Collecting Asset Data and Using it to Tell a Story

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SOUTHWEST ENVIRONMENTAL FINANCE CENTER

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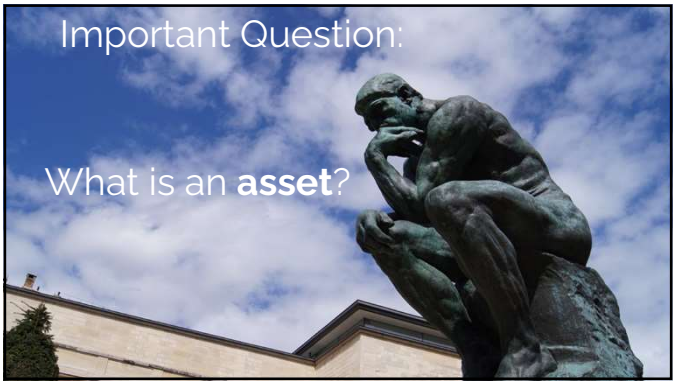

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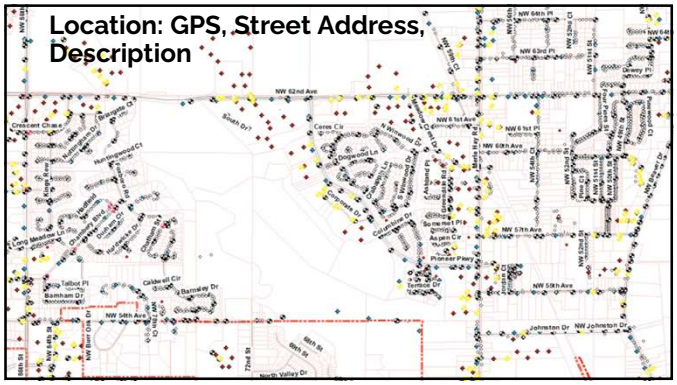

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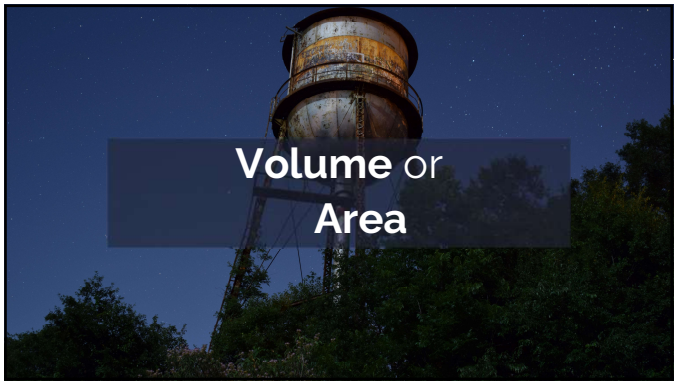

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Other Basic Data About Assets

Asset Class or Category	Sub Asset Class or Subcategory	Type	Size	Asset Ownership
Manufacturer	Model/Serial Number	Installation Date	Operational Status	Initial Cost
Energy User	Supplier	Under Warranty	Maintenance Frequency	Material of Construction
Maintenance Details	Asset function	Volume of water stored	Redundancy of Asset	Unique asset attributes

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Condition of the asset:

Excellent
Good
Average
Fair
Poor

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Condition

Defines the physical state of the asset at this moment in time.

Will help inform useful life remaining, maintenance interventions, replacements, other asset decisions

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Probability of Failure:

1 –Very Low
2 – Low
3- Moderate
4– High
5 – Very High

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Failure Modes

- MORTALITY
- LEVEL OF SERVICE
- CAPACITY
- FINANCIAL INEFFICIENY

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Consequence of Failure:

1 –Very Low
2 – Low
3- Moderate
4– High
5 – Very High

- FINANCIAL
- ENVIRONMENTAL
- SOCIAL

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Why not use age alone?

It is a poor predictor of how long an asset will last in service.

It is likely to overestimate how soon assets need to be replaced and how much money needs to be invested.

