GLOBAL PERSPECTIVE.
LOCAL FOCUS.




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Managing Assets with Application Layer Technology

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Presentation Overview

- Asset management
  - Physical assets
  - Information assets
- IT Architectures
- Application Layer Technology (ALT)
- Case study
- Questions

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Asset management – the context of ALT

Asset management is defined as "systematic and co-ordinated activities and practices through which an organization optimally manages its physical assets, and their associated performance, risks and expenditures over their lifecycle for the purpose of achieving its organizational strategic plan"

(PAS55, British Standard Institution (BSI) 2003)

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Asset Management

- Holistic
- Interdisciplinary
  - Business Process Designers, Economists, Accountants, Planners, Statisticians, Risk specialists, Geo-spatialists, Engineers, Information management

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Asset management decision making processes

- Making credible and defensible investment and maintenance decisions
  - Cost
  - Risk
  - Performance

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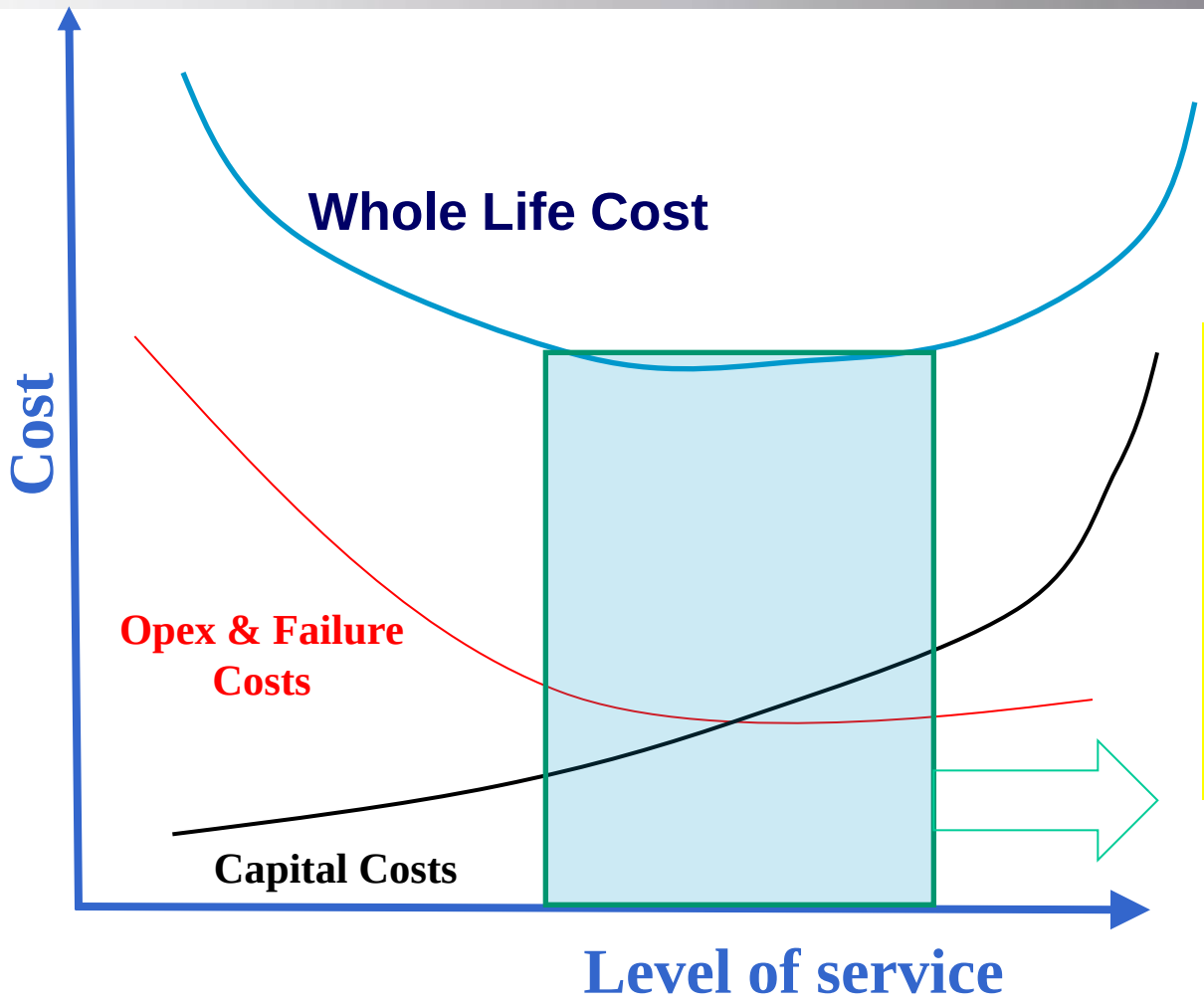
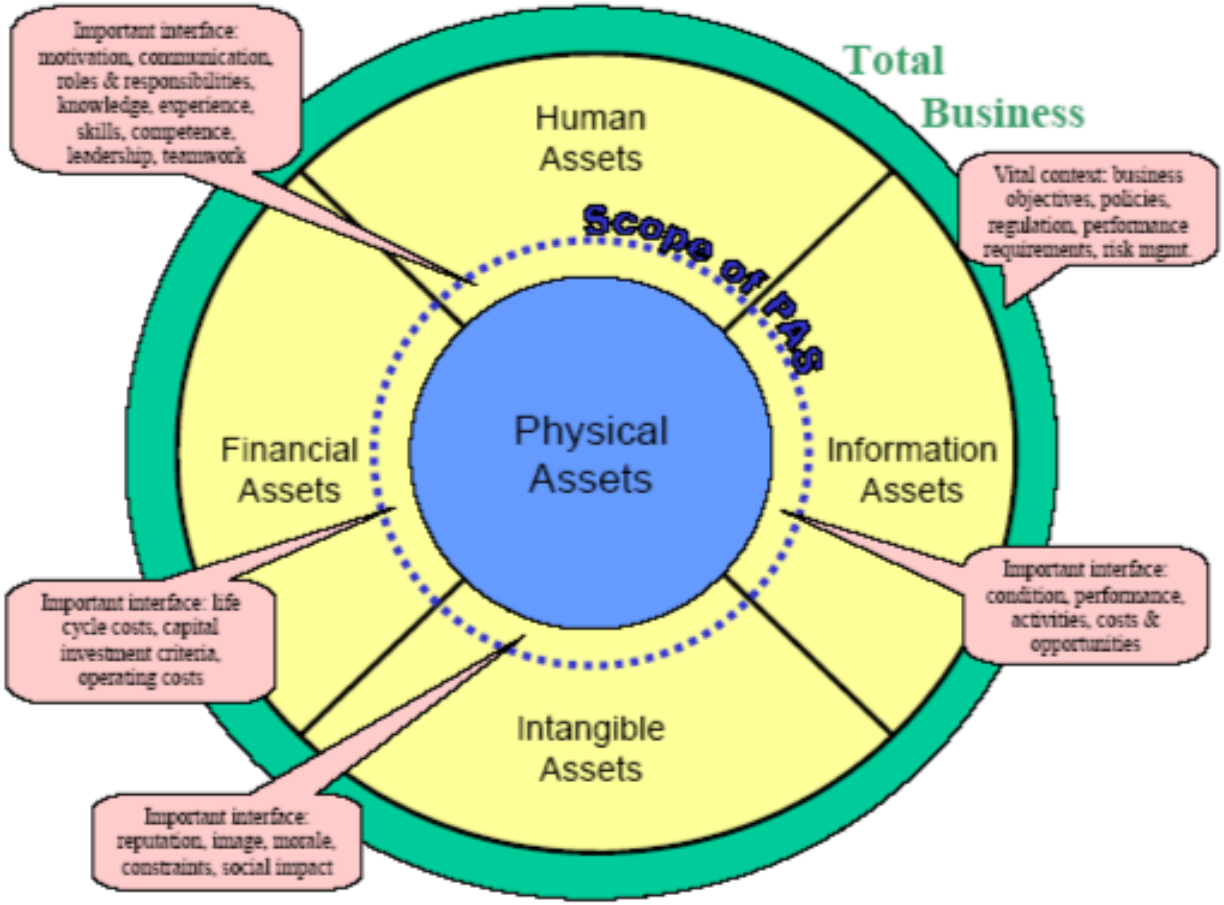
Decision making economics



