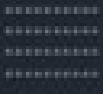




DOT

DECISION OPTIMIZATION TECHNOLOGY™

Asset Management and Capital Planning Software



Visual Dashboard



Infrastructure
Solutions

DECISION OPTIMIZATION TECHNOLOGY™

Erin Calcari



DOT Home / Network Overview

ANYTOWN

ASSET TYPE

BRIDGE



NETWORK OVERVIEW



NETWORK GIS VIEW



ASSET INVENTORY



ANALYSIS



REPORTS



SETTINGS

Bridge - Network Overview

Single Asset



Network Size
4,187

No. of Assets
29,450

Population
1,000,000

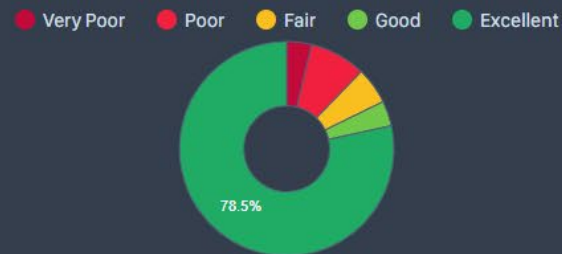
Network Overall Condition



Network Condition Status



Concrete Deck Condition Dist.



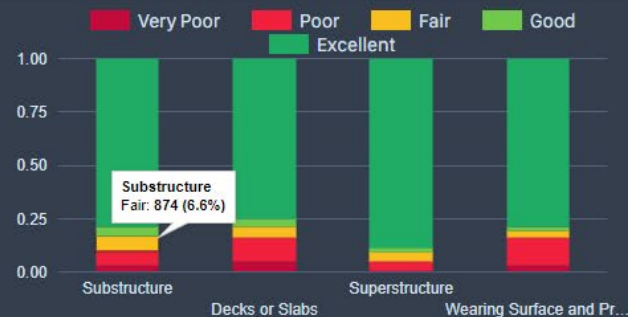
Bridge 168 - Substructure Condition



Condition Breakdown by Major Groups



Reinforced Concrete Decks



Network GIS View

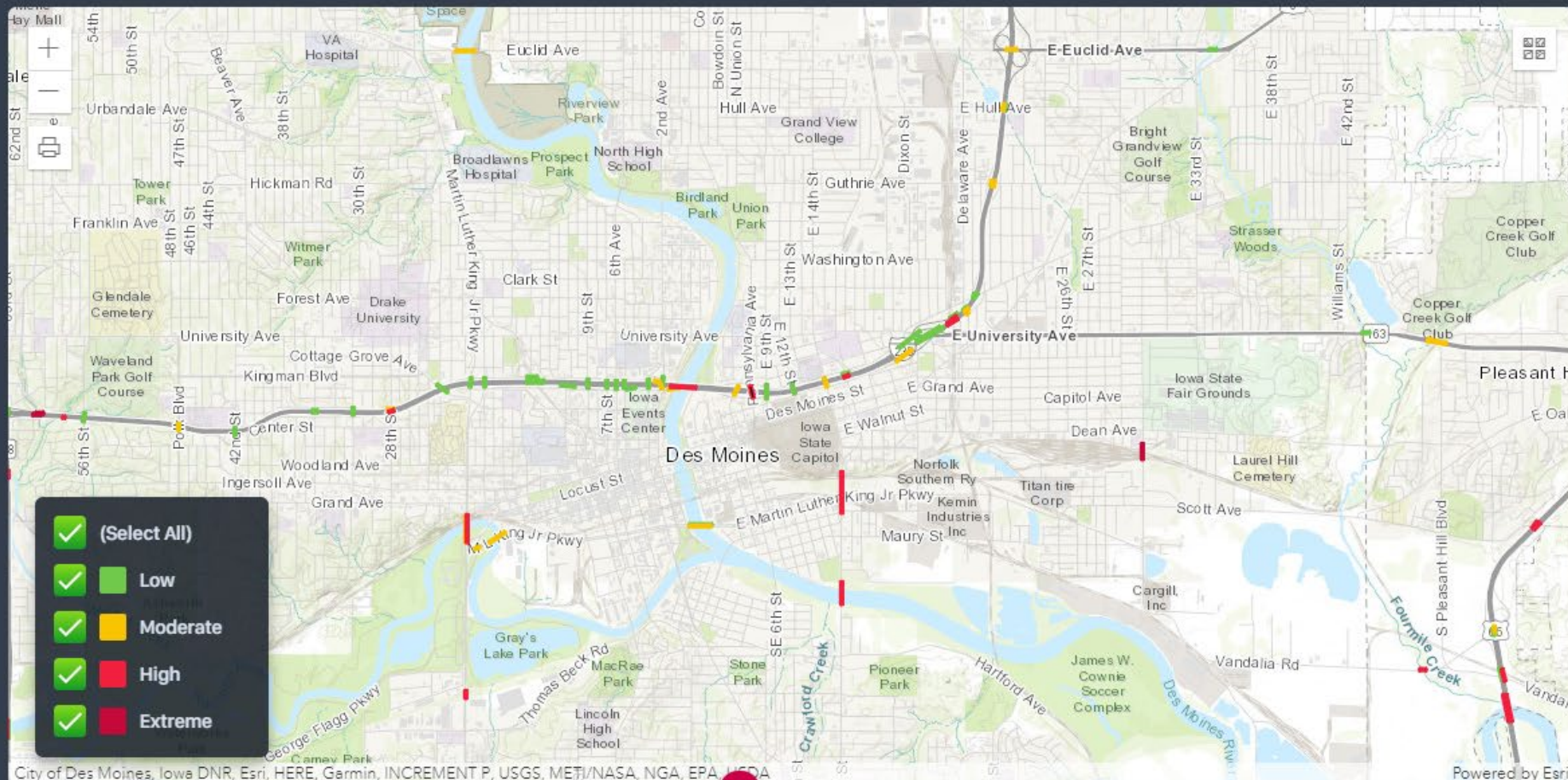
Bridge - Network GIS View

Assets

Condition

Criticality

Risk



Asset Information

Asset Type: Bridge
GIS ID: 0000000000428...

90	37	44
Condition	Risk	Criticality

Asset Elements

Reinforced Concrete Deck

Steel Girder/Beam

Reinforced Concrete Column

Reinforced Concrete Abutment

Reinforced Concrete Pier Cap

Asset Inventory

Bridge - Data Repository - Edit Asset

[Back](#)[Save](#)