Age doesn't take into account all the other factors that go into predicting useful life: manufacturing, materials, installation, maintenance history, repair history, usage….

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Data is for everyone

Managers | Executives | Engineers

Supervisors | Operators | Field Staff

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What can we do with the data?

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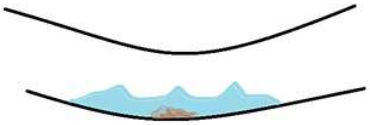
Wastewater Sag Example



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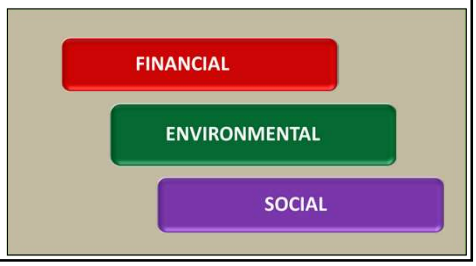
The challenges



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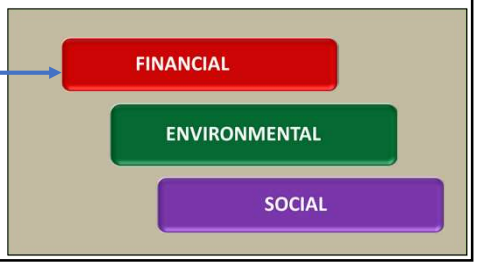
Cost of the monthly cleaning



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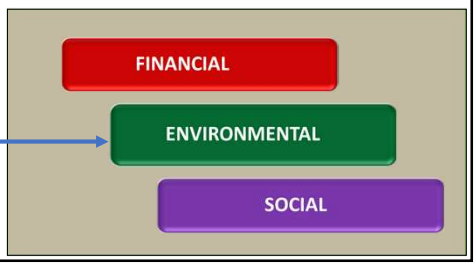
Potential overflows and potential violations at the plant



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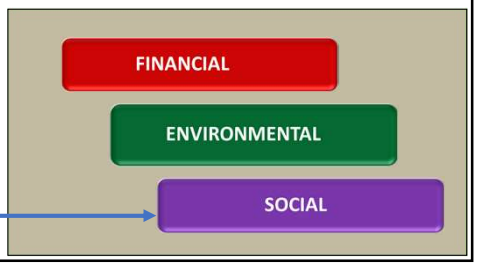
The frustration of repeating the cleanings every month and the PIA of the work



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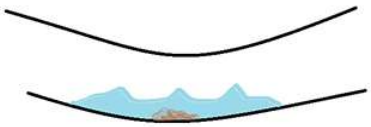
Is there anything that can be done other than monthly cleanings?



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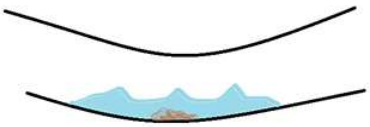
What data is necessary to make a case for a different action?



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Data related to the cleaning

- Number of Manhours
- Use of Trucks
- Cost of Trucks & Manhours
- Manhours at Plant
- Cost at Plant

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Data related to the replacement

- Length Needing Replaced
- Cost of Replacement (Full Cost)
- Years of Payback

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Costs of Cleaning

Number of Manhours Cleaning	Cost of Manhours Cleaning	Hours of Vehicles	Cost of Vehicles	Number of Manhours at Plant	Cost of Manhours Cleaning
24 hours/month	$600	12	$600	4	$100
288 hours/year	$7,200	144	$7,200	48	$1,200

Total for a year = $15,600

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Costs of Replacement

Feet of Pipe Replaced	Cost per foot	Total Cost
100	$378	$37,800

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Payback Period

Total Cost for Replacement	Costs Per Year	Number of Years for Payback
$37,800	$15,600	$2.42

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What's the best option?

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Could the case be made without the data?