Where are you now?

What level of service are you aiming for?

The Information Asset Interface



PAS 55-1: Asset Management, Part 1: Specification for the optimised management of physical infrastructure assets

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Asset management resources

- Knowledge -> Information -> Data
  - What do you need to know to make a sound investment/maintenance decision?
  - What data do we need to build knowledge?
- Data -> Information -> Knowledge
  - IT revolution

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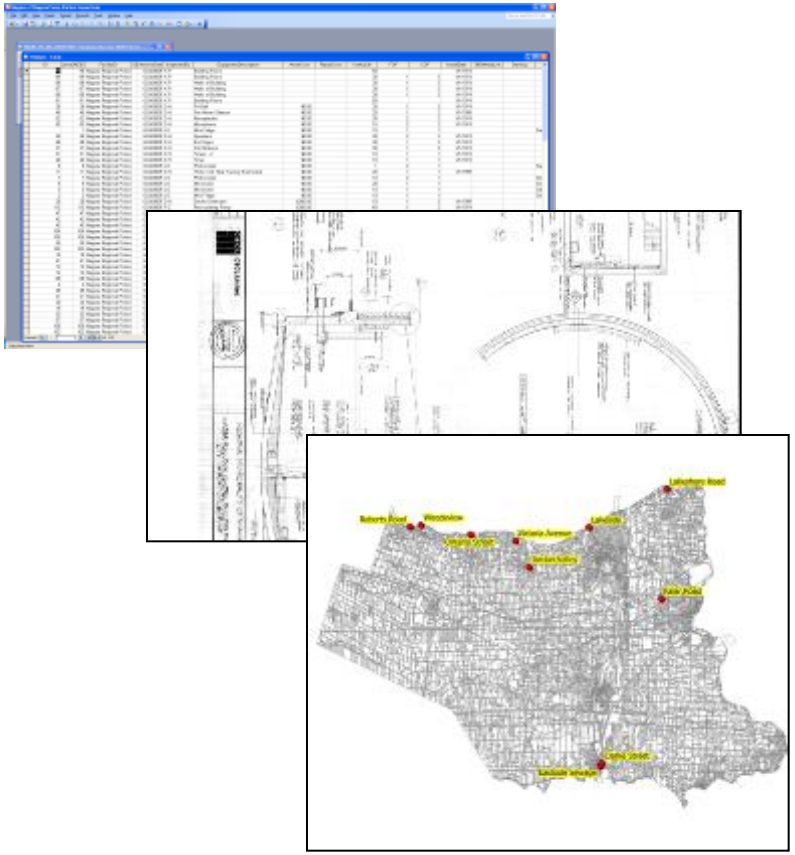
Available Information

- GA, P&ID Drawings
- Account inventory
- Maintenance management systems
- SCADA
- Location (GIS, GPS)
- Studies



System Architectures

- Enterprise Systems
  - All knowing and seeing container for everything
  - One big “bucket”
  - Pros and Cons
- Modular Best of Breed
  - Business process purpose built
  - Many “buckets”
  - Pros and Cons
- Application Layer technology

