

Make better decisions

Life-Cycle Modelling with Condition and Risk

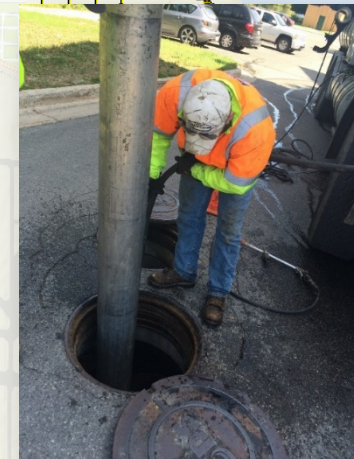
The Traverse City Michigan Story



Stormwater System

64 Miles of Storm Gravity Mains
1,186 Storm Manholes
2,315 Catch Basins

CITY of
TRAVERSE CITY



State of Michigan SAW Grant

Stormwater, Asset management and Wastewater



The
intent is
to

- **Accelerate** asset management planning
- **Improve** water quality
- **Enhance** understanding of the condition of wastewater and stormwater infrastructure
- **Plan** effectively for **long-term capital improvements, operation, and maintenance** of wastewater and storm sewer systems.

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Asset Management

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Plans/Programs](#)[What is Asset Management?](#)[PASER Street Ratings](#)[SAW Grant Information](#)[Resource Documents](#)

Asset Management

Mission Statement:

Our mission is to create/provide/maintain asset inventories including condition assessments for all City assets, for use in a strategic approach to long term financial and economic management, implement sound policies and strategic plans, monitor/report/measure performance, provide access to information used to assist in operational activities, and create Asset Management Plans/Programs.

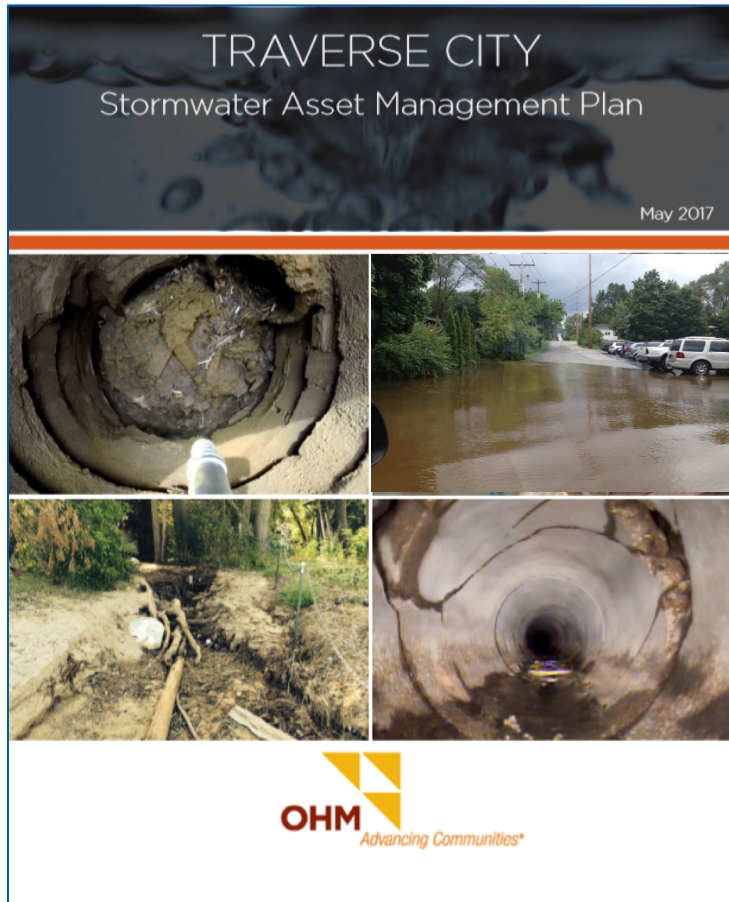
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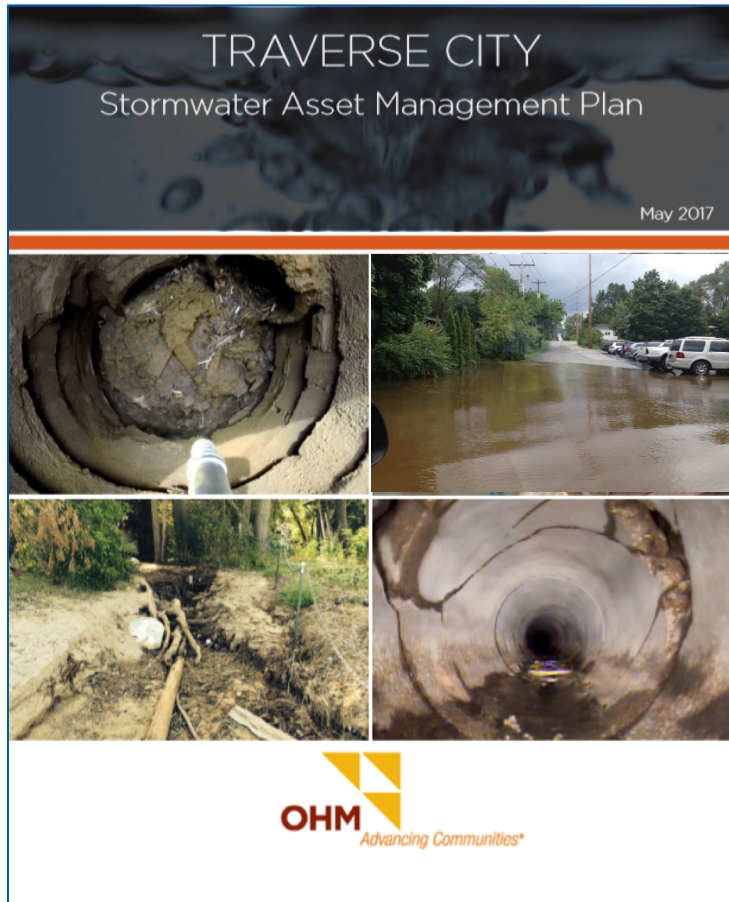
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Traverse City Asset Management Plan



