funding
  - Complete critical facility repairs in 2017
  - Engineering design of water plant electrical improvements

What is a Value-Engineering Study Four Components:

Level 1 – Technical Review

- Review of the pump station and pipe network capacities and parameters used to develop the hydraulic model

Level 2 – Alternatives Review

- Was the alternative analysis performed sufficient to determine that the proposed project concept is the best option for meeting the Village's objectives?
- Did the alternative analysis adequately consider the key factors that could make one alternative "better" than another?
- Are there any factors that could dramatically impact the feasibility, cost, or effectiveness of the proposed project that were not adequately considered?

Level 3 – Project Cost Review

- Review the assumptions and backup that went into the initial cost estimate
- Determine how reasonable the current estimate reflects key factors that may impact project costs

Level 4 – Value Engineering Analysis

- Identify ways in which the construction cost and/or risks could potentially be reduced
- This step should only be taken once the Village has determined a specific course of action

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Stormwater Improvements

Separate Storm Sewer Study Timeline

Date	Meeting	Action/Discussion
July 9, 2013	Municipal Services Committee	Discussed modeling and analysis of the Separate Storm Sewer System
July 15, 2013	Committee of the Whole	Staff recommended the Village Board fund a Separate Storm Sewer Study by Christopher B. Burke Engineering, LTD (CBBEL) to map out critical areas of overland flooding.
September 10, 2013	Village Board Meeting	**Village Board Approved Contract with CBBEL for Separate Storm Sewer Study.**
August 25, 2014	Municipal Services Committee	CBBEL provided an update on the Separate Storm Sewer Study.
January 28, 2015	Municipal Services Committee	CBBEL presented the results of the Separate Storm Sewer Study. Three project alternatives were identified to relieve flooding in West Wilmette.

Separate Storm Sewer Study Timeline (continued)

Date	Meeting	Action/Discussion
March 25, 2015	Municipal Services Committee	Approved proposal from CBBEL for additional Refinement of the Alternatives for the Separate Storm Sewer Study.
April 14, 2015	Village Board Meeting	Village Board Approved Contracts with CBBEL for Refinement of Alternatives.
September 24, 2015	Municipal Services Committee	CBBEL gave a presentation on the alternatives aimed at eliminating street flooding for the ten-year storm event. Staff was asked to prepare a detailed schedule and implementation plan for Alternatives 1 and 2, detailed financial analysis including review of a stormwater utility fee, and a detailed analysis of cost per structure protected.

Separate Storm Sewer Study Timeline (continued)

Date	Meeting	Action/Discussion
April 4, 2016	Municipal Services Committee (MSC)	Village staff presented an update on the Separate Storm Sewer Study, including implementation schedule, cost/benefit review, and analysis of funding options. The MSC concurred that Alternative 1, building a relief storm sewer system ($77 million), was the most logical of the alternatives and asked staff to include it as a place holder in the Capital Improvements Program for further discussion. There was consensus that funding a project of this magnitude would be a challenge. The MSC suggested that sewer rates should be increased on an incremental basis over time and the first increase could happen during the planning and design period so that the project fund could build early.

Stormwater Improvements

- This presentation will talk about 10, 25 and 100 year storms, what does this mean?
  - 10- year storm: There is a 10% chance of a storm of this magnitude happening in any given year
  - 25-year storm: There is a 4.0% chance of a storm of this magnitude happening in any given year
  - 100-year storm: There is a 1.0% chance of a storm of this magnitude happening in any given year

