

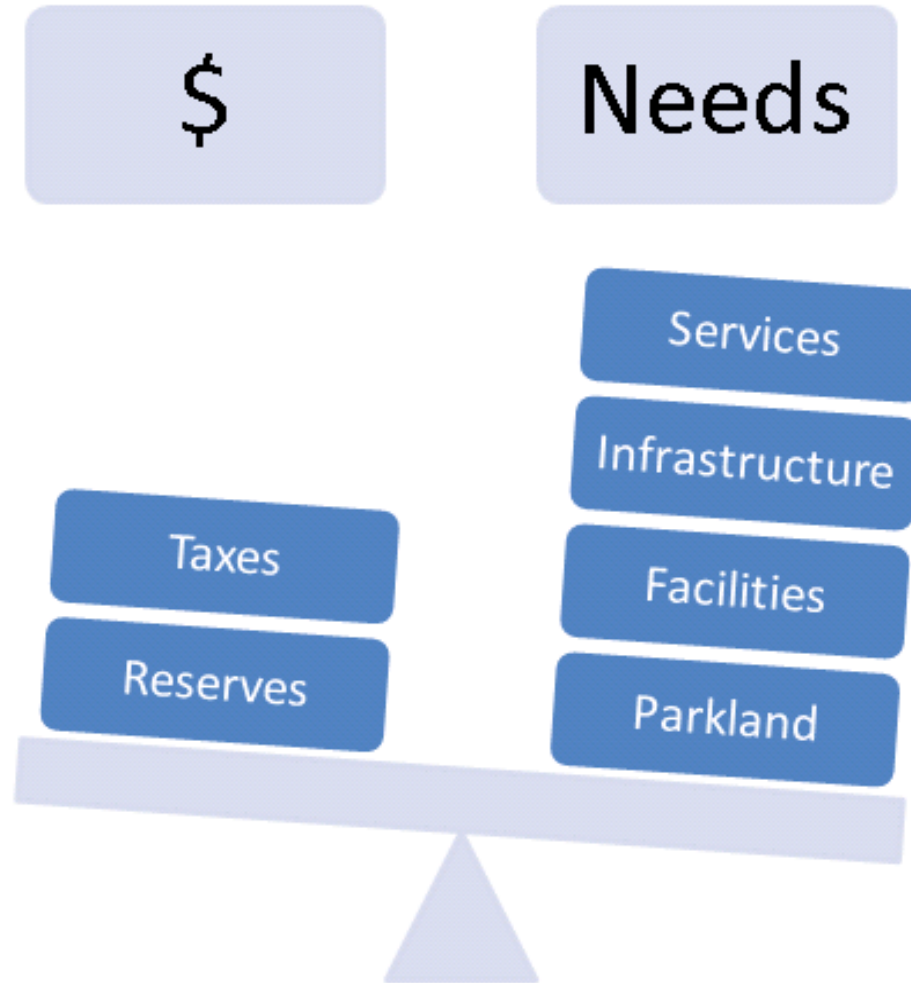


NORTH VANCOUVER  
DISTRICT

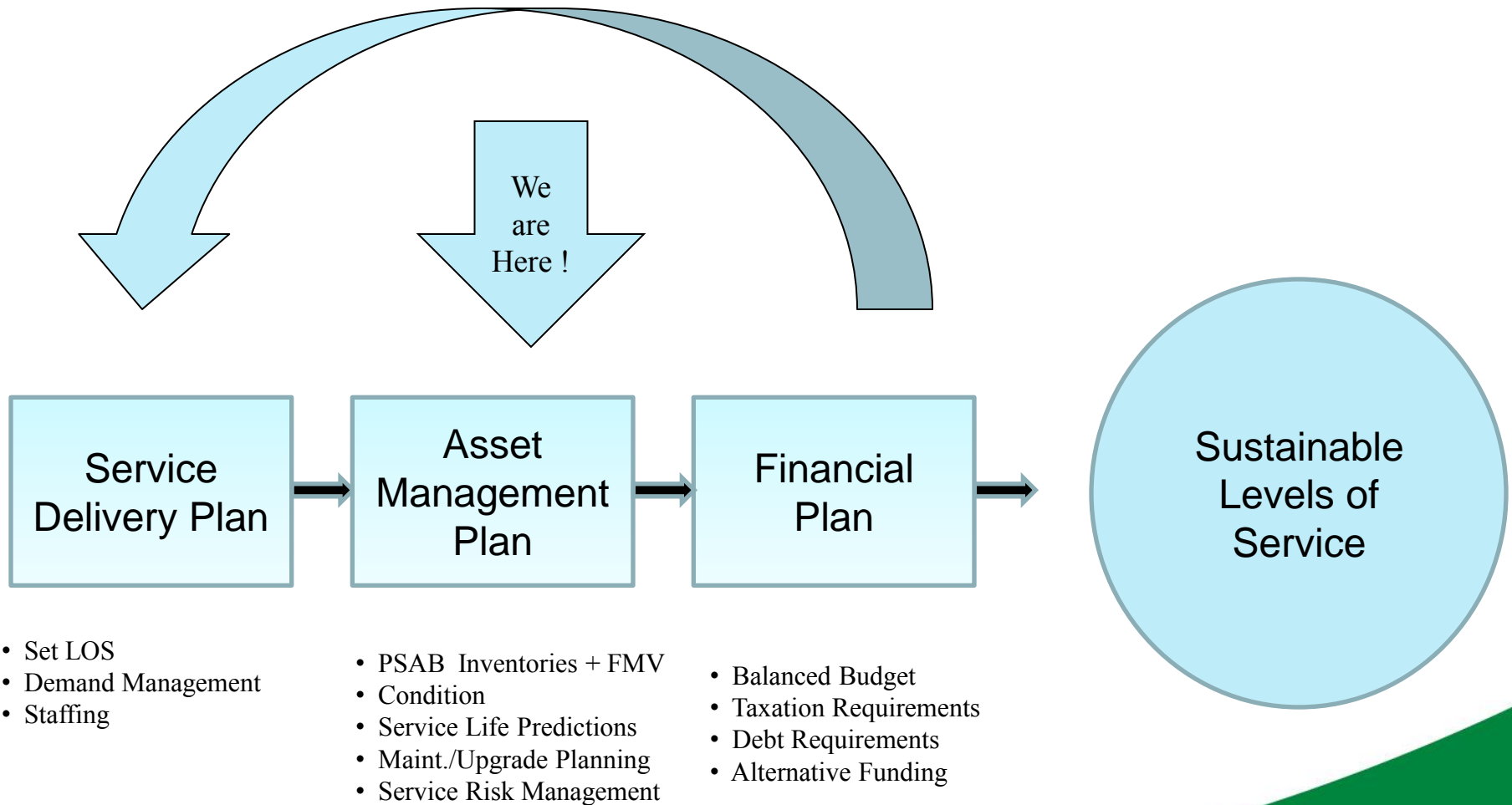
# **Building on PSAB 3150: Assessment of Tangible Capital Assets**

Best Practices for Assessing Your Assets

# A Balancing Act?



# Alignment (Service, Assets, Funding)



# Alignment ??? (Service, Assets, Funding)

- Balanced Budget
- Taxation Requirements
- Debt Requirements
- Alternative Funding