- Asset Inventory and Condition Assessment
- Level of Service / Capacity
- Criticality of Assets
- Operation and Maintenance (O&M) Strategic/Revenue Structure
- Long-term Funding/Capital Improvement Planning

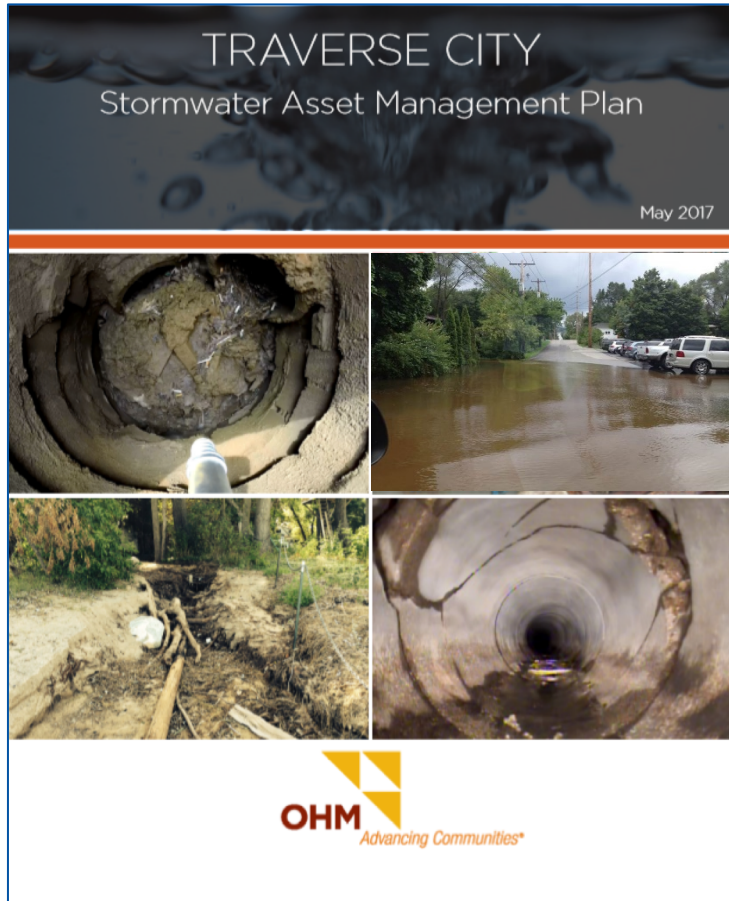
Traverse City Asset Management Plan



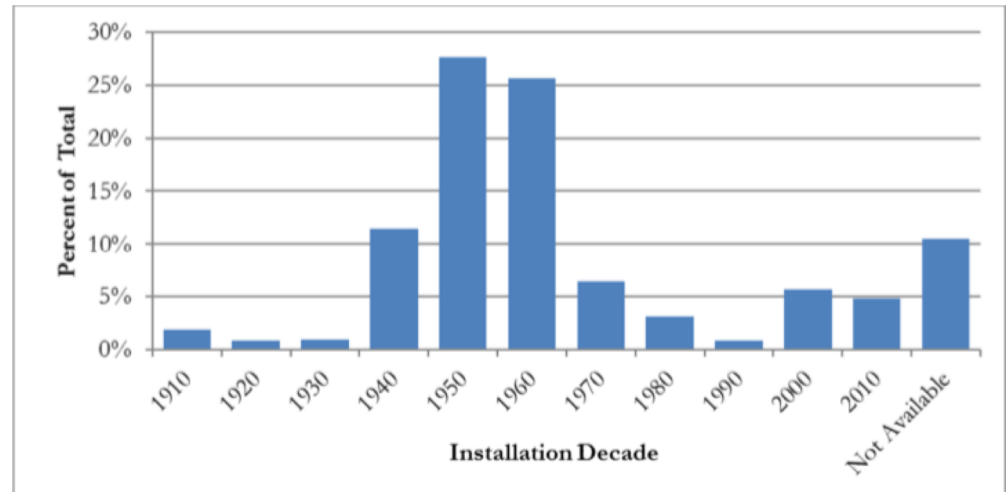
Discovery

- Aging assets
- Deteriorating condition
- Under capacity
- Underfunded
- No dedicated funding source
- No long term strategy

