



LEHIGH COUNTY AUTHORITY
ALLENTOWN, PA

FINAL 5-YEAR CAPITAL PLAN
ADMINISTRATION 2017-2021
APPROVED SEPTEMBER 12, 2016

**LEHIGH COUNTY AUTHORITY
5-YEAR CAPITAL PLAN
2017-2021**

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2017-2021 Capital Plan

Glossary of Acronyms & Terms

The following is a listing of acronyms and terms used in the Capital Plan Summary and Project Detail Sheets.

LCA Water and/or Wastewater Divisions/Systems

LCA Water and/or Wastewater Divisions/Systems		Water	Wastewater
<i>AD</i>	Allentown Division	X	X
<i>AWD</i>	Arcadia West Division	X	X
<i>BHD</i>	Beverly Hills Division	X	
<i>CLD</i>	Central Lehigh Division	X	
<i>CFD</i>	Clear View Farms Division	X	
<i>ECD</i>	Emmaus Consecutive Division	X	
<i>HHD</i>	Heidelberg Heights Division	X	X
<i>LLRI-1</i>	Little Lehigh Relief Interceptor, Phase 1		X
<i>LLRI-2</i>	Little Lehigh Relief Interceptor, Phase 2		X
<i>LTD</i>	Lynn Township Division		X
<i>MCD</i>	Mill Creek Division	X	
<i>MND</i>	Madison Park Division	X	
<i>NWD</i>	North Whitehall Division	X	
<i>PLD</i>	Pine Lakes Division	X	
<i>SSD</i>	Sands Spring Division		X
<i>UMD</i>	Upper Milford Division	X	X
<i>UMCD</i>	Upper Central Milford Division (Buss Acres)	X	
<i>WLI</i>	Western Lehigh Interceptor		X
<i>WTD</i>	Washington Township Division	X	X
<i>WWD</i>	Wynnewood Division		X

Project Type

Project Type	Description
<i>AO</i>	Administrative Order
<i>UW</i>	Uncompleted Work ⁽¹⁾
<i>S-7-MCI</i>	Schedule-7 (<i>Lease Required</i>) Major Capital Improvement ⁽²⁾
<i>LCA-MCI</i>	LCA Developed Major Capital Improvement ⁽²⁾
<i>Regular</i>	A project that does not fit in any of the aforementioned special categories

(1) *Uncompleted Work: City Projects that were supposed to be complete by the time of settlement. The City and LCA have reached an agreement for LCA to execute them.*

(2) *Major Capital Improvement: In accordance with the Lease all Major Capital Improvements must be approved by the City.*

Project Funding

Project Funding	Description
<i>LCA</i>	Funded by LCA
<i>100% Reimb</i>	All costs are 100% reimbursable by fees charged
<i>Fees & LCA</i>	Costs partly recovered through fees charged and partly funded by LCA
<i>Allentown</i>	Funded by the City of Allentown
<i>CCRC</i>	Capital Cost Recovery Charge ⁽¹⁾ ; Applies only to City approved MCI

(1) Capital Cost Recovery Charge: An on-going user fee that is above the rate caps set forth in the Lease to allow the recovery of the cost of an MCI. Rate payers are charged based upon usage.

Project Category

Projects have been categorized to identify the primary and secondary reasons for the need. In some cases there is no secondary reason that would be applicable.

Project Category	Description
<i>Regulatory</i>	Required to meet Regulatory requirements
<i>New Cust</i>	New Customers
<i>CA/OS</i>	Concession Lease/Operating Standards
<i>AM - Low</i>	Asset Management - Low Risk
<i>AM - Med</i>	Asset Management -Medium Risk
<i>AM - High</i>	Asset Management - High Risk
<i>AM - Varies</i>	Asset Management – Varies ⁽¹⁾
<i>Efficiency</i>	Efficiency
<i>Sys Imp</i>	System Improvement
<i>Rev Opprt</i>	Revenue Opportunity
<i>Planning</i>	Planning
<i>N/A</i>	Not Applicable

(1) Applies to Asset Management Projects, where there are multiple standalone sub-projects of varied levels of “risk”.