Financial  
Plan

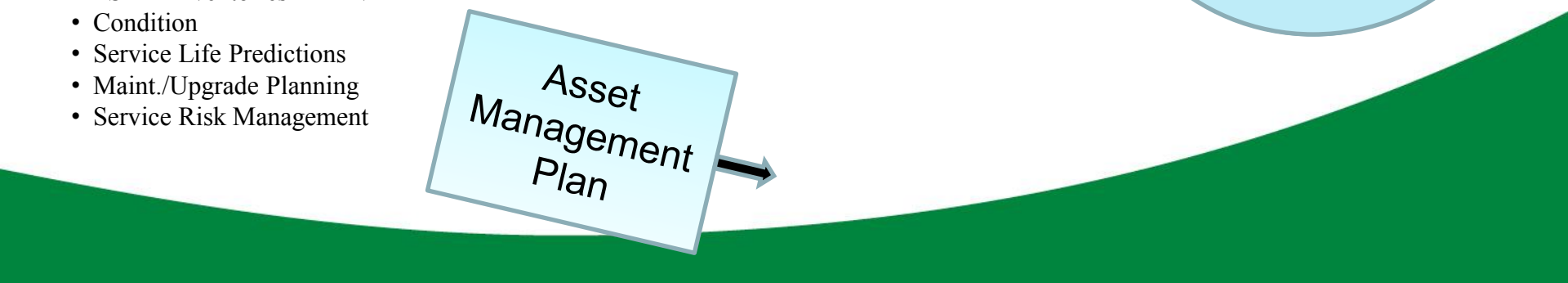
- Set LOS
- Demand Management
- Staffing

Service  
Delivery Plan

- PSAB Inventories + FMV
- Condition
- Service Life Predictions
- Maint./Upgrade Planning
- Service Risk Management

Asset  
Management  
Plan

Infrastructure  
Gap



# Systems Thinking...

## Who's Job is That?

- Asset Management as an organization wide behaviour <sup>1</sup> requires:
  - an open mind
  - a desire to learn and
  - acceptance of a shared responsibility

# Systems Thinking

- Working together, helping each other fulfill AM stewardship responsibilities:
  - Builds
    1. organizational capacity,
    2. organizational knowledge,
    3. relationships
  - Breaks down the silos and
  - Eliminates “systems blindness <sup>1</sup>”.

# Overcoming Systems Blindness

- AM Steering Committee – Vision - a full AM framework...
  - PSAB - just the beginning
  - First 6 months - Team Building and learning about each other = Group Trust
  - Measuring to Learn versus Measuring to Report

# PSAB in AM

Long term

**Asset Management Framework Project**

2 years

**PSAB to go live**

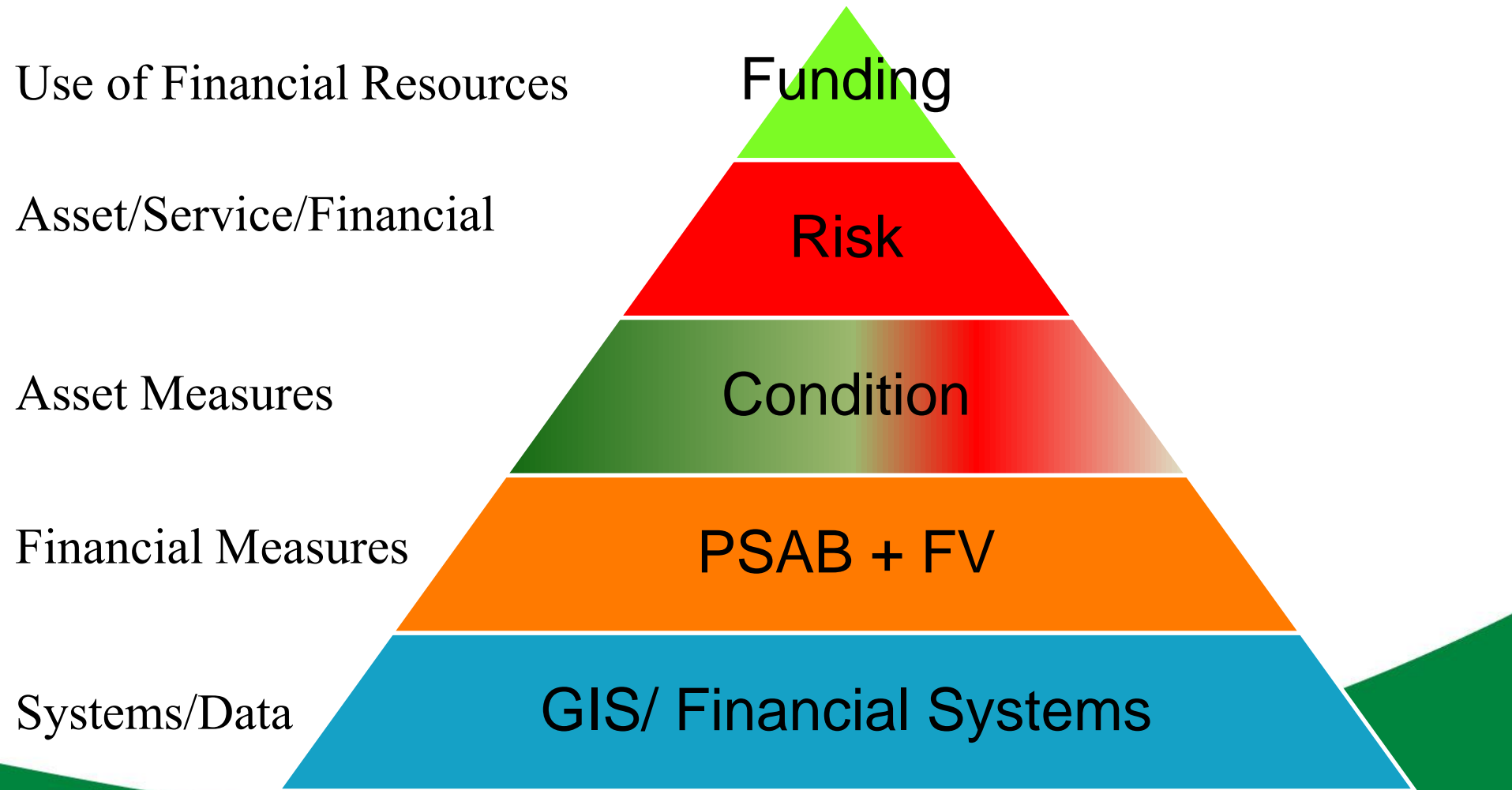


At the end of 2 years the PSAB sub-project needs to:

1. fulfill PSAB requirements
2. align with the larger AMF project
3. Be capable of measuring assets in a manner that supports and is supported by other systems



