INCORPORATING GREEN INFRASTRUCTURE INTO LOCAL DECISION-MAKING IN MICHIGAN CITY, IN

Bill Schleizer, Managing Director, Delta Institute

DISRUPT CATALYZE TRANSFORM

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OUR MISSION

Delta works in partnership with business, government and communities in the Great Lakes region to create and implement innovative, market-driven solutions that build environmental resilience, economic vitality and healthy communities.

Learn more at delta-institute.org

WHAT IS GREEN INFRASTRUCTURE?

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GREEN INFRASTRUCTURE

1. Green Stuff
   - Trees
   - Open Space
   - Native Habitat

2. Disaggregated Stormwater Infrastructure features that increase infiltration and/or holding capacity; and/or reduces rate/amount of runoff into existing pipes, outfalls, streams, etc.
   - Bioswales
   - Rain Gardens
   - Stormwater Planters
   - Permeable Pavement
   - Detention Basins

GREEN INFRASTRUCTURE PLANNING IN MICHIGAN CITY

Partners: Alliance for the Great Lakes, Michigan City Sanitary District, MC Park District, MC Redevelopment Commission, MC Planning, Chicago Wilderness, Field Museum

Objective: Develop tools and engage state, regional & local stakeholders to prioritize coastal restoration and green infrastructure projects.

WHAT WE DID

- Understand existing resources in community
- Gain knowledge from local citizens and groups, and understand their perceptions and needs
- Educate on the local impacts of climate change
- Investigate current policy and zoning issues
- Create alignment with local priorities and environmental outcomes
- Bring in money!
- Starting to put things in the ground.
- Provide tools and support
- More stakeholder engagement and education to identify mechanisms to fully incorporate green infrastructure into municipal structure in a sustainable way.

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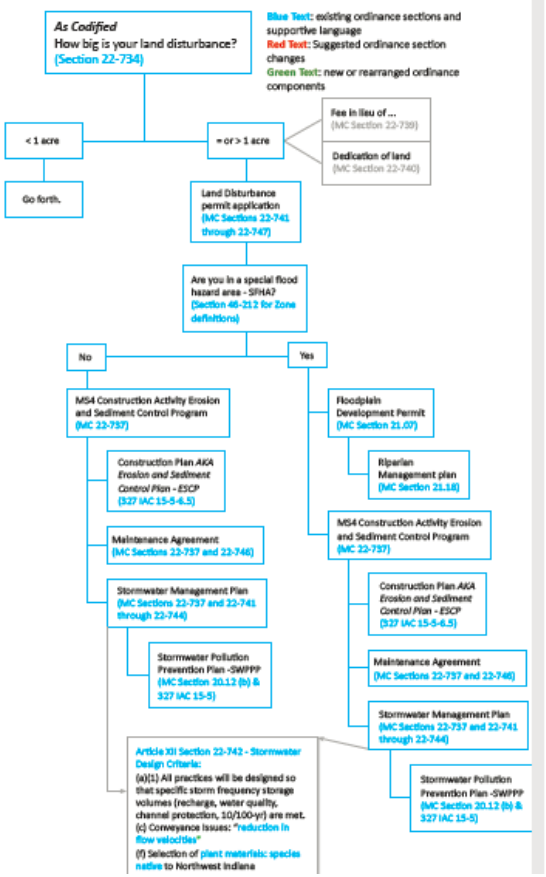