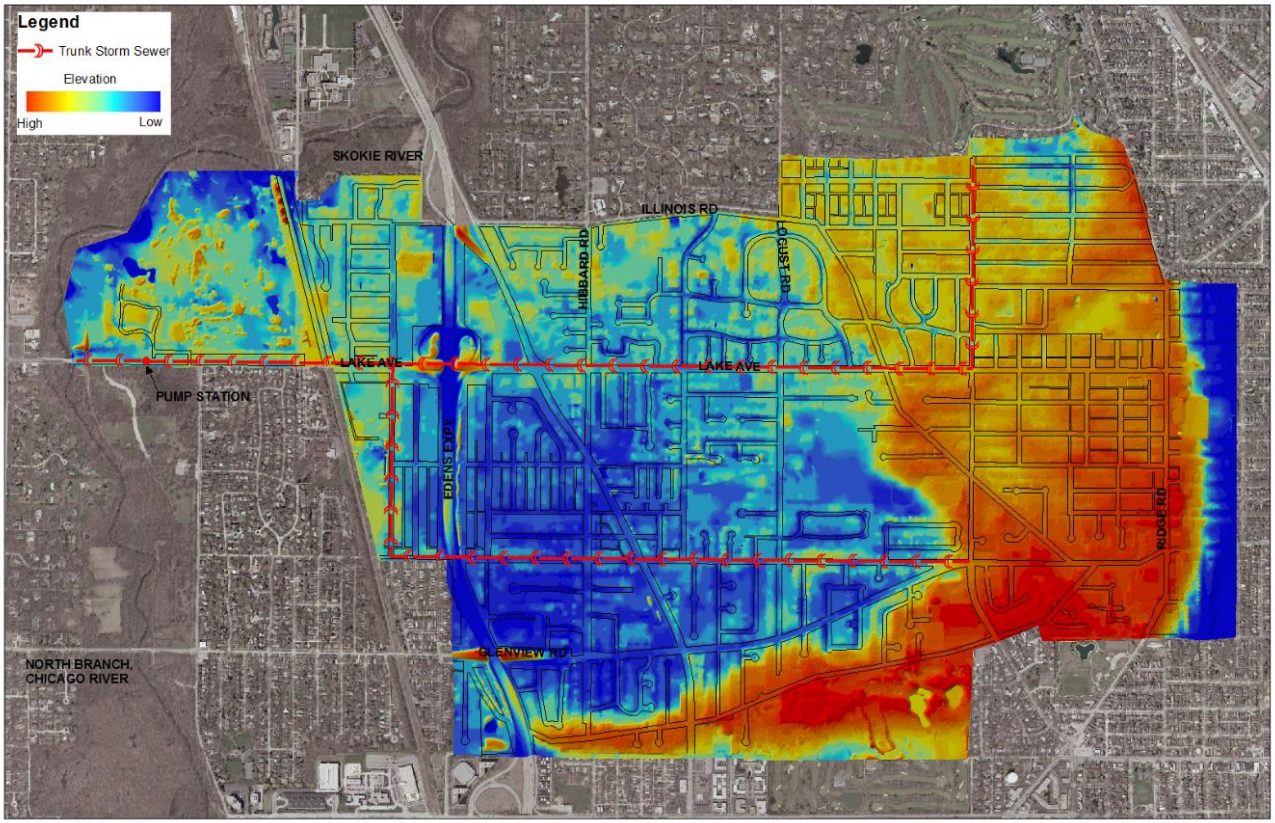
Rainfall during a 3-hour Event	
Storm	**Inches**
2-year	1.94
5-year	2.43
10-year	2.86
25-year	3.53
50-year	4.14
100-year	4.85

Stormwater Improvements

- The separate storm sewer system west of Ridge Road, built in the 1950s, is undersized to adequately handle even moderate rain events
  - The system currently can only handle a 2-year rain event
  - The result of the undersized system is flooded streets and intersections during moderate rain events
- A modern sewer system, with a larger capacity has been identified as the best solution to reduce the amount of overland flooding experienced west of Ridge Road

Limitations of Existing System

- Topographic Limitations



- Highly developed residential area
- Developed prior to modern stormwater management practices
- Limited open space
- No easy place to safely store or send runoff

Summary of Projects

- Short Term Projects
  - Residential flood-proofing
  - High capacity inlets (limited benefit)
  - Connection to Glenview system

- Green Infrastructure
  - Village owned property (roadside bioswales and islands)
  - Privately owned property (rain gardens and rain barrels)
  - Ordinance requirements, maintenance and limited flood reduction benefits

- Long Term Capital Projects
  - Alternative 1 – Relief Sewer System
  - Alternative 2 – Centralized Storage at Community Playfield
  - Alternative 3 – Neighborhood Stormwater Storage

Green Infrastructure Improvements

- Limitations
  - Vegetation requires establishment and maintenance
  - Reliance on infiltration – soils and weather constraints
  - Roadway jurisdictions and requirements
  - Capacity limitations:
    - A single 0.15 acre lot in Wilmette would generate up to 15,000 gallons of runoff during the April 2013 storm event
      - 235 rain barrels (55 gallons each)
      - Roof Only = 110 rain barrels
    - Goal of streets dry in 10-year event requires ± 50 acre-ft of storage
      - 296,000 rain barrels (55 rain barrels per property on West Side)
      - 20-25 miles of permeable pavement (nearly ½ of West Side)
      - 20,000 rain gardens (4 rain gardens per property on West Side)
    - Model results indicate <0.2 ft of flood reduction for 10-year storm event if every property installed 1 rain garden!