Name 000000000000168

Asset ID 000000000000168

GIS ID 000000000000168

Asset Class

- Family Class
Not Defined
- Performance Class
PC2-Substructure

Condition



Criticality



Risk

[Data](#)[Condition Data](#)[Community Impact](#)[Repair History](#)[Map Location](#)[Attachments](#)

Name	Value	Year	History
HI	77.7	2020	
Service Life (SL)			
Deck Condition	6	2018	
Superstructure Condition	5	2018	
Substructure Condition	5	2018	
Channel Protection Condition (CPC)	6	2018	
Culvert Condition			



Attachments Feature

Bridge - Data Repository - Edit Asset

Back

Save

Name 000000000000168

Asset ID 000000000000168

GIS ID 000000000000168

Asset Class

Family Class

Default

Performance Class

PC2-Substructure

Condition



78

Fair

Criticality



56

Critical

Risk



22

Moderate

Data

Condition Data

Community Impact

Repair History

Map Location

Attachments

Documents (1)



Media Files (1)



File Name

Uploaded By

Upload Date

Actions



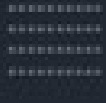
2016 Routine Inspection Report SN 0...

Erin Calcari

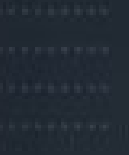
Sep 10, 2021



timberlane bridge inspections.jpg



Scenario Optimization Modes



Bridge - Analysis - Edit Scenario

Back

Save

Scenario Info.

