

# LCA Lease Concession Financial Study

## Summary of Results



Lehigh County Authority

April 23, 2018



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# Agenda

1. Safety Minute
2. Project Overview
3. Debt Management
4. Capex
5. Revenue Sufficiency
6. Model Scenarios and Results
7. Conclusions and Recommendations

# Safety Moment- Reverse Parking

- Reverse Parking has many names
  - “Bay parking”
  - “Back-in parking”
  - “Tactical parking”
- 14% of car crashes occur in parking lots
  - Many are “backover crashes” (*Insurance Institute for Highway Safety (2001/2002)*)
  - *Parking lot crashes in the US are responsible for 1,500 deaths and 90,000 injuries each year (NHTSA)*
- Reverse Parking takes longer, but is safer and more efficient
- Computers won’t save us: AAA found that even with rear assistive devices, 48% of motorcycles were not detected, 40% of bicycles were not detected, and passing vehicles were not detected 30% of the time. Adult/child pedestrians were not detected 60% of the time!
- Food for thought:
  - A 3-foot tall child, sitting on the ground, would need to be 15-20 feet from a car to be seen by a driver in a car parked “forward”.



Photo: Geotab

*According to AAA, up to 2/3 of Americans park headfirst.*

*AAA officially recommends Reverse Parking whenever possible*

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# Project Overview

# Project Overview

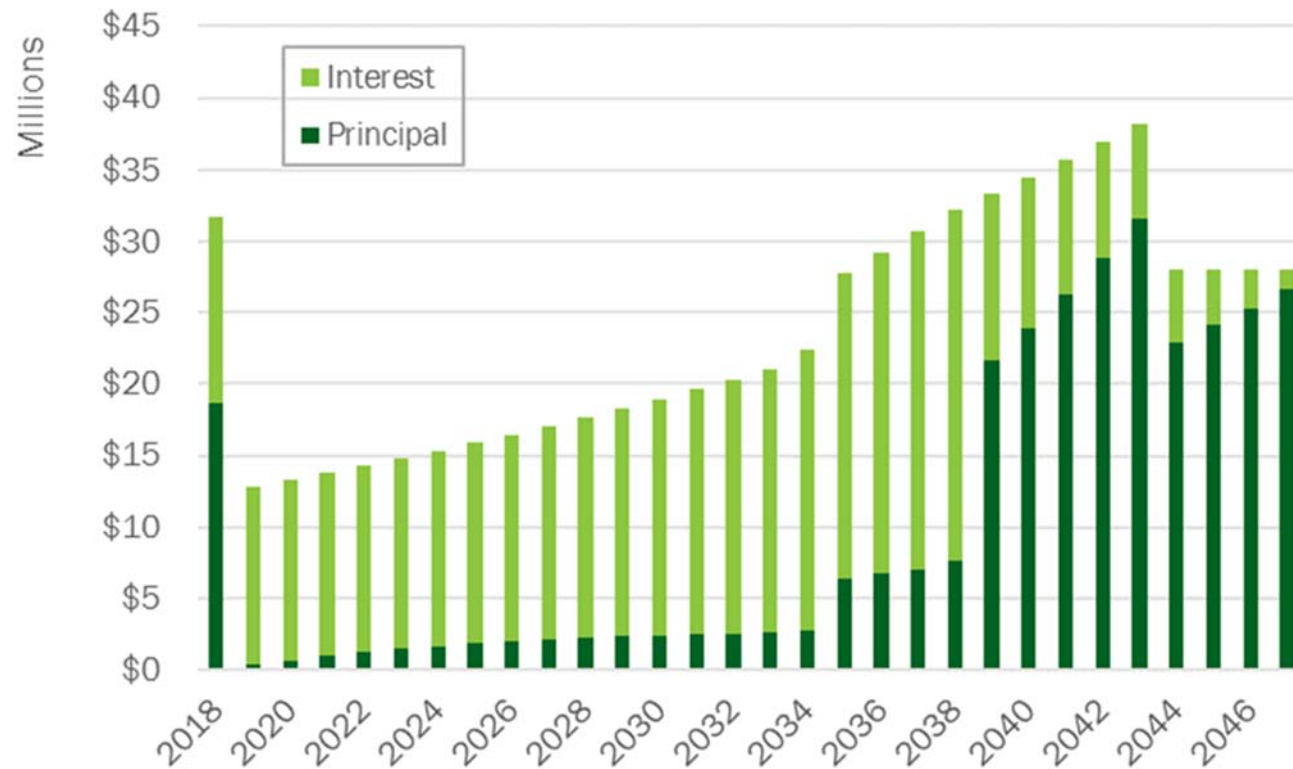
- LCA requested the Jacobs Team perform a detailed review and new financial model for the City Division reflecting the terms of lease agreement with Allentown (CoA)
- Concerns raised about financial sustainability around issues of:
  - Debt management
  - Capital Improvements Costs/Planning, and
  - Revenue Sufficiency
- Terms of the lease reviewed at April 9<sup>th</sup> meeting
- Goal of project: Provide analysis of key issues and develop recommendations to move forward on financially sustainable path for the City Division

## Key Issue – Debt Profile

## Key Issues – Debt Profile

- 2013 Bonds issued to finance upfront payment to Allentown, fund required reserves, and \$32 M in CAPEX
- LCA's lease debt is separated from Suburban system – Allentown system must financially stand on its own
- 2013 Bond issue structure anticipated that:
  - Period through 2027 would be difficult for funding new CAPEX
  - Need to refinance 2013C bonds in 2018
- Debt profile goals in project:
  - How to successfully refinance 2013C Bonds
  - Review options for refinancing 2013A Bonds

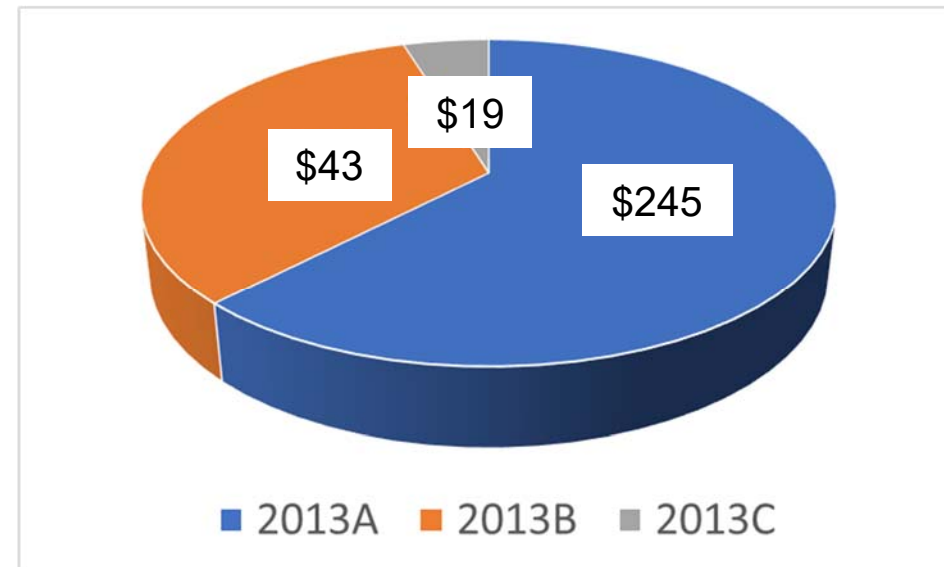
# LCA Current Debt Service Schedule





# LCA City Division Bonds And Options

- 2013A Bonds (tax-exempt)
  - Carry 10 year call or prepayment provision
  - May provide the future ability to be refinanced and/or restructured
  - Extension of LCA Charter with County will help with future refinancing options (allows term past 2047)
- 2013B Capital Appreciation Bonds (CABs)
  - Generally not prepayable
  - Will not provide the opportunity to refinance and limit effectiveness in a debt restructuring scenario
- 2013C Bonds (taxable)
  - Bullet maturity on December 1, 2018
  - Will need to be termed out prior to final maturity, as the City Division does not have excess cash over and above legal reserve requirements