Long Term Capital Projects

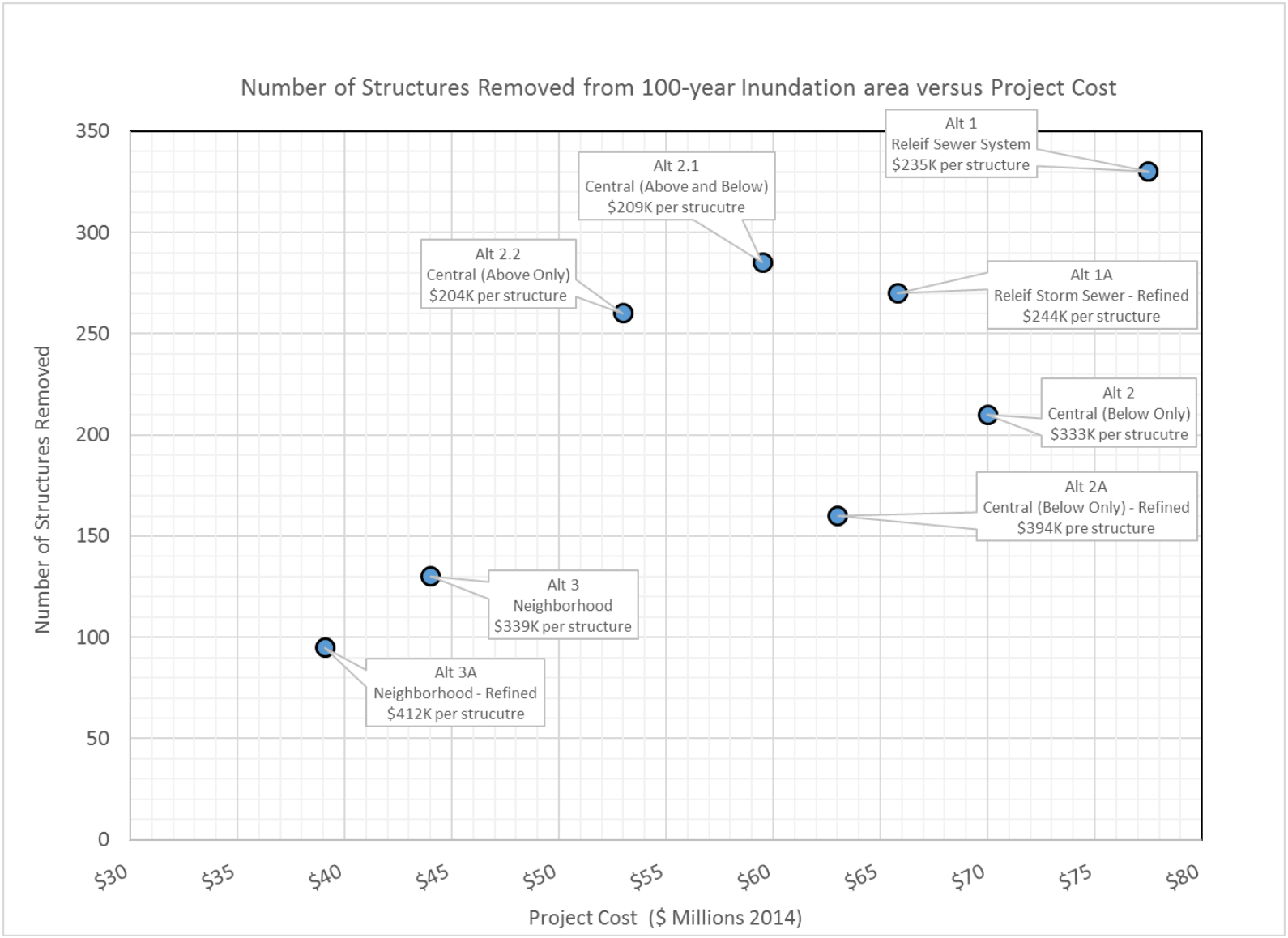
- Projects Analyzed
  - Alternative 1 – Storm Sewers
  - Alterative 2 – Community Park Floodwater Storage
  - Alternative 3 – Neighborhood Floodwater Storage
- Project Benefits
  - 10-year flood elevation at or below street level at all locations (except Alternative 3)
  - Reduction in street flooding depth and duration for all storm events
  - Reduction in structures impacted by flooding

Capital Projects - Benefits and Costs

	Design Storm	Existing Conditions	Alternative 1 Relief Storm Sewer System	Alternative 1A Relief Storm Sewer System	Alternative 2 Underground Stormwater Storage at Community Playfield	Alternative 2A Underground Stormwater Storage at Community Playfield	Alternative 2.1 Combination Stormwater Storage at Community Playfield	Alternative 2.2 Above Ground Stormwater Storage at Community Playfield	Alternative 3 Neighborhood Stormwater Storage	Alternative 3A Neighborhood Stormwater Storage
Benefits	Number of structures impacted by flooding (% reduction)									
	10-year	120	0 (100%)	0 (100%)	0 (100%)	0 (100%)	0 (100%)	0 (100%)	50 (58%)	50 (58%)
	25-year	280	60 (79%)	95 (66%)	90 (67%)	115 (60%)	60 (79%)	60 (79%)	160 (43%)	170 (39%)
	50-year	480	190 (60%)	235 (51%)	240 (50%)	290 (40%)	180 (63%)	200 (58%)	320 (33%)	350 (27%)
	100-year	700	370 (47%)	430 (38%)	490 (30%)	540 (23%)	415 (41%)	440 (37%)	570 (19%)	605 (14%)
	Street Flooding Depth in feet (Minimum - Maximum)									
	10-year	0.3 - 2.2	0.0	0.0 - 0.8	0.0	0.0 - 0.8	0.0	0.0	0.0 - 2.2	0.0 – 2.2
	25-year	0.5 - 2.7	0.0 - 1.7	0.0 – 1.9	0.1 - 1.8	0.2 – 1.8	0.0 – 1.7	0.0 – 1.6	0.3 - 2.6	0.3 – 2.6
	50-year	0.6 - 3.0	0.0 - 2.2	0.0 – 2.3	0.5 - 2.3	0.5 – 2.3	0.3 – 2.2	0.0 – 2.2	0.5 - 2.9	0.5 – 2.9
	100-year	0.6 - 3.3	0.0 - 2.6	0.0 – 2.7	0.6 - 2.7	0.6 – 2.7	0.6 – 2.6	0.6 – 2.6	0.6 - 3.2	0.6 – 3.2
Costs	Total Cost*	--	$77 Million	$75.8 million	$70 million	$63 million	$59.5 million	$53.0 million	$44 million	$39.1 million
	Cost per Structure Protected for 100-year event	--	$234,840	$243,700	$333,333	$393,750	$208,772	$203,846	$338,462	$411,579

