

The Social, Economic, and
Environmental Impacts of Improving
Big Sioux River Quality

SMALL STEPS
TOWARD BIG CHANGE

ISG

Architecture
Engineering
Environmental
Planning



Steve Watson

Development Strategist

Passionate about providing communities in South Dakota with the tools they need to facilitate positive change.



Rachel Kloos

*Water/Wastewater
Group Leader*

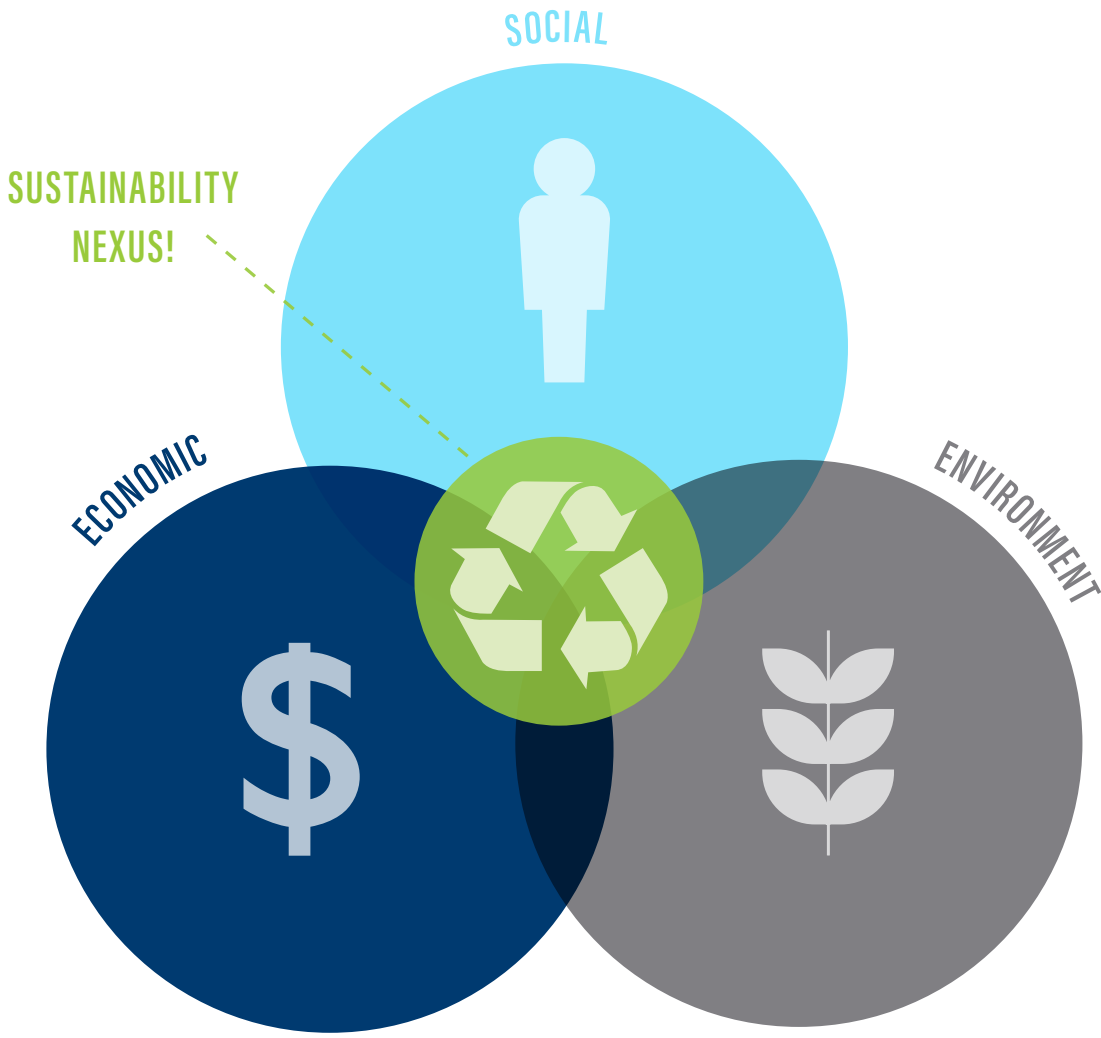
Committed to changing the role of sustainability from accessory to essential.



WHY TRY TO
IMPROVE

THE RIVER?