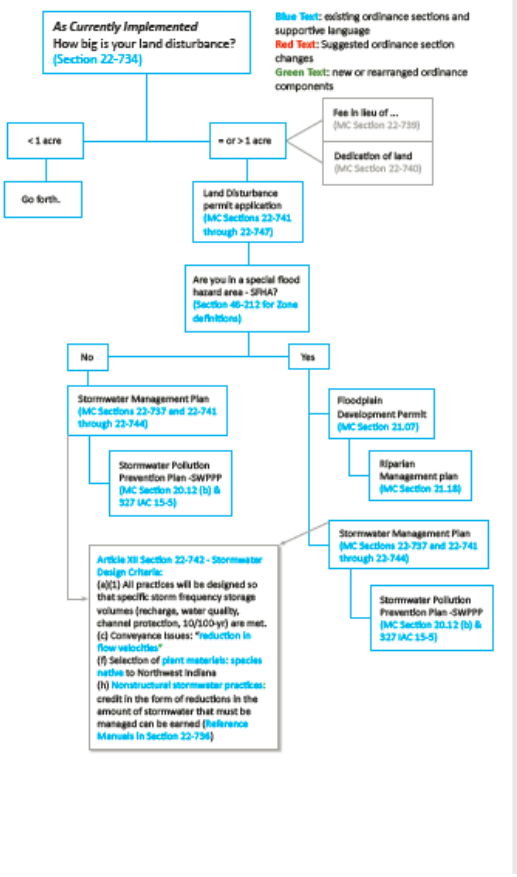

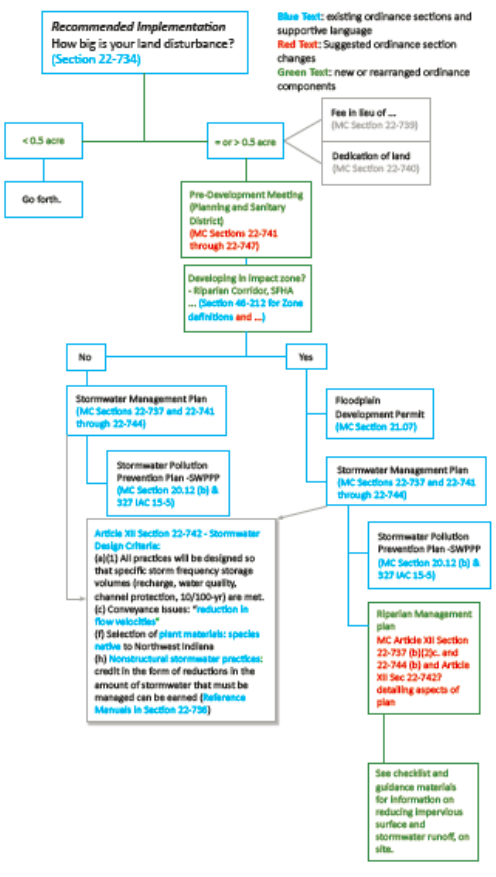

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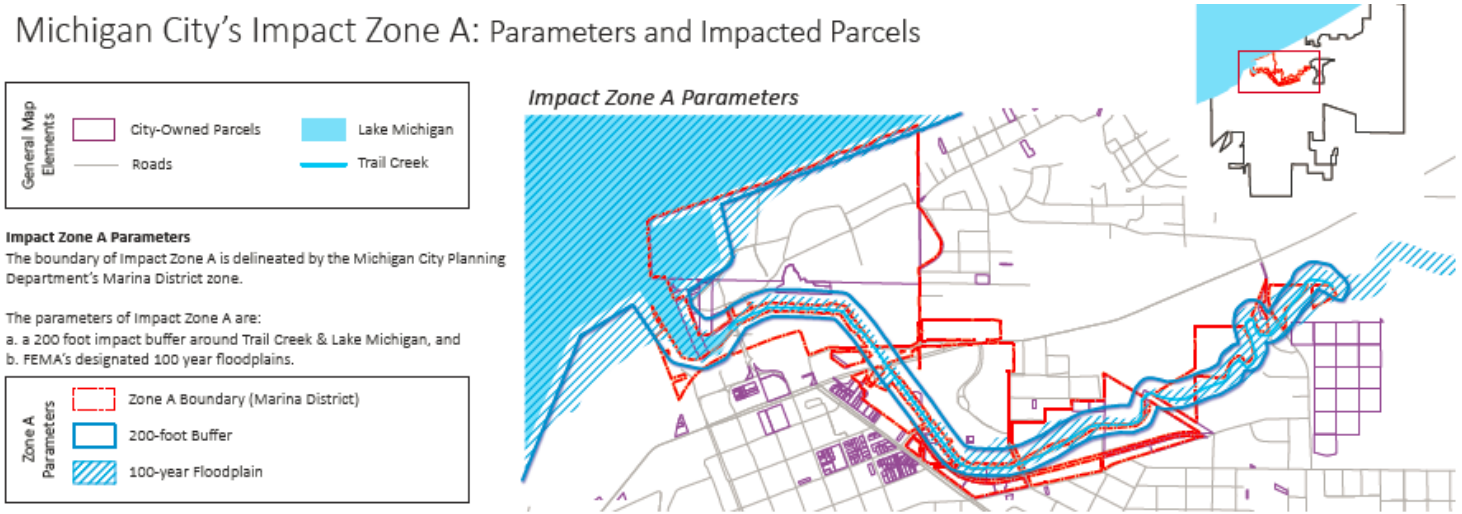