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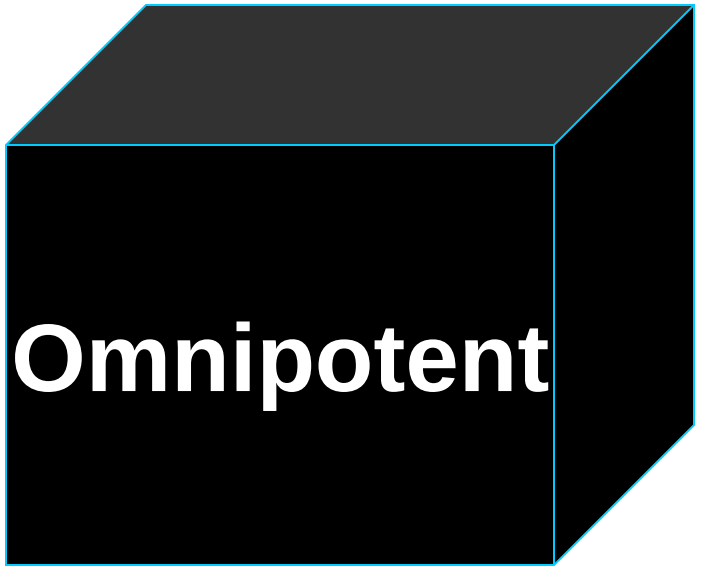
Enterprise Systems

- One big black box combining
  - MMWS
  - Inventory
  - Drawings /
  - Media
  - Everything else
- Does everything but **nothing particularly well**
- Reporting is limited to **vendor priorities**
- Doesn't play well with others **unless you pay**



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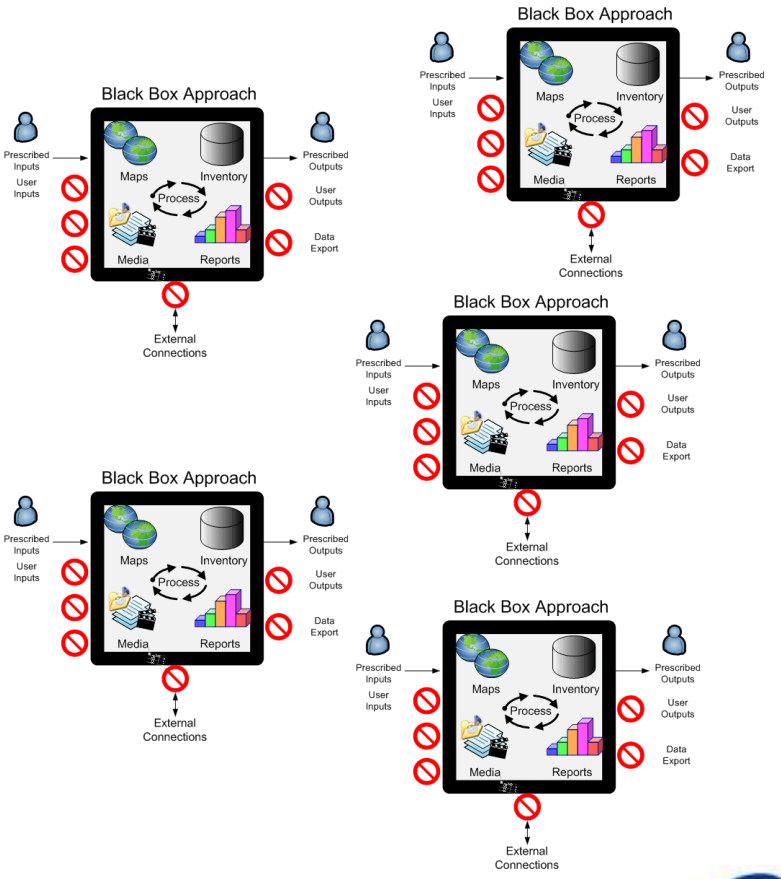
Business process purpose built

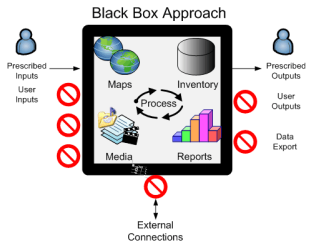
- WTP Data Sources
  - Water Quality Management
  - Maintenance / Work Order Management
  - Drawing Management
  - Asset Inventory
- No cohesive view – many “buckets”
- **Great performance on individual processes**
- No information flow between systems !