# Key Issue – CAPEX

# Capital Improvement Plan and Costs (CAPEX)

- 45 year Water and Wastewater capital needs developed from:
  - 2018–2022 LCA CIP for City Division Water/Wastewater Systems
  - Water Plant and Storage/Pumping beyond 5 years: 2017 Water System Master Plan, Arcadis
  - Water Distribution System Piping: 2 miles/year requirement per lease agreement, using LCA actual costs/mile as baseline and escalated by inflation
  - Wastewater Treatment Plant beyond 5 years estimated based in age of assets and conceptual replacement costs
  - Wastewater Collection System based on age of major interceptors, excluding costs under AO program
- *Goal for LCA is to maximize the projects that can be completed while minimizing need to borrow*

# CAPEX through 2062 - \$1.3 Billion

System	Subsystem		Total
Water	Intake/Springs	\$	39,245
	Water Treatment Plant	\$	113,430
	Storage and Pumping	\$	78,429
	Water Distribution	\$	289,798
	Other	\$	92,574
	<b>Total Water</b>	<b>\$</b>	<b>613,476</b>
Wastewater	WWTP	\$	514,589
	Collection System	\$	162,573
	Other	\$	39,142
	<b>Total Wastewater</b>	<b>\$</b>	<b>716,304</b>
<b>Grand Total</b>		<b>\$</b>	<b>1,329,780</b>
Note: Costs in \$1,000's			

## Capital Cost Recovery Charge (CCRC)

- Lease allows LCA to collect charges from City Division customers to recover amortized cost of MCIs through Capital Cost Recovery Charges (CCRC).
- All projects greater than \$1M are allowable as MCI and for CCRC recovery, unless otherwise noted
- Project amortization based on 30 years
  - 8.3% rate of return for equity or self funded
  - 6.6% rate of return for debt financed
- LCA will not recover any amortized costs after 2062 (lease expiration)

# CIP Prioritization Overview

- Prioritization of CIP intended to align capital expenditures with LCA's goals and objectives for City Division
- Criteria and performance scales developed to measure how each project helps achieves LCA's goals
- Goals weighted to determine overall prioritization scores
- Prioritization can be used for adjusting scheduling of projects or to eliminate least important projects if CAPEX funding is constrained



# Key Issue – Revenue Sufficiency

# Revenue Sufficiency Is Key to a Sustainable Utility

- Revenue Goals for LCA:
  - Generate sufficient revenues to fund system operations and anticipated capital needs
  - Maintain necessary reserves
  - Keep bills to City Division customers affordable
- User rates and allowable adjustments defined in lease agreement
- Additional charges allowed – such as CCRC
- Examining billing frequency and implementation
  - Quarterly versus Monthly Billing
- Conscious of affordability concerns and opportunities for mitigation



# 2018 Sewer Charges– Increased based on terms of Lease

## A. Sewer Usage Charges

Meter Size	Current Monthly Charge	Current Quarterly Charge
5/8"	\$6.69	\$9.66
3/4"	\$7.41	\$11.84
1"	\$8.86	\$16.19
1 1/2"	\$12.48	\$27.06
2"	\$16.83	\$40.11
3"	\$28.51	\$74.90
4"	\$41.56	\$114.29
6"	\$77.88	\$223.26
8"	\$142.88	\$352.30

Flow Charge	Current Rate per 1000 Gallons*
All flow based on metered water usage***	\$2.46425

*Rates from Original Rate Schedule in Lease Agreement* **JACOBS®**

## 2018 Water Rates – Increased based on terms of Lease

### A. Metered Water Use

Meter Size	Current Monthly Charge	Current Quarterly Charge
5/8"	\$19.23	\$27.85
3/4"	\$21.33	\$34.15
1"	\$25.64	\$46.73
1 1/2"	\$36.25	\$78.59
2"	\$48.96	\$116.72
3"	\$82.78	\$218.51
4"	\$121.03	\$332.92
6"	\$226.92	\$650.92
8"	\$354.14	\$1,032.24

Volume	Current Rate per 1000 Gallons*
All Volume	\$3.42003

*Rates from Original Rate Schedule in Lease Agreement* **JACOBS®**

# Impact of Monthly Billing on a Typical Customer

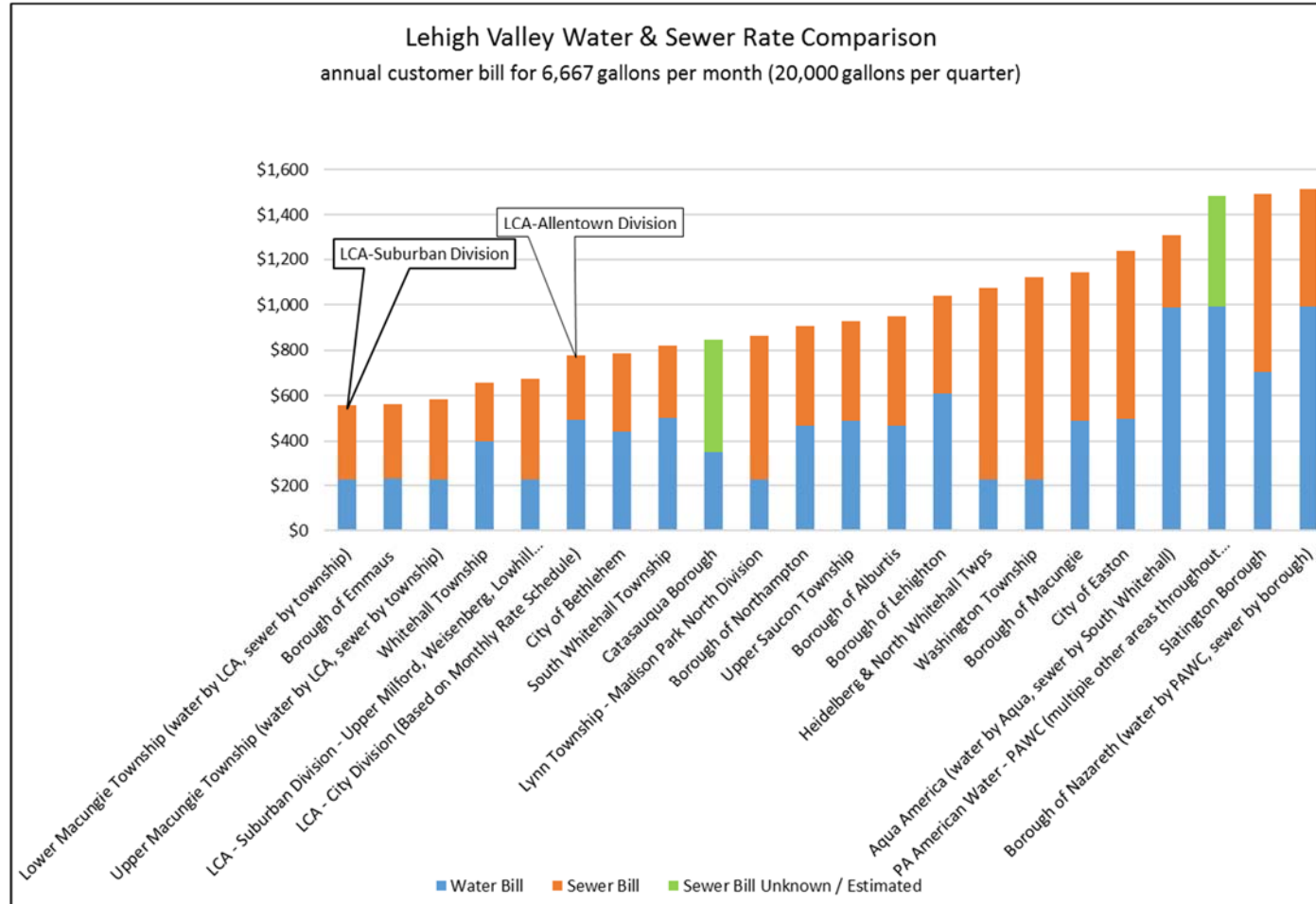
Typical residential customer using 6,400 gallons of water per month, 5/8" meter