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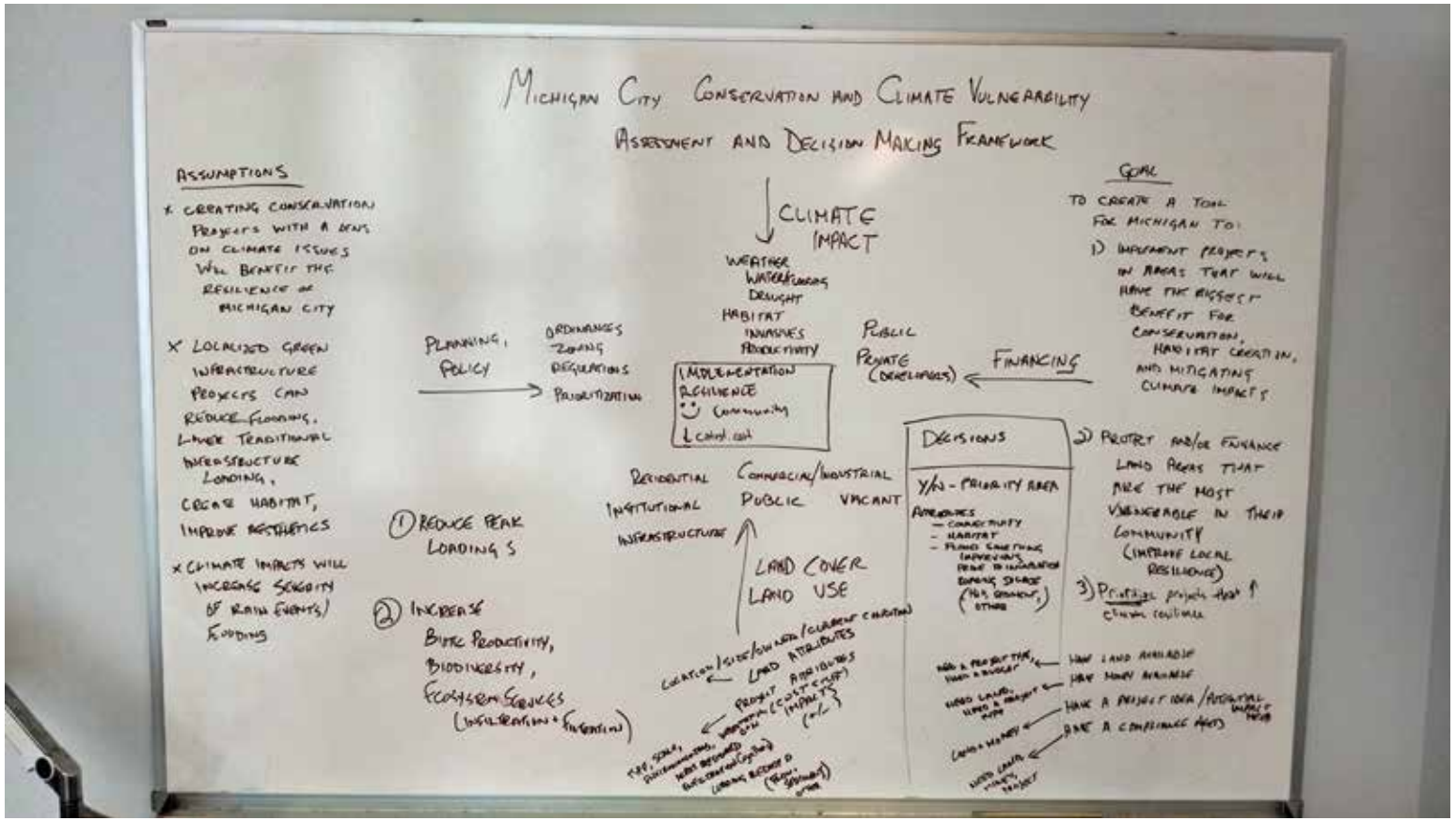