Approval Stage

Approval Stage	Description
<i>A</i>	Annual Project, no approvals required
<i>S</i>	Study/Planning Phase
<i>D</i>	Design Phase
<i>C</i>	Construction/Implementation Phase
<i>E</i>	Entire Project
<i>V</i>	Various Phases
<i>P</i>	Pending Board approval

**ADMINISTRATION
5-YEAR CAPITAL PLAN
2017-2021**

CAPITAL FINANCING JUSTIFICATION

The Administrative projects of the Authority are funded through charge-backs to the various operating and capital budgets.

The Administrative projects are either a strictly Suburban Division (SD) project or a project which benefits both the City and Suburban Division (CON). In the case of the multi-division projects the Total costs have been apportioned 33% to the Suburban Division and 67% to the City Division.

Project SD A-1 is an Information Technology (IT) project to upgrade our Suburban SCADA capabilities. Water fund operating reserves will be used to finance the projects with partial recovery through charge-backs to Authority wastewater funds.

Project CON A-1 is an organization-wide project related to the annual upgrades of computer hardware and software.

Project CON A-2 is an organizational-wide upgrade to the Geographic Information System (GIS).

Project CON A-3 is an organization-wide update and implementation of the LCA IT Master Plan.

Project CON A-4 is an organization-wide project to develop an electronic document management system.

**LEHIGH COUNTY AUTHORITY
ADMINISTRATION
2017-2021 CAPITAL PROGRAM**

Project #	Name or Title of Proposal	(1) Proj. Type	(1) Funding	Approvals	Project Cost		This Capital Program						Project Category (1)		
				Stage (1)	Total Cost	Prior Years' (2)	2017 Year -1	2018 Year -2	2019 Year -3	2020 Year -4	2021 Year -5	Total	Primary	Secondary	
Annual															
SD-A-1	SCADA Programming, Hardware Upgrades, Software & Training	Regular	LCA	A	\$ 1,163,800	\$ 160,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 403,800	\$ 1,003,800	AM - Varies	Efficiency	
CON-A-1 (*)	Computer System Hardware & Software Upgrades	Regular	LCA	A	\$ 391,000	\$ 198,000	\$ 34,000	\$ 9,000	\$ 20,000	\$ 130,000	-	\$ 193,000	AM - High	N/A	
	Subtotal				\$ 1,554,800	\$ 358,000	\$ 184,000	\$ 159,000	\$ 170,000	\$ 280,000	\$ 403,800	\$ 1,196,800			
Previously Authorized															
CON-A-2 (*)	Geographic Information System Upgrades & Application Dev.	Regular	LCA	V	\$ 1,245,000	\$ 345,000	\$ 400,000	\$ 300,000	\$ 100,000	\$ 50,000	\$ 50,000	\$ 900,000	Efficiency	N/A	
	Subtotal				\$ 1,245,000	\$ 345,000	\$ 400,000	\$ 300,000	\$ 100,000	\$ 50,000	\$ 50,000	\$ 900,000			
Pending Authorization															
CON-A-3 (*)	Information Technology Master Plan Update	Regular	LCA	P	\$ 225,000	\$ -	\$ 50,000	\$ 50,000	\$ 125,000	\$ -	\$ -	\$ 225,000	Planning	N/A	
CON-A-4 (*)	Document Management	Regular	LCA	P	\$ 480,000	\$ -	\$ 30,000	\$ 425,000	\$ 25,000	\$ -	\$ -	\$ 480,000	Efficiency	N/A	
	Subtotal				\$ 705,000	\$ -	\$ 80,000	\$ 475,000	\$ 150,000	\$ -	\$ -	\$ 705,000			
	GRAND TOTAL				\$ 3,504,800	\$ 703,000	\$ 664,000	\$ 934,000	\$ 420,000	\$ 330,000	\$ 453,800	\$ 2,801,800			

(*) CON = a Project that benefits both the Allentown and Suburban Divisions where Project costs will be allocated based on system revenue 2/3 City Division and 1/3 Suburban Division.

(1) Reference Glossary of Acronyms & Terms found immediately after the Table of Contents

(2) Includes estimate of expenditures through 2016.

Note: Shading indicates new project or revised project scope.