Traverse City Asset Management Plan



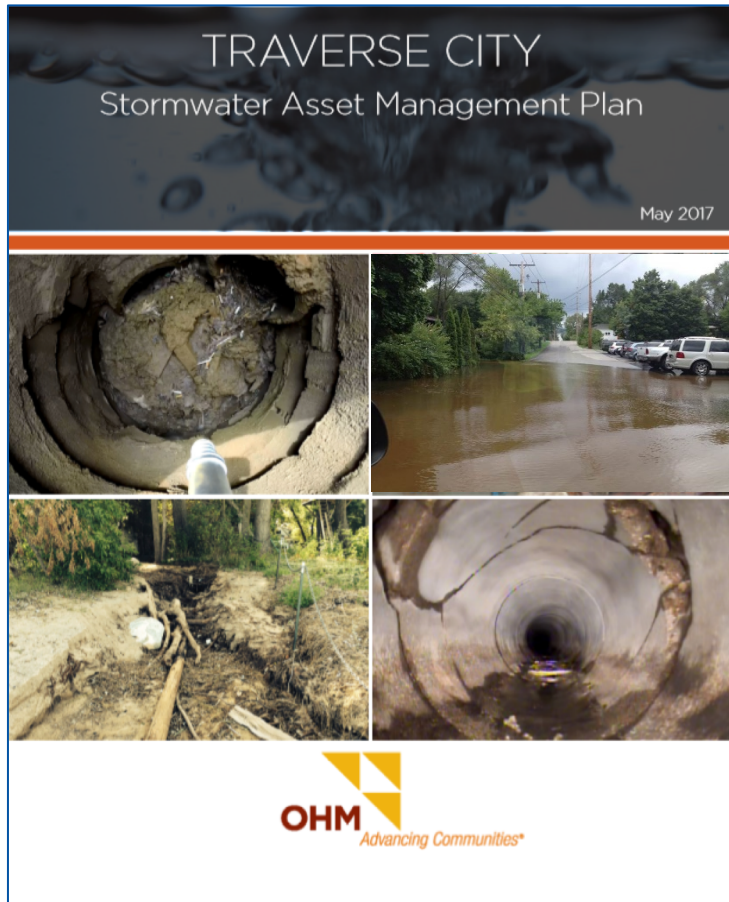
Age Assessment



- Average age 55 years
- 70% over 50 years

Traverse City Asset Management Plan

Condition Assessment



NASSCO's

