

# Lehigh County Authority 2017-2021 Capital Plan

Preliminary Plan – Board Presentation – August 22, 2016

# Process Review / Approvals

- Capital Plan
- Annual Budget
- Funding / New Borrowing
- Project Authorizations / Contracts

# New Project Prioritization / Categories

Project Category	Description
Regulatory	Required to meet Regulatory requirements
New Cust	New Customers
CA/OS	Concession Lease/Operating Standards
AM - Low	Asset Management - Low Risk
AM - Med	Asset Management - Medium Risk
AM - High	Asset Management - High Risk
AM - Varies	Asset Management - Varies
Efficiency	Efficiency
Sys Imp	System Improvement
Rev Opprt	Revenue Opportunity
Planning	Planning

# New Financial Analysis Method

## 5-Year Cash Flow Projection Includes the Following Elements:

- Annual Capex Spending Requested
- Use of Existing Project Reserves
- Projection of Operating Surplus via Growth in Revenues & Expenses
- Reimbursements for Capex / Construction Contributions
- Maintaining a Minimum Operating Cash Reserve Balance
- Remaining Cash from Operations - Available for Capex
- Borrowing Required to Fund Remaining Capex not Funded from Operations
- Annual Debt Service for New Borrowing (plugged back into cash flow)
- Recalibrate & Finalize

**RESULT = Financial Model of Cash Flow / Borrowing Impact of Capex Plan**

# Administration – 2017 Projects

#	Project	2017- \$	2018-2021-\$
SD-A-1	SCADA Programming, Hardware & Software Upgrades	\$ 150,000	\$ 853,800
CON-A-1 *	Computer System Hardware & Software Upgrades	34,000	159,000
CON-A-2 *	Geographic Information System Upgrades & Application Dev.	400,000	500,000
CON-A-3 *	Information Technology Master Plan Update	50,000	175,000
CON-A-4 *	Document Management	30,000	450,000

*\*= Projects split 1/3 to Suburban and 2/3 to City Division*

# Administration – Financial Analysis

- Consolidated Admin Projects split 1/3 to Suburban and 2/3 to City Division
- SCADA Upgrade - \$1,197k
- GIS Upgrades - \$900k
- IT Master Plan- \$225k
- Document Management - \$480k
- TOTAL - \$2,802k

# Capital Plan Suburban Division 2017

## Total 2017 Capex Spending

Budget Area	Category						Totals
	AM	Efficiency	Regulatory	New Customers	Revenue Opp.	System Imp.	
Water	\$4,776,000	N/A	\$ 337,000	\$366,500	N/A	\$1,967,100	\$ 7,446,600
Wastewater	3,117,000	\$35,000	2,941,600	112,500	N/A	407,000	6,613,100
<b>Totals</b>	<b>\$7,893,000</b>	<b>35,000</b>	<b>\$3,278,600</b>	<b>\$479,000</b>	<b>N/A</b>	<b>\$2,374,100</b>	<b>\$14,059,700</b>