**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	SUPERVISORY CONTROL & DATA ACQUISITION (SCADA) PROGRAMMING, HARDWARE UPGRADES, SOFTWARE & TRAINING						
Budget Area	Administration	Department	IT	Date	7/1/2016	Project No.	SD-A-1
Location	Various LCA Divisions located in multiple municipalities			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - Varies	Secondary	Efficiency	Preparer		PB

Purpose of Expenditure (check all that apply)	
<input type="checkbox"/>	New Facility
<input checked="" type="checkbox"/>	Existing Facility - Rehabilitation/Upgrade
<input type="checkbox"/>	Scheduled Replacement
<input type="checkbox"/>	Improved Service
<input type="checkbox"/>	Study

Additional Information		
Expected Useful Life (Years)	5	Comments * Dependent upon the system
Approx. No. of Customers Benefitted	*Varies	
Is this System part of a Common User Rate?	Yes	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
This annual on-going project includes both programming and hardware enhancements to the SCADA system to provide reliable telemetry and effective/proactive/flexible control of our facilities. It also includes an upgrade to SCADA & Telog communications, and radio replacement of Telco lines to reduce monthly Telco charges to resolve ongoing communication problems with critical facilities. Training on the Historian software package is also included.

Purpose and Needs to be Met by the Project
The SCADA system currently provides real-time data and control for CLD water facilities and WLI related wastewater facilities and must be updated. The Telog system provides real-time data (no control) for satellite water and wastewater systems. Both are necessary to allow efficient operation of the water and wastewater system facilities.

Project Status - Describe what work, if any has been completed or underway for this project
SCADA upgrades will be completed at Res. 3/Well 20 and Pine Lakes in 2016.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	SD-A-1
Project Name	SUPERVISORY CONTROL & DATA ACQUISITION (SCADA) PROGRAMMING, HARDWARE UPGRADES, SOFTWARE & TRAINING

Estimated Project Costs :	
LCA Staff	\$ 100,000
Land Acquisition	\$ -
Construction/Equipment	\$ 550,000
Professional Services	\$ 273,000
Other	
Contingencies	\$ 80,000
Total Project Cost	\$ 1,003,000

Project Estimate Level	
	Conceptual Estimate
X	Preliminary Estimate
	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 1,003,800
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Source of Funds					
	Need	Source			
		Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years	\$ 160,000	\$ 160,000			
1st Year 2017	\$ 150,000	\$ 150,000			
2nd Year 2018	\$ 150,000	\$ 150,000			
3rd Year 2019	\$ 150,000	\$ 150,000			
4th Year 2020	\$ 150,000	\$ 150,000			
5th Year 2021	\$ 403,800	\$ 403,800			

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**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	COMPUTER SYSTEM HARDWARE & SOFTWARE UPGRADES						
Budget Area	Administration	Department	IT	Date	7/5/2016	Project No.	CON-A-1
Location	Allentown & Suburban Divisions			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	AM - High	Secondary	N/A	Preparer		PB

Purpose of Expenditure (check all that apply)	
<input type="checkbox"/> New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	Comply with Regulatory Requirements
<input checked="" type="checkbox"/> Improved Service	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/> Study	Other (explain):

Additional Information		
Expected Useful Life (Years)	6	Comments
Approx. No. of Customers Benefitted	N/A	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
This project includes both hardware and software costs for server replacements for units older than 6 years. Project costs will be allocated based on system revenue - 2/3 City Division and 1/3 Suburban Division.

Purpose and Needs to be Met by the Project
Improved efficiencies will assist employees in becoming more productive.

Project Status - Describe what work, if any has been completed or underway for this project

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	CON-A-1
Project Name	COMPUTER SYSTEM HARDWARE & SOFTWARE UPGRADES

Estimated Project Costs :	
LCA Staff	
Land Acquisition	
Construction/Equipment	\$ 351,000
Professional Services	\$ 40,000
Other	
Contingencies	
Total Project Cost	\$ 391,000

Project Estimate Level	
	Conceptual Estimate
X	Preliminary Estimate
	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 193,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ 198,000	\$ 198,000			
1st Year	2017	\$ 34,000	\$ 34,000			
2nd Year	2018	\$ 9,000	\$ 9,000			
3rd Year	2019	\$ 20,000	\$ 20,000			
4th Year	2020	\$ 130,000	\$ 130,000			
5th Year	2021					