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Shovel Purchases

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Purchasing bought lowest cost shovels

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Shovels broke at a high rate; some individuals hurt by the breaks

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Data showed it was cheaper to buy more expensive shovels

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Example: Change in Assets

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Solving a Problem with Data

Difficult and unpleasant job to do

Not liked by employees

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What are some of the issues:

Health & Safety (maintenance creates a new problem)

Time

Money

Hazardous waste

Difficulty

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A solution

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Triple Bottom Line

Old System and New System

Year/ Time Period	Initial Construction or Retrofit/ Rehab	O&M Cost	Difference in Cost
2000	Not Known		
2001 - 2011		$175,992	
2012	$101,079		
2013 - 2018		$738.06	
2013 – 2022 (estimated)		$1,267	Savings of $73,645.43 over an 11 year period. Savings will grow over time.
Cost/Year for Old		$20,000	
Cost/Year for New		$117	$19,883 per year of savings going forward with new system over the old system.

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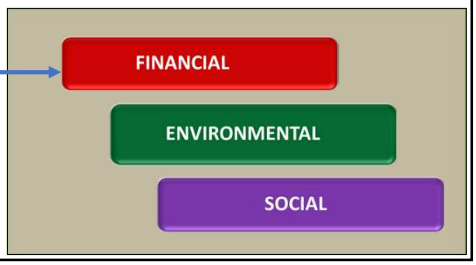
The Benefits

Cost Savings



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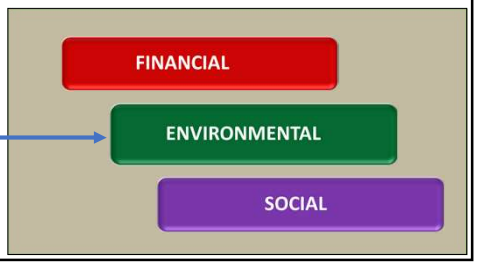
The Benefits

No hazardous waste



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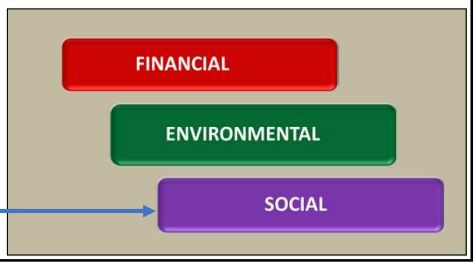
The Benefits

Elimination of terrible job for employees



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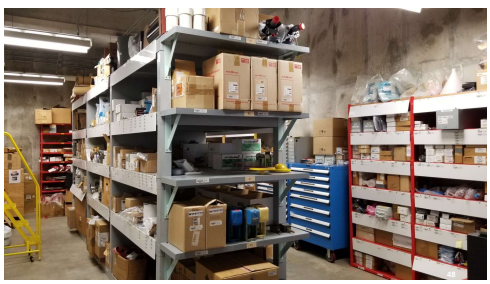
Spare Parts – How can data help?



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How can data help with spare parts?

- Which parts are needed in a short amount of time?
- What would cause the biggest problem if you didn't have it?
- What has the longest lead time?
- What is the hardest to get?
- Other?

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Using Data to Save Money: Steel Water Lines

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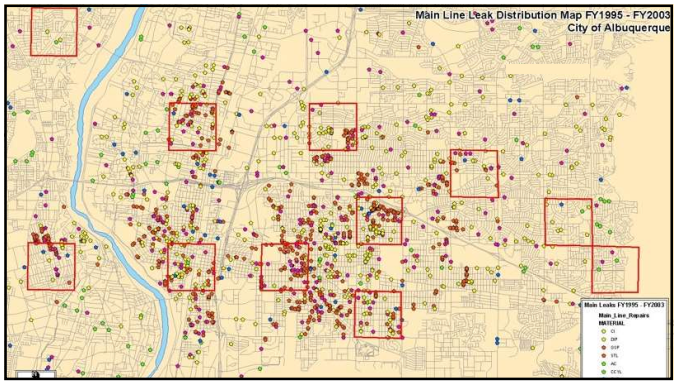