	Monthly Bill	Quarterly Bill
Fixed Charge – Water	\$ 19.23	\$ 27.85
Water Volume Charge	21.89	65.66
Water Capital Cost Recovery Charge	1.40	4.19
Fixed Charge – Sewer	6.69	9.66
Sewer Flow Charge	15.77	47.31
Sewer Capital Cost Recovery Charge	0.31	0.94
Administrative Order Fee	0.20	0.59
<b>Bill Total</b>	<b>\$ 65.48</b>	<b>\$ 156.22</b>

# Why Implement Monthly Billing?

- Monthly billing is industry best practice, in place in most major cities for water and sewer, and is already a standard practice of all other types of utilities such as electric, gas, cable, etc.
- Allows for better management of household bills, and earlier detection of water leaks
- Generates net revenue increase of \$4.3 million, which will be returned to the Allentown system through investment in system improvements and reduced need to borrow.
  - LCA is non-profit- all revenues go back into the infrastructure and operations
- Implementation Impact
  - Customers who are billed quarterly will move to the monthly bill schedule
  - Based on City's monthly rate, customers will pay about \$160 more per year, but spread out over monthly bills

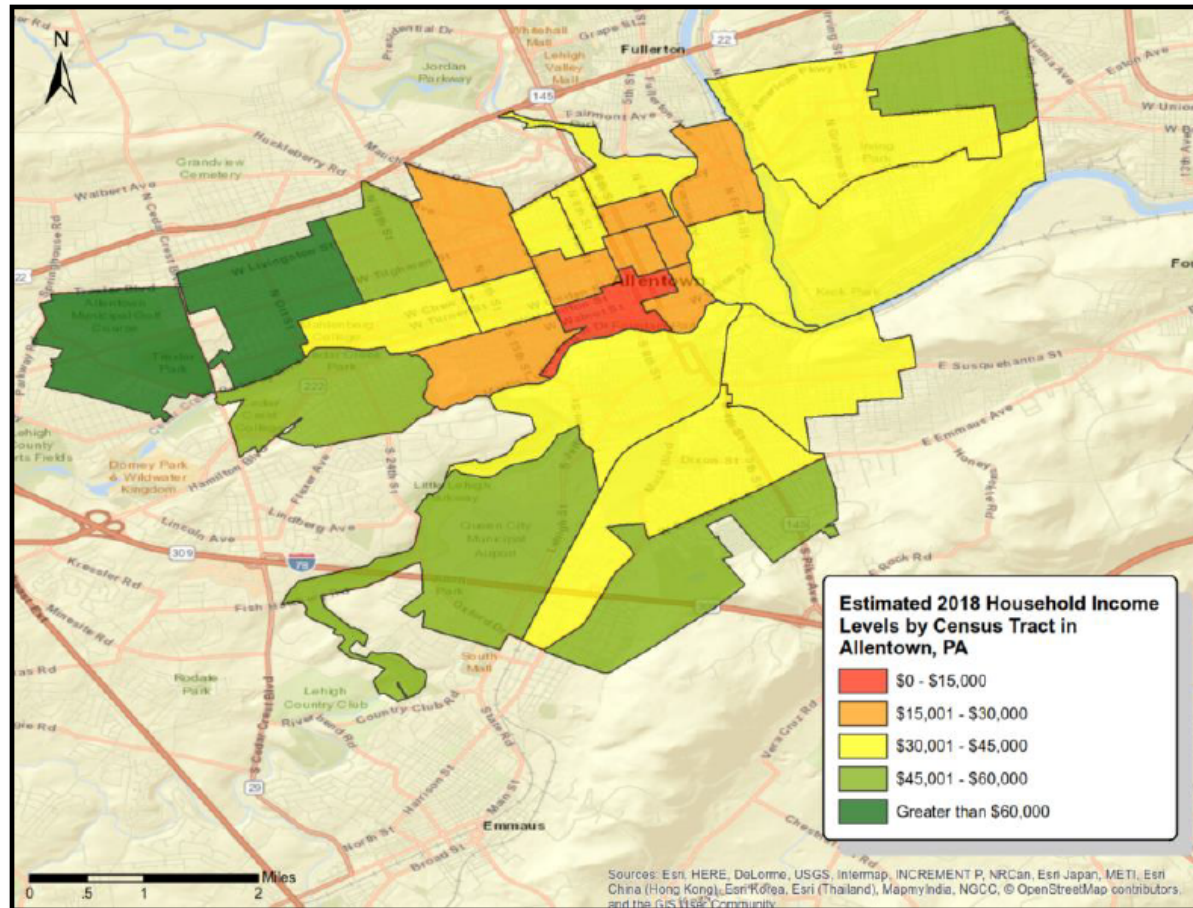
# City Division Bills Are Currently Below Regional Averages