Optimization

Treatment Methods

Level of Service

Criticality Settings

Network Subset

Project Alignment

Budget

Capacity Limit

Optimization Mode

☒ Standard ☐ Target Optimization

Planning Horizon (Years) 50 

Optimization Objective

☒ Standard ☐ Advanced (Multi-Objective)

☒ Maximize Network Performance (Recommended)

☐ Minimize Network Risk

☐ Minimize Cost

☐ Maximize Network Condition

☐ Minimize Backlog

Bridge Bundling Option

Other Settings



Automatically Estimate Current Condition



Roll annual leftover balance forward



Include Operational Efficiency Analysis

Condition Variation

10

%

Grouped Projects Size Limit

20

mi



XXXXXXXXXX
XXXXXXXXXX
XXXXXXXXXX

Socioeconomic Factors

XXXXXXXXXX
XXXXXXXXXX
XXXXXXXXXX

Bridge - Edit Scenario

Back

Save

Scenario Info.

Optimization

Treatment Methods

Level of Service

Criticality Settings

Network Subset

Project Alignment

Budget

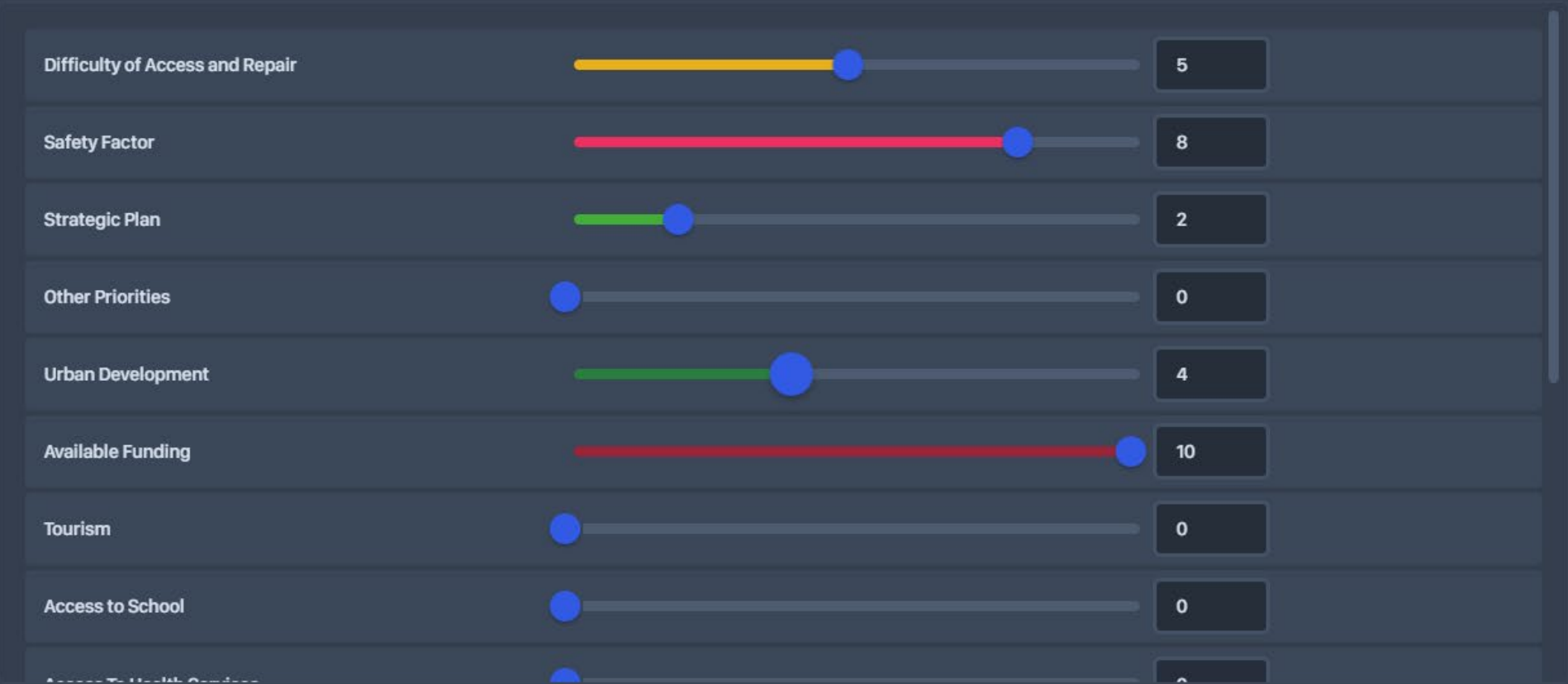
Capacity Limit

☐ Use Default Scenario Settings

Attribute-Based

Community Impact

i

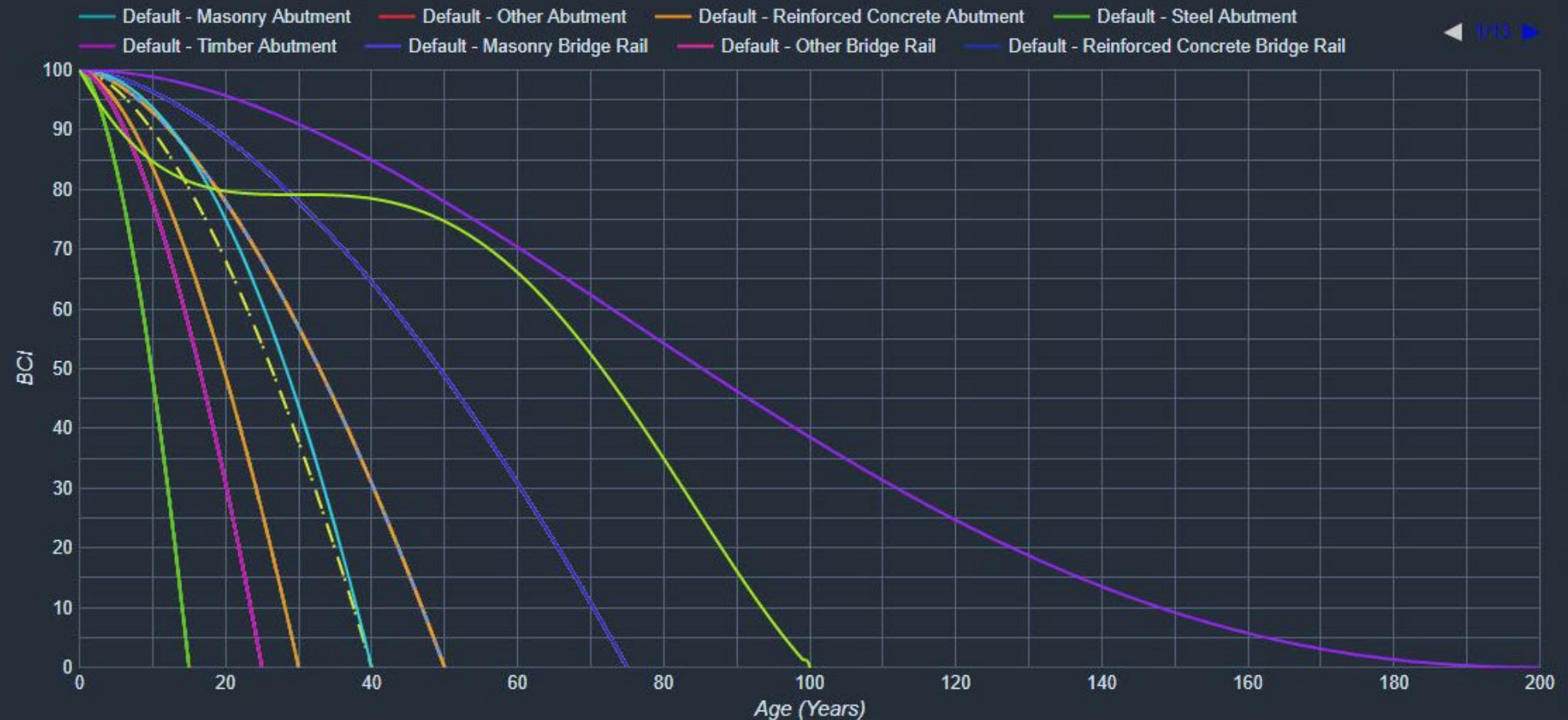


Relative Importance Scale



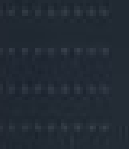
Default Degradation Models

Bridge - Settings

[Select Curves](#)[Asset Configuration](#)[Condition Index](#)[Criticality Index](#)[Risk Index](#)[Treatments](#)[Degradation Curve](#)[Family Class](#)[Performance Class](#)[Price Index](#)[Curve List](#)[Curve View](#)☐ Show Condition States