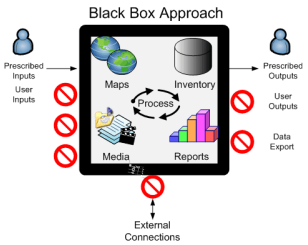
Application Layer Technology

Decision Making

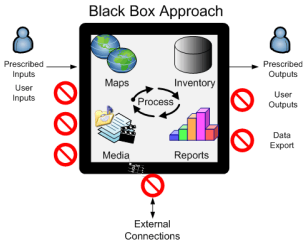
Application Layer Engine



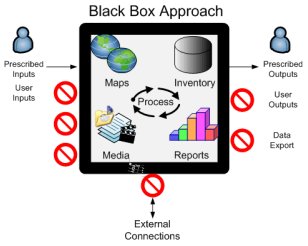
Drawings



Studies



Financial



Inventory

Example:
Capital Planning

CapitalPlan

Open Start Page

Show Completed Projects

Refresh

Fiscal Year

ProjectID	Title	PreRisk	PostRisk	Benefit	Cost/Benefit Ratio	Cost	Allocated Total	2011	2012	2013	2014
1	Parkland Heating...	4.00	0.32	3.68	2717.39	$10,000.00	$151.00	50.00			
2	Digester Gas Sys...	3.00	0.12	2.88	69444.44	$200,000.00	$0.00				
4	Digester Ferment...	2.00	0.16	1.84	3804.35	$7,000.00	$0.00				
5	Digester Ferment...	2.00	0.16	1.84	3804.35	$7,000.00	$0.00				
6	Digester Ferment...	2.00	0.16	1.84	815.22	$1,500.00	$0.00				
7	Utilities Boiler #1 ...	1.98	0.12	1.86	96774.19	$180,000.00	$200.00				
8	Flare System	1.98	0.24	1.74	229885.06	$400,000.00	$0.00				
9	Headworks Scre...	1.98	0.24	1.74	28735.63	$50,000.00	$0.00				
10	Headworks Influe...	1.98	0.24	1.74	86206.90	$150,000.00	$999.00				
11	Ft. Sask. River Cr...	1.32	0.24	1.08	4629.63	$5,000.00	$0.00				
12	UV Building Efflu...	1.98	0.24	1.74	19310.34	$33,600.00	$0.00				
13	Parkland Sewag...	1.98	0.16	1.82	32967.03	$60,000.00	$0.00				
14	Morinville Sewag...	1.32	0.00	1.32	15151.52	$20,000.00	$0.00				
15	Headworks Scre...	1.32	0.32	1.00	20000.00	$20,000.00	$0.00				
16	Headworks Influe...	1.32	0.32	1.00	150000.00	$150,000.00	$0.00				
17	Parkland Service...	1.32	0.16	1.16	6034.48	$7,000.00	$0.00				
18	Digester Gas Co...	1.32	0.32	1.00	5000.00	$5,000.00	$0.00				
18	Digester Gas Co...	0.16	0.32	-0.16	no benefit	$5,000.00	$0.00				
18	Digester Gas Co...	0.20	0.32	-0.12	no benefit	$5,000.00	$0.00				
19	Grit Tank #1 Grit ...	1.32	0.16	1.16	8620.69	$10,000.00	$0.00				

Submit

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Example:
WSA-MAIS Northern Saskatchewan

- Comprised three interrelated components
- Addressed
  - PSAB 3150 compliance
  - Waterworks System Assessment (WSA) of water and sewer systems
  - Implementing a provincial Municipal Asset Information System (MAIS).
- 8 submissions
- AE Team awarded $1.1 million project

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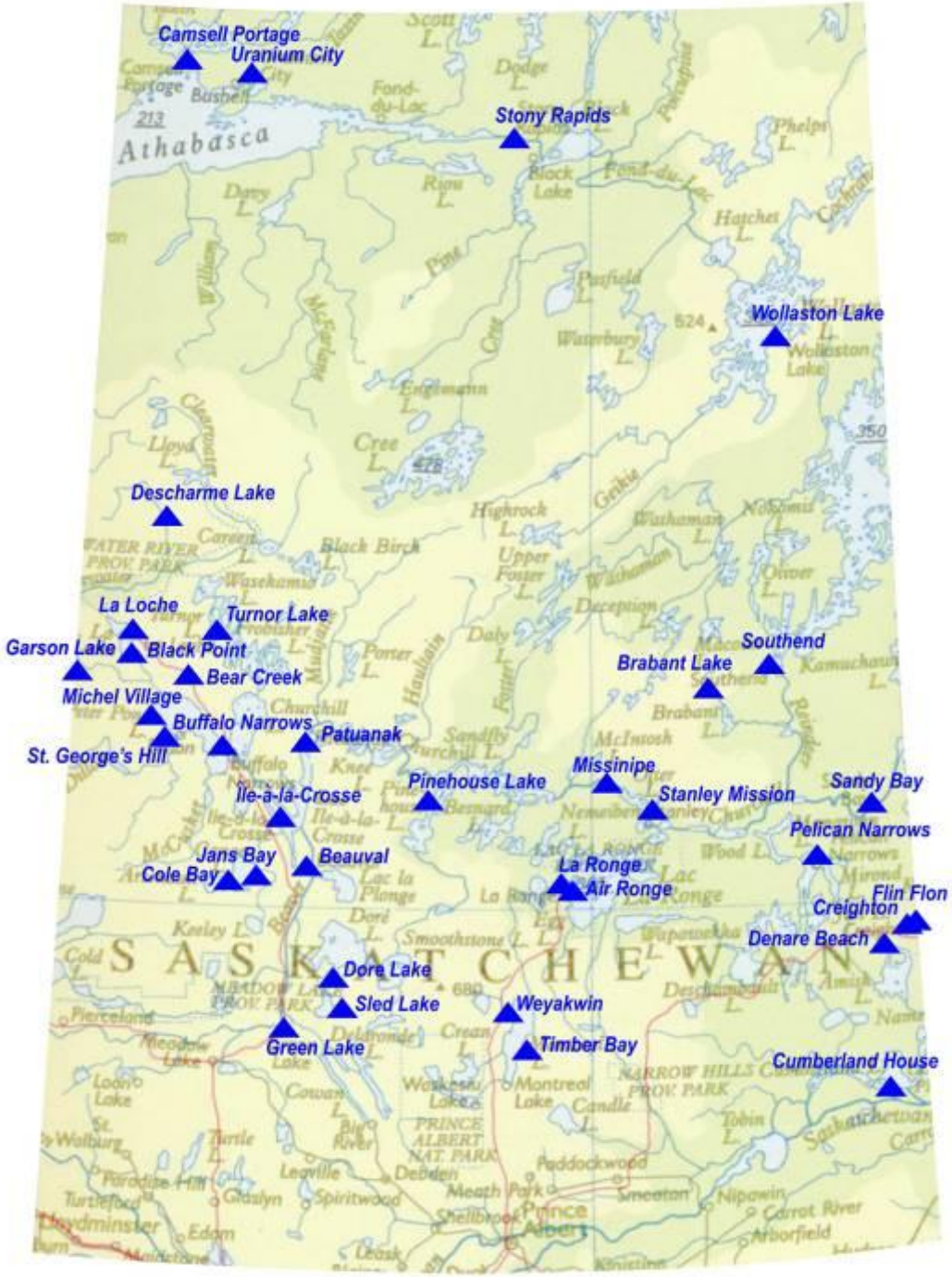
The Northern Municipalities



- Included:
  - 1 city
  - 2 towns
  - 11 northern villages
  - 12 northern hamlets
  - 10 northern settlements
- Administered by the provincial government