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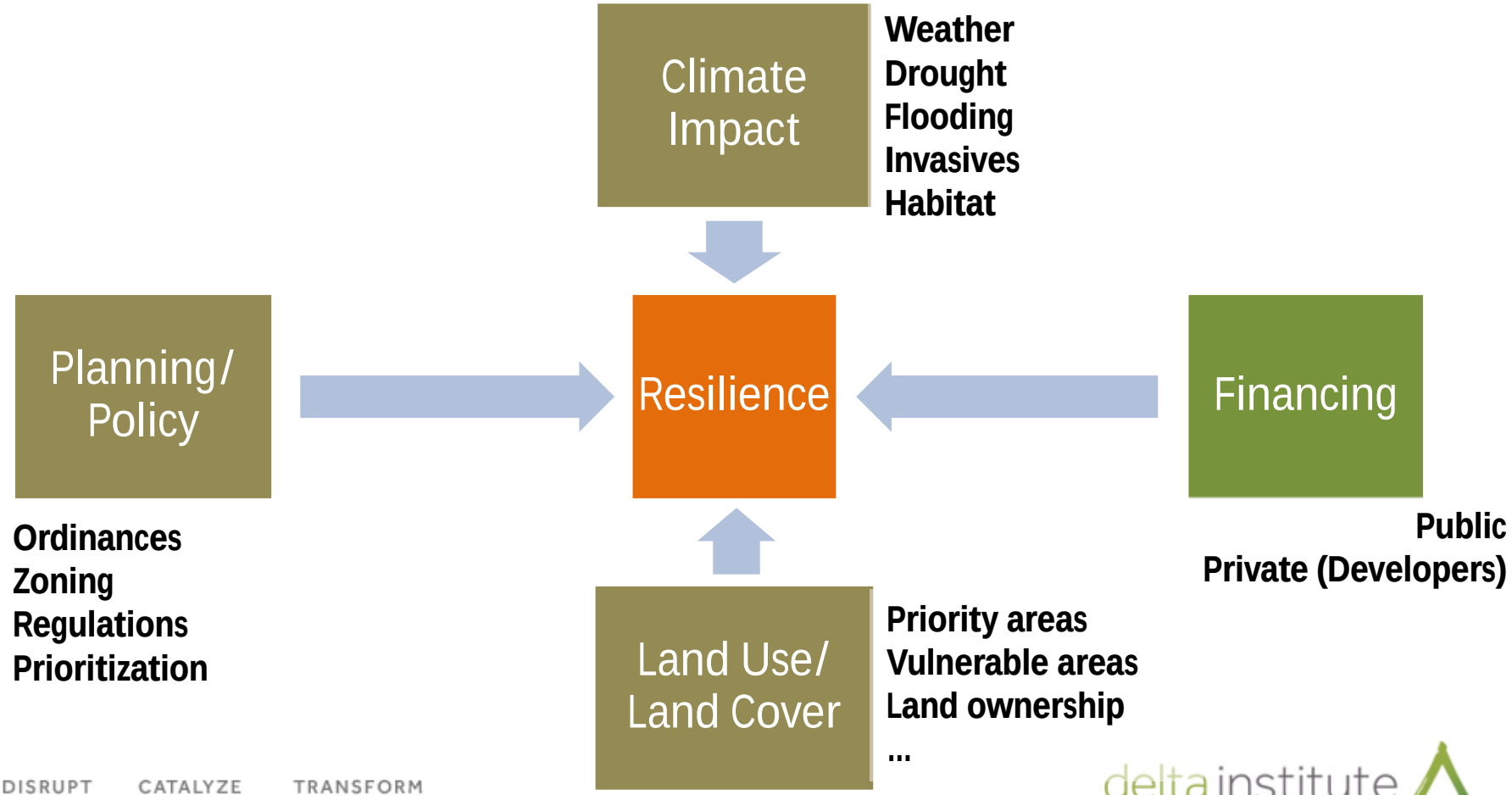
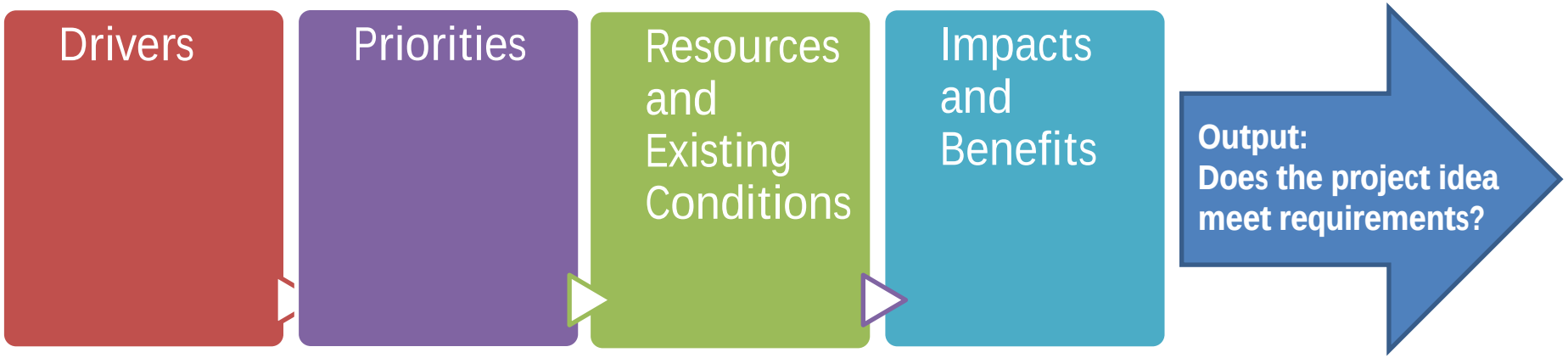