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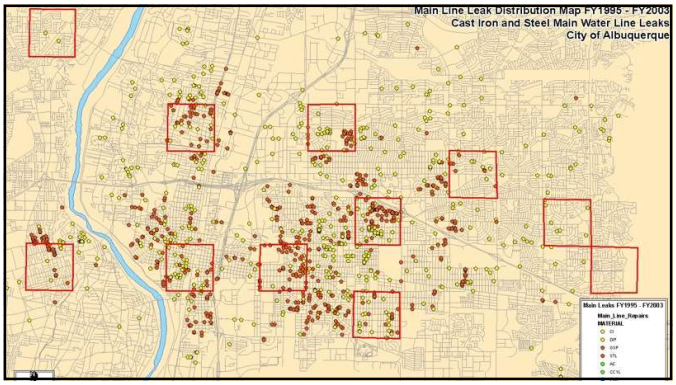

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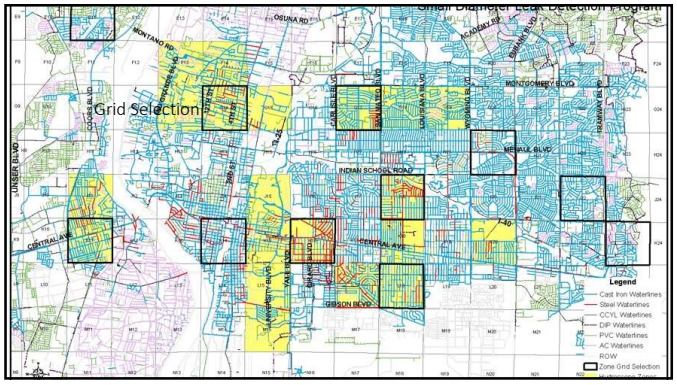

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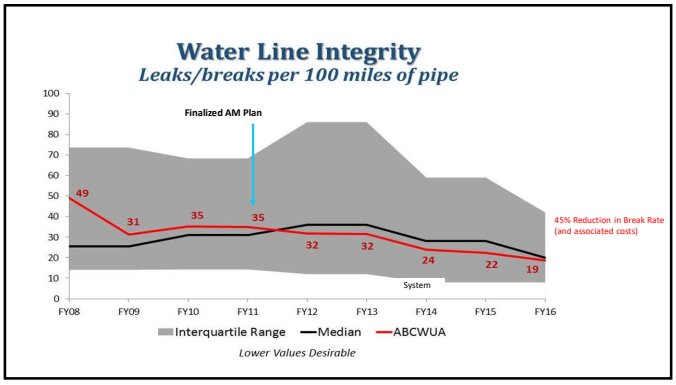

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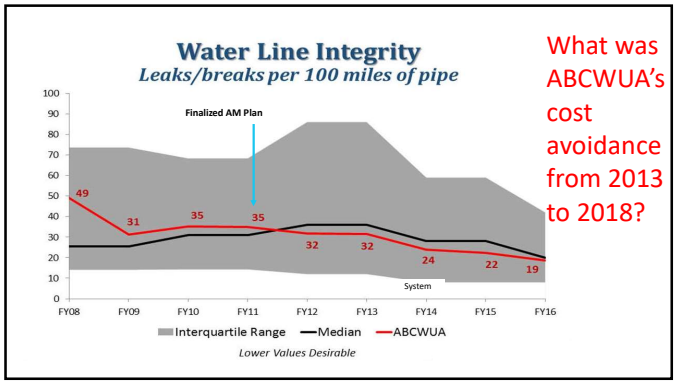

What was ABCWUA's cost avoidance from 2013 to 2018?