## How is Rate Affordability Defined?

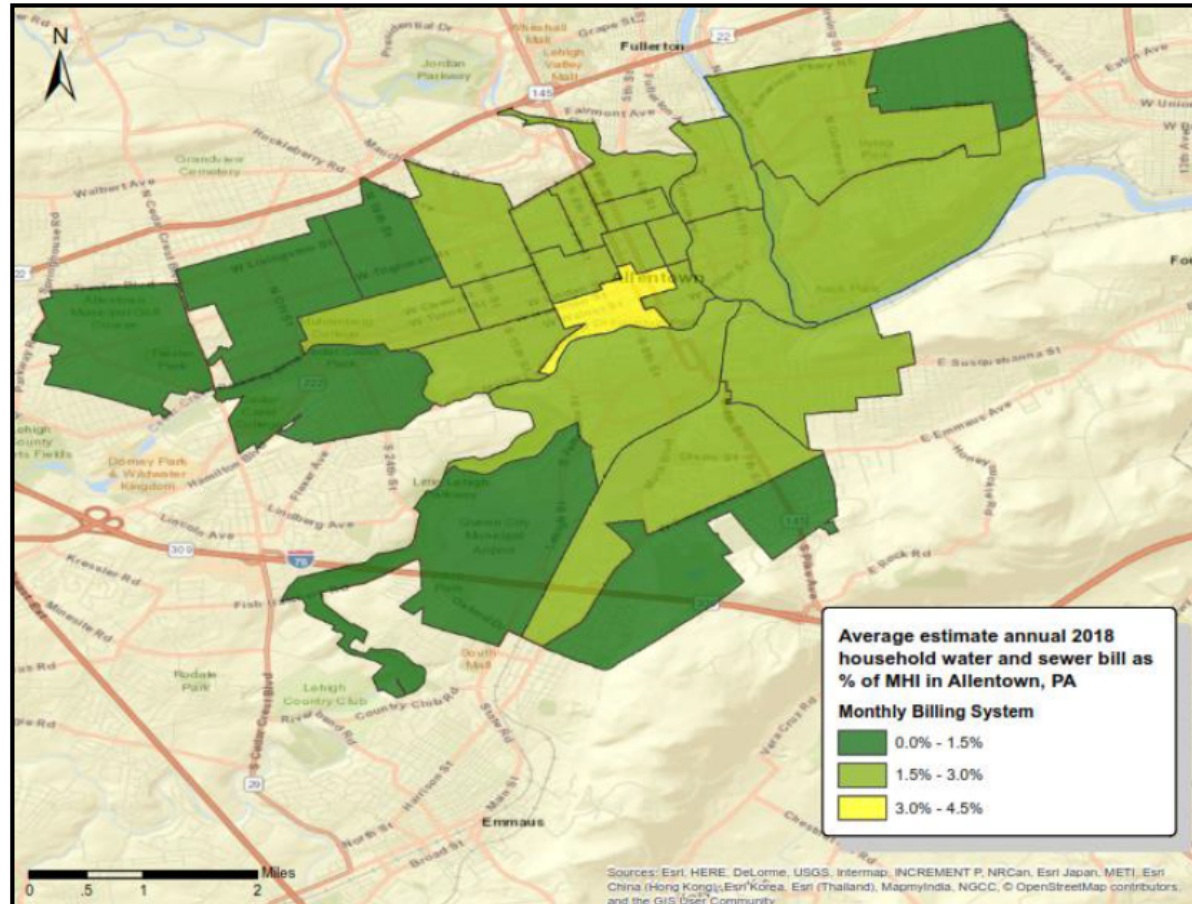
- EPA has defined “high” rate affordability threshold as residential bill greater than 2.0% of MHI for Sewer and Stormwater bills.
- No similar threshold for water, but independent study performed for EPA placed water affordability threshold between 1.5% - 3% of MHI
- For this analysis – assumed 4.5% of MHI affordability threshold for combined water and wastewater bills

# Current Income By Census Tract in Allentown





# Current Measure of Affordability by Census Tract





## Revenue Sufficiency Results Highlights

- Monthly rates in Allentown are among lowest in Lehigh Valley and in the State of Pennsylvania
- Affordability is important
  - Strategies are available to address affordability issues including:
    - Alternative rate structures
    - Customer assistance programs
- Starting now will be important to support lower income households in the future

# Model Scenarios and Results

# Key Metrics for Financial Health

Financial Metric	Required	Target
<b><i>Debt Service Coverage Ratio (Operations)</i></b>	<b>1.2</b>	<b>1.8</b>
Debt Service Coverage Ratio (Indenture)	1.2	1.8
Debt to Operating Ratio	N/A	>50%
<b><i>Days Cash on Hand</i></b>	<b>180</b>	<b>270</b>
Operating Ratio	N/A	≤50%
Percent Equity Funded CIP	N/A	30% to 100%
<b><i>Residential Water and Wastewater Bill as % of MHI</i></b>	<b>N/A</b>	<b>&lt;4.5%</b>
Outstanding Debt to NPV of Free Cash Flow	<80%	<80%

- ***DSCR*** is generally based on operating revenues less operating expenses divided by total debt service.
  - Bond Indenture calculation slightly modified
- ***Days Cash on Hand*** is net cash available to cover OPEX without any income
- ***Residential Water and Wastewater Bill as % of Median Household Income (MHI)*** is a measure of affordability

# Key Input Assumptions- Revenue and OPEX

- Major Global Inputs
  - CPI increases 1% per year
  - CAPEX inflation rate is 3% per year
  - Personnel costs increase 3.5% per year
  - Other O&M costs increase 2% per year
  - MHI increases 1% per year
- Number of Customers and water consumption held constant at 2017 levels

## Key Input Assumptions- Debt Service

- Applies to any new debt issues, but not all scenarios assume new bonds or loans
- Debt Service - To keep debt repayment within lease period
  - 30-year term for any debt issued before 2032
  - 25-year term for any debt issued in 2033-2037
  - 20 year term for any debt issued in 2038-2042
  - No new debt after 2042
- Interest Rate of new debt – 6.6%
- Cost to issue debt – 1% of bond issue value
- Bond Reserve – 3% of bond issue value

## Two sets of scenarios modeled

- First Set – Baseline and Scenarios 1 to 3
  - Intended to determine the importance of Monthly Billing and assessing CAPEX Full Recovery for City Division Sustainability
  - The “most favorable” scenario for LCA would form the basis for the second set of model runs
- Second Set- Scenarios A to C
  - Examine modifications of “most favorable” scenario as a long-term approach to determine most advantageous path for LCA to pursue