FRAMEWORK CONCEPT



DRIVERS

Choose the primary driver(s) for this project.

- q Climate
- q Compliance
- q Policy
- q Opportunity (funding, land, idea, stakeholder pressures, etc)
- q Need (i.e. address flooding)
- q Plan alignment

Prioriti

Priorities

Rank priorities for the proposed project

1. Reduce flooding
2. Utilize a city-owned parcel
3. Connect habitat
4. Engage the community
5. Increase resilience

Resour

Resources and Existing Conditions

List and, where applicable, include metrics for relevant attributes

Acres: _____
Habitat Type:
    Current:_____
    Proposed:_____
BMP Type:_____
BMP Size:_____
Loading:
    Water:_____
    Sediment:_____
    FC:_____
Risk Addressed:_____

Impact

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Impacts and Benefits

Impact	Project 1	Project 2
Habitat	+	-
Flooding Mitigation	-	+
Water quality	-	+
Acreage Conserved	10	12
Overall Resilience	-	+

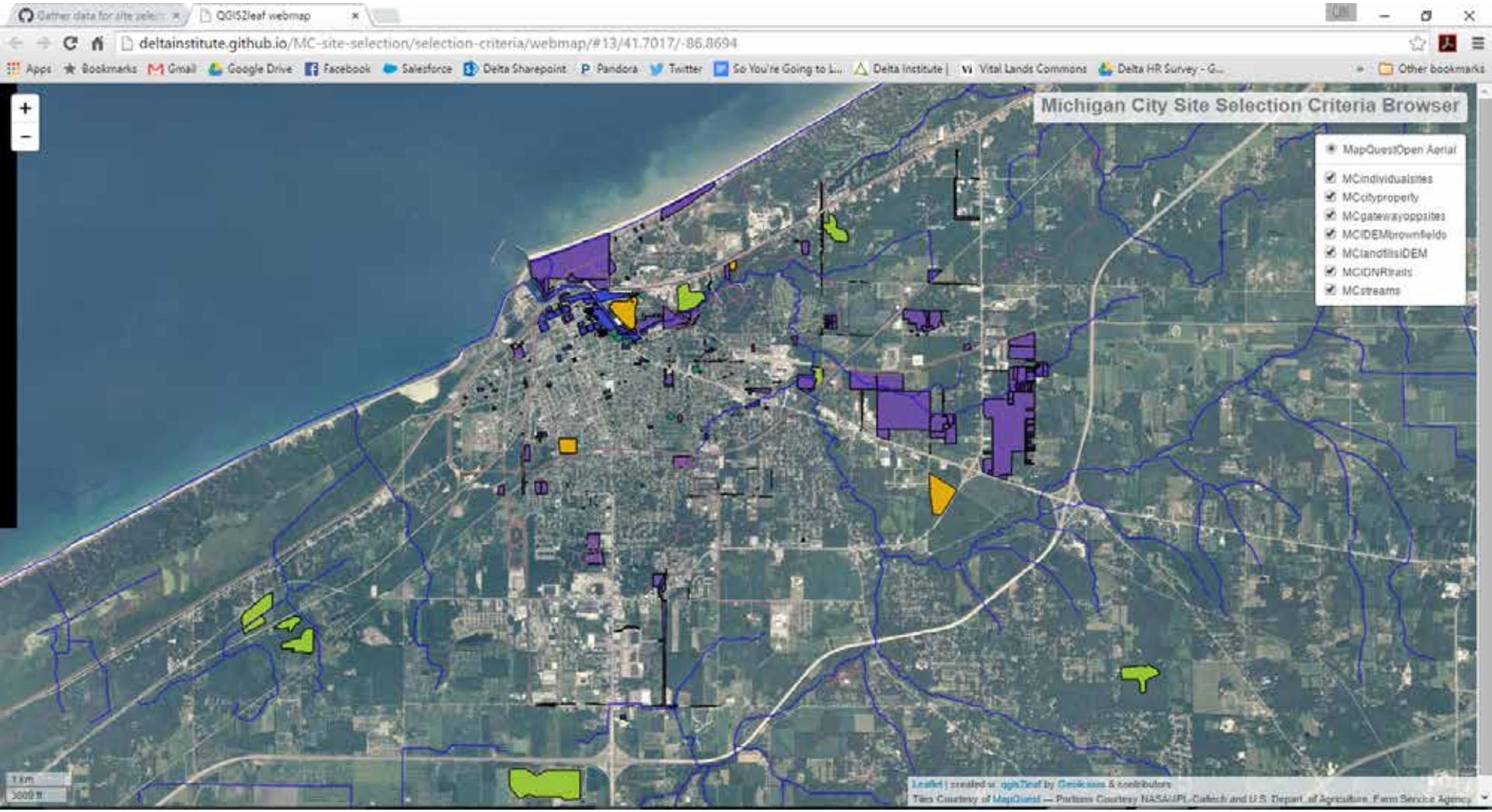
Output:
Does the pr
idea meet
requiremen

Output:
Does the project idea meet requirements?

Align with Michigan City's normal operations

Prioritize projects that increase resilience

Additionally, optimized for specific preferences



Or, it's a map and a checklist

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WHAT WE DID

- Bring in money!
- Starting to put things in the ground.
  - Park District Demo Project
  - Wabash Street Corridor

MICHIGAN CITY — The City of Michigan City has been awarded a Great Lakes Shoreline Cities Green Infrastructure Grant for $224,823 for the Wabash Street green infrastructure project, according to a news release.

The Wabash Street green infrastructure project consists of a set of improvements including the installation of stormwater best management practices in the form of rain gardens and bioswales.

WHAT WE DID

- Provide tools and support
  - Templates

Practical tools for (resource-constrained) municipalities!