*Alternative 1 in 2016 Dollars, all others in 2014 Dollars

Capital Projects - Benefits and Costs

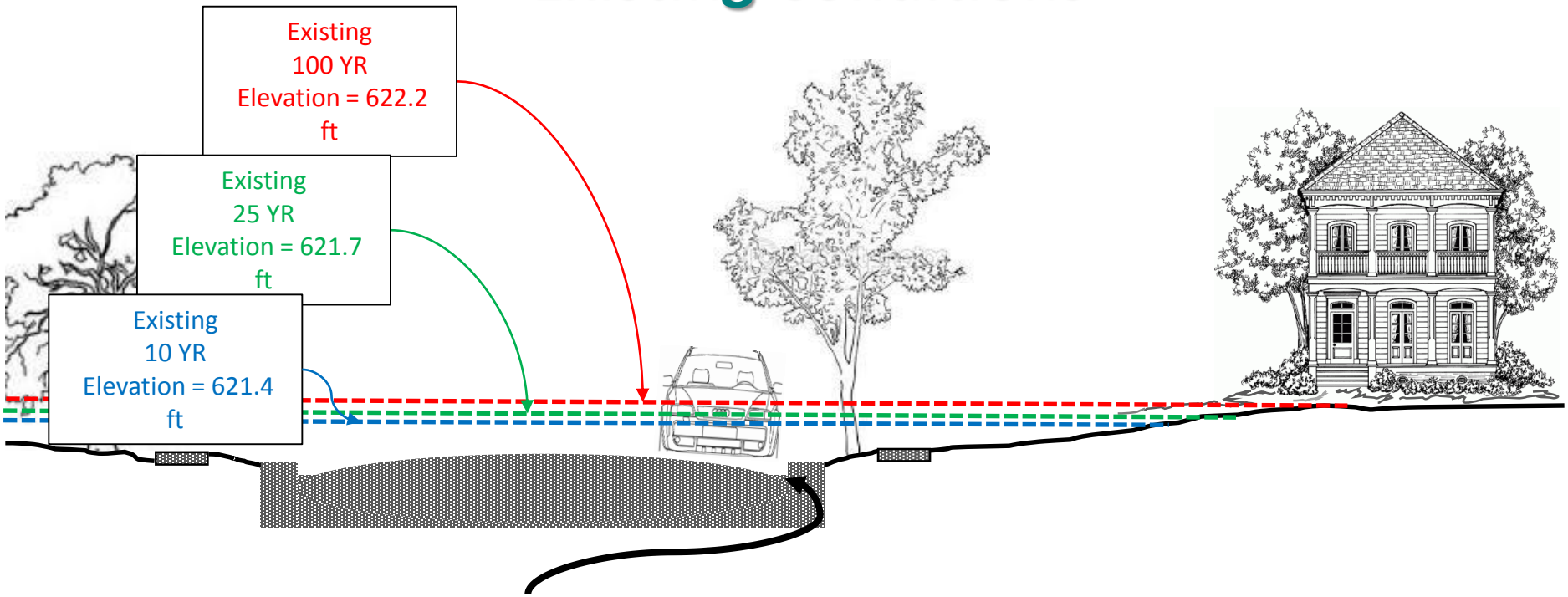


*Alternative 1 in 2016 Dollars, all others in 2014 Dollars

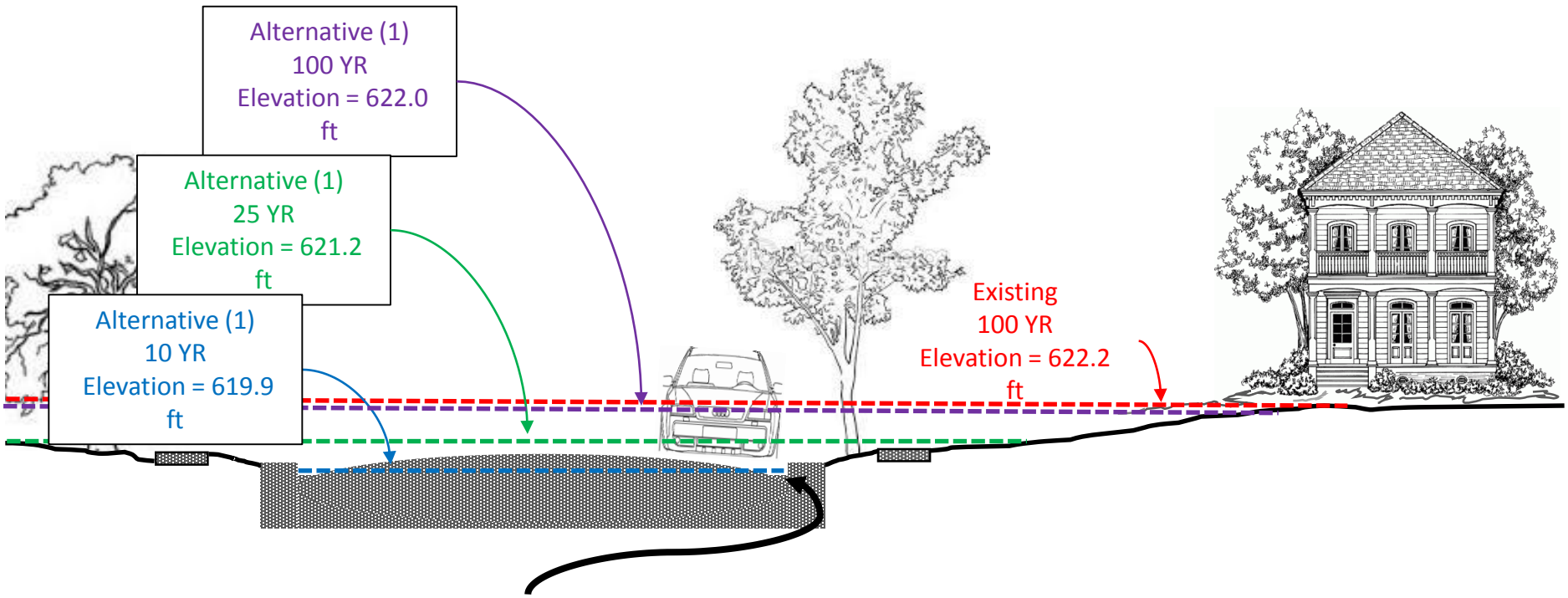
Benefits of the Proposed Stormwater Improvement Project

- The project will mitigate problems associated with stormwater for households west of Ridge Road and will lead to better performance of the sewer system in even the most extreme storms:
  - Basement Back-ups: Reduced infiltration of stormwater into the sanitary system, thereby reducing basement back-ups
  - Foundation seepage: The ground will be less saturated with rain water, thereby reducing hydrostatic pressure which can cause seepage
  - Overland flooding: Structures/vehicles less susceptible to overland flooding
  - Streets/Intersections: Severity and duration of street/intersection flooding reduced
- Project is designed to keep flood levels for a 10-year rain event below street level and reduce overland flooding
  - The project will <u>not</u> eliminate overland flooding in the most extreme storms but will reduce the severity/duration of overland flooding for all storms