# Capital Plan Suburban Division Water

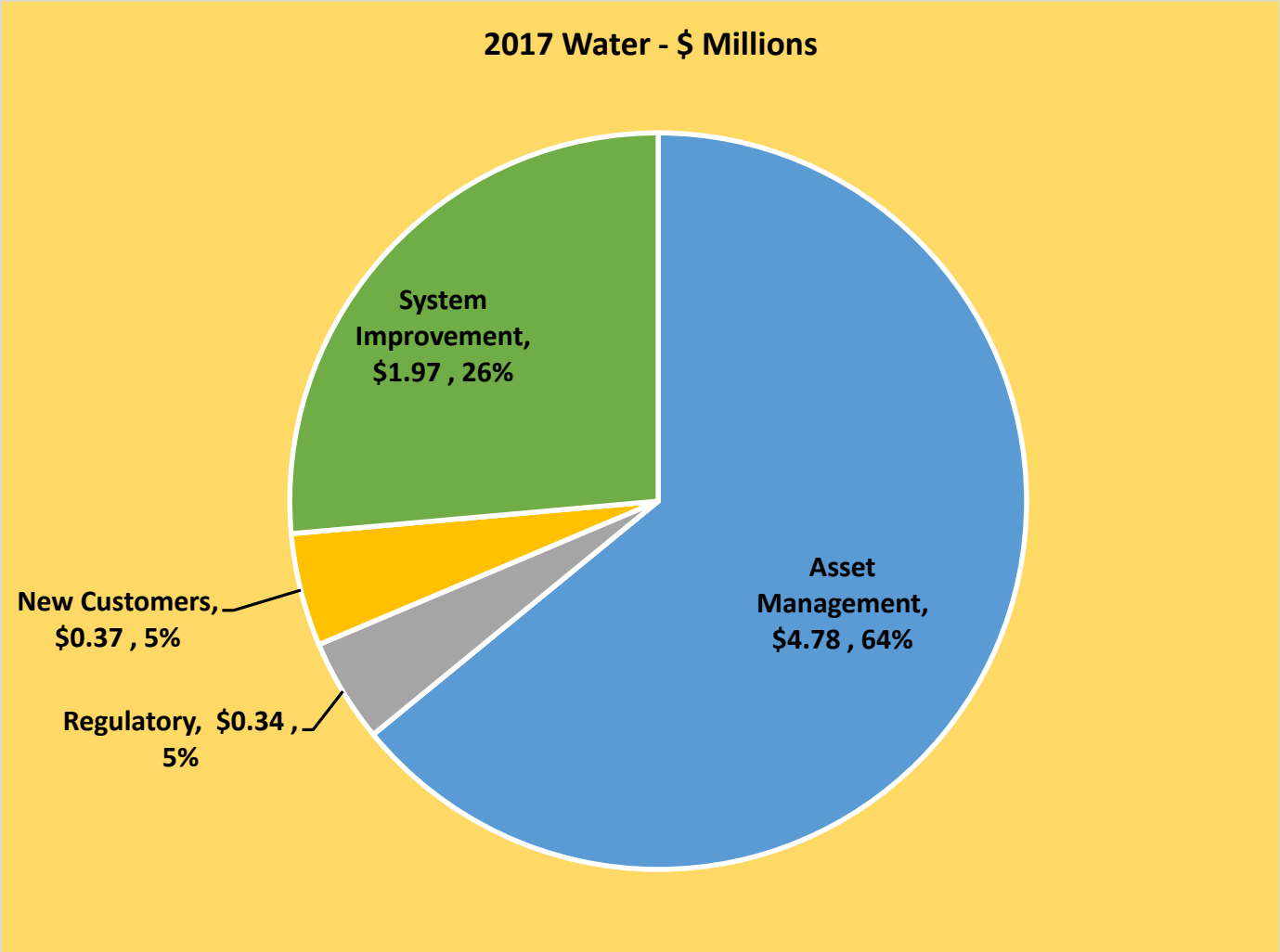
## 2017 Water Capex Spending

Budget Area	Category						
	AM	Efficiency	Regulatory	New Customers	Revenue Opp.	System Imp.	Total
Water	\$4,776,000	N/A	\$ 337,000	\$366,500	N/A	\$1,967,100	<b>\$ 7,446,600</b>



# Capital Plan Suburban Division 2017 - Water

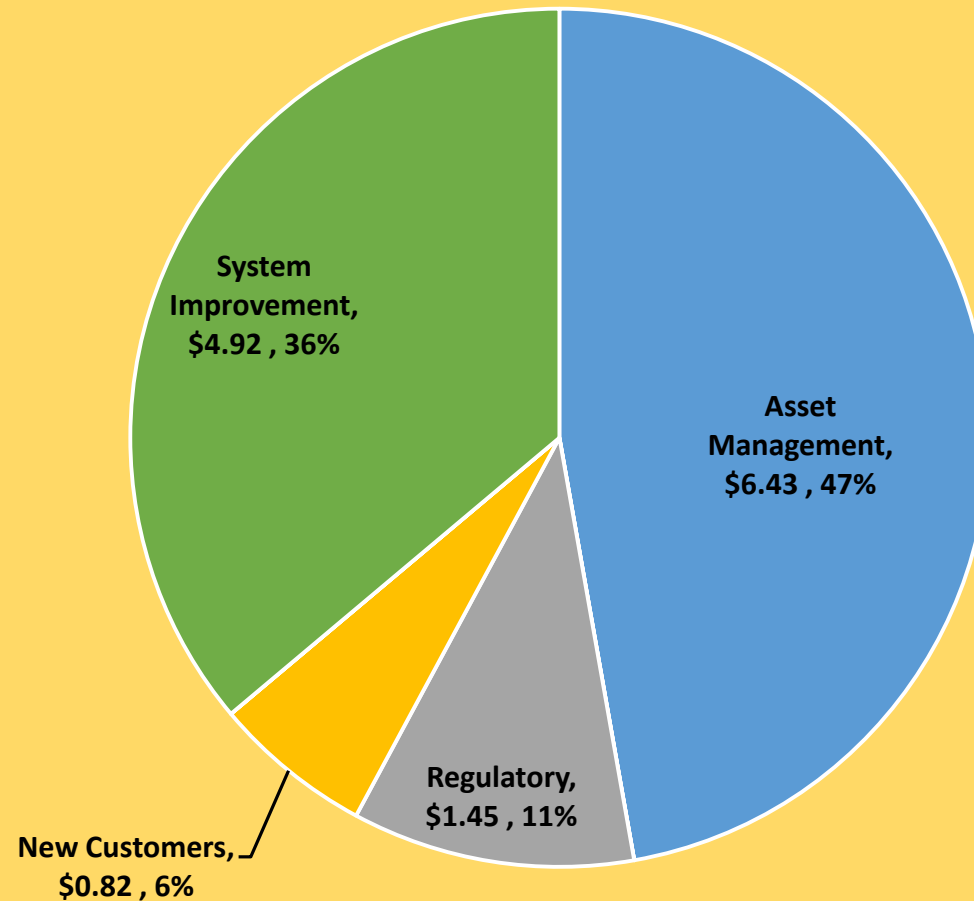
*Capex Spending by Category*



# Capital Plan Suburban Division 2018-2021 Water

## *Capex Spending by Category*

2018-2021 Water - \$ Millions



# Capital Plan

## Suburban Division

### Water

#### Asset Management

#	Project	2017- \$	2018-2021-\$
SD-W-4	Upper Milford Central Division Improvements	\$ 155,000	\$ 980,000
SD-W-5	Reservoir Rehabilitation / Maintenance	210,000	850,000
SD-W-9	Main Office / Operations Center Improvements	210,000	120,500
SD-W-10	Mobile Equipment	31,000	504,000
SD-W-11	Water Facility Cond. Assess. & Improvements	720,000	780,000
SD-W-12	Water Main Replacements	2,040,000	2,800,000
SD-W-25	Pine Lakes Pumping Station Improvements	328,000	N/A
SD-W-28	Other Equipment	100,000	504,000
SD-W-53	Non-Residential Meter Replacement Project	982,000	N/A

# Capital Plan Suburban Division Water

## Regulatory

#	Project	2017- \$	2018-2021-\$
SD-W-1	New Water Meter Installations	\$ 162,000	683,000
SD-W-7	Well Abandonments	175,000	175,000
SD-W-13	Arcadia West Division TDS Removal	N/A	590,000

# Capital Plan

## Suburban Division

### Water

#### New Customers

#	Project	2017- \$	2018-2021-\$
SD-W-2	Distribution Mains - Development and Svc. Connections	\$ 180,000	\$ 980,000
SD-W-8	Water Company Acquisitions	12,500	50,000
SD-W-51	Route 309 Crossing at Sand Spring Road	174,000	N/A

# Capital Plan

## Suburban Division

### Water

#### System Improvements

#	Project	2017- \$	2018-2021-\$
SD-W-3	Distribution Mains-Upsizing	\$ 150,000	200,000
SD-W-6	General Water System Improvements	135,000	1,040,000
SD-W-15	LCA & Adjoining Municipal Interconnections	N/A	750,000
SD-W-37	Additional Water Supply - Small Satellite Divisions	150,000	440,000
SD-W-48	Crestwood - New Alternate Water Supply	357,100	N/A
SD-W-49	CLD Auxiliary Pump Station & Main Extension Lower to Upper System	175,000	1,690,000
SD-W-54	Central Lehigh to Upper Milford Division Interconnection	1,000,000	971,000