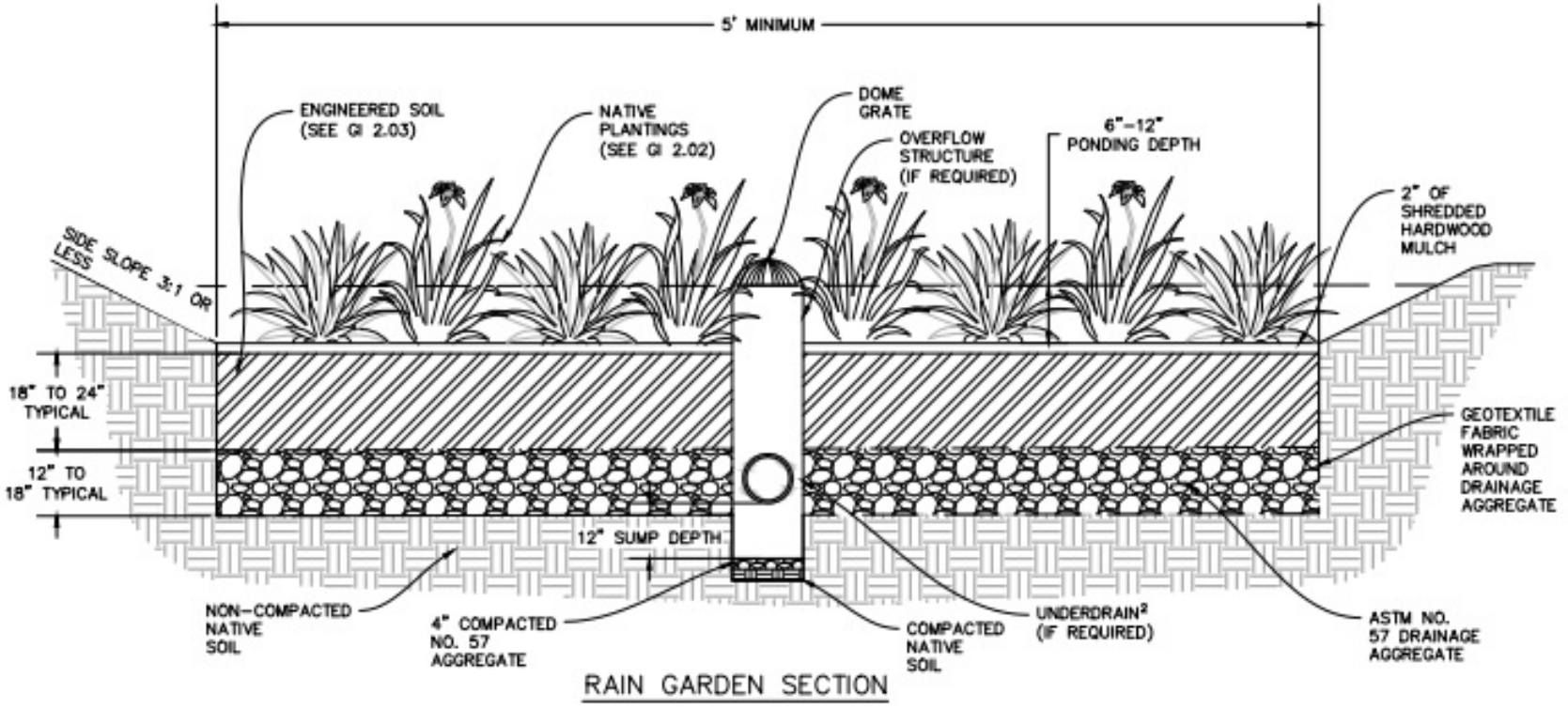
TOOLKIT FEATURES

1. Decision support tree, basic information on green infrastructure
2. Templates, plan sets, cross sections, and material specifications
3. Estimation tools for installation and maintenance costs

- Bioswale/Hybrid Ditch
- Rain Garden
- Stormwater Planters
- Permeable Pavement
- Underground Storage

FOR GENERAL PUBLIC

FOR ENGINEERS



Excerpt from Rain Garden section

FOR MUNICIPAL MANAGERS

	Item	Description	Installed Cost[1]	Unit
GI Technique	Permeable pavement	Pavers, stone layers (bedding, base, and subbase), geotextile and excavation	$ 15.00	SF^2
Required component	Bedding layer	2" ASTM No. 8 Stone	$ 45.00	TON
	Base layer	4" ASTM No. 57 Stone	$ 30.00	TON
	Subbase layer[3]	6" ASTM No. 2 Stone	$ 35.00	TON
	Geotextile	Non-woven geotextile fabric	$ 5.00	SY
	Curb	Containment curb	$ 35.00	LF^1
Custom options	Underdrain	12" HDPE perforated storm pipe	$ 32.00	LF
	Connect to existing storm structure	Core drill existing structure, connect overflow pipe	$ 1,500	EA

WHAT WE CONTINUE TO DO

- More stakeholder engagement and education to identify mechanisms to fully incorporate green infrastructure into municipal structure in a sustainable way.
  - Policy Maker dialogue
  - Agency Staff dialogue
  - Public dialogue

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