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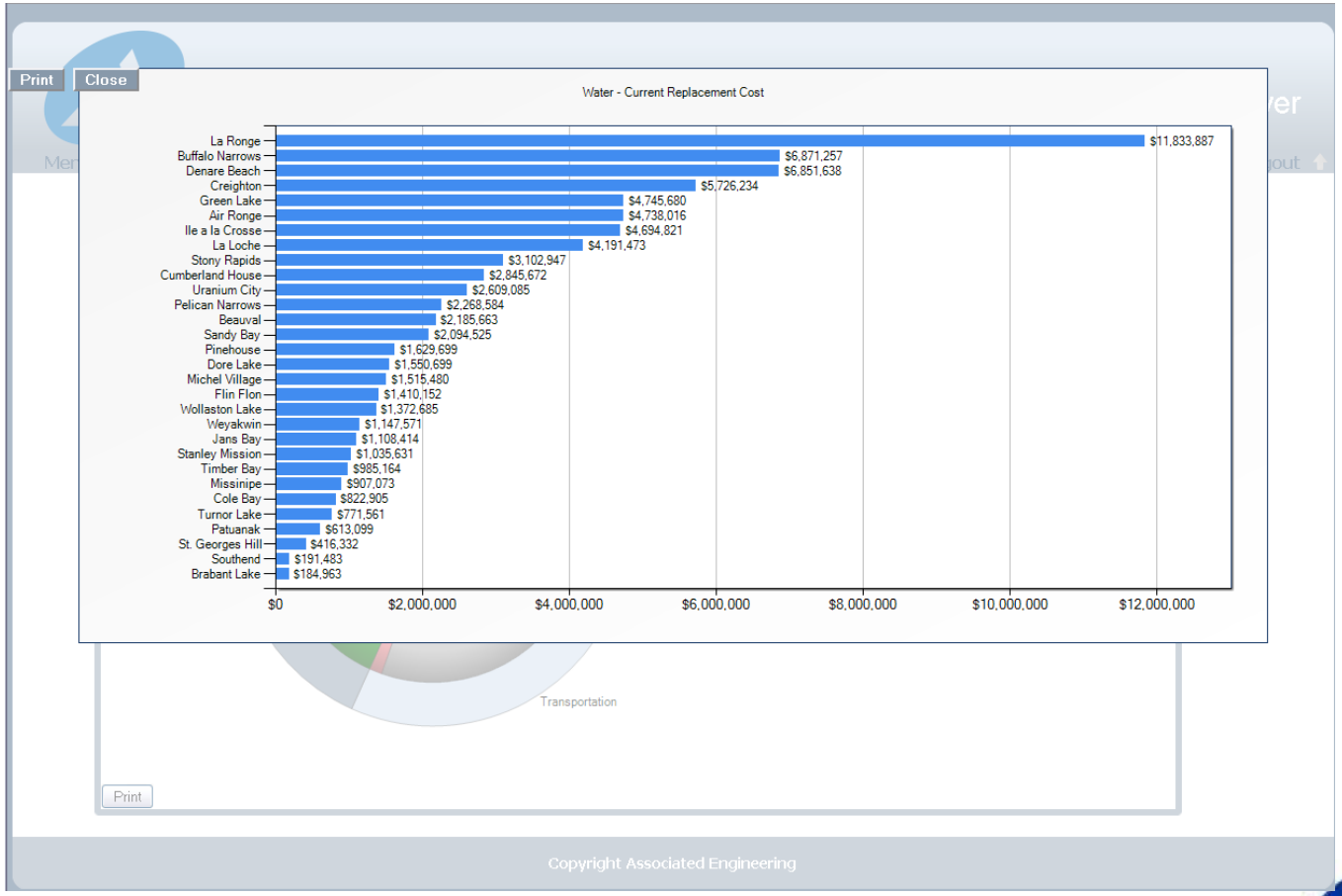
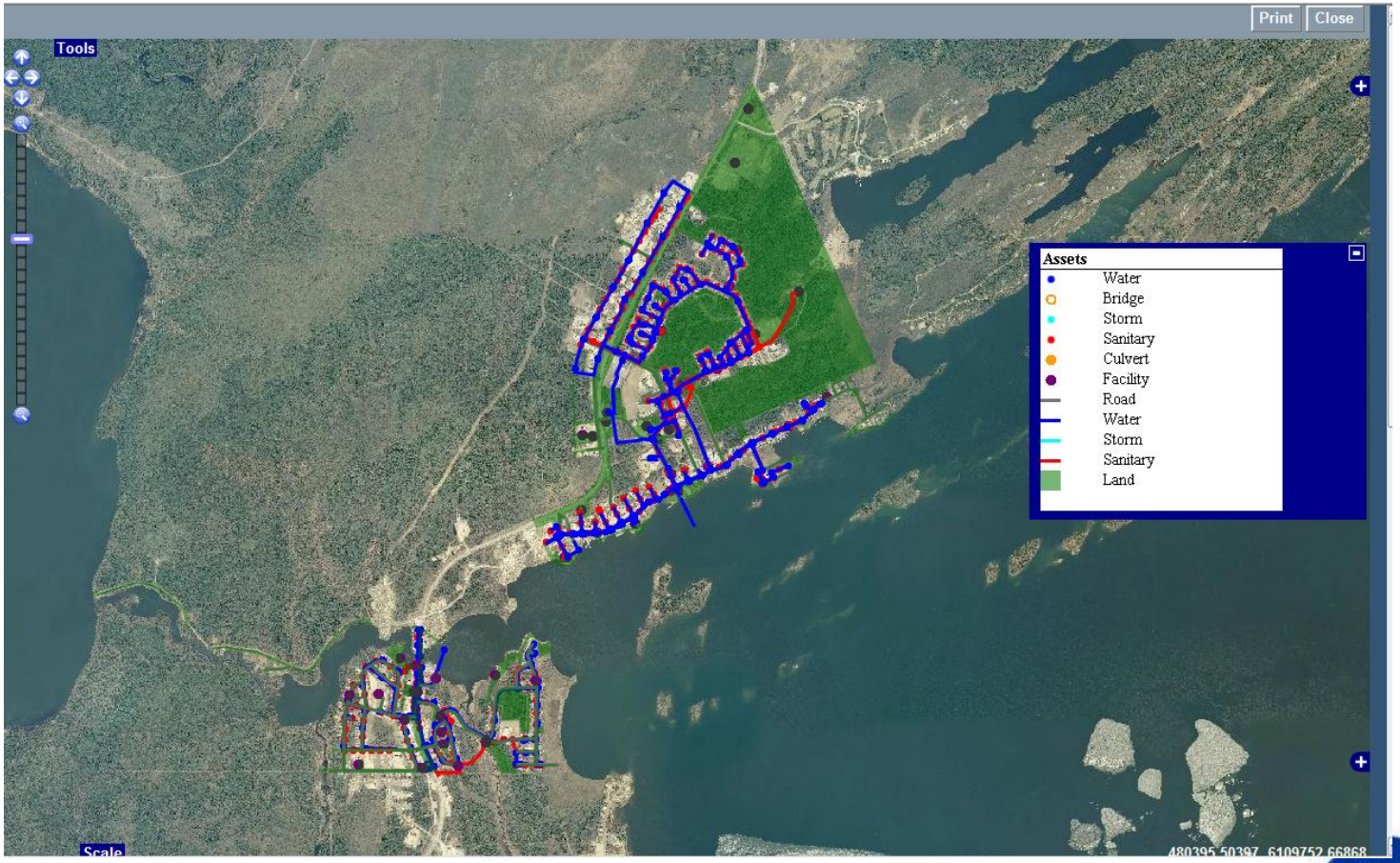
Community overview