# Suburban Water – Financial Analysis

- As presented in plan – total borrowing model
- Assumes 0% revenue growth
- Assumes 3% annual increase in expenses
- Approximately \$2.4M in project reimbursements goes directly to operations
- Result is \$20.0M in new borrowing, and declining cash reserves

# Suburban Water – Financial Analysis

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	TOTAL
Capex Spending	\$ (7,447)	\$ (6,436)	\$ (2,588)	\$ (1,981)	\$ (2,611)	\$ (21,063)
Use of Reserves / Prior Borrowings	\$ (372)					\$ (372)
Use of Cash from Operations	\$ (1,400)					\$ (1,400)
Use of NEW Debt	\$ (5,675)	\$ (6,436)	\$ (2,588)	\$ (1,981)	\$ (2,611)	\$ <b>(19,291)</b>
<b>Operating Cash Balance*</b>	<b>\$ 3,673</b>	<b>\$ 3,634</b>	<b>\$ 3,558</b>	<b>\$ 3,201</b>	<b>\$ 2,538</b>	
<i>* Includes O&amp;M Reserves</i>						



# Suburban Water – Additional Financial Considerations

- Austerity Model – Assume 10% annual reduction in Capex from plan

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	TOTAL
Capex Spending	\$ (6,702)	\$ (5,792)	\$ (2,329)	\$ (1,783)	\$ (2,350)	\$ (18,956)
Use of Reserves / Prior Borrowings	\$ (372)					\$ (372)
Use of Cash from Operations	\$ (1,400)					\$ (1,400)
Use of NEW Debt	\$ (4,930)	\$ (5,792)	\$ (2,329)	\$ (1,783)	\$ (2,350)	\$ <b>(17,184)</b>
<b>Operating Cash Balance*</b>	<b>\$ 3,841</b>	<b>\$ 3,970</b>	<b>\$ 4,062</b>	<b>\$ 3,873</b>	<b>\$ 3,378</b>	
<i>* Includes O&amp;M Reserves</i>						

# Suburban Water – Additional Financial Considerations

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016 (est)</u>
<b>Water Customers</b>	17,987	18,473	19,142	19,375	20,053	20,342	20,557	20,745	20,995
<b>% Increase</b>		<b>2.7%</b>	<b>3.6%</b>	<b>1.2%</b>	<b>3.5%</b>	<b>1.4%</b>	<b>1.1%</b>	<b>0.9%</b>	<b>1.2%</b>

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016 (est)</u>
<b>Water Revenues</b>	\$ 5,785,270	\$ 5,897,985	\$ 6,408,124	\$ 6,628,291	\$ 7,141,092	\$ 7,618,998	\$ 8,218,522	\$ 8,644,432	\$ 8,787,000
<b>% Increase</b>		<b>1.9%</b>	<b>8.6%</b>	<b>3.4%</b>	<b>7.7%</b>	<b>6.7%</b>	<b>7.9%</b>	<b>5.2%</b>	<b>1.6%</b>
<b>Rate Increases</b>				<b>5.0%</b>	<b>3.5%</b>	<b>3.0%</b>			

# Suburban Water – Additional Financial Considerations

- Growth Model – Assume 4% annual revenue increases (via growth/rate increases)

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	TOTAL
Capex Spending	\$ (7,447)	\$ (6,436)	\$ (2,588)	\$ (1,981)	\$ (2,611)	\$ (21,063)
Use of Reserves / Prior Borrowings	\$ (372)					\$ (372)
Use of Cash from Operations	\$ (1,400)	\$ (1,400)	\$ (1,500)	\$ (1,500)	\$ (2,000)	\$ (7,800)
Use of NEW Debt	\$ (5,675)	\$ (5,036)	\$ (1,088)	\$ (481)	\$ (611)	\$ <b>(12,891)</b>
<b>Operating Cash Balance*</b>	<b>\$ 4,611</b>	<b>\$ 4,476</b>	<b>\$ 4,585</b>	<b>\$ 4,808</b>	<b>\$ 4,636</b>	
<i>* Includes O&amp;M Reserves</i>						

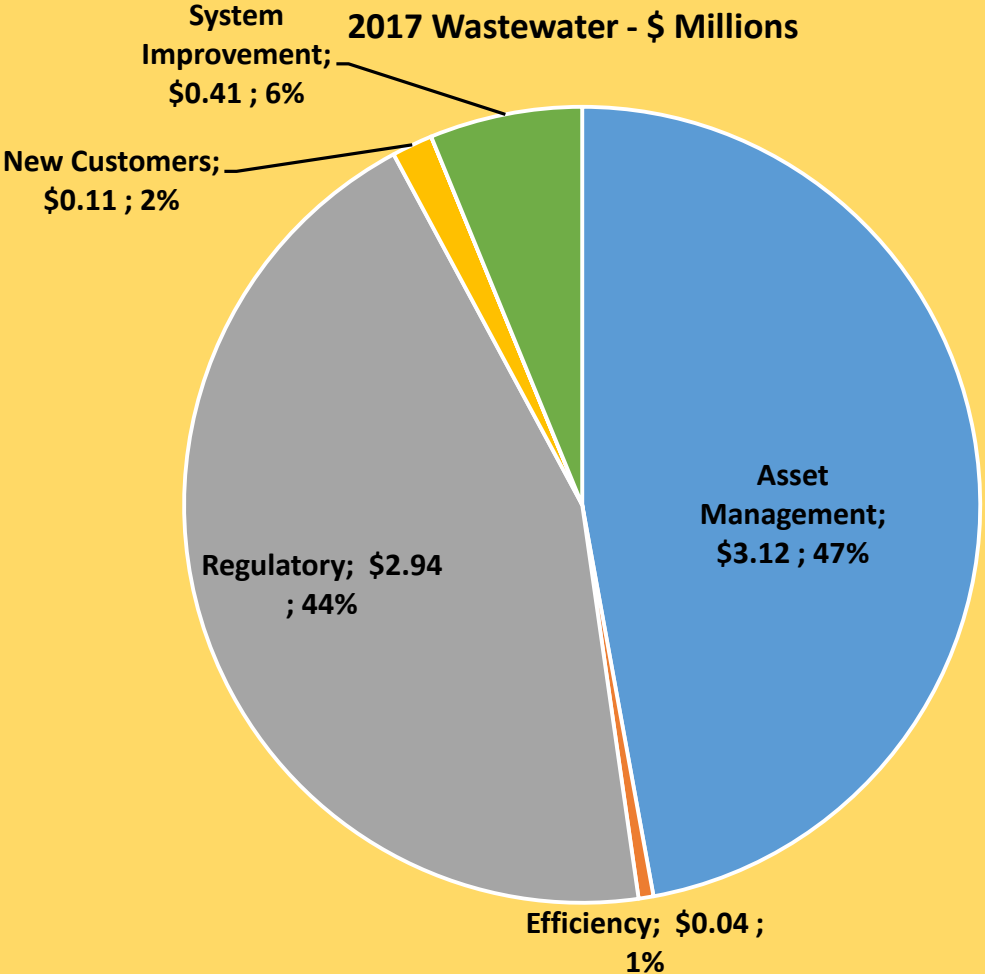
# Capital Plan Suburban Division Wastewater