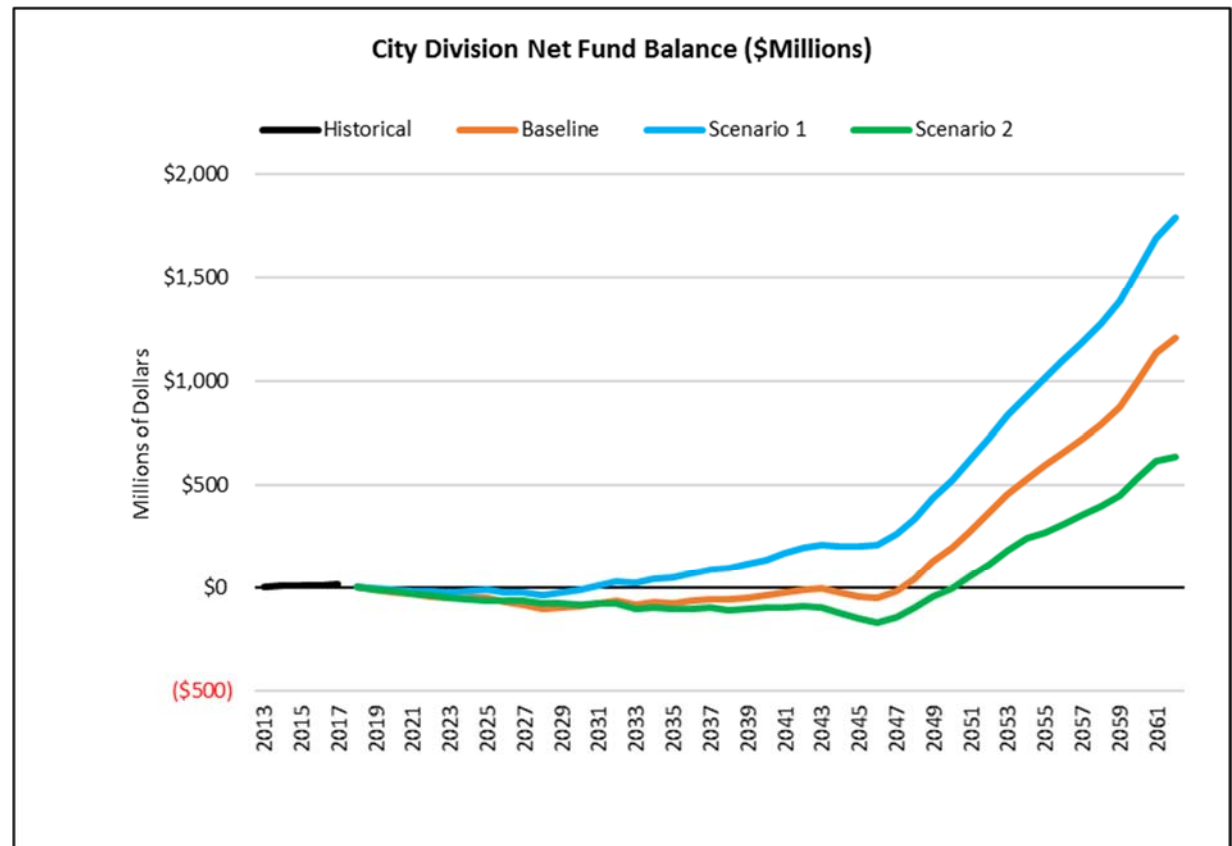
# Baseline and Scenarios 1-3 Assumptions

	Baseline (CCRC Applied, Quarterly Billing, No New Debt)	Scenario 1 CCRC Applied, Monthly Billing, No New Debt	Scenario 2 CCRC Reduced, Quarterly Billing, No New Debt	Scenario 3 - (Baseline w/ Debt Funding) Quarterly Billing, CCRC Applied, with New Debt
Meter Billing	Quarterly	<i>Monthly</i>	<i>Quarterly</i>	Quarterly
MCI Funding	Most MCI recovered through CCRC, no new debt	Most MCI recovered through CCRC, no new debt	Most MCI non-recoverable, <b>reduced CAPEX</b> , no new debt	<b>Debt Funding considered</b> , Pay-go and CAPEX Fund, Most MCI recovered through CCRC
Existing Debt Service	Refinance Series 2013C Bonds - \$19M due in 2018	Refinance Series 2013C Bonds - \$19M due in 2018	Refinance Series 2013C Bonds - \$19M due in 2018	Refinance Series 2013C Bonds - \$19M due in 2018
CAPEX Funding <sup>a</sup>	No new debt, CAPEX funded from revenues/reserves and CAPEX Fund	No new debt, CAPEX funded from revenues/reserves and CAPEX Fund	No new debt, CAPEX funded from revenues/reserves and CAPEX Fund	<b>CAPEX may be funded from new debt if metrics allow</b> , and from revenues/reserves and CAPEX Fund

<sup>a</sup> The Capex Fund is a fund that is collected over most of the life of the lease intended to fund capital outlays in the later years of the contract that can't be recovered through the CCRC charge.

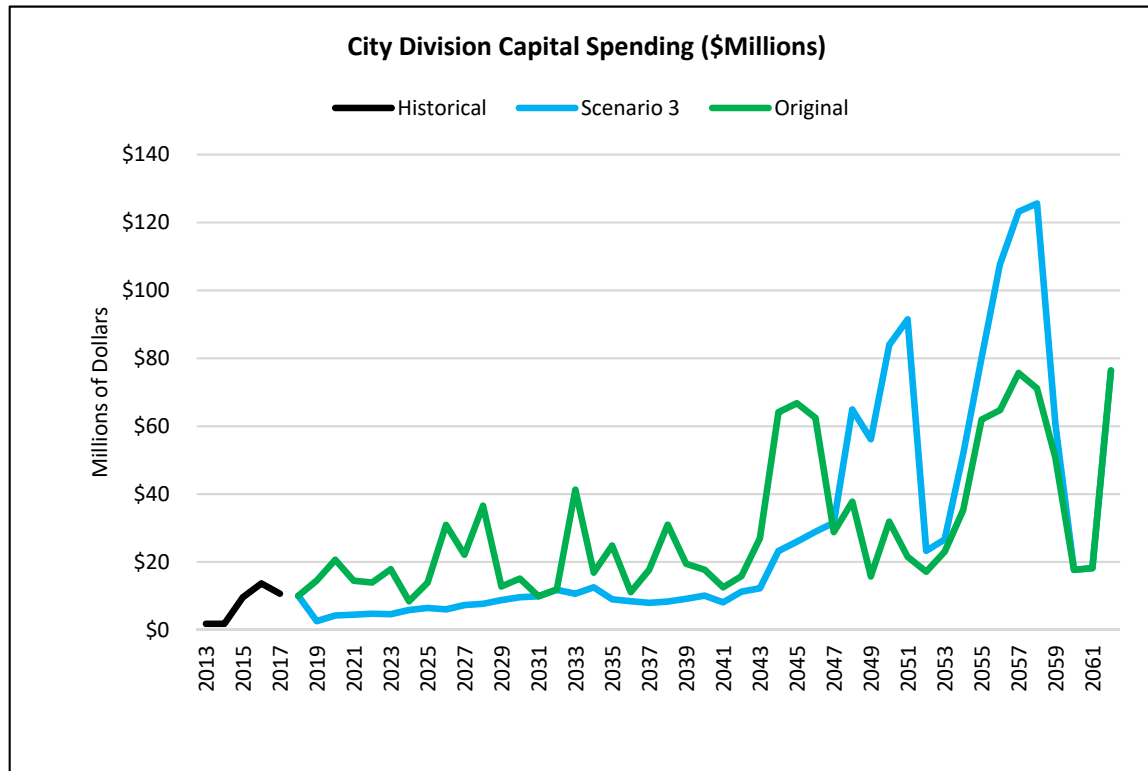
# Baseline and Scenarios 1 and 2 Conclusions

- Results illustrate to fully fund CAPEX, additional borrowing would be needed (when net balance falls below zero)
- Scenario 1 (Monthly billing) significantly improves Net Fund Balance results
- Scenario 2 would not allow for construction of all planned CAPEX (lack of funds)





# Scenario 3 with Quarterly Billing Not Viable



- Scenario 3 reflects path that LCA would be on if no changes are made
- Scenario 3 would not allow significant debt funding due to low DSCR
- Delay in CAPEX would place system at significant risk of operational failure