TRIPLE BOTTOM LINE FRAMEWORK



LIMITING BELIEFS

ISG



AGRICULTURE



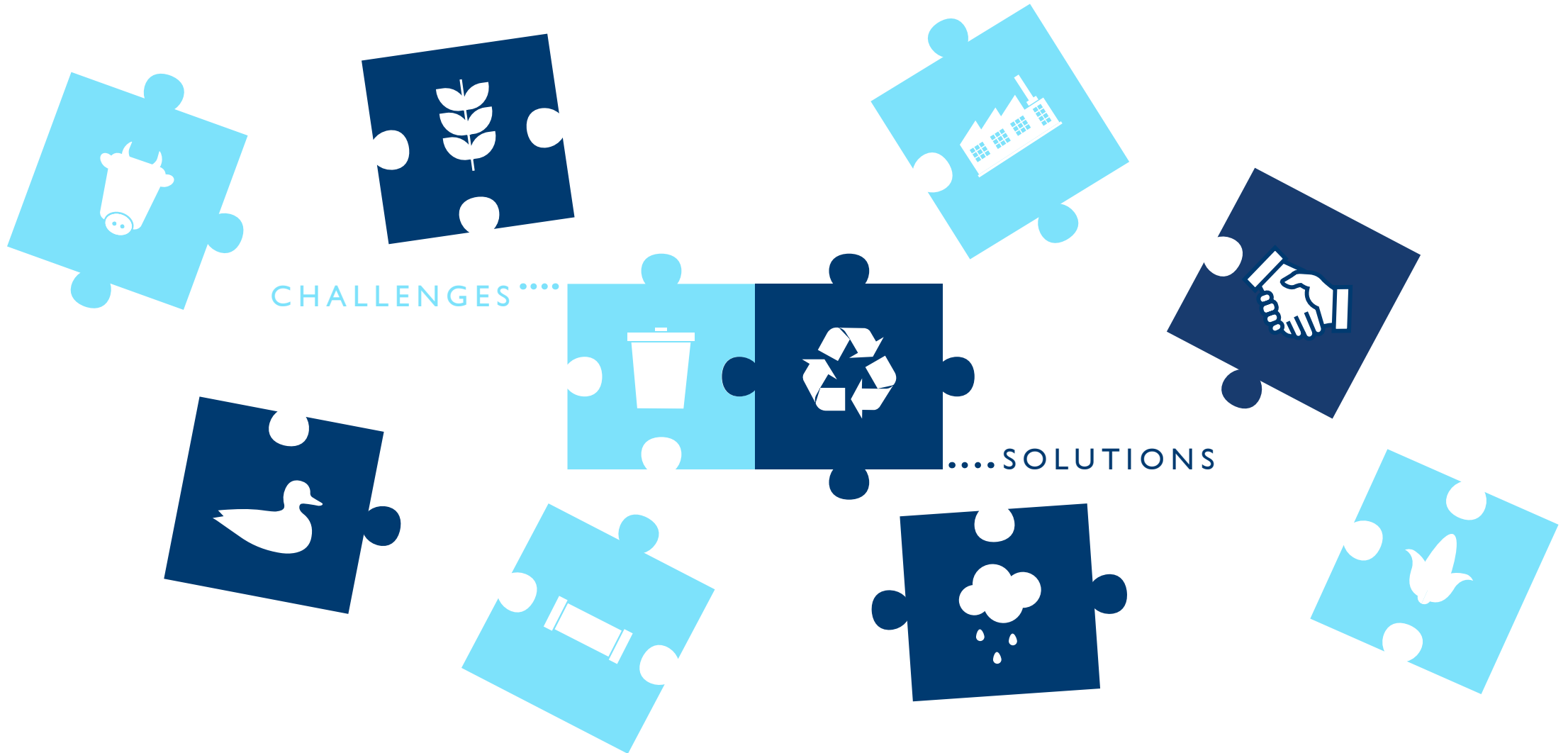
INDUSTRY



NOT MY
RESPONSIBILITY

THERE ISN'T ONE SOLUTION

ISG





SUSTAINABILITY—
WHAT DOES IT MEAN TO YOU?