Pipeline
Assessment
and
Certification
Program

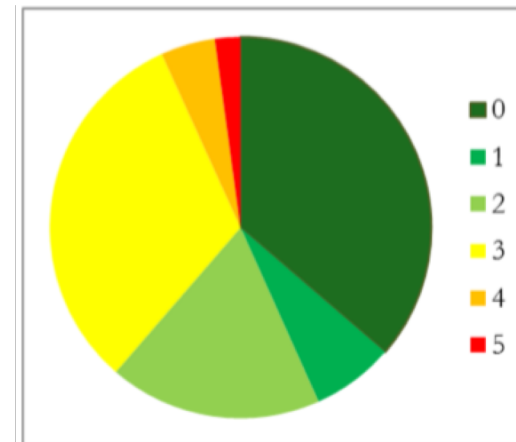
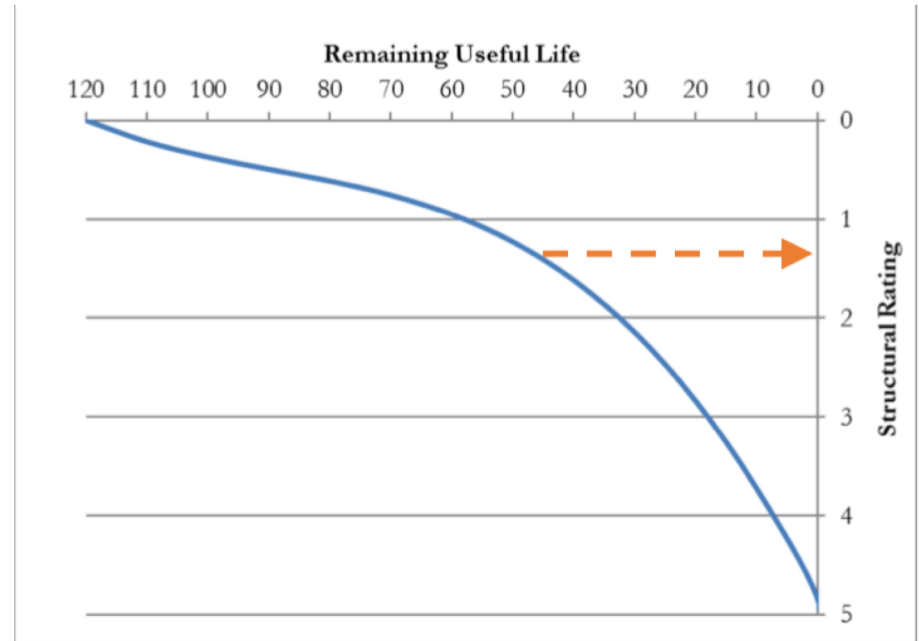
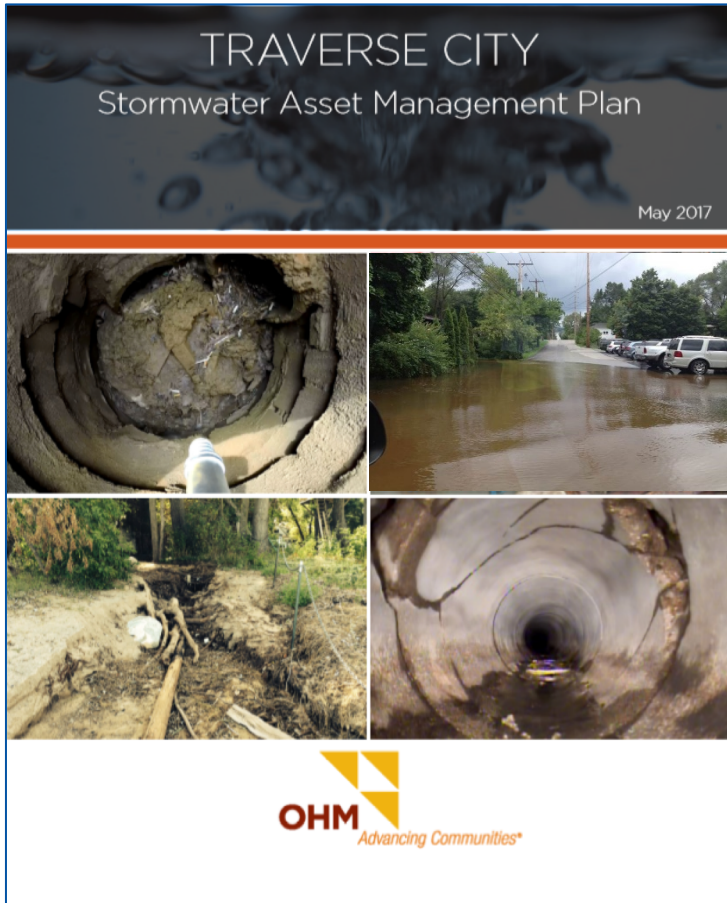
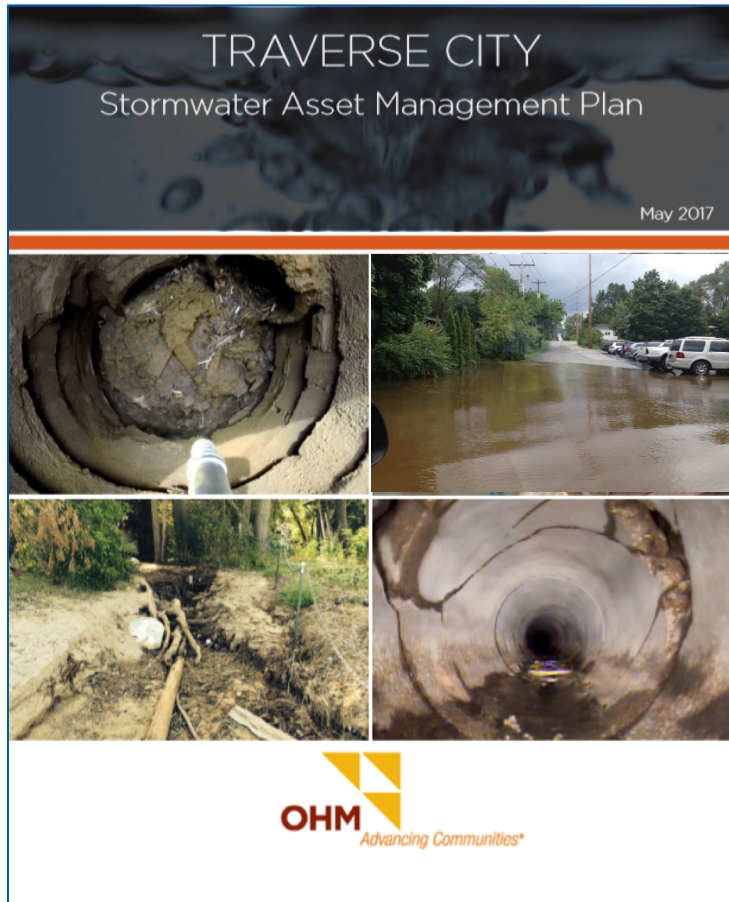