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**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	GEOGRAPHIC INFORMATION SYSTEM UPGRADES & APPLICATION DEVELOPMENT						
Budget Area	Administration	Department	IT	Date	7/1/2016	Project No.	CON-A-2
Location	Allentown & Suburban Divisions			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Efficiency	Secondary	N/A	Preparer		PB

Purpose of Expenditure (check all that apply)	
<input type="checkbox"/> New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	Comply with Regulatory Requirements
<input checked="" type="checkbox"/> Improved Service	Equipment/Infrastructure at End of Useful Life
<input type="checkbox"/> Study	Other (explain):

Additional Information		
Expected Useful Life (Years)	N/A	Comments
Approx. No. of Customers Benefitted	N/A	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
The mobile application was deployed in 2012 with final operational staff training in 2013 and included the development of additional mobile functionality. Applications on an as-needed basis may include integration of the PA One-Call system and fire hydrant and manhole inspection databases. Mapping of water service lines is included in the project along with expanded use of GPS attributing of assets. IT Master Planning efforts may dictate some of the application work. Project cost will be allocated based on percentage of work performed.

Purpose and Needs to be Met by the Project
The development and deployment of a mobile GIS application has provided our field personnel with valuable data at their fingertips. The new applications that will be built off of the mobile platform will allow even more data to be viewed in the field and will also allow data to be collected electronically in the field. This will eliminate the need for duplicate data entry and will assist in streamlining some existing processes. The applications developed will also easily integrate into the maintenance management system that LCA deployed in early 2015.

Project Status - Describe what work, if any has been completed or underway for this project
GPS location of buried assets is progressing.

Annual Cost Impact	
Operating - Increase/(Decrease)	N/A
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	CON-A-2
Project Name	GEOGRAPHIC INFORMATION SYSTEM UPGRADES & APPLICATION DEVELOPMENT

Estimated Project Costs :	
LCA Staff	\$ 300,000
Land Acquisition	\$ -
Construction/Equipment	\$ 75,000
Professional Services	\$ 450,000
Other	
Contingencies	\$ 75,000
Total Project Cost	\$ 900,000

Project Estimate Level	
	Conceptual Estimate
X	Preliminary Estimate
	Budget Estimate
	Definitive Estimate

Requested in this Capital Program	\$ 900,000
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Source of Funds					
	Need	Source			
		Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years	\$ 345,000	\$ 345,000			
1st Year 2017	\$ 400,000	\$ 400,000			
2nd Year 2018	\$ 300,000	\$ 300,000			
3rd Year 2019	\$ 100,000	\$ 100,000			
4th Year 2020	\$ 50,000	\$ 50,000			
5th Year 2021	\$ 50,000	\$ 50,000			

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**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	INFORMATION TECHNOLOGY MASTER PLAN UPDATE						
Budget Area	Administration	Department	IT	Date	8/5/2016	Project No.	CON-A-3
Location	Allentown & Suburban Divisions			Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Planning	Secondary	N/A	Preparer		PB

Purpose of Expenditure (check all that apply)	
<input type="checkbox"/> New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	Comply with Regulatory Requirements
<input type="checkbox"/> Improved Service	Equipment/Infrastructure at End of Useful Life
<input checked="" type="checkbox"/> Study	Other (explain):

Additional Information		
Expected Useful Life (Years)	10	Comments
Approx. No. of Customers Benefitted	N/A	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
This project provides funds for the update of the 8-year old LCA IT Master Plan (completed in early 2012) and the implementation of the recommendations cited. Additionally it includes funding to investigate and implement if applicable software to manage developer related plan review and permitting and software for to manage the back-flow prevention and FOG programs. It may also include other work deemed beneficial to LCA. Project costs will be allocated based on system revenue - 2/3 City Division and 1/3 Suburban Division.

Purpose and Needs to be Met by the Project
The update identified needs in both technology and LCA's business/organization. In addition, IT will be a strategic and significant part of LCA's transition to the future as LCA begins a major knowledge transfer to the next generation of employees.