Geo-referenced



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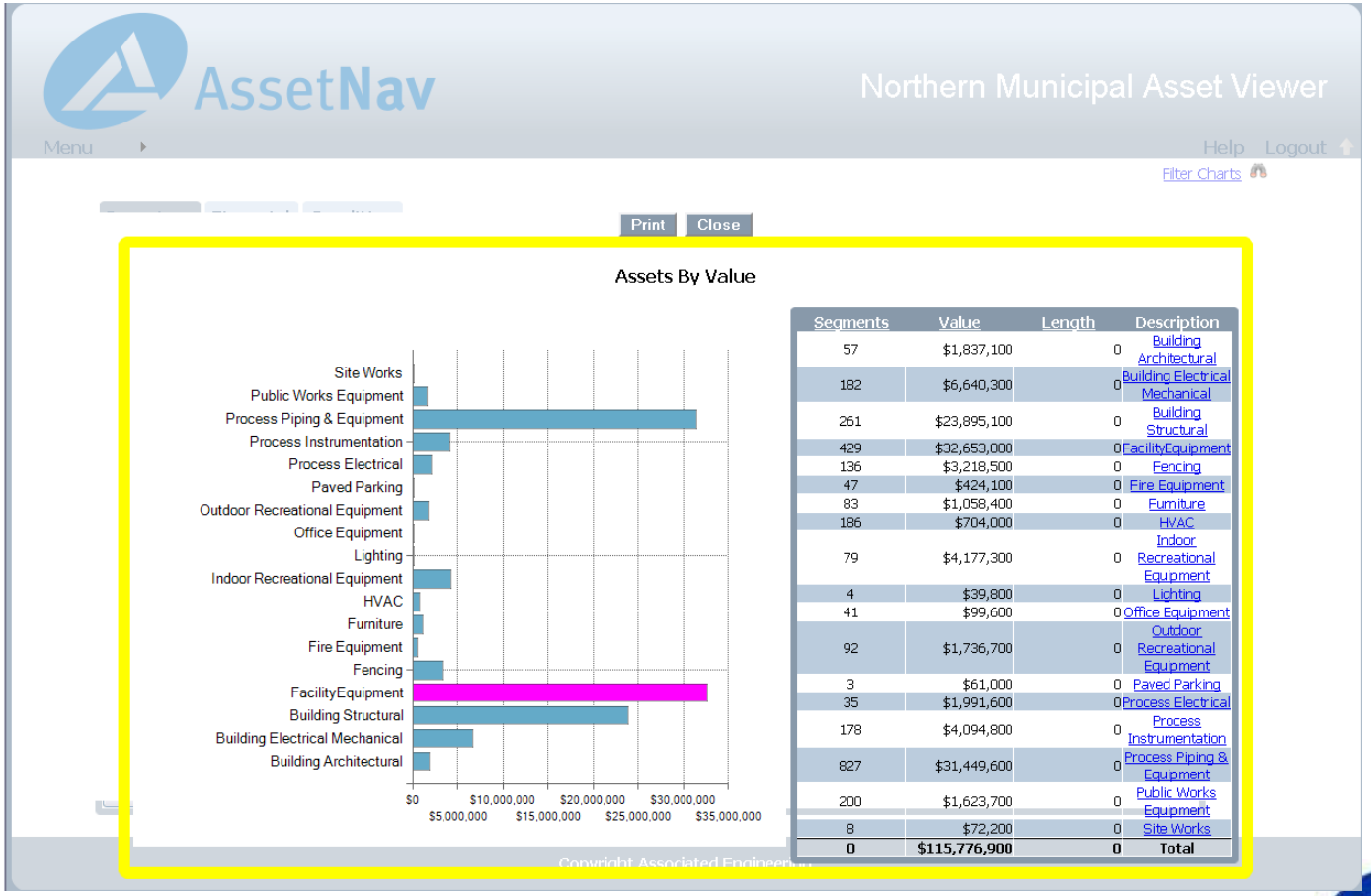
Asset overview



Segments	Value	Length	Description
57	$1,837,100	0	Building Architectural
182	$6,640,300	0	Building Electrical Mechanical
261	$23,895,100	0	Building Structural
429	$32,653,000	0	FacilityEquipment
136	$3,218,500	0	Fencing
47	$424,100	0	Fire Equipment
83	$1,058,400	0	Furniture
186	$704,000	0	HVAC
79	$4,177,300	0	Indoor Recreational Equipment
4	$39,800	0	Lighting
41	$99,600	0	Office Equipment
92	$1,736,700	0	Outdoor Recreational Equipment
3	$61,000	0	Paved Parking
35	$1,991,600	0	Process Electrical
178	$4,094,800	0	Process Instrumentation
827	$31,449,600	0	Process Piping & Equipment
200	$1,623,700	0	Public Works Equipment
8	$72,200	0	Site Works
0	**$115,776,900**	**0**	**Total**