Figure 17: Storm Sewer Structural Ratings

Traverse City Asset Management Plan

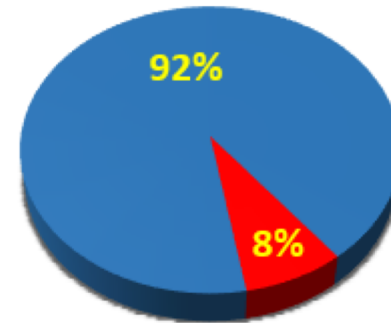


Traverse City Asset Management Plan



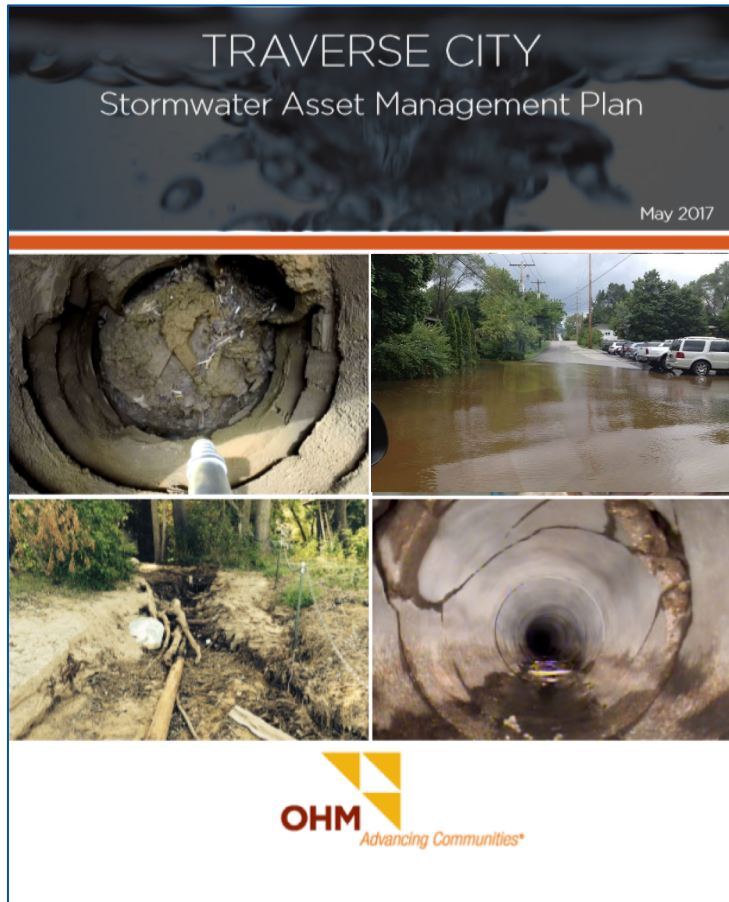
Capacity Assessment

8% of pipes are under Capacity



AM Strategy:
Coordinate replacement of
undersized pipes with street repairs

Traverse City Asset Management Plan



Risk Assessment

Table 6: Probability of Failure

Score	Description
1	Improbable
2	Remote, unlikely but possible
3	Possible
4	Probable, likely
5	Imminent, likely in near future

Table 7: Consequence of Failure

Score	Description
1	Negligible, minor loss of function
2	Minimal or marginal
3	Noticeable, may suspend some operations
4	Critical, temporarily suspends operations
5	Catastrophic disruption