INNOVATIVE SOLUTIONS FOR WATER QUALITY

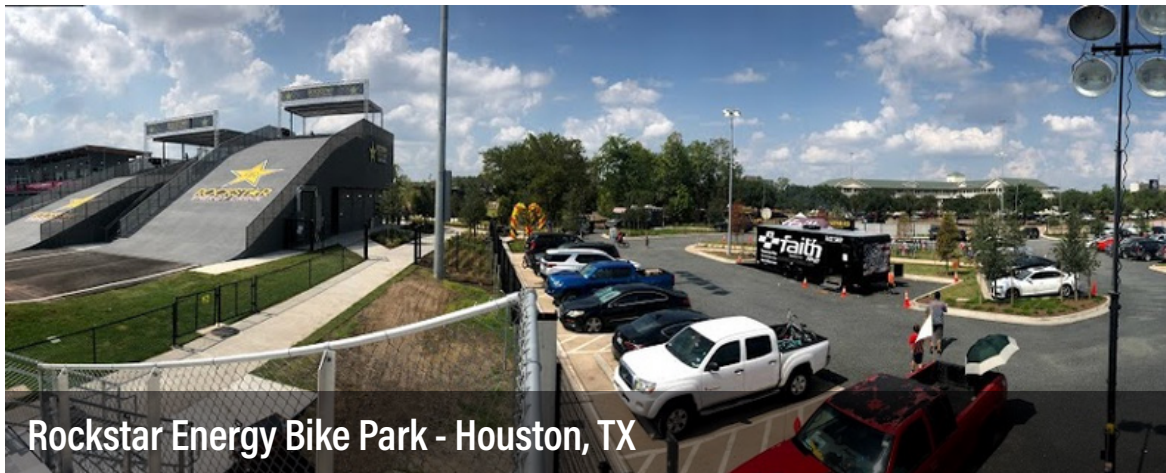
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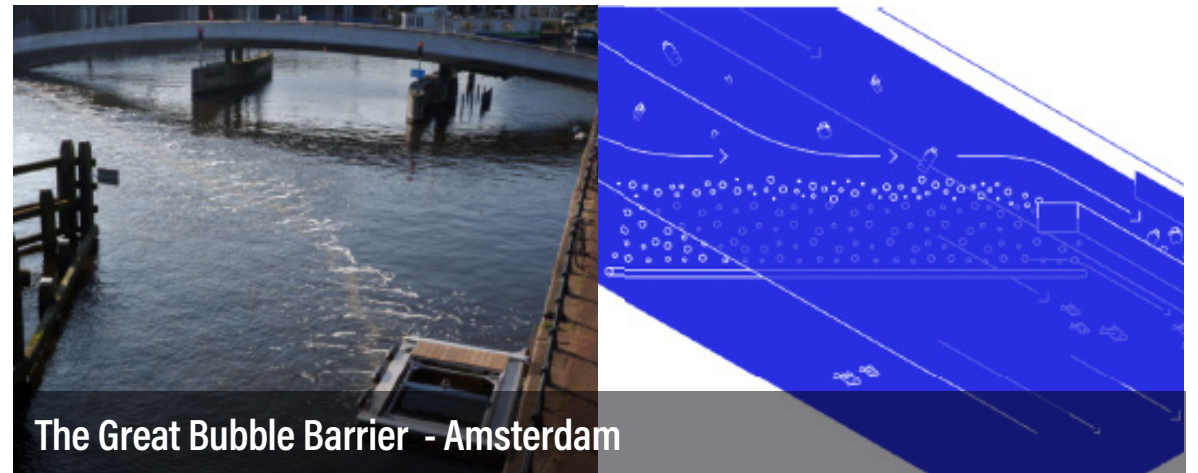
City Hall Green Roof - Chicago, IL