## **Key Results for Baseline and Scenarios 1 - 3**

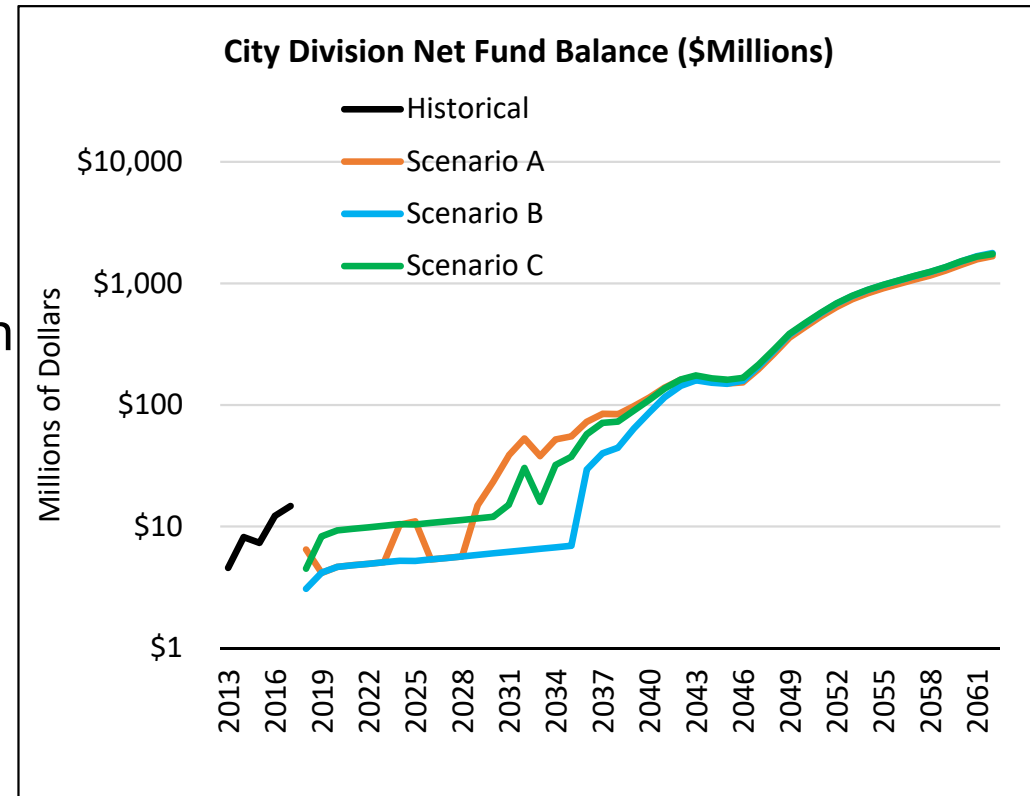
- In all scenarios, OPEX and existing debt service payments are fully covered by revenues
- Scenario 1 (monthly billing and full CAPEX recovery) offers the best base for additional analysis
- Additional scenarios build on Scenario 1, using debt financing to resolve fund balance and other financial metric issues associated with this

# Scenarios A to C Assumptions

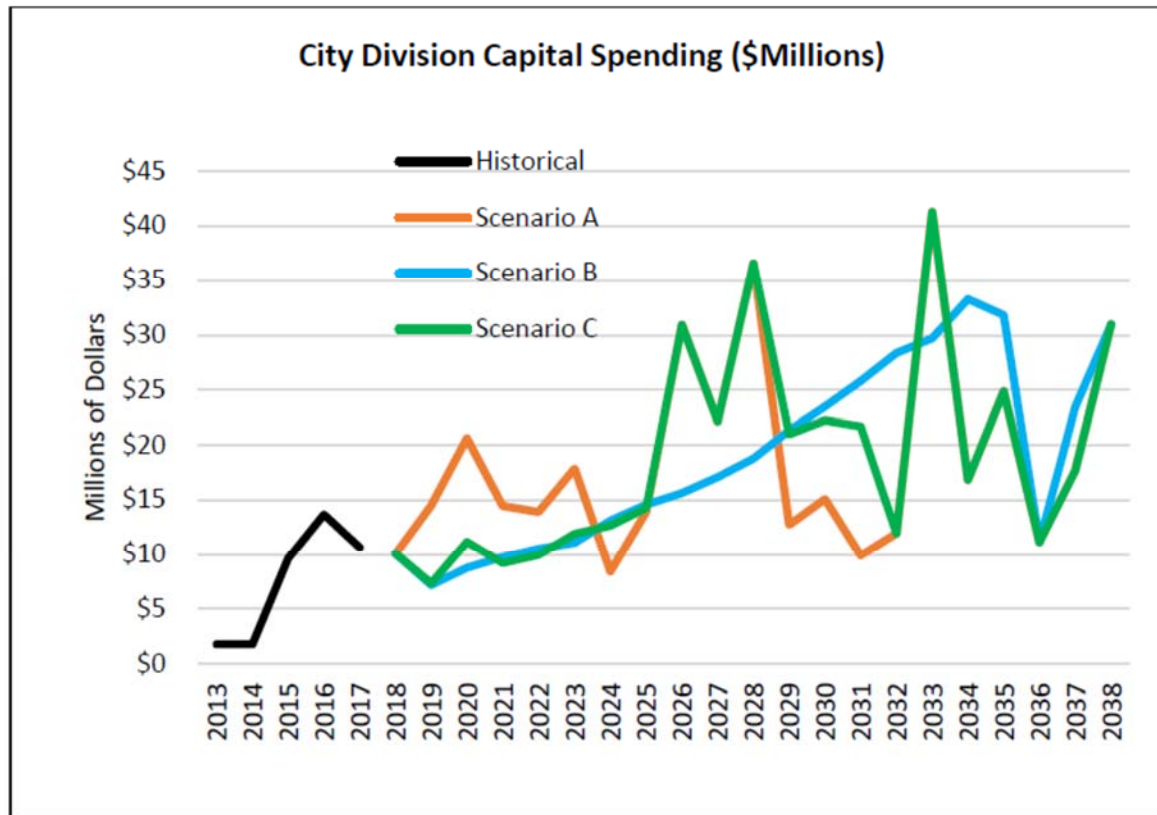
	Scenario A	Scenario B	Scenario C
Meter Billing	Monthly	Monthly	Monthly
MCI Funding	Debt (2018 to 2042) and pay-go recovered through CCRC	Debt (2018 to 2042) and pay-go recovered through CCRC	Debt (2018 to 2042) and pay-go recovered through CCRC
	CAPEX Fund	CAPEX Fund	CAPEX Fund
Non-MCI Funding	Debt (2018 to 2042) and/or pay-go	Debt (2018 to 2042) and/or pay-go	Debt (2018 to 2042) and/or pay-go
Existing Debt Service	Refinance Series 2013C	Refinance Series 2013C	Refinance Series 2013C
			<b>Refinance portion of Series 2013A</b>
CAPEX Spending Levels	\$1.3 billion as originally scheduled	\$1.3 billion, <b>adjust schedule to maintain key metrics</b>	\$1.3 billion, adjust schedule to maintain key metrics
Fund Balance	90 days unrestricted balance	90 days unrestricted balance	<b>180 days unrestricted balance</b>
DSCR Target	120% minimum, 180% Phase In	<b>180% Achieve ASAP</b>	180% Achieve ASAP