## 2017 Wastewater Capex Spending

Budget Area	Category						
	AM	Efficiency	Regulatory	New Customers	Revenue Opp.	System Imp.	Total
Wastewater	\$3,117,000	\$35,000	2,941,600	\$112,500	N/A	\$407,000	<b>\$6,613,100</b>

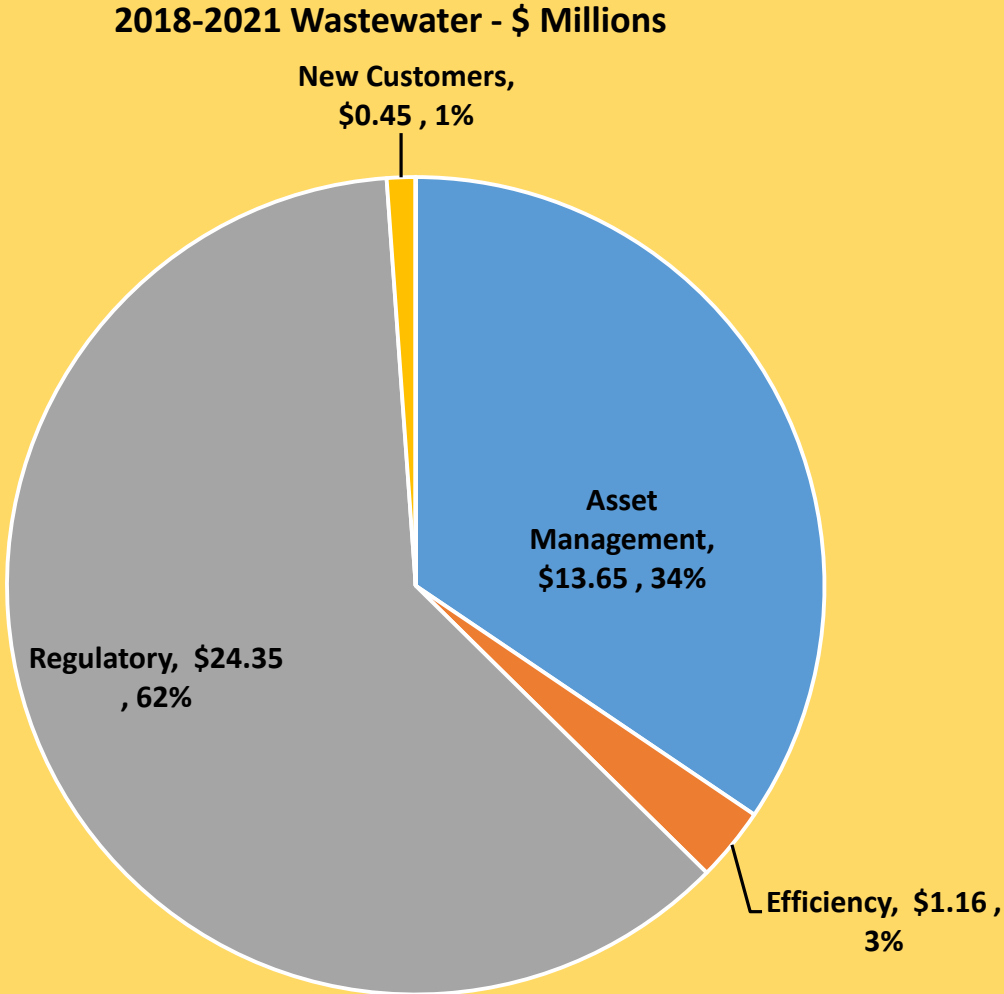
# Capital Plan Suburban Division 2017 - Wastewater

*Capex Spending by Category*



# Capital Plan Suburban Division 2018-2021 Wastewater

*Capex Spending by Category*



# Capital Plan Suburban Division Wastewater

## Asset Management

#	Project	2017- \$	2018-2021-\$
SD-S-4	Spring Creek Force Main A / V Valve Replacements	\$ 30,000	\$ 130,000
SD-S-5	Mobile Equipment	37,000	802,000
SD-S-6	Wynnewood I&I Program	300,000	10,000
SD-S-7	Wynnewood Terrace WWTP Replacement	170,000	1,207,000
SD-S-10	Other Equipment	100,000	385,000
SD-S-11	Wastewater Facility Cond. Assess. & Improvements	425,000	550,000
<b><i>SD-S-12</i></b>	<b><i>Park Pump Station Force Main Rehabilitation</i></b>	<b><i>450,000</i></b>	<b><i>2,500,000</i></b>
SD-S-13	Sand Spring WWTP Replacement	170,000	1,352,000
<b><i>SD-S-15</i></b>	<b><i>Park Pump Station Rehabilitation/ Improvements</i></b>	<b><i>450,000</i></b>	<b><i>2,400,000</i></b>