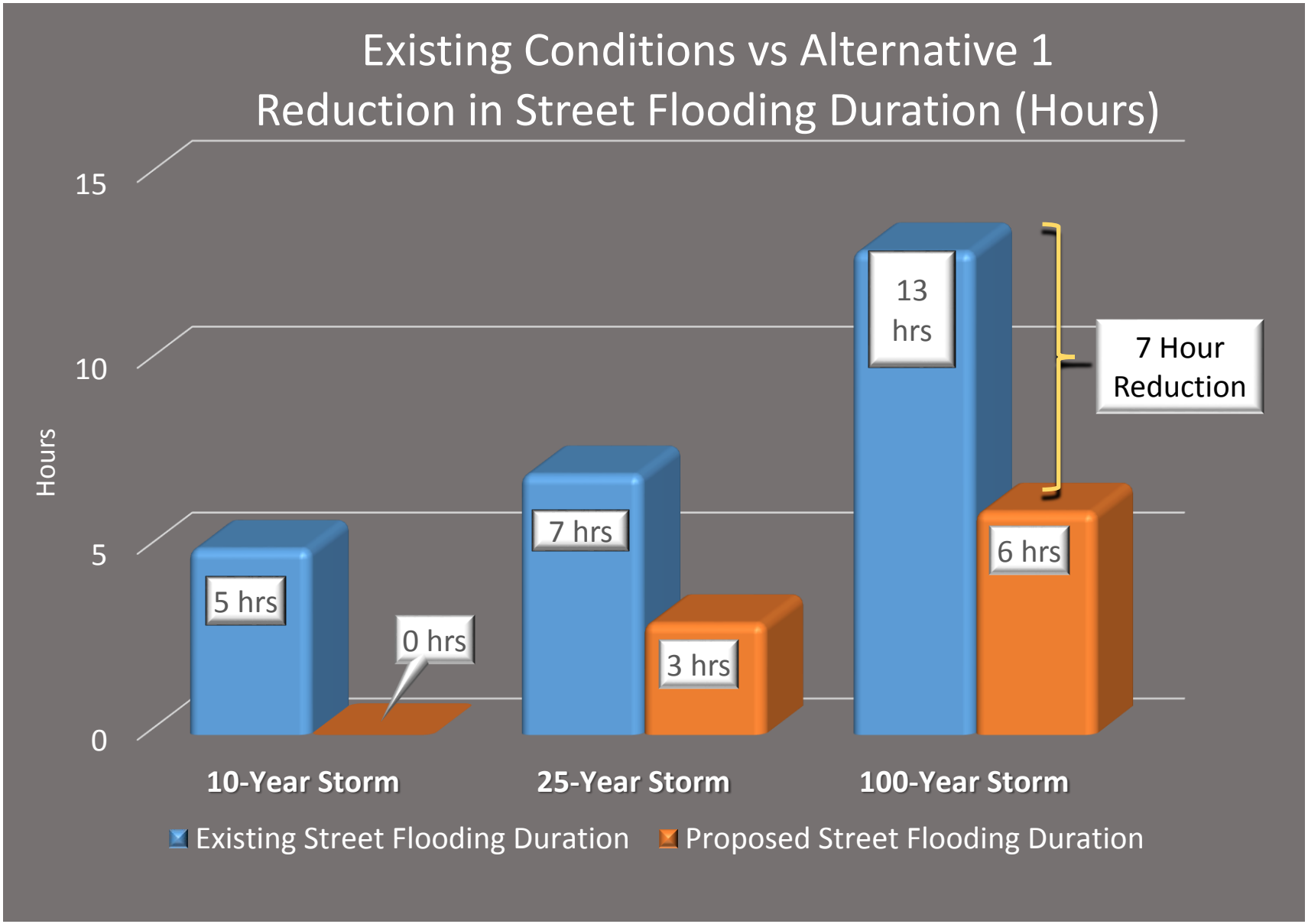
Kilpatrick Avenue
Existing Conditions



Kilpatrick Avenue



Kilpatrick Avenue



Cost of the Proposed Stormwater Improvement Project

- The proposed project is $77 million
  - This is in 2016 dollars and includes a 20% contingency
- Cost Impact
  - Estimated annual debt service is $5.6M
  - Sewer rate is projected to increase from $4.24 to $8.92
    - This is an estimated average annual increase of $625 per household
- As engineering, permitting and construction will take at least 5-6 years, the sewer rate increase would be phased in over time

Downsides of the Proposed Stormwater Improvement Project

- Cost: The $77M project will have a significant impact on a resident's annual sewer bill and the large debt load could lead to a reduction in the Village's Aaa bond rating, thereby increasing future borrowing costs
- Execution Risk: Long implementation period could lead to increasing interest rates, construction price increases, other unforeseen problems
- Construction Impact:
  - Inconveniences associated with construction, including traffic
  - Impact of the Park District Golf Course