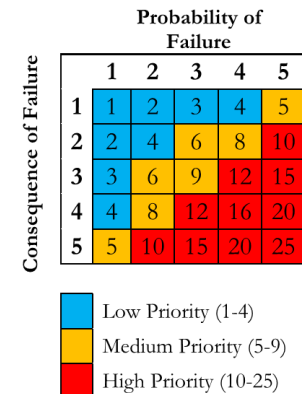
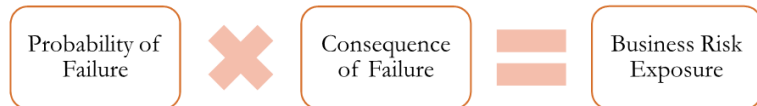
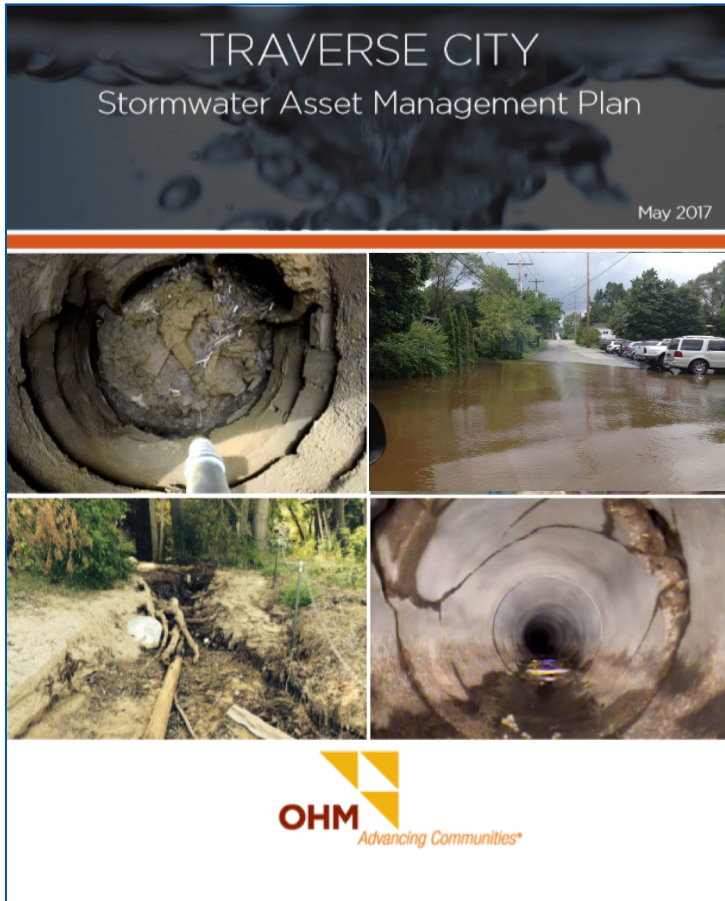


Figure 28: BRE Prioritization Matrix

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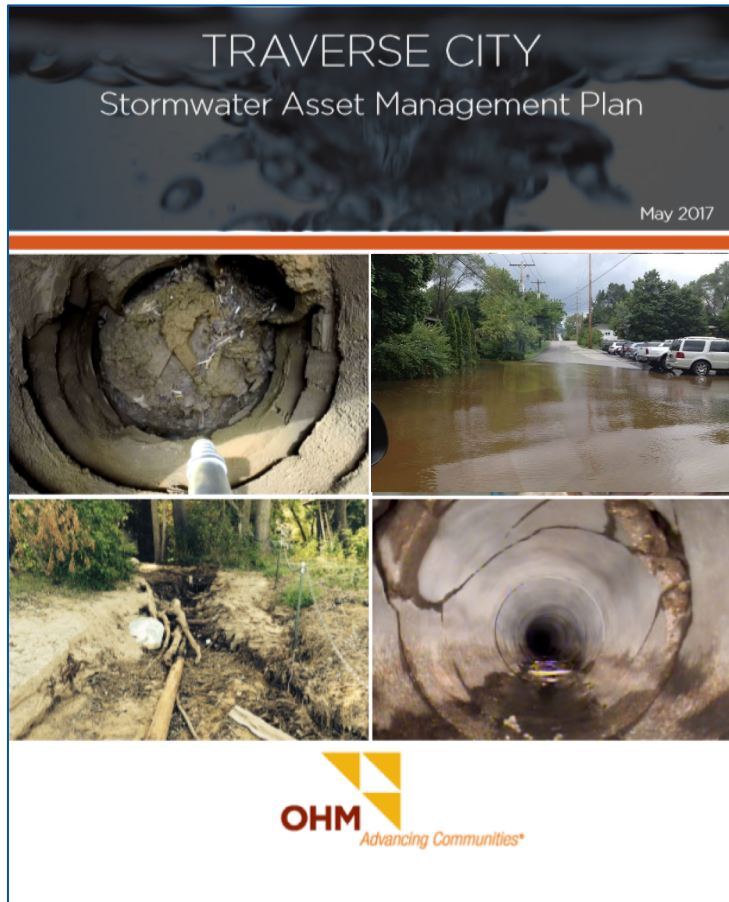
Level of Service Goals