Project Status - Describe what work, if any has been completed or underway for this project

Annual Cost Impact	
Operating - Increase/(Decrease)	TBD
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	CON-A-3
Project Name	INFORMATION TECHNOLOGY MASTER PLAN UPDATE

Estimated Project Costs :	
LCA Staff	\$ 15,000
Land Acquisition	\$ -
Construction/Equipment	
Professional Services	\$ 200,000
Other	
Contingencies	\$ 10,000
Total Project Cost	\$ 225,000

Project Estimate Level	
<input checked="" type="checkbox"/>	Conceptual Estimate
<input type="checkbox"/>	Preliminary Estimate
<input type="checkbox"/>	Budget Estimate
<input type="checkbox"/>	Definitive Estimate

Requested in this Capital Program	\$ 225,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years						
1st Year	2017	\$ 50,000	\$ 50,000			
2nd Year	2018	\$ 50,000	\$ 50,000			
3rd Year	2019	\$ 125,000	\$ 125,000			
4th Year	2020					
5th Year	2021					

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**LEHIGH COUNTY AUTHORITY
ADMINISTRATION - CAPITAL IMPROVEMENTS PLAN
PROJECT DETAIL SHEET**

Project Name	DOCUMENT MANAGEMENT						
Budget Area	Administration	Department	IT	Date	7/1/2016	Project No.	CON-A-4
Location				Prj. Type	Regular	Prj. Funding	LCA
Prj. Category	Primary	Efficiency	Secondary	N/A	Preparer		PB

Purpose of Expenditure (check all that apply)	
<input type="checkbox"/> New Facility	Correct Known or Potential Safety Issue
<input type="checkbox"/> Existing Facility - Rehabilitation/Upgrade	Equipment Obsolete
<input type="checkbox"/> Scheduled Replacement	Comply with Regulatory Requirements
<input type="checkbox"/> Improved Service	Equipment/Infrastructure at End of Useful Life
<input checked="" type="checkbox"/> Study	Other (explain): Increase Efficiencies

Additional Information		
Expected Useful Life (Years)	10	Comments
Approx. No. of Customers Benefitted	N/A	
Is this System part of a Common User Rate?	N/A	
Will the Project Require Obtaining Land Rights	No	

Detailed Project Description
This project provides for an Electronic Document Management System (EDMS) to store, search and share documents. This project does not plan for the imaging of existing paper documents. Project costs will be allocated based on system revenue - 2/3 City Division and 1/3 Suburban Division.

Purpose and Needs to be Met by the Project
Ready access to plans, reports, and past correspondence will reduce research time. Storage space, files and cabinets for maintaining hard-copy documents will be minimized or eliminated. Digital, cross-referenced documents will improve accessibility and ease workflow.

Project Status - Describe what work, if any has been completed or underway for this project

Annual Cost Impact	
Operating - Increase/(Decrease)	TBD
Debt Service	\$ -
Net	\$ -

Revenue Impact	
Gain/(Loss) in Annual Revenue	N/A
Assessment, Contribution in Aid-of-Construction	N/A
Other	

Borrowing Information	
Interest Rate	5.5000%
Term (Years)	30

Explanation if Necessary

Project No.	CON-A-4
Project Name	DOCUMENT MANAGEMENT

Estimated Project Costs :	
LCA Staff	\$ 125,000
Land Acquisition	\$ -
Construction/Equipment	\$ 30,000
Professional Services	\$ 300,000
Other	
Contingencies	\$ 25,000
Total Project Cost	\$ 480,000

Project Estimate Level	
<input checked="" type="checkbox"/>	Conceptual Estimate
<input type="checkbox"/>	Preliminary Estimate
<input type="checkbox"/>	Budget Estimate
<input type="checkbox"/>	Definitive Estimate

Requested in this Capital Program	\$ 480,000
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Source of Funds						
		Need	Source			
			Operating Revenues	Borrowing	Assessment, Contr.-in-Aid	Reserves
Prior Years		\$ -				
1st Year	2017	\$ 30,000	\$ 30,000			
2nd Year	2018	\$ 425,000	\$ 425,000			
3rd Year	2019	\$ 25,000	\$ 25,000			
4th Year	2020	\$ -				
5th Year	2021	\$ -				

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