  - Possible tree/vegetation removal along trunk line routes

Summary- Stormwater Improvements

- The proposed improvements would provide relief from the negative impacts of storm water to properties west of Ridge Road
- The $77M project would be funded by a $625 average annual increase to the residential sewer bill
- There are no other identified, less costly alternatives that provide comparable levels of protection; should the project not move forward, existing conditions will remain in place
- Conducting a value-engineering review of the proposed project is the most appropriate next step

Next Steps- Stormwater Improvements

- Determine whether to engage an engineering firm to conduct a Value-Engineering review of the CBBEL alternatives
  - Winter 2016: Issue an RFP to hire an engineering firm
  - Jan/Feb. 2017: Village Board approval of contract
  - Summer 2017: Public meeting presenting results of value-engineering study
- Continue to solicit public input regarding the proposed improvements

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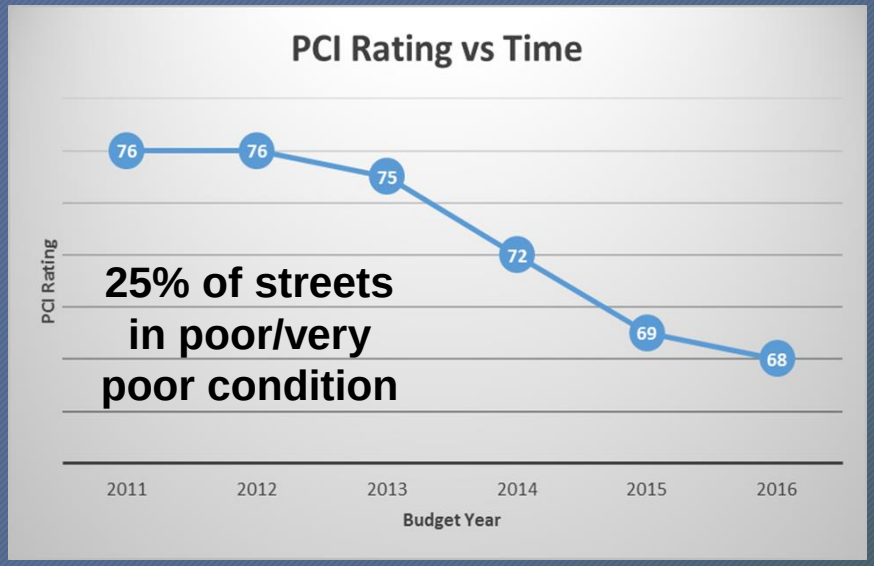
Annual Road Resurfacing Program