# PSAB in an Asset Management System



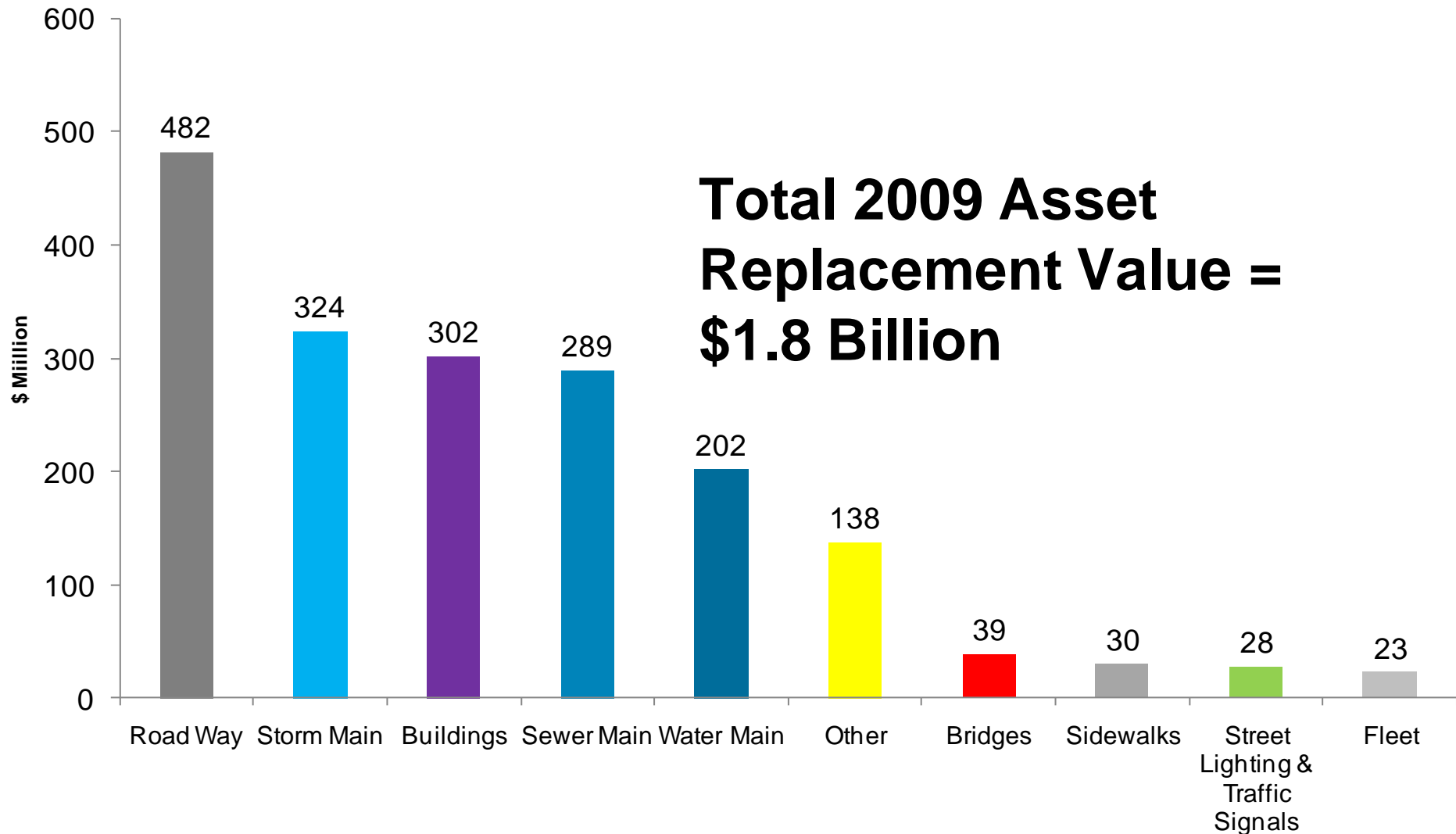
# 2009 Depreciable Asset Base

## Depreciable Assets (in millions)

In millions

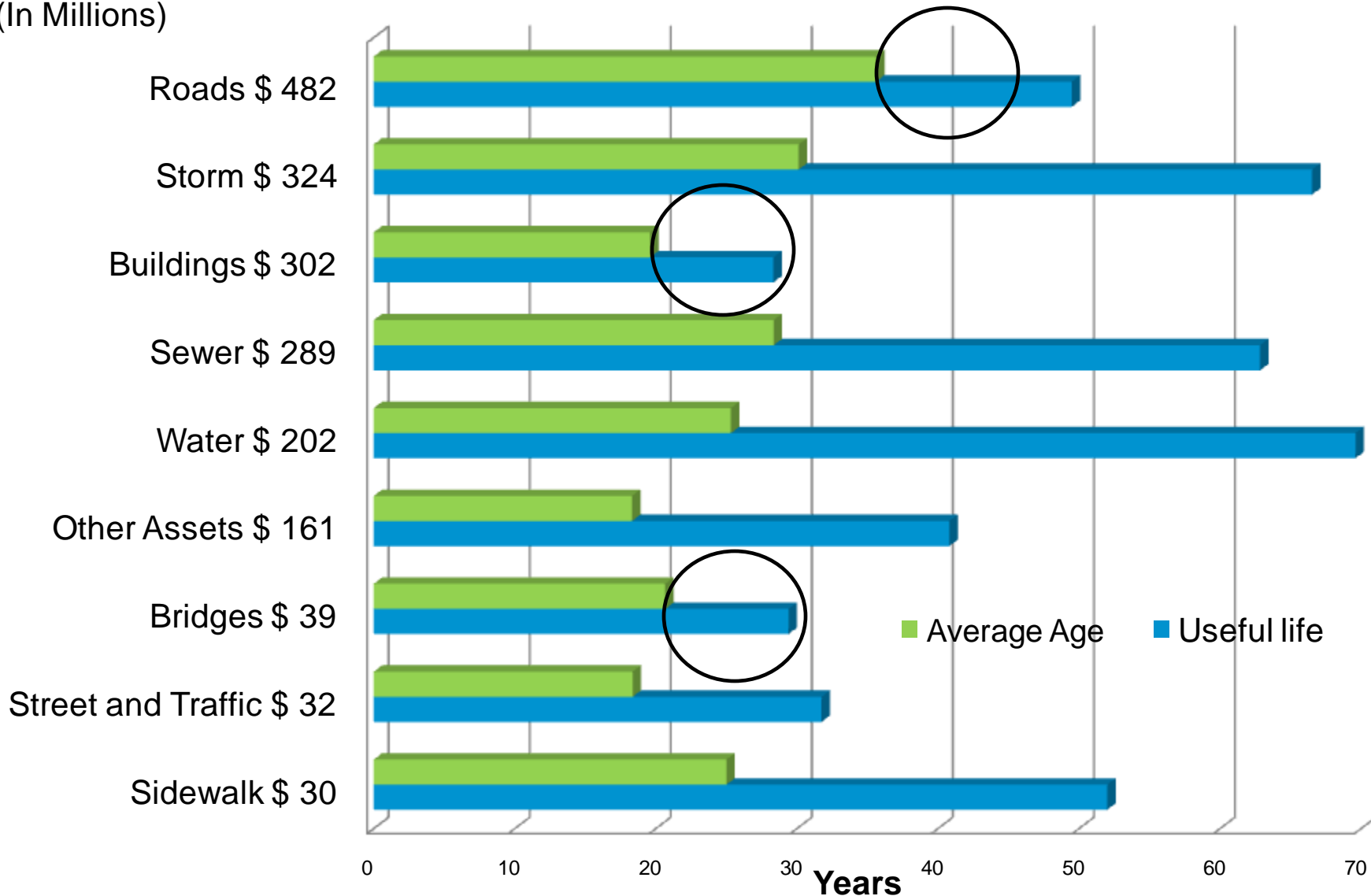
In millions						Roads, Bridges, Culverts, Networks	Fleet and Other Assets					
		Land	Impr.	Buildings	Utilities			Totals				
<u>Historical</u>												
Historical Cost	\$	57	\$	126	\$	225	\$	158	\$	28	\$	594
Acc Depn		27		44		62		84		14		231
Net Book Value		30		82		163		74		14		363
% Life Consumed		47%		35%		27%		53%		50%		39%
Annual Depreciation		2		3		3		4		3		14
<u>Fair Value</u>												
Replacement Cost		116		275		779		623		44		1,837
FV Life Consumed		54		97		214		333		22		719
Annual FV Depreciation		3		8		9		12		3		35

