Regenerative Stormwater Conveyance (RSC) at CTH KR Roadway Expansion:

Finding Win-Win

Dave Giordano
Executive Director
Root-Pike Water Initiative Network

STORMWATER SOLUTIONS ENGINEERING LLC

WISCONSIN DEPARTMENT OF TRANSPORTATION

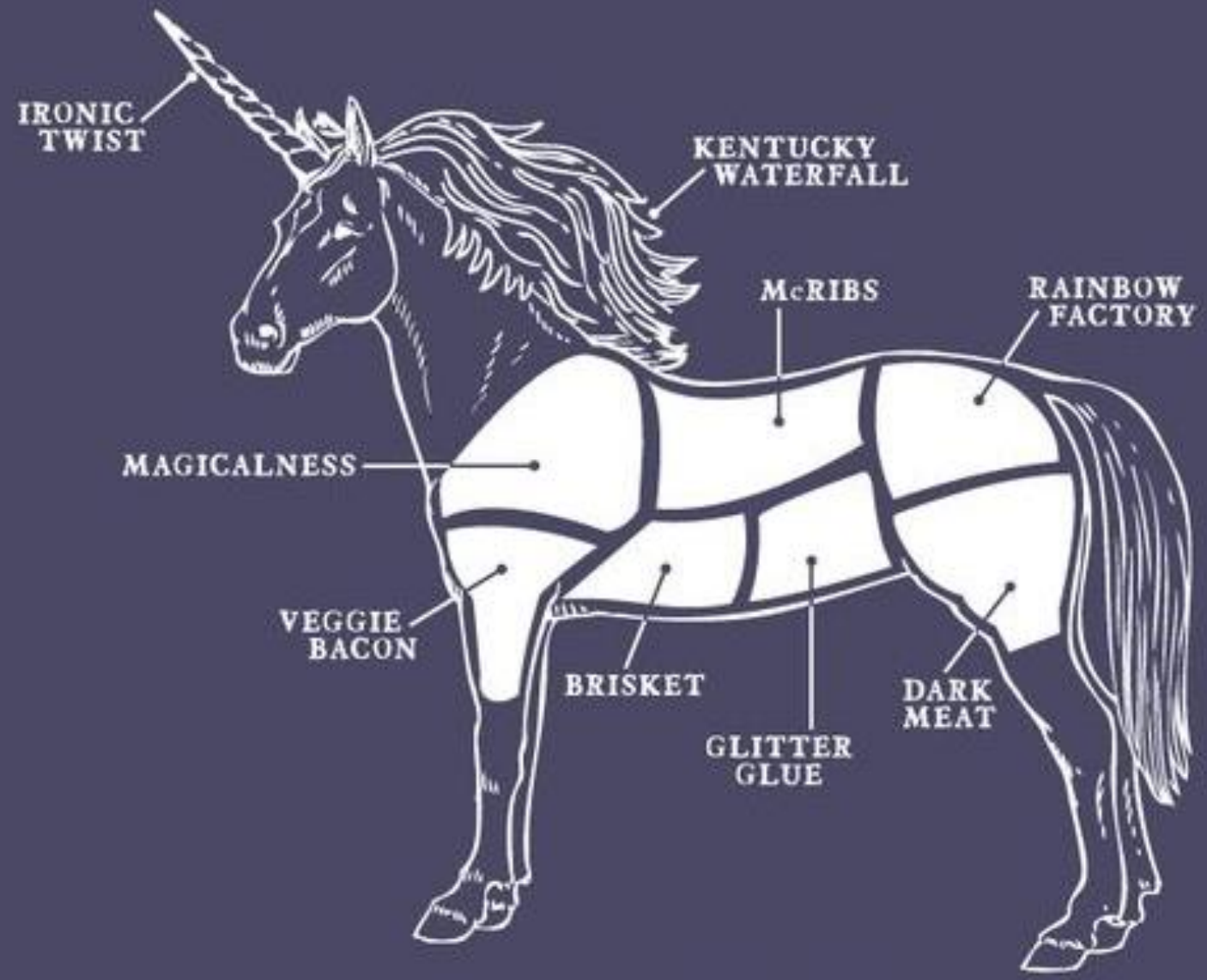
KENOSHA COUNTY WISCONSIN Established 1850