Annual Road Program

- The condition of the Village's roads continues to deteriorate



Maintaining the existing funding level of $1.5M will increase percentage of poor/very poor streets to 45% over the next 20 years

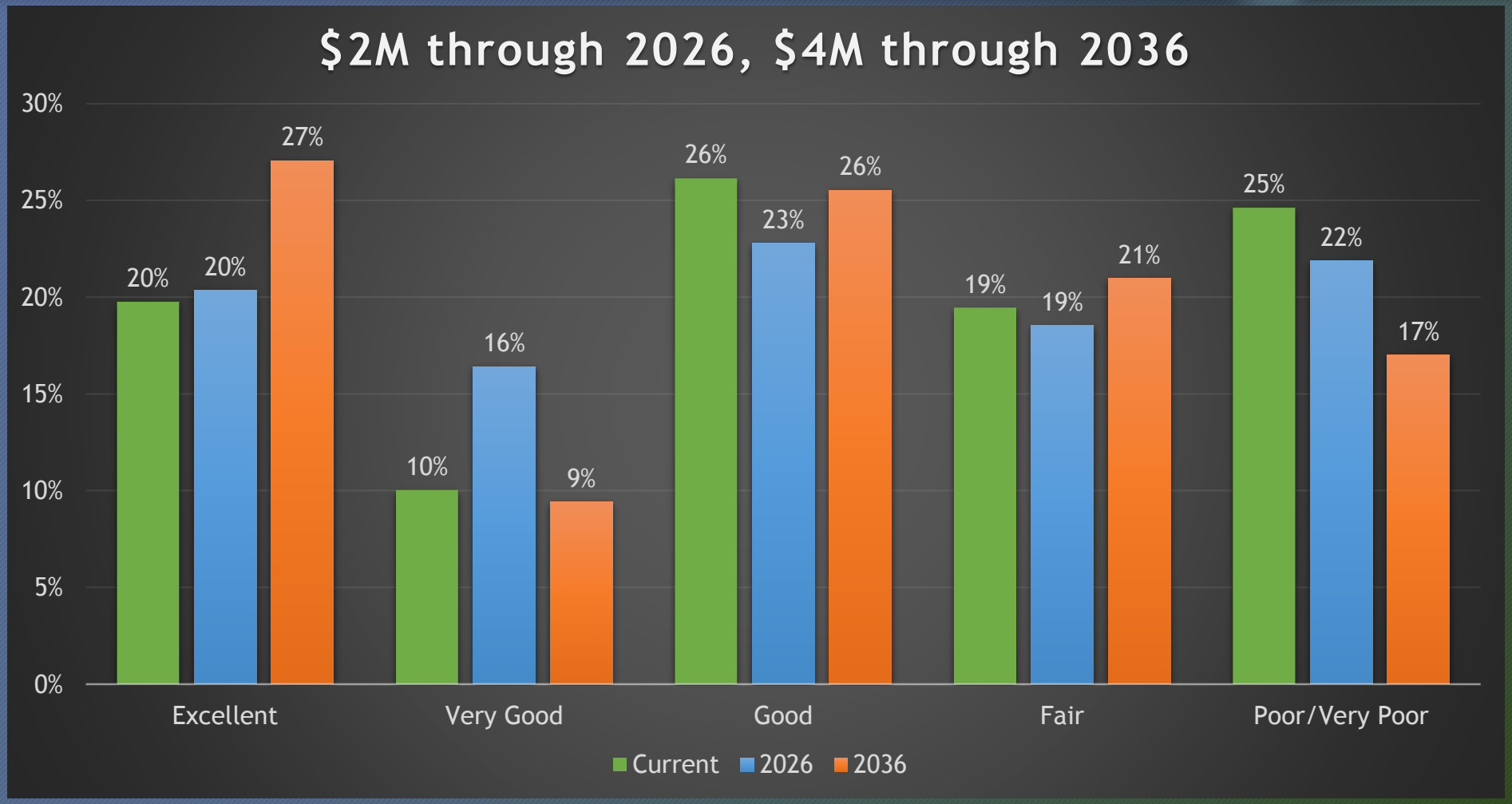
- Staff is recommending a $500,000 increase to the annual budget to provide steady improvement in pavement conditions in a fiscally responsible manner

Recommendation: Maintain PCI Rating Between 65 - 68

- Annual funding need =
  - $2M in 2017 & $4M/$3.5M in 2027
- How to get there:
  - Fund engineering design/mgt. through operating budget
  - Increase property tax levy by $500,000 for 2017
  - Utilize additional $2M/$1.5M in retired debt service beginning in 2027

Existing Avg. PCI (2016)	Average PCI after 10 years	Average PCI after 20 years w/ use of retired debt (2027)
68 (Fair / high end)	65 (Fair/mid-range)	68 / 67 (Fair / high end)

Benefits of Recommendation: Steady Improvement



Cost of Enhanced Road Program

- The road program is currently funded at $1.5M per year through dedicated General Fund revenues
- The recommendation to add $500,000 will increase the property tax levy by 3%
  - To the average household tax bill, this is an approximate $50 increase