Custom Degradation Models



Bridge - Settings - Add Degradation Curve

Cancel

Save

Asset Configuration

Condition Index

Criticality Index

Risk Index

Treatments

Degradation Curve

Family Class

Performance Class

Price Index

Name

Reinforced Concrete Abutment

Attribute Type 

Performance Indicator



Performance Indicator(s) 

HI



Curve Type

DOT™ Predictive Analysis



Expected Service Life

15

Family Class

Reinforced Concrete Abutment



Advanced Settings

Polynomial Degree 

4



Cutoff Value 

2

Please save the degradation curve first, to be able to run the predictive analysis.

Run Analysis

 Data  Outlier



00000000
00000000
00000000
00000000

Default Treatment Types

00000000
00000000
00000000
00000000

Bridge - Settings

Asset Configuration

Condition Index

Criticality Index

Risk Index

Treatments

Degradation Curve

Family Class

Performance Class

Price Index

Treatment List



	Treatment ID	Treatment Type	Description	Action
✓	Clean/Flush Drains	Routine Maintenance	Clean and Flush Drains	
✓	Clean Joints	Routine Maintenance	Clean Joints	
✓	Clean/Wash Bridge	Routine Maintenance	Clean/Wash Bridge	
✓	Crack Sealing	Routine Maintenance	Deck/Parapet/Rail Sealing and Crack Sealing	
✓	Polymer Overlay	Routine Maintenance	Polymer Overlay	
✓	Polymer-Modified Asphalt Overlay	Preventative Maintenance	Polymer-Modifed Asphalt Overlay	
✓	Seal Concrete	Preventative Maintenance	Seal Concrete	
✓	Bearing Restoration	Minor Rehabilitation Treatment	Bearing Restoration (cleaning, lubrication, resetting, replacement)	
✓	Channel Cleaning / Debris Removal	Routine Maintenance	Channel Cleaning / Debris Removal	
✓	Concrete Deck Repair	Major Rehabilitation Treatment	Concrete Deck Repair (see halo effect below) in Conjunction with Overlays, CP System...	
✓	Deck Overlays	Minor Rehabilitation Treatment	Deck Overlays (thin polymer epoxy, asphalt with waterproof membrane, rigid overlays)	

Custom Treatment Types

Bridge - Settings - Edit Treatment

Cancel

Save

Asset Configuration

Condition Index

Criticality Index

Risk Index

Treatments

Degradation Curve

Family Class

Performance Class

Price Index

Treatment ID

Concrete Repair

Description

Seal/Patch/Repair Superstructure Concrete

Treatment Type

Minor Rehabilitation Treatment



Cost Type 



Unit Cost



Replacement Cost

Unit of Measurement

\$ per

Square Feet



Min allowable time until next repair

0

Year(s)