***Red= AO Work***

# Capital Plan

## Suburban Division

### Wastewater

#### Asset Management-Continued

#	Project	2017- \$	2018-2021-\$
SD-S-17	Heidelberg Heights I & I Program	\$ 30,000	\$ 220,000
SD-S-18	Heidelberg Heights WWTP Rehabilitation	100,000	110,000
SD-S-22	Wastewater PTP Improvements	800,000	3,750,000
SD-S-26	Lynn Township I & I Program	55,000	235,000



# Capital Plan Suburban Division Wastewater

## Efficiency

#	Project	2017- \$	2018-2021-\$
<i>SD-S-2</i>	<i>Interceptor Access Easement Acquisitions</i>	<i>N/A</i>	<i>\$ 550,000</i>
SD-S-8	Western Weisenberg WWTP Mechanical Screen	N/A	320,000
SD-S-19	Heidelberg Heights WWTP - Mechanical Screen	\$ 35,000	290,000

*Red= AO Work*

# Capital Plan Suburban Division Wastewater

## Regulatory

#	Project	2017- \$	2018-2021-\$
SD-S-16	Western Weisenberg WWTP Cold Weather Improvements	\$ 121,600	N/A
<i>SD-S-23</i>	<i>Park Pump Station Force Main Extension</i>	<i>175,000</i>	<i>\$ 2,460,000</i>
<i>SD-S-24</i>	<i>Signatory I &amp; I Investigation/Remediation Program</i>	<i>1,070,000</i>	<i>5,155,000</i>
SD-S-25	Lynn Twp WWTP Upgrades & Expansion	1,175,000	3,735,000
<i>SD-S-28</i>	<i>WLI- Trexlertown Area Interceptor Upgrade</i>	<i>400,000</i>	<i>13,000,000</i>

*Red= AO Work*

# Capital Plan Suburban Division Wastewater

## New Customers

#	Project	2017- \$	2018-2021-\$
SD-S-3	Central Lehigh County WW Capacity Planning & Expansion	\$ 75,000	\$ 300,000
SD-S-9	Sewer Company Acquisitions	12,500	50,000
SD-S-14	Jordan Creek Wastewater System	25,000	100,000

# Capital Plan Suburban Division Wastewater

## System Improvement

#	Project	2017- \$	2018-2021-\$
SD-S-27	Spring Creek Pump Station Upgrades	\$ 407,000	N/A

# Suburban Wastewater – Financial Analysis

- As presented in plan – total borrowing model
- Assumes 100% recovery of AO Debt Service from signatories
- Assumes 3% increase in total cost – 2/3 recovered from signatories, 1/3 associated with satellite systems
- Assumes no increase in rates for satellite systems
- Result is \$39.5M in new borrowing, and sharply declining cash reserves

# Suburban Wastewater – Financial Analysis

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	TOTAL
Capex Spending	\$ (6,613)	\$ (15,159)	\$ (6,193)	\$ (10,743)	\$ (7,516)	\$ (46,224)
Use of Reserves / Prior Borrowings	\$ (2,157)					\$ (2,157)
Use of Cash from Operations	\$ (800)	\$ (1,000)	\$ (1,200)	\$ (800)	\$ (750)	\$ (4,550)
Use of NEW Debt	\$ (3,656)	\$ (14,159)	\$ (4,993)	\$ (9,943)	\$ (6,766)	<b>\$ (39,517)</b>
<b>Operating Cash Balance*</b>	<b>\$ 5,842</b>	<b>\$ 5,333</b>	<b>\$ 4,453</b>	<b>\$ 3,736</b>	<b>\$ 2,813</b>	
<i>* Includes O&amp;M Reserves</i>						

# Suburban Wastewater – Additional Financial Considerations

- Approximately \$15M in projects for work not associated with Administrative Order
- \$10.2M of this work is related to satellite systems serving a small customer base of 2,500 homes and businesses
- Debt service for this work equates to about \$703K/year – or \$281 per customer, or a 43% rate increase (varies from system to system)

# Project Considerations – Satellite Systems

- Every project will require individual detailed analysis:
  - Environmental Impact
  - Financial / Affordability
  - Social / Regional Considerations
- Grant / Other Funding Available?
- Common Rate Approach?



# Capital Plan Allentown Division 2017

## Total 2017 Capex Spending

Budget Area	Category							Totals
	AM	CA/OS	Efficiency	Regulatory	New Customers	Revenue Opp.	System Imp.	
Water	\$1,716,400	\$3,178,200	N/A	\$ 148,810	\$35,000	N/A	\$25,000	\$5,103,410
Wastewater	1,164,500	1,702,500	N/A	2,607,000	\$39,000	N/A	N/A	5,513,000
<b>Totals</b>	<b>\$2,880,900</b>	<b>\$4,880,700</b>	<b>N/A</b>	<b>\$2,755,810</b>	<b>\$74,000</b>	<b>\$0</b>	<b>\$25,000</b>	<b>\$10,616,410</b>