Summary- Road Program

- The current level of funding for the road program is not sufficient to maintain existing pavement conditions
- The most practical solution to ensure steady improvement in pavement conditions is to add $500,000 to the annual program budget beginning in FY 2017, and as road related debt service payments decline in 2025, utilize those funds to further improvement the Village's roadways
- This recommendation will reduce the amount of poor/very poor streets, and impacts the avg. property tax bill by $50 per year

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Facility Repairs

Facility Repairs

- The Village will have the opportunity to refinance debt in 2017 and 2020 and the following long deferred projects are recommended for debt financing in 2017:

Project	Budget
PW Yard Improvements	$3,380,000
VH Roof Replacement	$630,000
Police Radio Network	$500,000
VH HVAC Replacement	$200,000
Police Station Generator	$135,000
Total	**$4,845,000**

PW Yard Improvements	
Lot Reconstruct	$2,125,000
Fuel Tanks	$500,000
Vehicle Hoists	$380,000
Generator	$180,000
South Garage	$80,000

Summary Facility Repairs

- Public Works Yard Improvements
  - Paving improvements were initially deferred in 1993 when the facility was rehabbed
  - The additional 23 years of pavement degradation now requires complete reconstruction of the lot (a leaf hauling truck fell through the pavement in 2015)
  - Vehicle hoists and generator are rusting and require replacement; fuel tanks were installed in 1991 and the warranty will be expiring
- Village Hall Roof & HVAC
  - The roof and HVAC and original to the building, and were installed in 1973
  - Projects should be completed at the same time to limit costs of moving HVAC equipment multiple times
- Police Radio Network
  - Federal regulations recently enacted require the Police Department to abandon its radio frequency by 2020, thereby rendering the current network obsolete
- Police Station Generator
  - The generator is 24 years old and reached the end of its useful life; powers only 1/3 of the facility which is used as the Village's emergency operations center

Cost of Facility Repairs

- The annual debt service for the $4.85M program is estimated to be $355,000
- The debt service would impact the FY 2018 property tax levy as debt would not be issued until September 2017
- The impact to the FY 2018 tax levy is 1.99%
  - To the average household tax bill, this is an approximate $30 increase

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Water Plant Electrical Improvements

Water Plant Electrical Improvements

- Proposed for FY 2017-2019 at an estimated cost of $7.7M
- Replace 2 backup generators, the main switch gear of the water plant, multiple MCCs, and small addition to the plant to accommodate equipment
- Identified as the most mission critical project in the water plant's condition assessment study
- Challenges in the project include limited space at the water plant, operational challenges to keep the plant running during the replacement project, long lead time and limited options to reduce neighborhood impact

Water Plant Electrical Improvements

- The project will be phased over 3 years:

Year	Action Item	Loan Process
2017	Engineering Design	Village required to pay for design costs at this time
2017	Bidding & Contract Award	Upon execution of contract, IEPA reimburses Village for design costs above
2018	Construction	Payments made by IEPA
2019	Substantial Completion	Debt service payments to IEPA begin 6 months after substantial completion

- Annual debt service is projected to be $471,000
  - Per IEPA program guidelines, debt re-payments will not begin until 2019 or 2020

Impact to Water Rate

- There is an opportunity to refinance Water Fund debt in 2017 and 2019
  - Under current market conditions, as well as water consumption/weather, the Village is hopeful that the savings realized from the refinancing will be sufficient to pay for the electrical improvements without requiring a water rate increase
- New wholesale water revenue from Kenilworth and Golf in 2017, and North Maine Utilities in 2020 may also be utilized such that a water rate increase may not be necessary

Summary- Water Plant Improvements

- An engineering firm conducting an assessment of the Water Plant determined the electrical improvements to be the highest priority project at the plant
- The improvements are estimated to cost $7.7M and will be completed from 2017 – 2019
- A water rate increase may be avoided through the refinancing/restructuring of existing debt and new wholesale revenues

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Financial Impact to Residents

What is the Impact to Residents?

- Road Program- In order to maintain the existing condition of streets, and to steadily improve the condition over time, an additional $50 would be added to the average household's property tax bill in 2017

- Facility Improvements- A bond issue would be required to complete critical repairs deferred since 2008, thereby adding $30 to the average household's property tax bill in 2018

- Stormwater Improvements- The recommended $70,000 - $100,000 value-engineering study will be funded from existing bond proceeds in 2017 and no sewer rate increase is required for the study

What is the Property Tax Impact to Residents?

- Based on a $10,000 property tax bill, for every 1% increase in the Village's levy, the tax bill will increase by approximately $11.59

	3.01% for Add'l Road Funding	4.07% for: Operations (1.27%), Pensions (2.41%) & Debt (0.39%)	Total FY 2017 Increase
Increase per $10,000 of Tax Bill	$34.88	$47.16	$82.04

- As such, for the FY 2017 Proposed Budget, for every $10,000 in property taxes paid, the tax bill would increase by $82
- For every 1% increase in the levy, the Village can raise an additional $166,000 for the road program