# Cities are Infrastructure Intensive



# Our Infrastructure is Ageing

(In Millions)



# Annual Funding Gap Unadjusted

In millions

## 2009 Asset Base

Consumption Based Replacement Cost

**Average  
Annual**

**15 yrs**

**\$ 35**

**\$ 525**



## Draft Long Term Funding Plan (PSAB model)

less: Not due for replacement next 15 years

(11)

(165)

DNV Current Asset Funding

(13)

(195)

Unadjusted Gap DNV Funding only

**12**

**180**

less: Other Funding Sources

(2)

(30)

Unadjusted Gap - Existing Assets Only

**\$ 10**

**\$ 150**

1% Tax Levy for Capital = 13 to 15 years to build \$10m

# PSAB Inventories Support Asset Management Plans

- Solid, standard, repeatable physical count of all assets ... subject to annual audit
- PSAB inventory measures align with other systems
- Removes the debate on how deep you need to go to define “what is an asset” = (mutual trust)
- Helps answer 3 of the 7 Questions:
  - ✓ An inventory (what and where?)
  - ✓ Valuation (replacement or fair value easily applied)
  - ✓ Age (how old is it?)

# Standardized Condition Rating System

- A robust predictor of:
  - asset failure,
  - replacement strategies and
  - timed funding requirements

# Standardized Rating System

- Transparency
  - All stakeholders
  - Builds shared knowledge
  - Can drill down to individual assets
- Conversion
  - From specialized measures
- Improves
  - Upon PSAB and facilitates changes to PSAB = alignment



# Standardized Rating Measures

- Physical
- Demand/Capacity
- Functionality

DNV model based on City of Edmonton

# Physical Condition

Very Good	A	The sub-element/asset is physically sound and is performing its function as originally intended. Required maintenance costs are well within standards and norms. Typically, sub-element/asset is new or recently rehabilitated.
Good	B	The sub-element/asset is physically sound and is performing its function as originally intended. Required maintenance costs are within acceptable standards and norms but are increasing. Typically, sub-element/asset has been used for sometime but is within mid-stage of its expected life.
Fair	C	The sub-element/asset is showing signs of deterioration and is performing at a lower level than originally intended. Some components of the sub-element/asset are becoming physically deficient. Required maintenance costs exceed acceptable standards and norms but are increasing. Typically, sub-element/asset has been used for a long time and is within the later stage of its expected life.
Poor	D	The sub-element/asset is showing significant signs of deterioration and is performing to a much lower level than originally intended. A major portion of the sub-element/asset is physically deficient. Required maintenance costs significantly exceed acceptable standards and norms. Typically, sub-element/asset is approaching the end of its expected life.
Very Poor	F	The sub-element/asset is physically unsound and/or not performing as originally intended. Sub-element/asset has higher probability of failure or failure is imminent. Maintenance costs are unacceptable and rehabilitation is not cost effective. Replacement/major refurbishment is required.

# Demand/Capacity

Very Good	A	Demand corresponds well with design capacity and no operational problems experienced.
Good	B	Demand is within design capacity and occasional operational problems experienced.
Fair	C	Demand is approaching design capacity and/or operational problems occur frequently.
Poor	D	Demand exceeds design capacity and/or significant operational problems are evident.
Very Poor	F	Demand exceeds design capacity and/or operational problems are serious and ongoing.

# Functionality

Very Good	A	The sub-element/asset meets all program/service delivery needs in a fully efficient and effective manner.
Good	B	The sub-element/asset meets program/service delivery needs in an acceptable manner.
Fair	C	The sub-element/asset meets most program/service delivery needs and some inefficiencies and ineffectiveness present.
Poor	D	The sub-element/asset has a limited ability to meet program/service delivery needs.
Very Poor	F	The sub-element/asset is critically deficient and does not meet program/service delivery and is neither efficient nor effective.

# Building Condition 2010

Replacement Value

\$ 263,232,609

Primary Quantity

125

Secondary Quantity

0

Primary Measure

EA

Secondary Measure

0

Average Remaining Life

18.2

Expected Asset Life

38.5

## Assessment Classification

### Physical Condition

A	12%
B	23%
C	41%
D	20%
F	3%
<b>Total</b>	<b>100%</b>

\$ 53m  
\$ 8.3m

### Demand/Capacity (Level of Service)

A	72%
B	17%
C	7%
D	4%
F	0%
<b>Total</b>	<b>100%</b>

### Functionality (code requirement)

A	21%
B	49%
C	28%
D	2%
F	0%
<b>Total</b>	<b>100%</b>

# Buildings - 2010 Condition

**\$263,232,609**

Quantity:

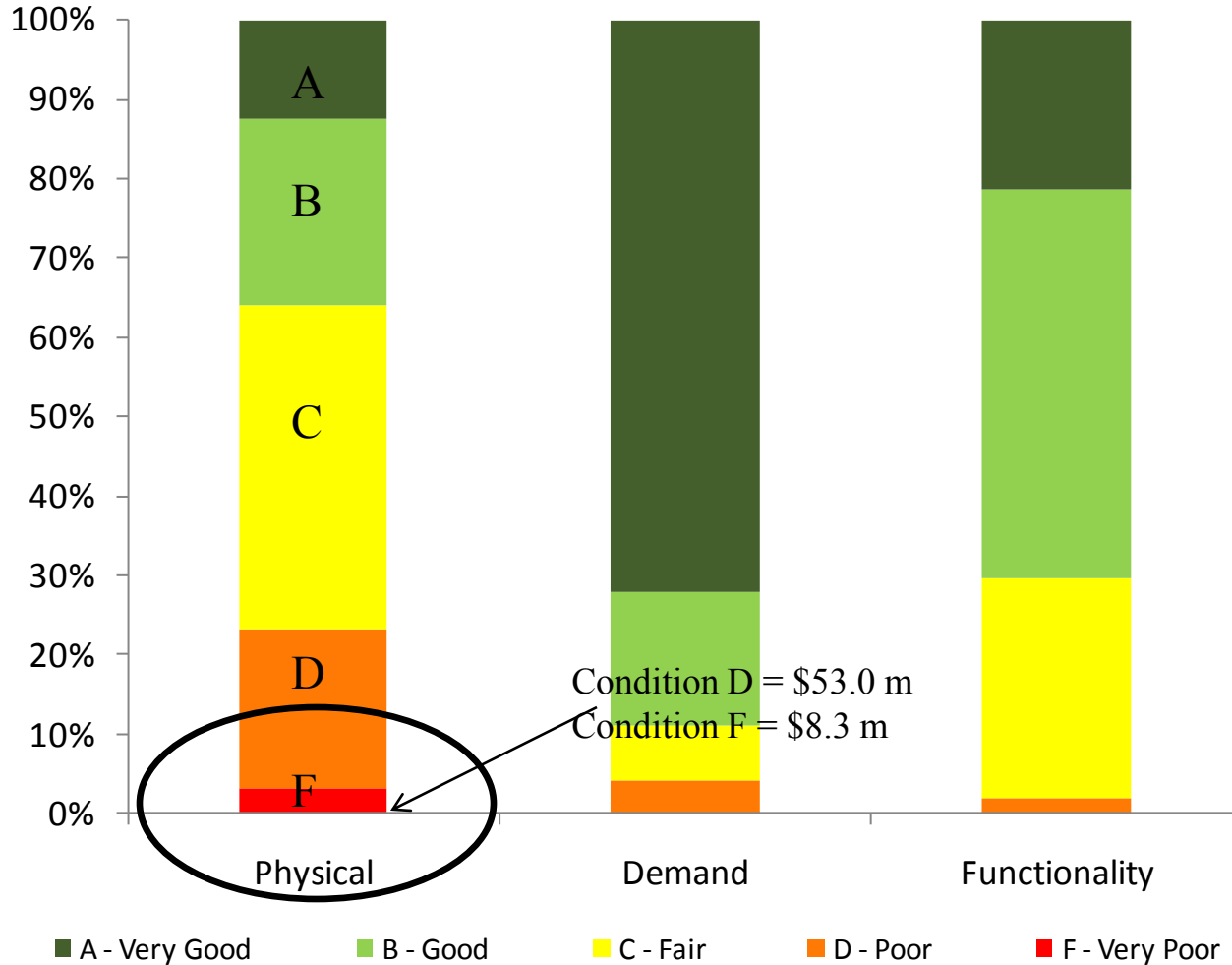
125 EA

Expected life:

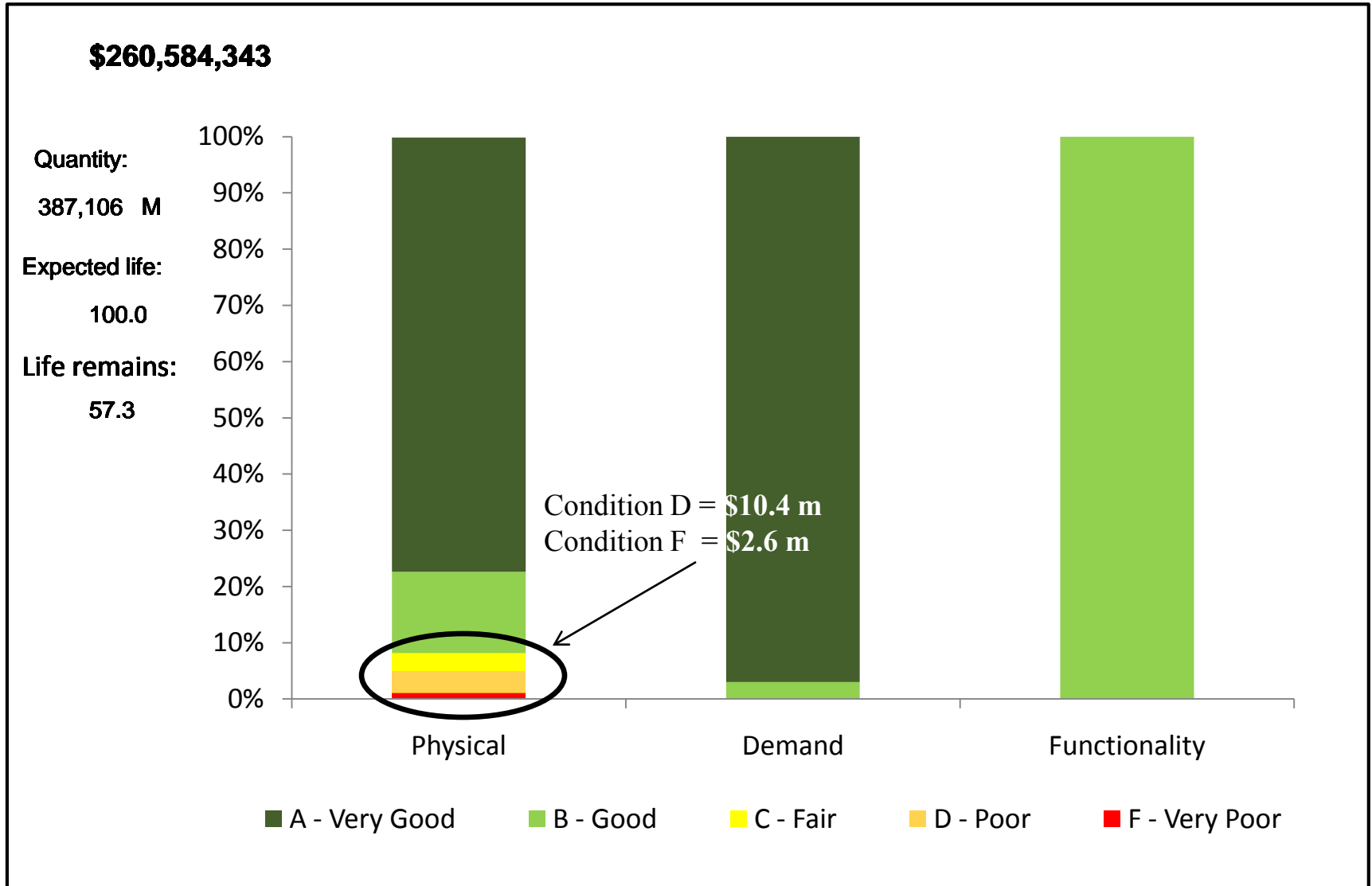
38.5

Life remains:

18.2



# Sewer Linear 2010 Condition



# Pavement - 2010 Condition

**\$111,573,798** (excludes Road Base of approx. \$370 million)

Quantity:

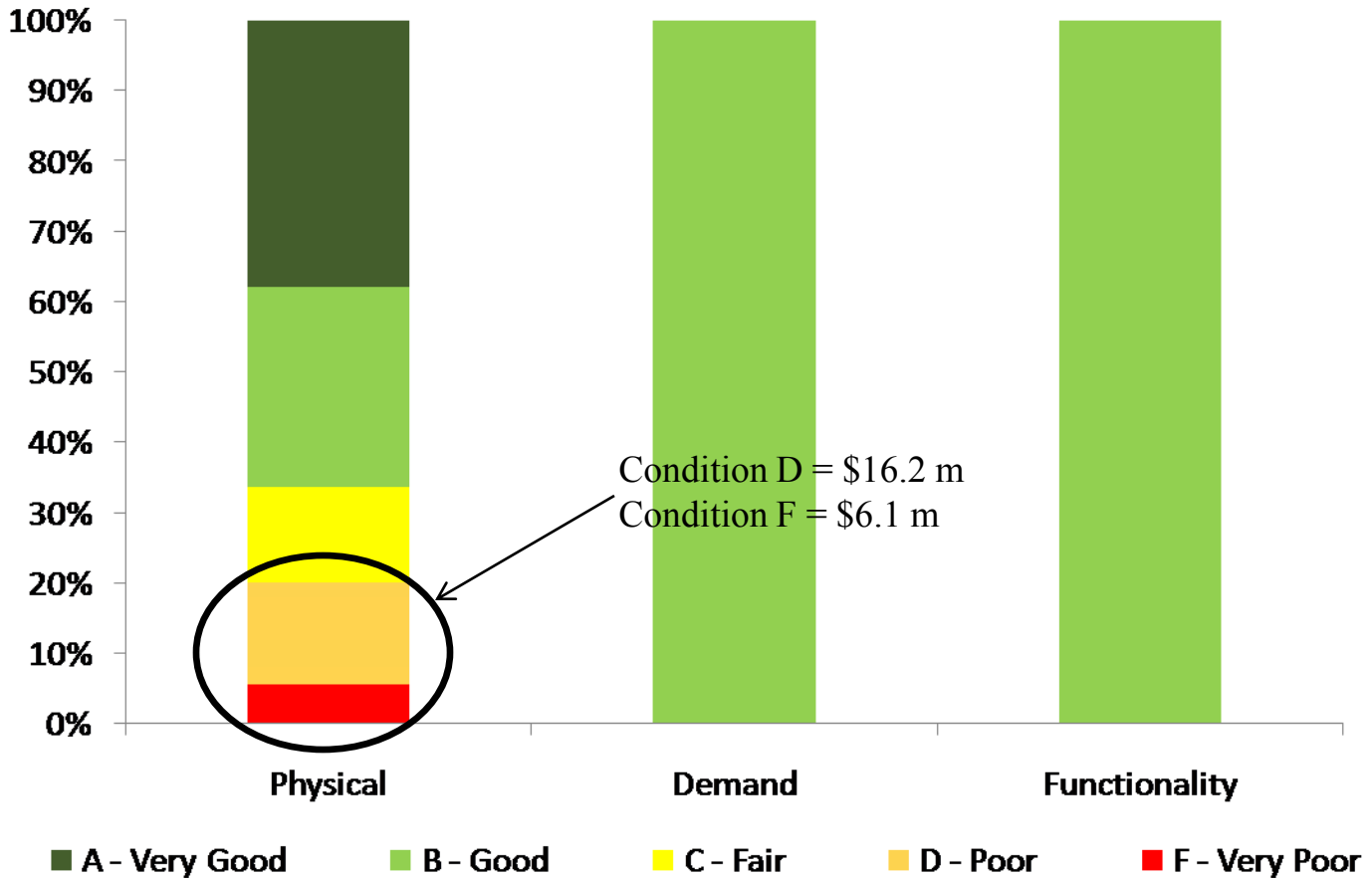
3,270,883 SQM

Expected life:

23.0

Life remains:

6.5





# Culverts - 2010 Condition

## DNV Asset Condition Assessment

Culvert

2010

100% = Total  
Replacement cost

**\$25,045,200**

Quantity:

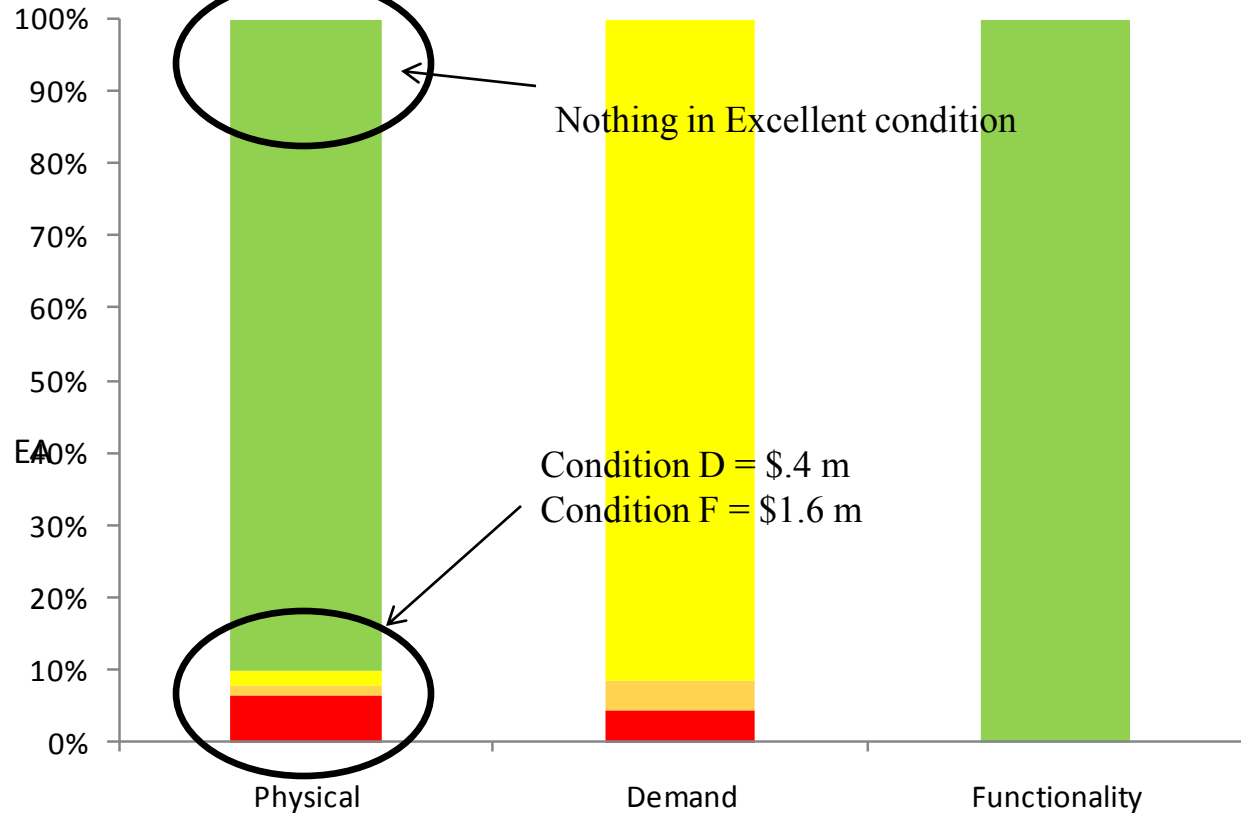
350

Expected life:

33.2

Life remains:

7.0



■ A - Very Good   
 ■ B - Good   
 ■ C - Fair   
 ■ D - Poor   
 ■ F - Very Poor

# Vehicle Bridges - 2010 Condition

**\$35,706,782**

Quantity:

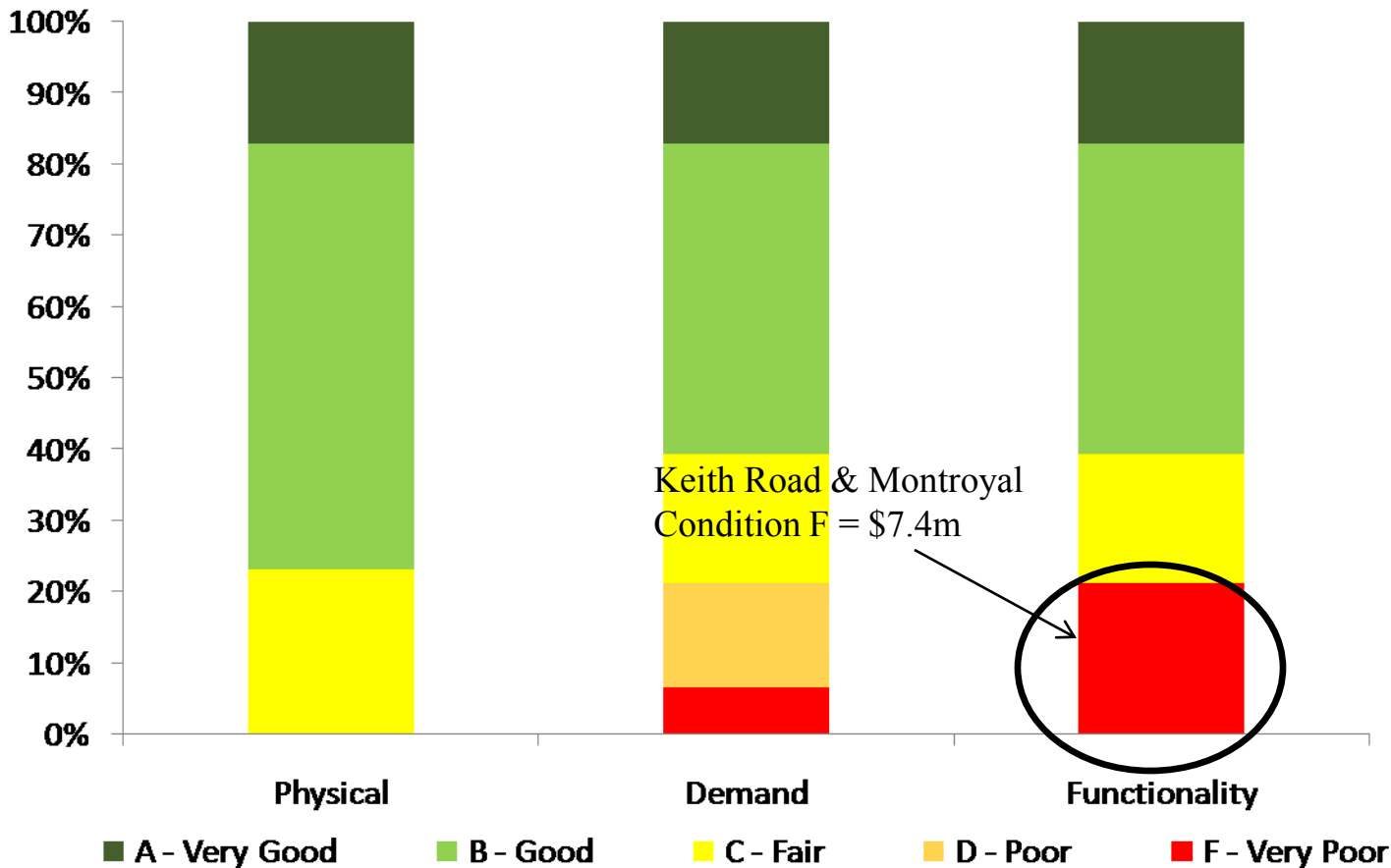
16 EA

Expected life:

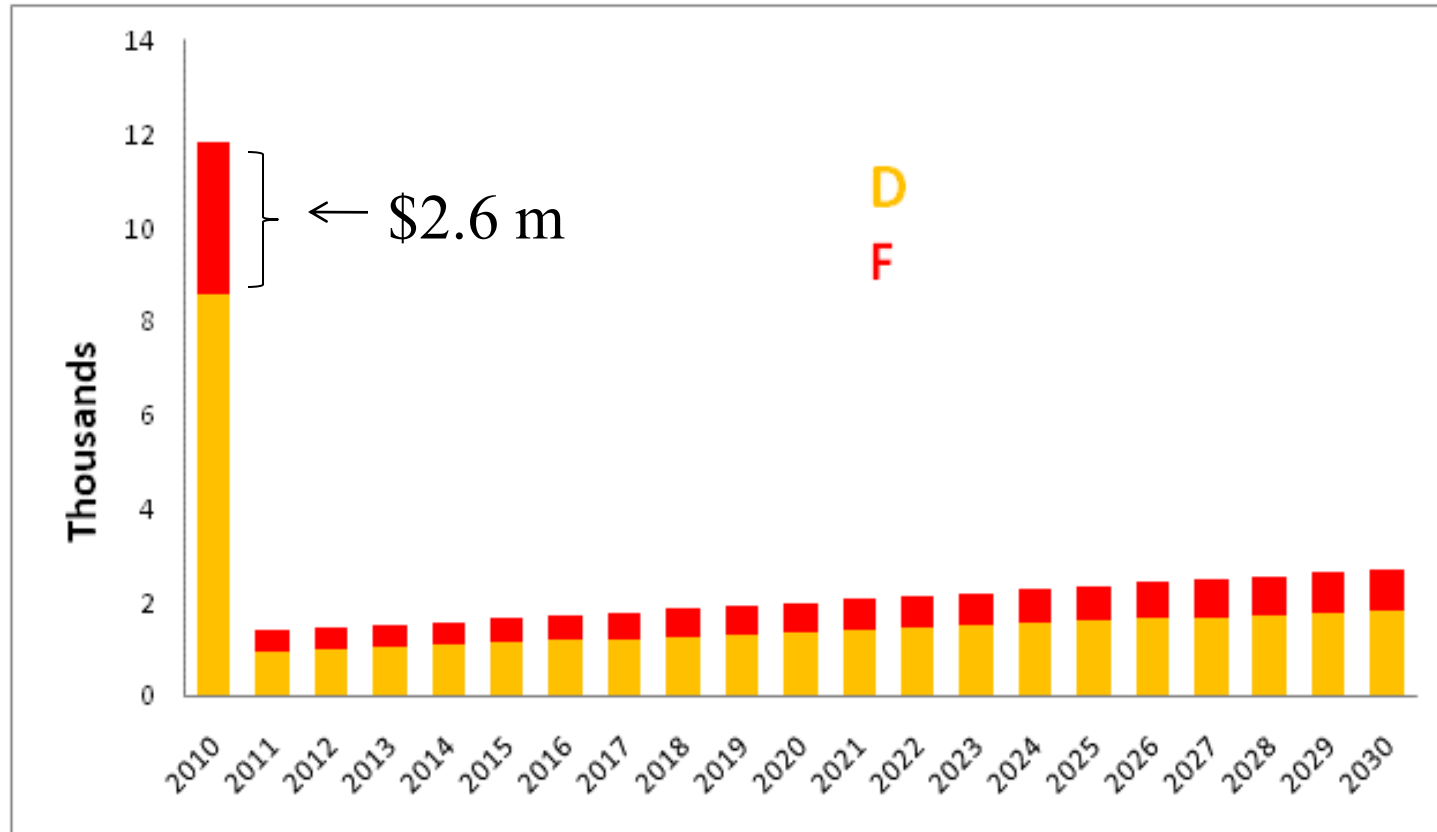
50.0

Life remains:

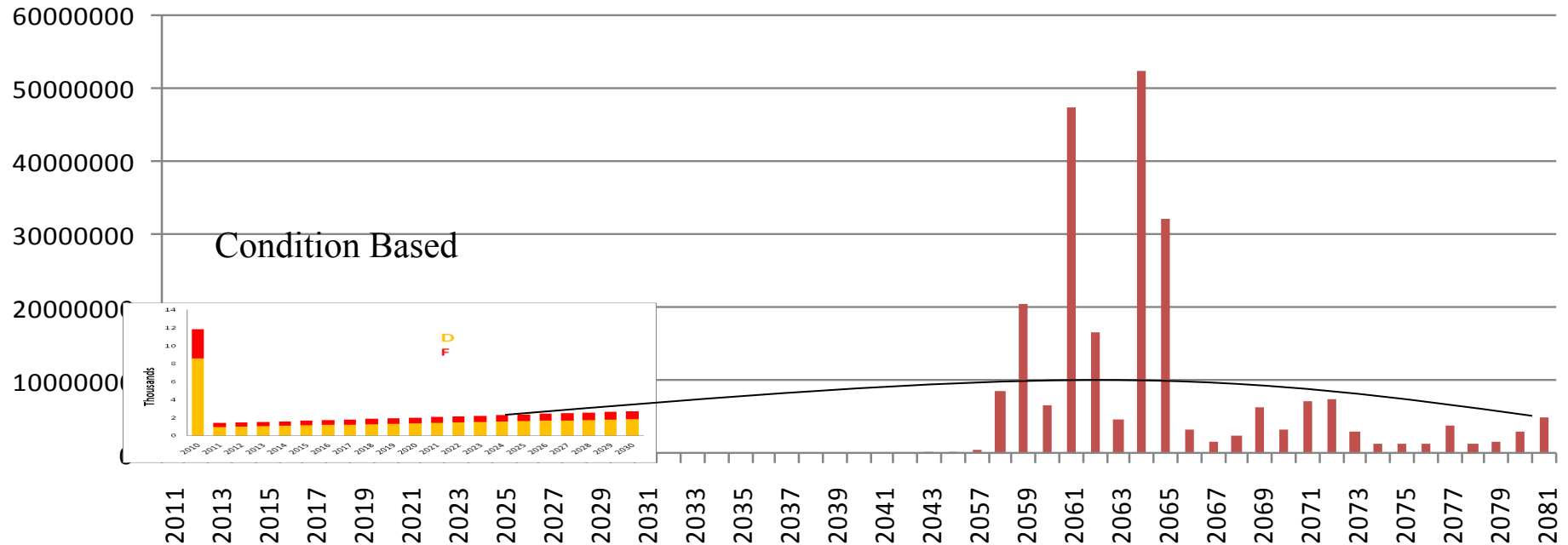
21.6



# Sewer 20 Year Condition Profile



# Sewer – PSAB End of Useful Life vs Condition Asset Model



What we know:

- Average life expectancy is 100 years
- Some mains are approaching 70 years old
- Probability of failure increases with age

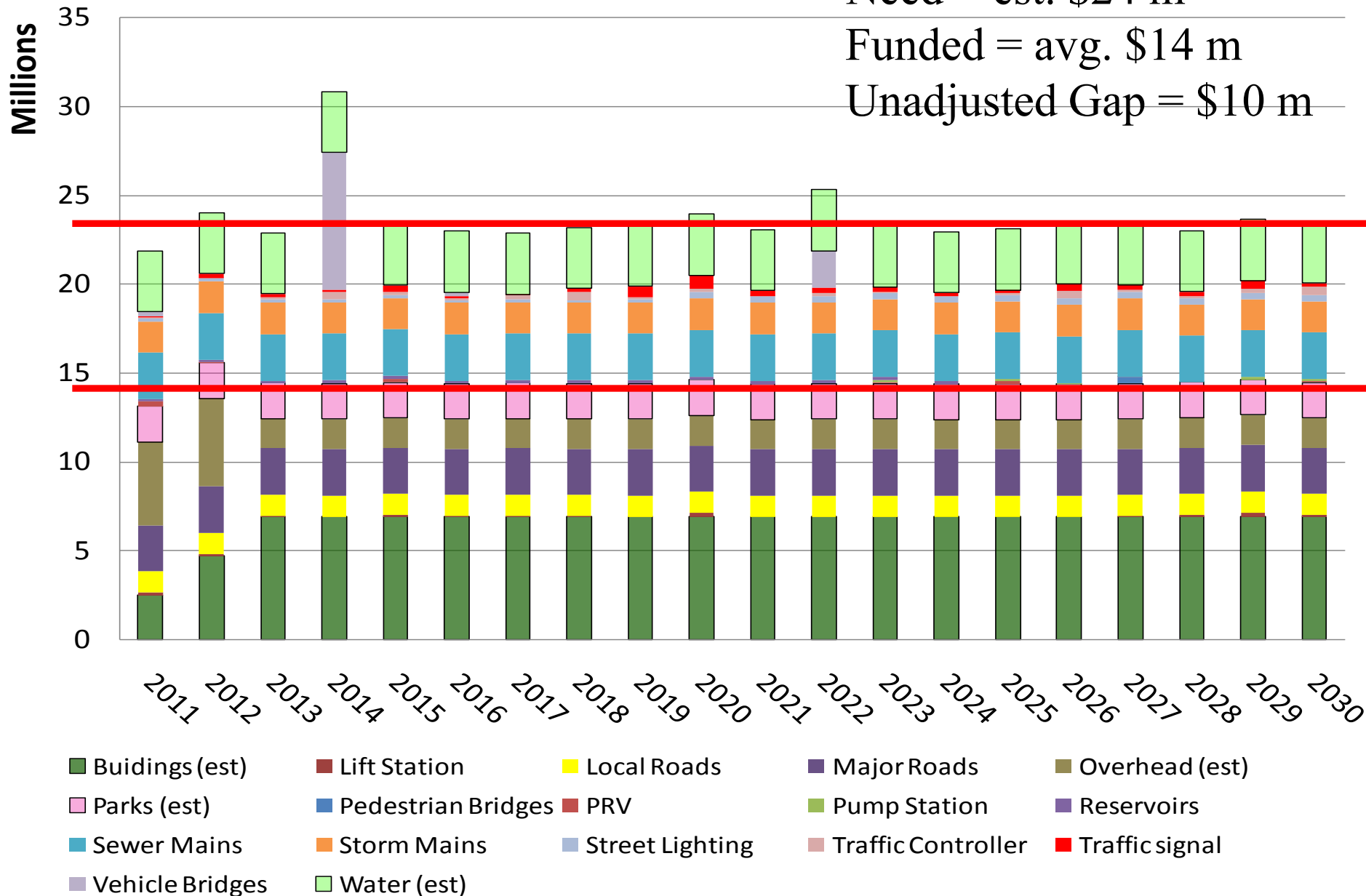


# 20 Year Asset Profile

Need = est. \$24 m

Funded = avg. \$14 m

Unadjusted Gap = \$10 m



# 20 Year View

- Age starting to show
- PSAB inventory
  - Hist. Cost vs FMV = +/- est. \$10 gap
- Condition
  - better measure of replacement timing
  - Managers plans = +/- est. \$10 gap
  - Needs to be risk adjusted
- Unadjusted Gap needs to be challenged
  - Further analysis, reserves, debt reduction, sale of assets,

# Are We There Yet?

- Long Term Asset Management
  - Condition changes
  - Levels of service changes
  - Inventories change
  - Risk models
    1. Long term on asset groups
    2. Decision matrixes focused on allocation of resources

# Summary

- PSAB inventory (a reference point) for financial reporting and AM reporting
- Standardized Condition
  - Assets - silent but finding a voice
  - Assets – growing “champions” at all organizational levels (multi-disciplinary, Council)
- Systeming Thinking – Working together to “see” the whole organization not just the parts





NORTH VANCOUVER  
DISTRICT