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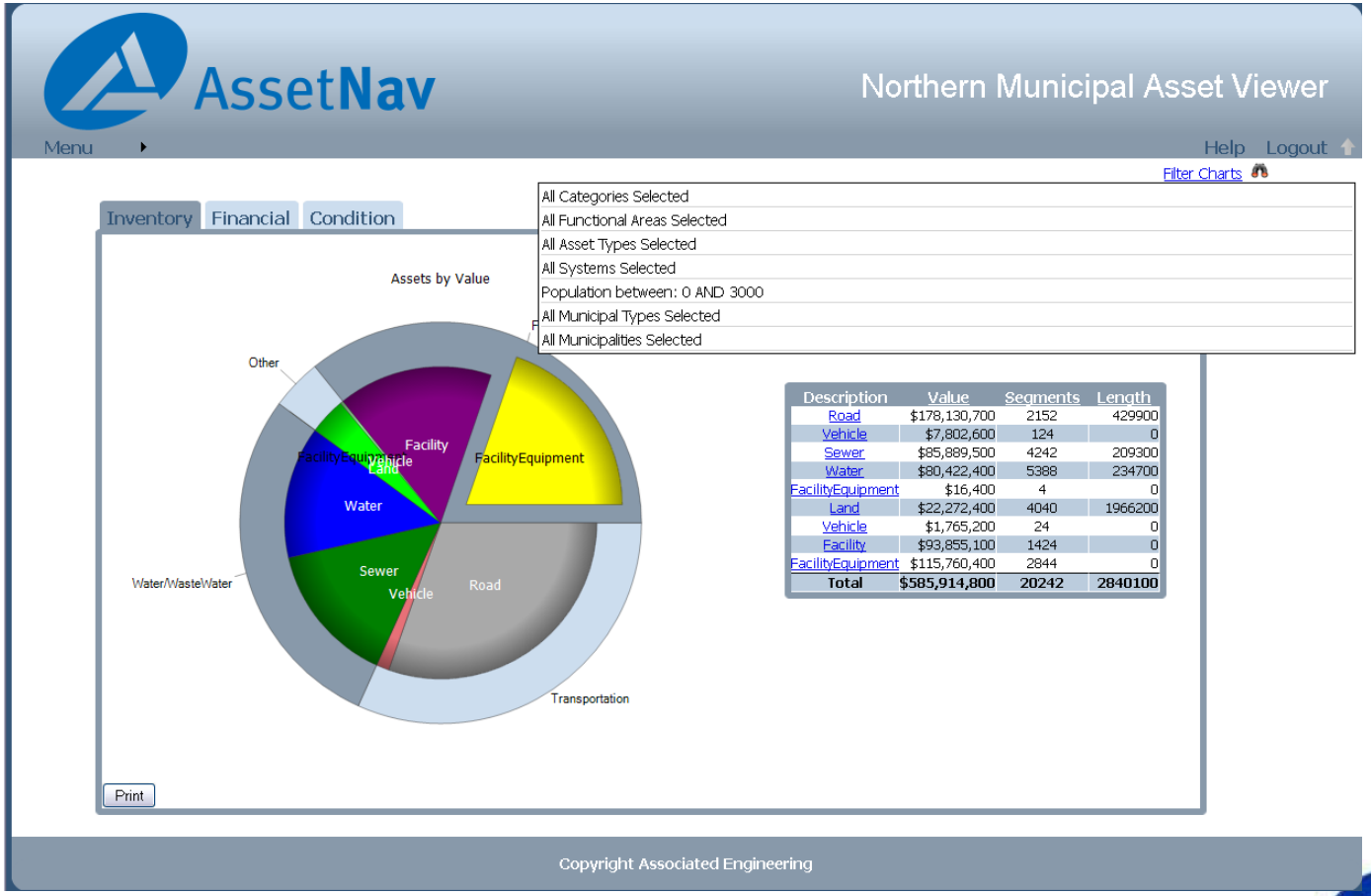
Inventory, Financial, Condition



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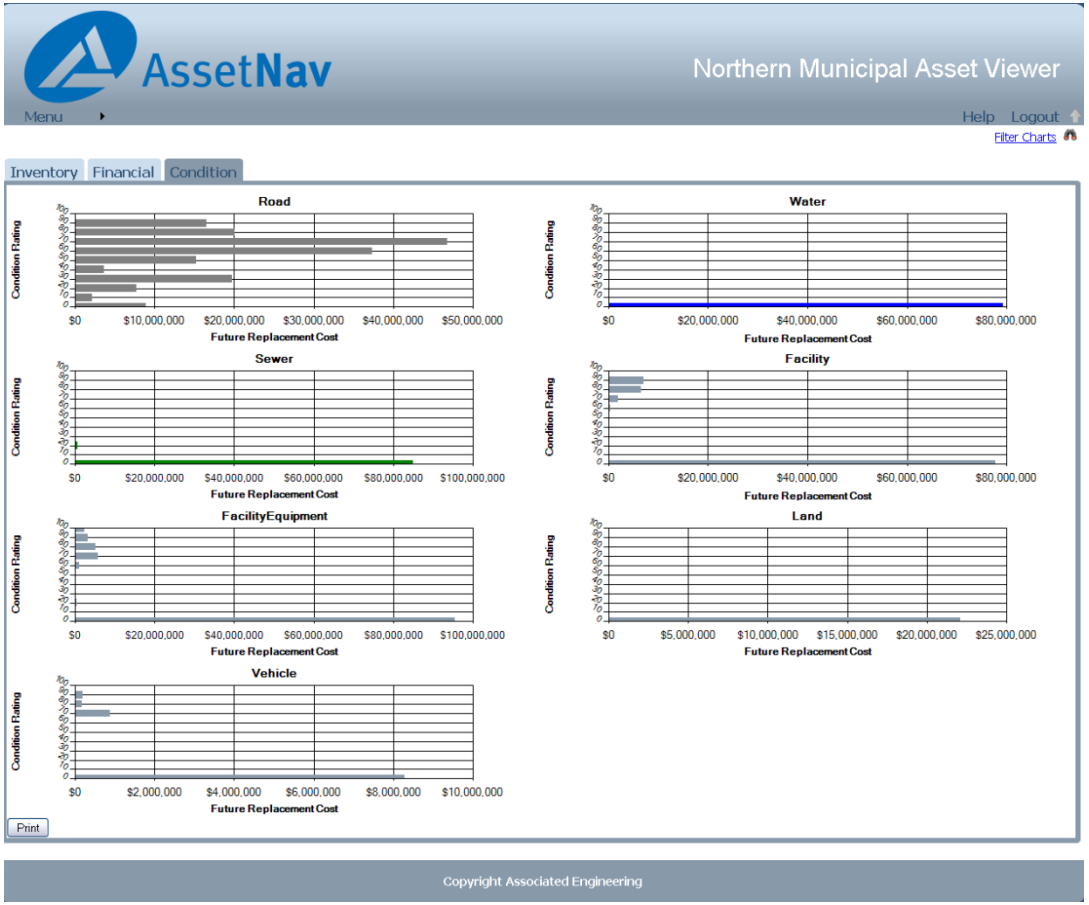
Condition assessment