Poudre River Whitewater Park - Fort Collins, CO



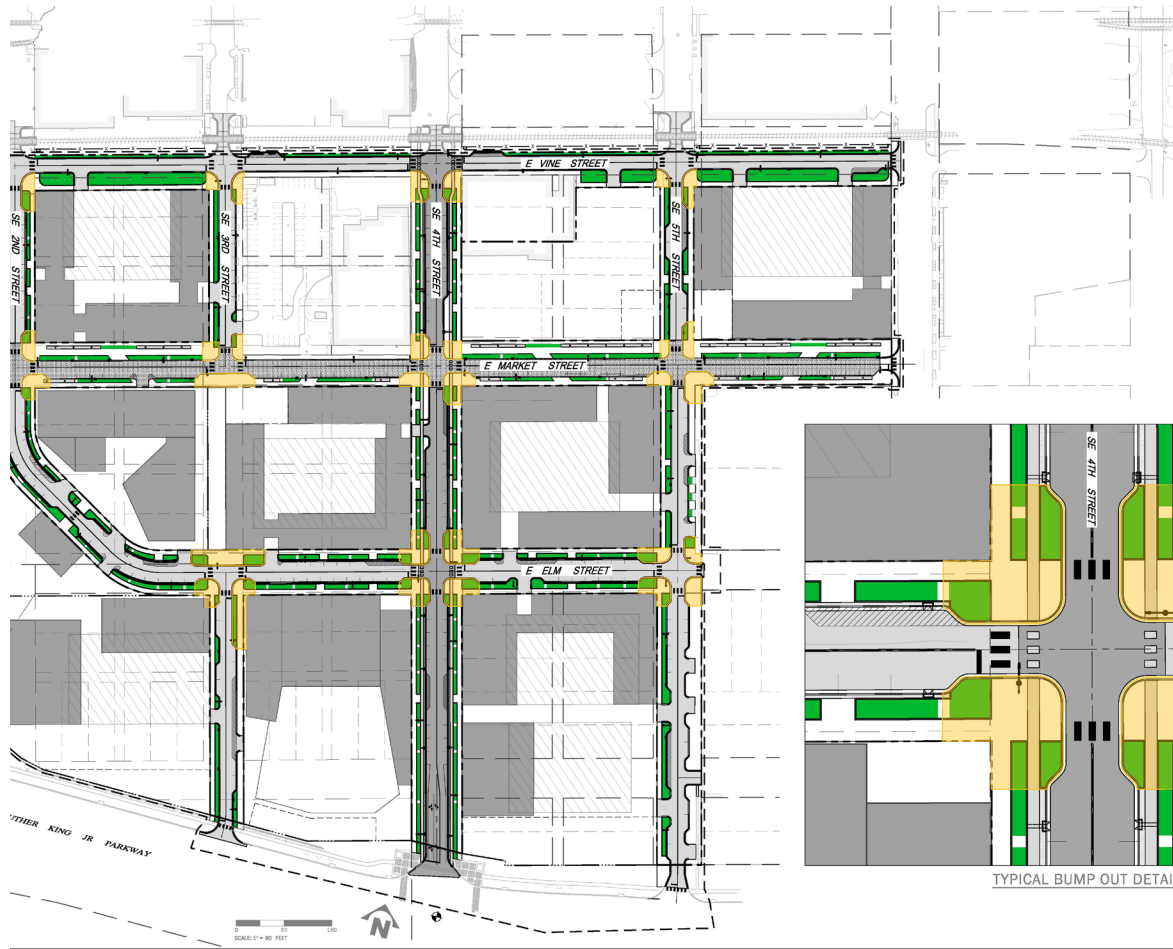
Rockstar Energy Bike Park - Houston, TX



The Great Bubble Barrier - Amsterdam

ISG - SUSTAINABLE DESIGN SOLUTIONS

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Market District - Des Moines, IA