# Capital Plan Allentown Division Water

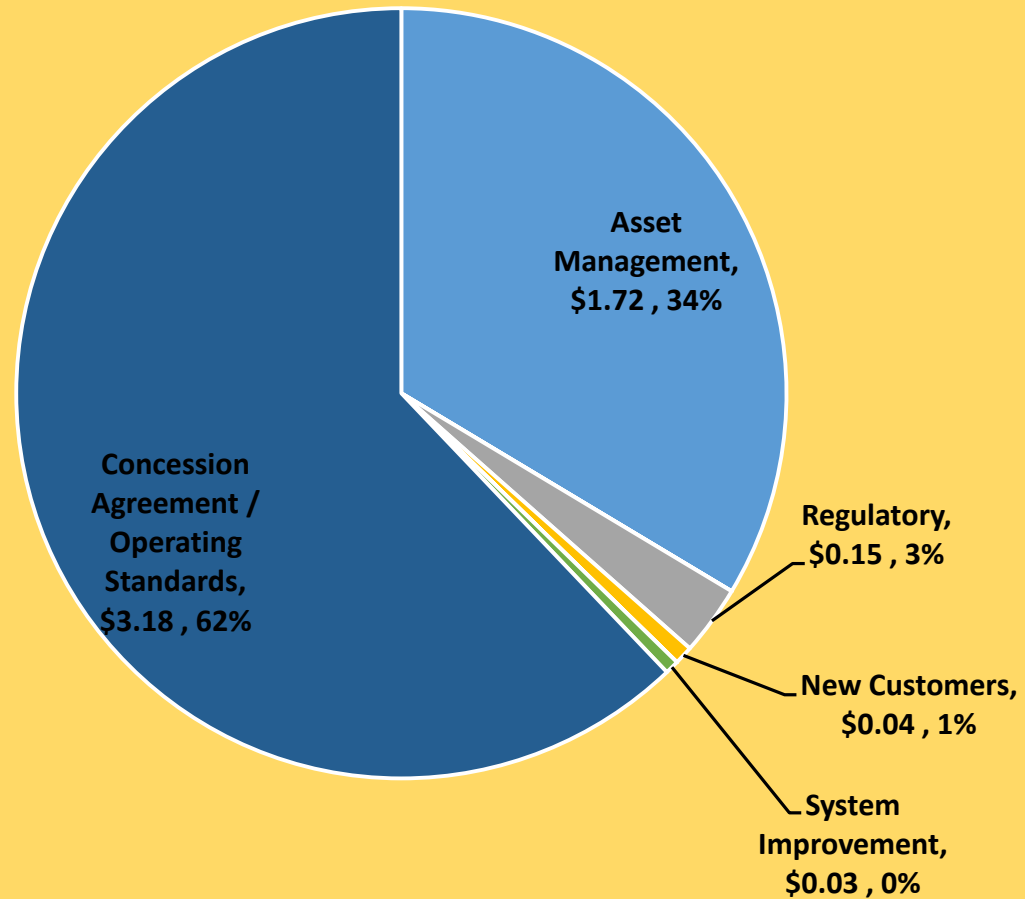
## 2017 Water Capex Spending

Budget Area	Category							Total
	AM	CA/OS	Efficiency	Regulatory	New Customers	Revenue Opp.	System Imp.	
Water	\$1,716,400	\$3,178,200	N/A	\$ 148,810	\$35,000	N/A	\$25,000	<b>\$5,103,410</b>

# Capital Plan Allentown Division 2017 Water

## *Capex Spending by Category*

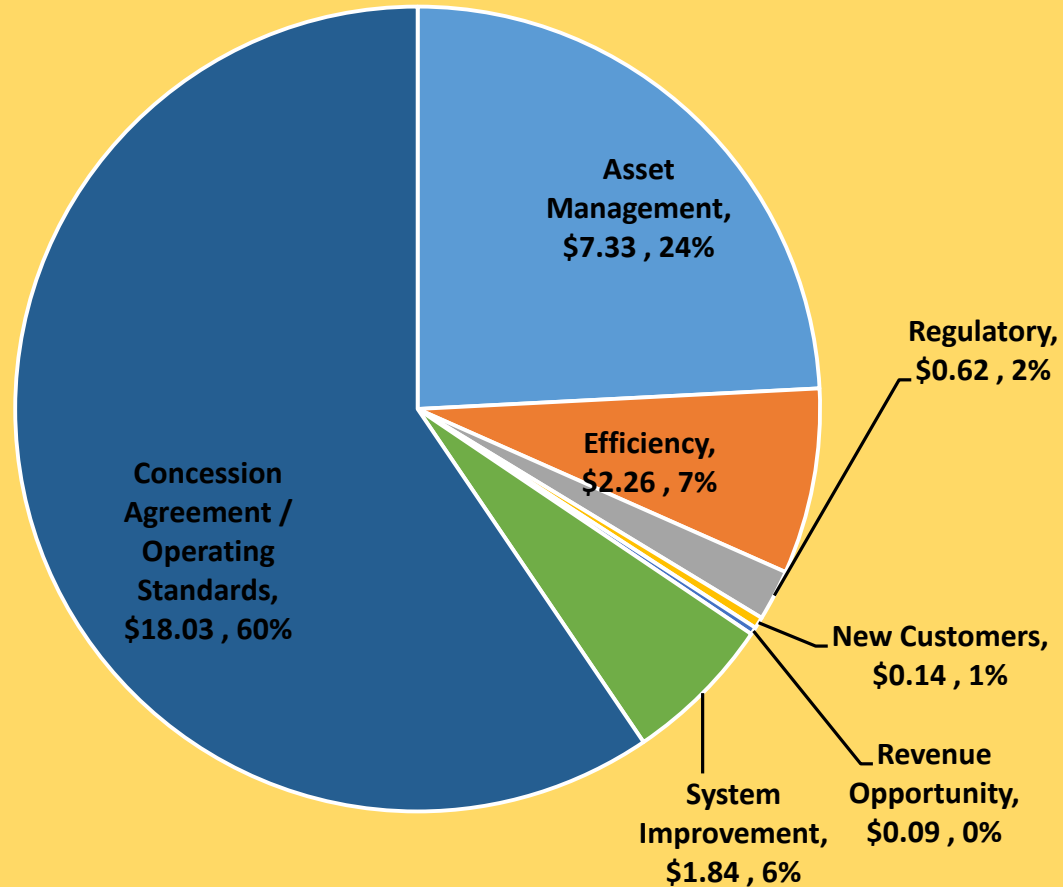
2017 Water - \$ Millions



# Capital Plan Allentown Division 2018-2021 Water

## *Capex Spending by Category*

2018 - 2021 Water - \$ Millions



# Capital Plan

## Allentown Division

### Water

### Asset Management

#	Project	2017 - \$	2018-2021 - \$
AD-W-4	Other Equipment	\$345,000	\$ 880,000
AD-W-5	WFP General Improvements	400,000	1,850,000
AD-W-8	Reservoir Rehabilitation/Maintenance	113,400	634,375
AD-W-13	Facility Roof Replacements, Phase 2 & 3	N/A	932,000
AD-W-17	Mobile Equipment	98,000	591,000
AD-W-19	General Water System Replacements/Improvements	760,000	2,440,000

# Capital Plan

## Allentown Division

### Water

#### Concession Agreement/Operating Standards

#	Project	2017 - \$	2018-2021 - \$
AD-W-7*	Water Main Replacements	N/A	\$17,700,000
AD-W-9	Various Water System Related Studies	\$ 100,000	180,000
AD-W-11*	Schantz Spring Water Main Replacement	2,070,000	N/A
AD-W-15	Itron/AMR Meter Project	138,200	152,800
AD-W-16	Pre-Lease Valve Replacements	870,000	N/A