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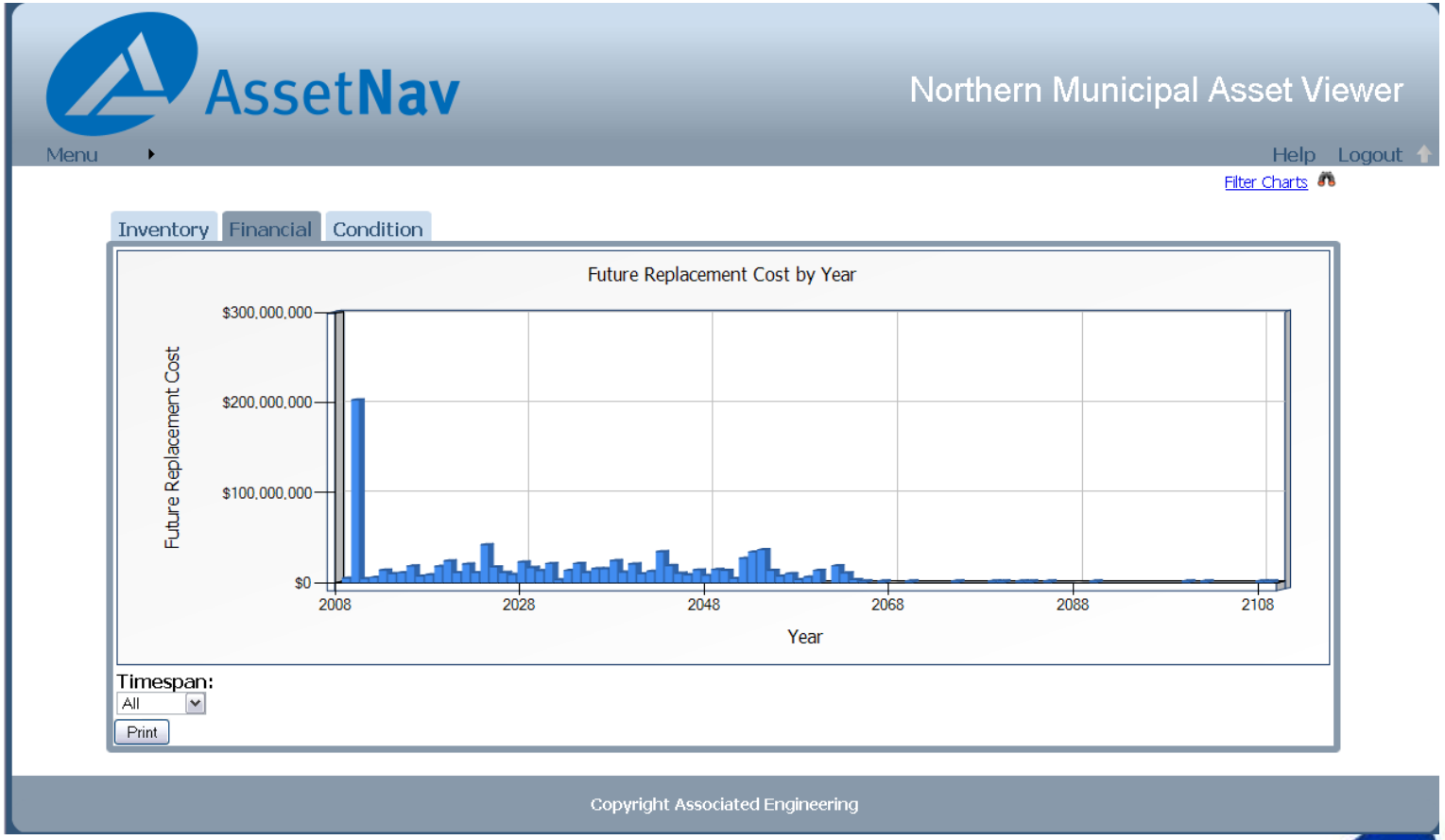
Financial forecasting



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Summary & conclusion

- Application Layer Technology is an efficient resource for obtaining decision making relevant information in the asset management context
- Needs-based investment and maintenance planning
- It enables the integration of expert software systems to make credible and defensible investment and maintenance decisions

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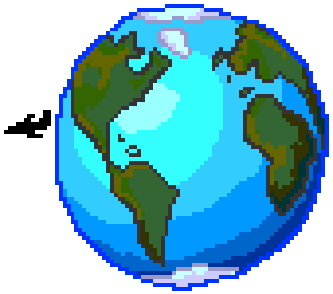
Questions



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