THE MARKET DISTRICT
DES MOINES, IOWA - 08-25-2020

INTERSECTION EXHIBIT

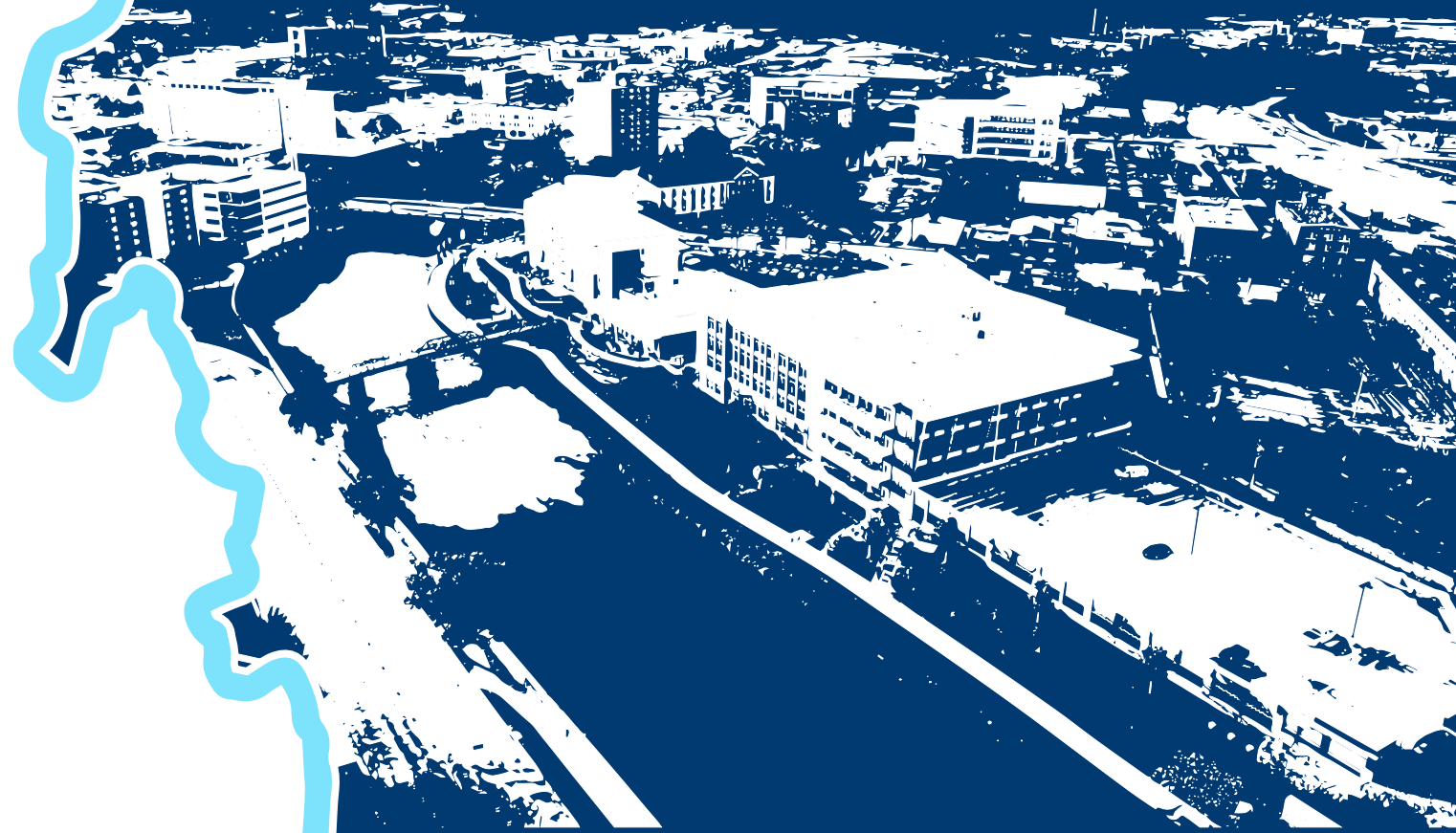


Bioswale - Harrisburg, SD



Sioux City Promenade - Sioux City, IA

WHAT DOES THIS MEAN FOR SIOUX FALLS?



STORMWATER FILTRATION

ISG

OPPORTUNITY

- Major stormwater drainage area with little natural vegetation filtering
- Riprap noted but erosion also noted in the area.
- Garbage in area, tires, etc.

SOLUTION

- Channel restoration
- Remove some of the wood to bring in more sunlight
- Increase pooled areas and vegetation
- Enhance existing trail and historic streetlights



EROSION AREAS LEADING TO SEDIMENT IN RIVER

ISG

OPPORTUNITY

- Erosion from lack of vegetation on shores
- Major storm intakes
- Garbage in area, tires, etc.
- Overflow parking impacting grass

SOLUTION

- Regional stormwater treatment
- Vegetation and riprap
- Alternative paving to enhance runoff quality
- Use as educational showcase



ROOF SHEETING DURING RAIN EVENTS

ISG

OPPORTUNITY

- Road floods during intense storm events
- Excessive roof top runoff in area

SOLUTION

- Green roof
- Curb cut design
- Rain garden and infiltration basins
- Utilize parking lots to redirect rain



TRASH IN RIVER

ISG

OPPORTUNITY

- Common area for trash under the viaduct
- Stormwater runoff into the River

SOLUTION

- Targeted community clean up
- Increased vegetation
- Targeted trash collection at stormwater inlets or outlets