Treatment Colour

#c49ae3

Treatment Impact Settings



Use Default Impact Settings

Select Performance Indicator 

HI



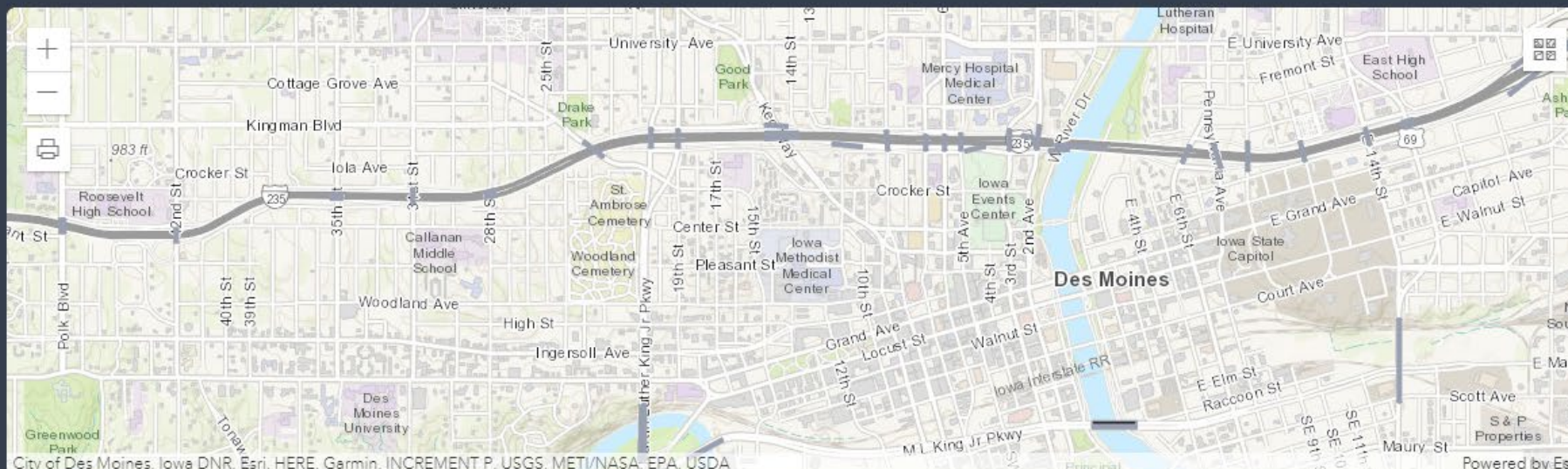
Project Plan Selection

Bridge - Edit Scenario

[Back](#)[Save](#)[Scenario Info.](#)[Optimization](#)[Treatment Methods](#)[Level of Service](#)[Criticality Settings](#)[Network Subset](#)[Project Alignment](#)[Budget](#)[Capacity Limit](#)☐ Use Default Scenario Settings

Year

All Years



Asset Information



- ☒ Reinforced Concrete Pier Cap +
- ☒ Strip Seal Expansion Joint +
- ☒ Elastomeric Bearing +
- ☒ Moveable Bearing (roller, sliding, etc.) +
- ☒ Steel/Aluminum Bridge Rail +

Asset ID

Name

Action

000000000505030 - 3103 Strip Seal Expansion Joint

☒ Mandatory ☐ Exclusions

Year

2021

Treatment

Calculate Automatically



Total Cost

Calculate Automatically

[Apply Settings](#)[Remove Settings](#)[Cancel](#)



Budgets & Funding

Bridge - Analysis - Edit Scenario

Back

Save

Scenario Info.

Optimization

Treatment Methods

Level of Service

Criticality Settings

Network Subset

Project Alignment

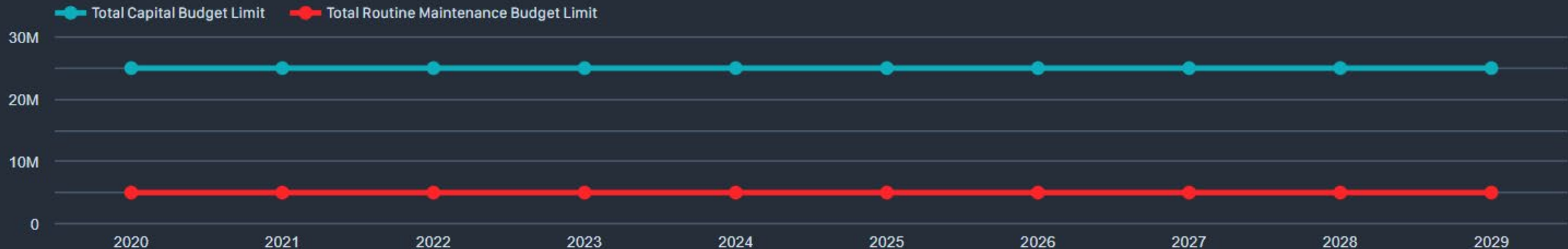
Budget

Capacity Limit

Budget Constraints List



✓	Name	Budget Type	Subset	Settings	From (Year)	To (Year)	AGF	Actions
✓	Total Capital Budget Limit	Total Capital Budget		≤ \$25,000,000	2020	2029	0%	 
✓	Total Routine Maintenance Bu...	Total Routine Maintenance Bu...		≤ \$5,000,000	2020	2029	0%	 



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