\*Schedule 7-MCI

Blue = City Funded Uncompleted Work

# Capital Plan

## Allentown Division

### Water

### Efficiency

#	Project	2017 - \$	2018-2021 - \$
AD-W-6	WFP SCADA Upgrades	N/A	\$ 551,000
AD-W-21**	Fixed Base Meter Reading System	N/A	1,705,000

\*\* LCA-MCI

# Capital Plan Allentown Division Water

## Regulatory

#	Project	2017- \$	2018-2021 - \$
AD-W-1	New & Replacements Meter Installation (non AMR Project)	\$148,810	\$624,240



# Capital Plan Allentown Division Water

## New Customers

#	Project	2017 - \$	2018-2021 - \$
AD-W-2	Distribution Mains – Development and Service Connections	\$35,000	\$140,000

# Capital Plan

## Allentown Division

### Water

### Revenue Opportunity

#	Project	2017 - \$	2018-2021 - \$
AD-W-12	Bulk Water Filling Station	N/A	\$90,000

# Capital Plan

## Allentown Division

### Water

### System Improvements

#	Project	2017 - \$	2018-2021 - \$
AD-W-3	Distribution Mains - Upsizing	\$25,000	\$ 100,000
AD-W-10**	WFP – Emergency Power (Schantz & Crystal Springs)	N/A	1,736,000

\*\*LCA-MCI

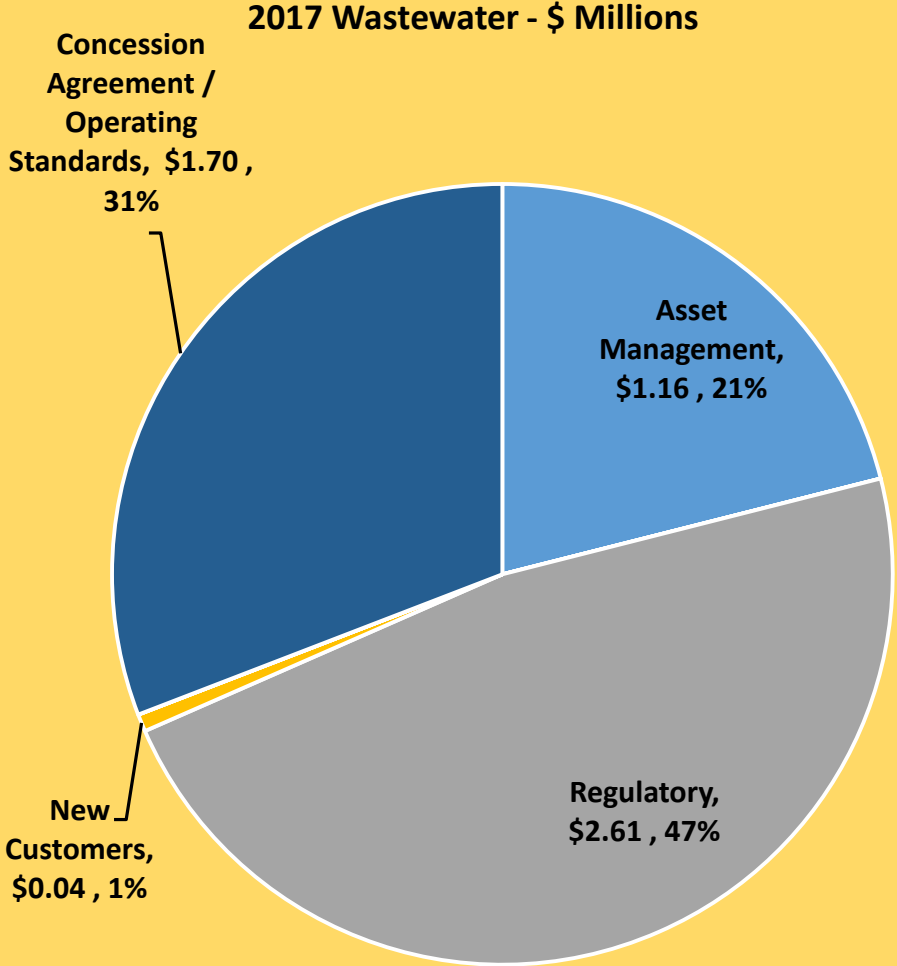
# Capital Plan Allentown Division Wastewater

## 2017 Capex Spending

Budget Area	Category							Total
	AM	CA/OS	Efficiency	Regulatory	New Customers	Revenue Opp.	System Imp.	
Wastewater	\$1,164,500	\$1,702,500	N/A	\$2,607,000	\$39,000	N/A	N/A	<b>\$5,513,000</b>