# Net Fund Balance 50-yr Horizon

- All 3 Scenarios meet key financial targets
- Fund balances rise significantly after 2037 and accelerate when 2013 bonds are retired
- Forecast high fund balance beginning in 2038 may:
  - Offer opportunities to address affordability issues that become significant during this same time period while still executing CAPEX plan
  - Accelerate some CAPEX into earlier years and gain additional CCRC recovery
  - LCA should discuss with CoA end-of-lease options to further define long-term cash requirements

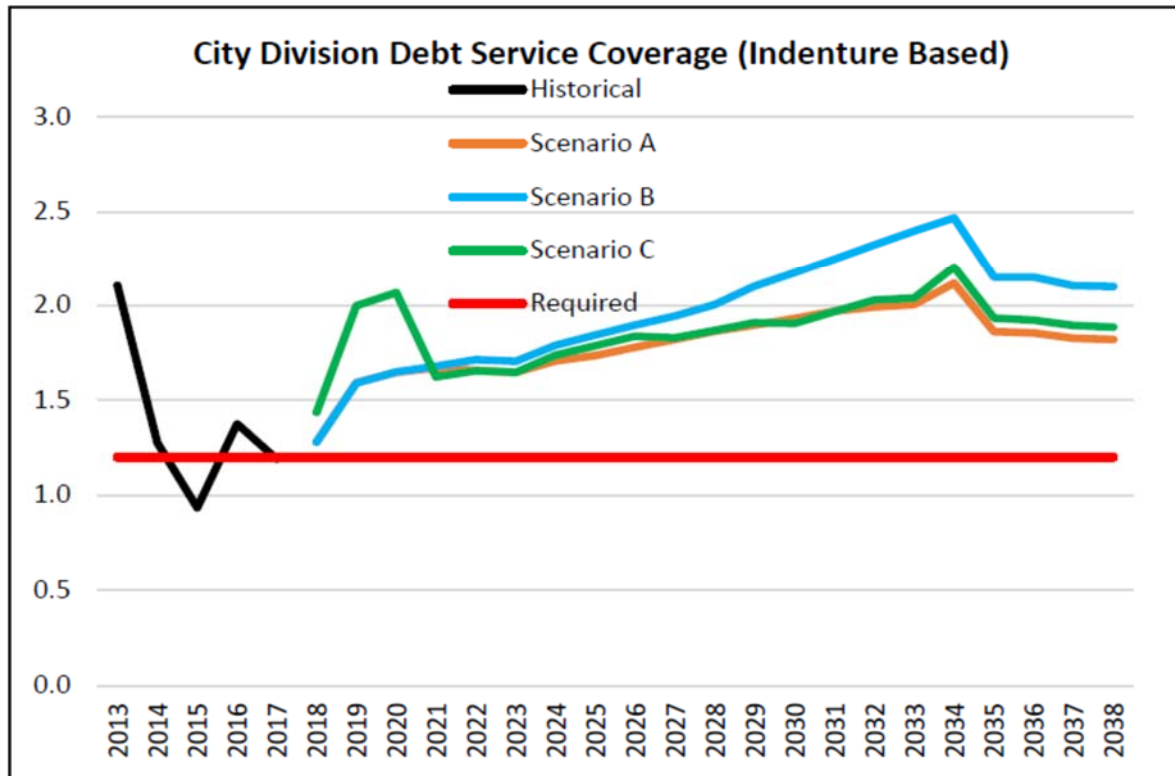


# Capital Spending in 20-year Horizon



- Scenario A follows initial schedule for CAPEX construction but relies partially on new debt funding
- Scenario B **defers** some of the CAPEX for up to 10 years, but **avoids** new debt funding
- Scenario C would refinance portion of 2013A bonds but continues to rely on new debt funding for a portion of CAPEX

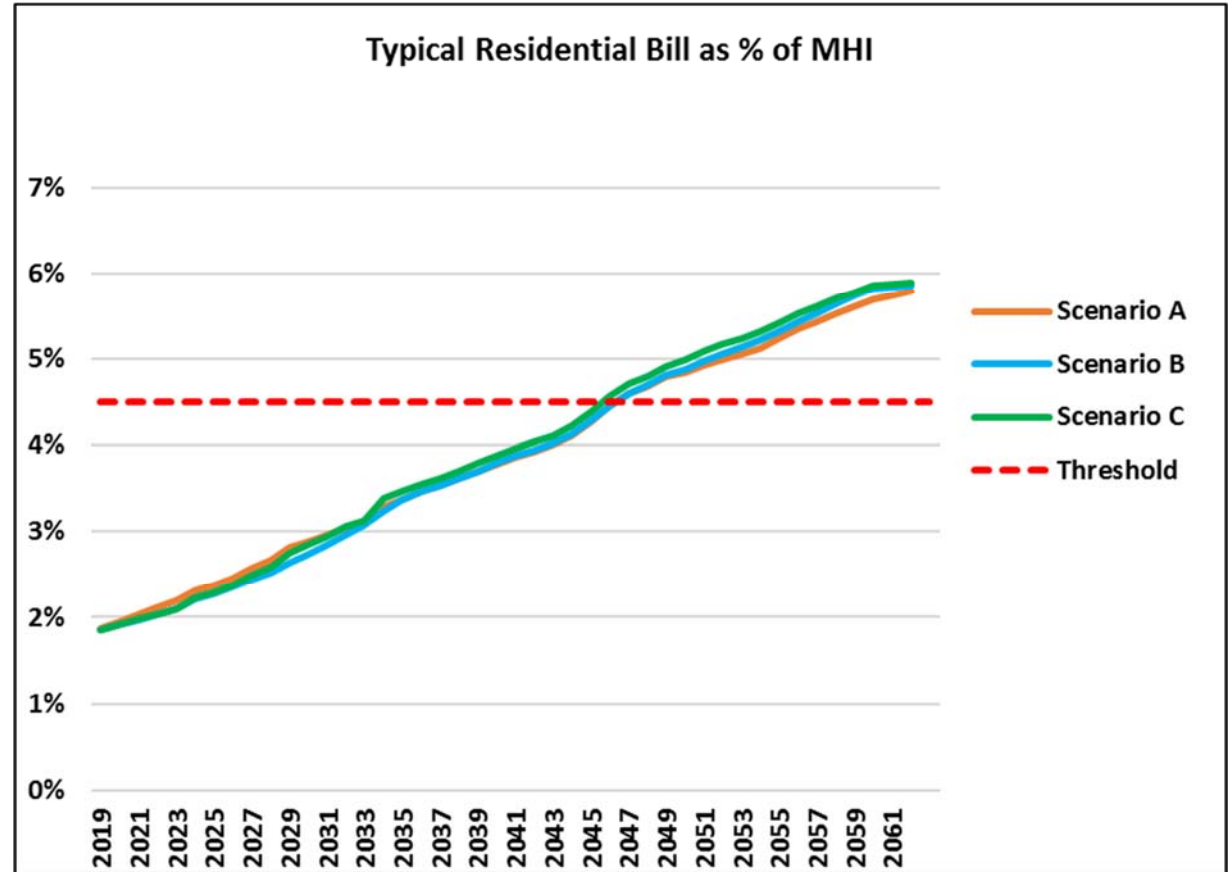
# Debt Service Coverage – 20 year Horizon