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Example Project:

Water Loss Control & Capital Improvement Planning

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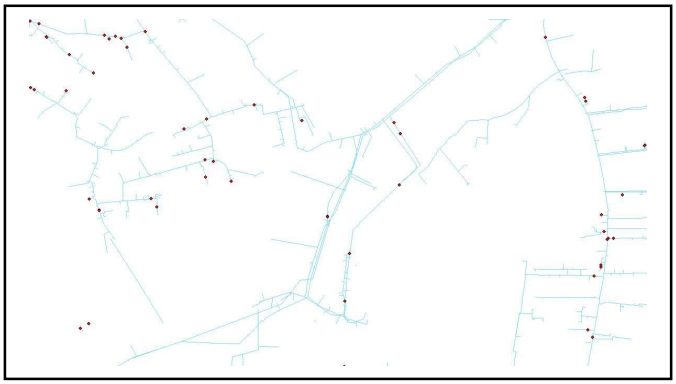

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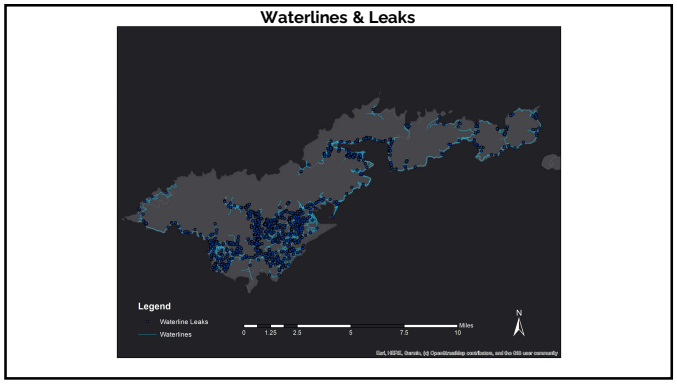

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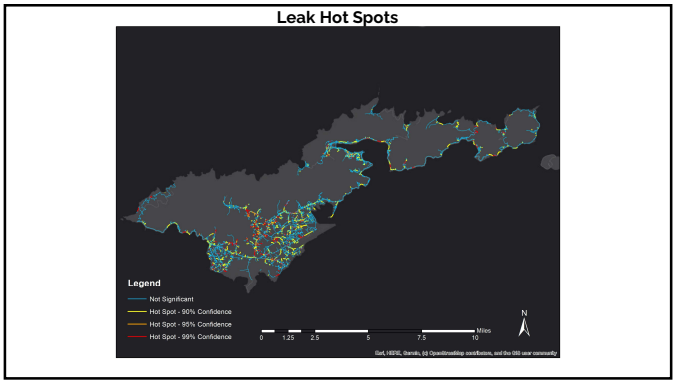

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Some questions you can answer

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What asset do you spend the most time on?

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What asset do you spend the most money on?

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What assets are potential health and safety concerns?

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Group Example

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What's a question on someone's mind?

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What data could we use to solve it?

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How could the data help?

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Data Collection Techniques

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Equipment & Software



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One option we use


fulcrum
mobile location leverage


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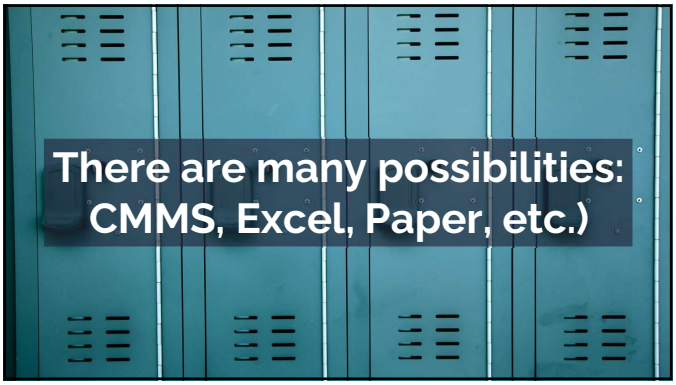

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Commercially Available Software	Generic Database Software	Spreadsheet Software	Handwritten Inventories
Specifically programmed for asset management	Must be able to program internally	Creates a list of assets	List of assets
Higher cost	Lower cost	Standard on most computers	Only useful if software is not available
Data can be searched, costs tracked, budget developed	Data can be searched, costs tracked, budget developed	Limited searching and tracking capabilities	No searching or tracking capabilities

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