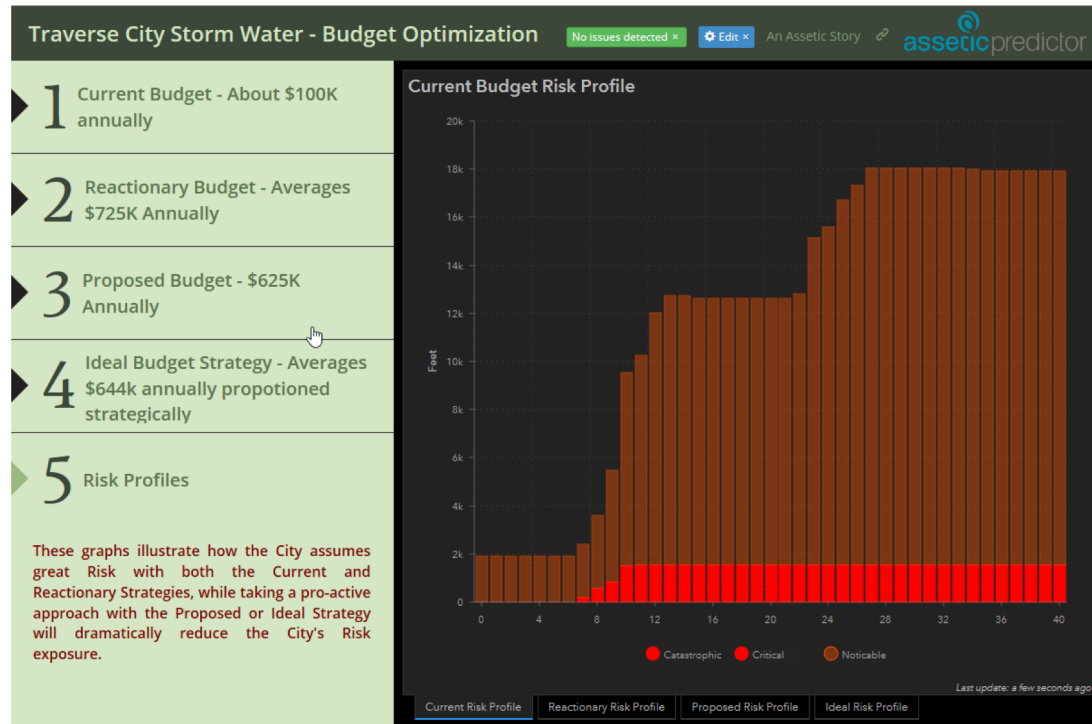
Meeting the City's long-term needs requires that:

1. The system remains clean, structurally sound, and clear of obstructions
2. The system is large enough to prevent excessive flooding
3. The system controls the amount of pollutants reaching Grand Traverse Bay

Traverse City Asset Management Plan



Long Term Funding Strategy



Demo