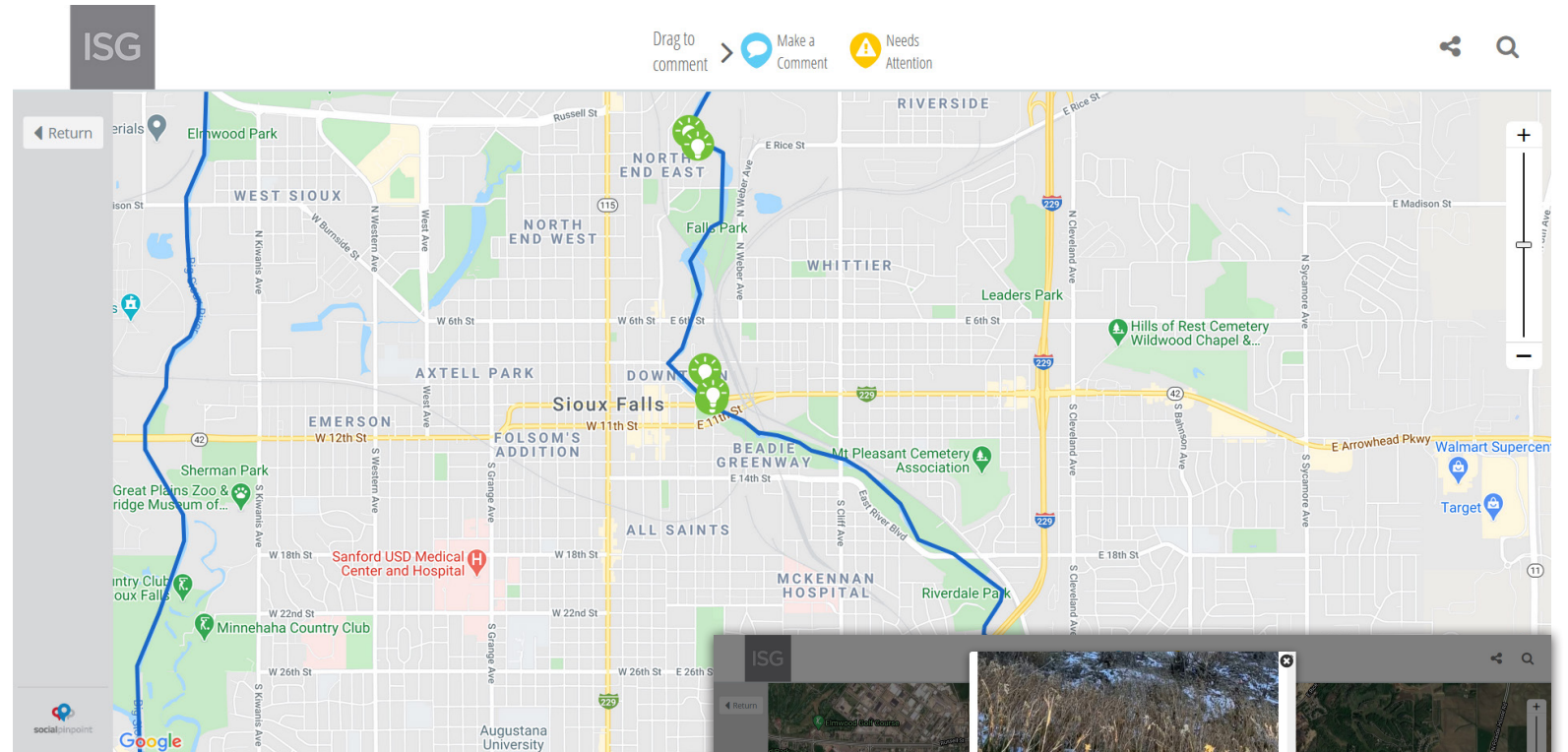
NOW THAT WE
HAVE THE

JUICES FLOWING

LET'S GET STARTED!

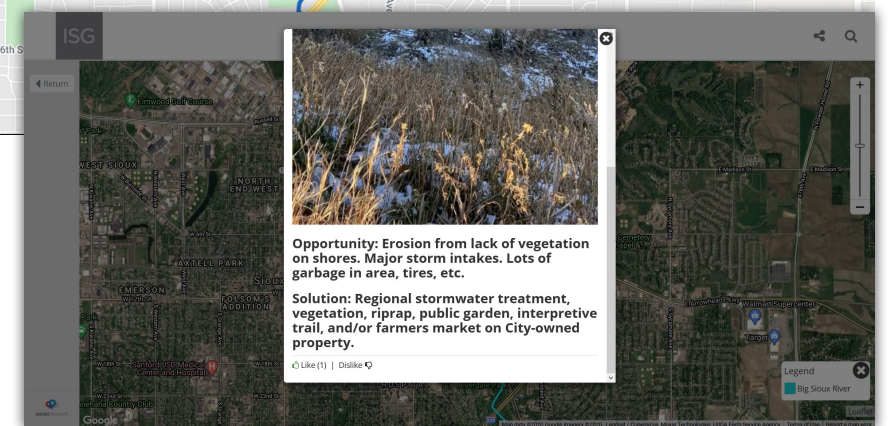
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DISCOVERY CONSENSUS ACTION



Check it out!

bit.ly/BigSiouxRiverSP





Q & A



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THANK YOU