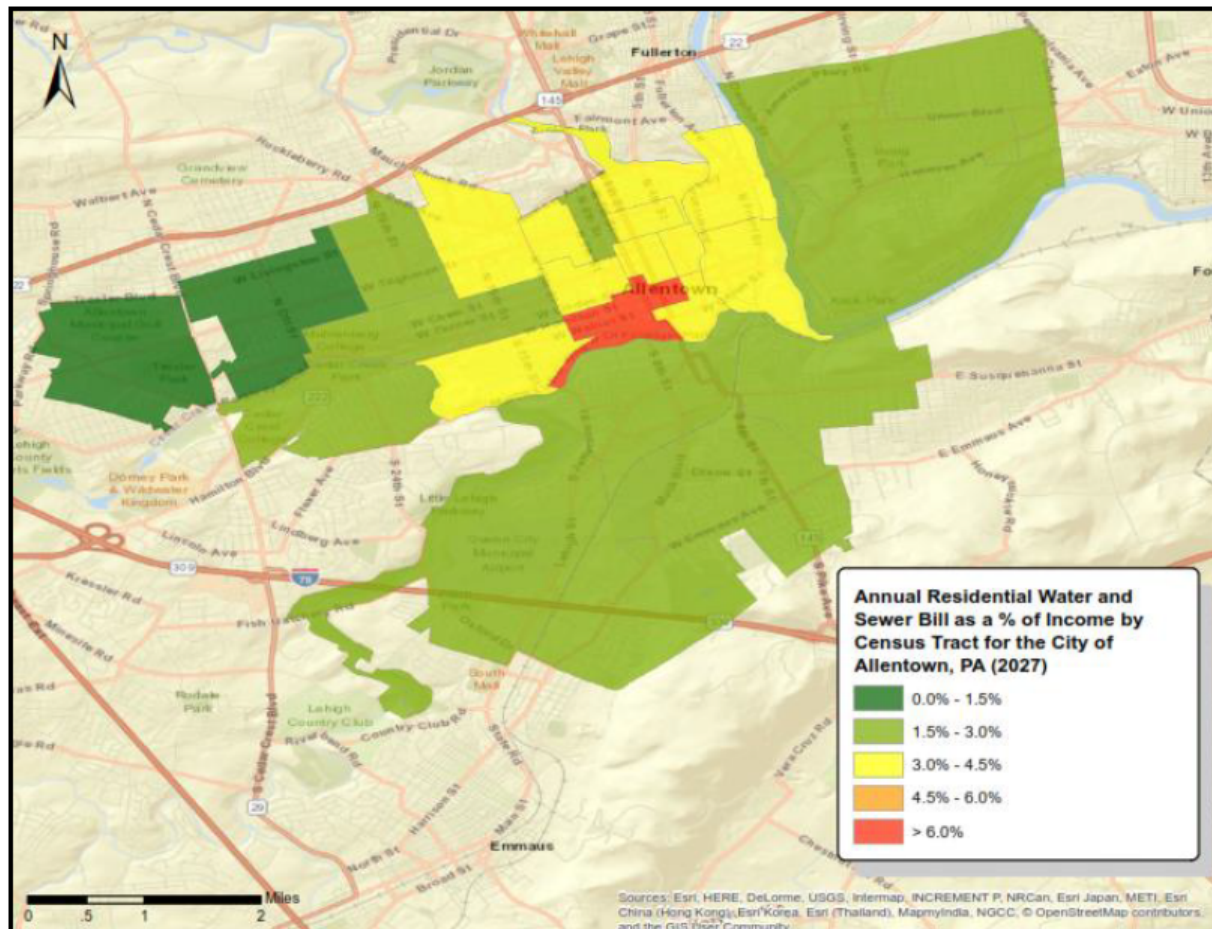
- Debt service coverage is above required levels throughout forecast period
- Coverage rises to over target 1.8 factor fastest for Scenario C, and reaches this level by 2027 under all three scenarios

# Rate Affordability is Manageable in Short/Medium Term

- Short-term affordability on whole is below threshold, longer term there may be opportunities to adjust approach
- Long-term is a projection, so LCA should track and see how projections meet reality before embarking on a major affordability program



# Where Affordability Issues Are Most Critical in 10 Years





## Conclusions Scenarios A - C

- Scenario A meets key financial metrics, and would allow full construction of CIP as originally scheduled, but debt finances about \$63.4M of improvements
- Scenario B meets financial metrics, would delay construction of some of CIP over next 10 years, but would potentially eliminate need for debt funding of improvements
- Scenario C meets financial metrics, accelerates meeting target DSCR, but is not favorable from financial perspective, and results in \$41.3 million in debt funding, and is not recommended at this time
  - May be more favorable in future if LCA's charter is extended
- CAPEX
  - Careful prioritization and phasing of CAPEX is critical to financial success of lease and can be used to limit or potentially eliminate need to issue new debt
  - Following conclusion of wastewater master plan, LCA should develop a detailed CIP that focuses on upcoming 10-year period when funds are most limited

## **Conclusions and Recommendations**

# Conclusions

- Revenue Sufficiency:
  - Continuing “business as usual” will put LCA in a vulnerable financial position in the short term based on available cash/net fund balance that could also affect refinancing of 2013C bonds and meeting bond covenant conditions.
  - LCA must have full recovery on CCRC and implement monthly billing to follow a path to a sustainable City System.
  - Affordability in the short term will remain less than the threshold of 4.5 percent of MHI through 2043. Long-term water/sewer rates may exceed the 4.5 percent of MHI threshold and may require additional evaluation
- Debt profile
  - Debt refinancing of the 2013C bonds is a must to meet short-term financial commitments and should be started as soon as possible.
  - Refinancing or restructuring of 2013A bonds is not recommended at this time.
- CAPEX
  - With full CCRC recovery and monthly billing, LCA will be capable of funding estimated CAPEX requirements with limited debt funding.

# Recommendations

- Develop a long-term financial plan that blends Scenarios A & B
- Revenue Sufficiency
  - Implement Monthly Billing as soon as possible
  - Complete a detailed affordability analysis in 2019
  - Develop strategies to address financial conditions and recovery at back end of lease
- Debt Profile
  - Refinance Series 2013C bonds immediately
- CAPEX
  - Develop detailed 10-year CAPEX plan using prioritization process to limit debt funding
  - Examine potential OPEX savings along with CAPEX deferment/adjustment to eliminate need for new debt
  - Verify long-term Wastewater Treatment Plant CAPEX with upcoming WWTP Master Plan

## Other Recommendations

- Use the model to perform some “stress tests” of the financial scenarios that are presented with assumptions more or less favorable to LCA
- OPEX Savings/Revenue Enhancements
  - 20 to 25 OPEX Savings and Revenue Enhancement options initially identified
  - Recommend several of them be pursued further to provide additional revenue enhancements or OPEX savings
  - Some options can be pursued by LCA administratively, and some will require additional study
  - Some of the options will require partnership with CoA to determine if feasible

# Questions?

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