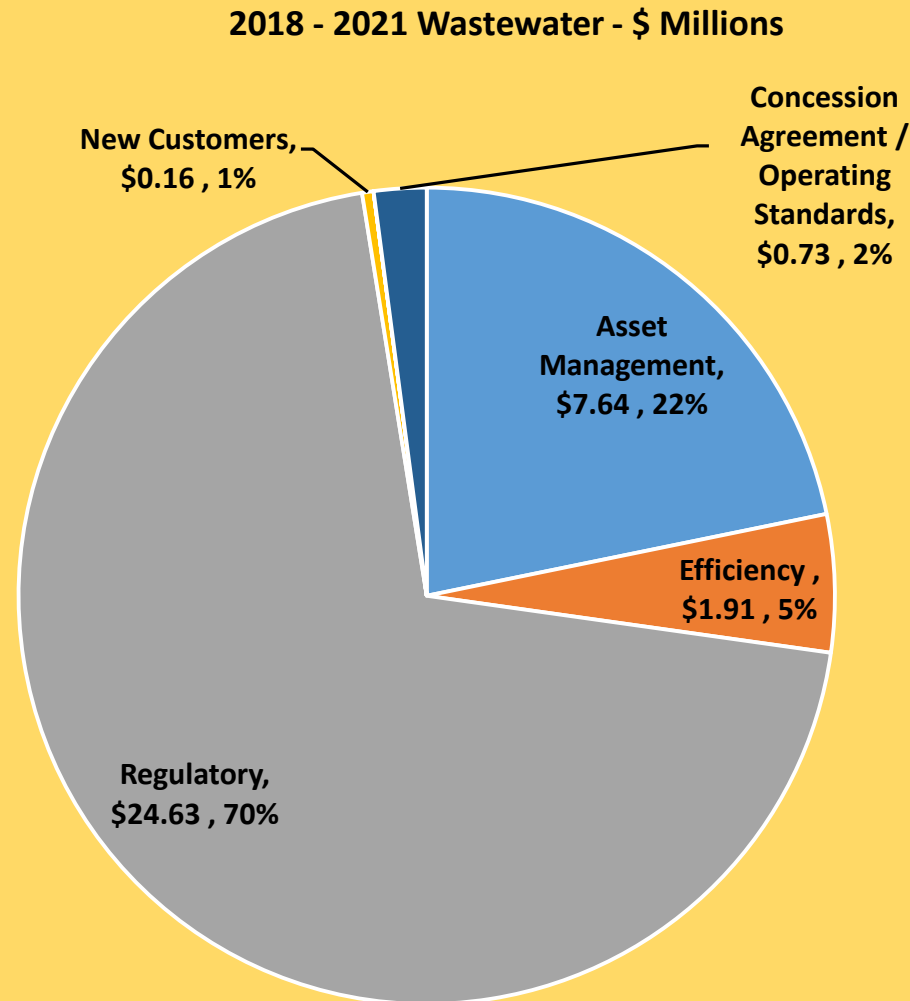
# Capital Plan Allentown Division 2017 Wastewater

*Capex Spending by Category*



# Capital Plan Allentown Division 2018-2021 Wastewater

## *Capex Spending by Category*



# Capital Plan Allentown Division Wastewater

## Asset Management

#	Project	2017- \$	2018-2021 - \$
AD-S-2	Other Equipment	\$370,000	\$880,000
AD-S-3	WWTP General Improvements	750,000	2,000,000
AD-S-5**	WWTP Electrical Substation Replacements	N/A	3,350,000
AD-S-17	Mobile Equipment	44,500	1,406,500

\*\*LCA-MCI

# Capital Plan Allentown Division Wastewater

## Concession Agreement/Operating Standards

#	Project	2017 - \$	2018-2021 - \$
AD-S-4	Sanitary Sewer Main Replacements and/or Rehabilitation	\$ 95,000	\$380,000
AD-S-7*	WWTP: Digester Cover Replacements	1,480,000	N/A
AD-S-9	Various Wastewater System Related Studies	N/A	350,000
AD-S-12	WWTP: Security Upgrades	127,500	N/A

\*Schedule 7-MCI

Blue= City Funded Uncompleted Work



# Capital Plan Allentown Division Wastewater

## Efficiency

#	Project	2017 - \$	2018-2021 - \$
AD-S-6**	WWTP Disinfection Upgrade	N/A	\$1,685,000
AD-S-8	WWTP Dewatering SCADA Upgrades	N/A	220,000

\*\*LCA-MCI

# Capital Plan Allentown Division Wastewater

## Regulatory

#	Project	2017 - \$	2018-2021 - \$
<i>AD-S-10</i>	<i>Rehabilitation of Administrative Order Manholes</i>	<i>\$ 247,000</i>	<i>\$ 300,000</i>
<i>AD-S-11</i>	<i>Administrative Order Phase 1A Improvements</i>	<i>1,050,000</i>	<i>24,330,000</i>
<i>AD-S-16</i>	<i>WWTP Interim Blending Pumping System</i>	<i>1,310,000</i>	<i>N/A</i>

*Red = City Funded AO Projects*

# Capital Plan Allentown Division Wastewater

## New Customers

#	Project	2017 - \$	2018-2021 - \$
AD-S-1	Collection System – Development and Service Connections	\$39,000	\$156,000

# City Division – Financial Analysis

- As presented in plan – total borrowing model
- Assumes 3.5% annual revenue increases (CPI = 1%, Index = 2.5%) from city ratepayers
- Assumes 3% annual increase in expenses
- Assumes 3% annual increase in signatory revenues (to match expense increases)
- Includes \$29.5M in reimbursements, primarily from City for Administrative Order projects
- Projects that are listed as “Major Capital” result in a capital cost recovery charge that adds to operating revenue
- Result is \$35.3M in new borrowing, and generally level cash reserves

# City Division – Financial Analysis

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	TOTAL
Capex Spending	\$ (10,616)	\$ (10,063)	\$ (25,052)	\$ (21,531)	\$ (8,718)	\$ (75,980)
Use of Reserves / Prior Borrowings	\$ (5,706)	\$ (2,084)				\$ (7,790)
Use of Cash from Operations & Reimbursements	\$ (4,910)	\$ (2,000)	\$ (12,000)	\$ (12,000)	\$ (2,000)	\$ (32,910)
Use of NEW Debt		\$ (5,979)	\$ (13,052)	\$ (9,531)	\$ (6,718)	<b>\$ (35,280)</b>
<b>Operating Cash Balance*</b>	<b>\$ 5,819</b>	<b>\$ 4,885</b>	<b>\$ 6,009</b>	<b>\$ 5,912</b>	<b>\$ 5,418</b>	
<i>* Includes O&amp;M Reserves</i>						

# City Division – Additional Financial Considerations

- Scenarios for discussion under Executive Session (relating to potential litigation)

# Summary

- 2017 Capital Budget
- Total 5-Year Capital Budget
- Review of Immediate Next Steps (public comment, approval schedule)

	<u>2017</u>	<u>2018-2021</u>	<u>TOTAL</u>
Administration	\$ 664	\$ 2,138	\$ <b>2,802</b>
Suburban Water	\$ 7,447	\$ 13,616	\$ <b>21,063</b>
Suburban Wastewater	\$ 6,613	\$ 39,611	\$ <b>46,224</b>
City Division	\$ 10,616	\$ 65,364	\$ <b>75,980</b>
<b>TOTAL</b>	\$ <b>25,340</b>	\$ <b>120,729</b>	\$ <b>146,069</b>

# Discussion

Questions?