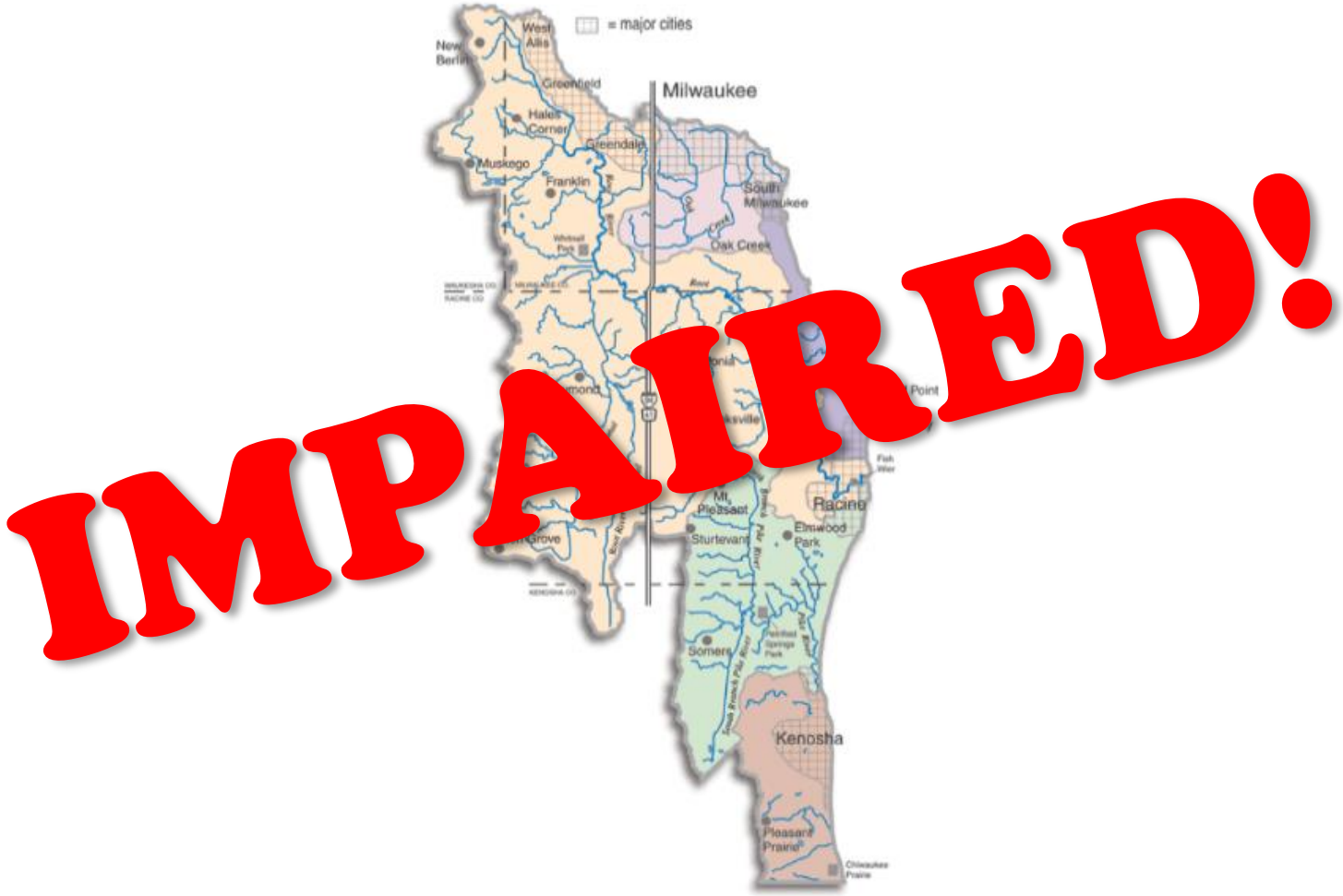
WISCONSIN DEPT. OF NATURAL RESOURCES

Fund for Lake Michigan
Clearly making a deep impact.

WATERSHED INITIATIVE NETWORK WIN ROOT-PIKE


ChisagoCountySO/Twitter


IRONIC TWIST
KENTUCKY WATERFALL
McRIBS
RAINBOW FACTORY
MAGICALNESS
VEGGIE BACON
BRISKET
GLITTER GLUE
DARK MEAT



PROBLEMS

THESE PROBLEMS GET US TO THE EPA'S 303D LIST

303D LISTED WATERS
IN THE ROOT-PIKE BASIN

Oak Creek	Oak Creek	0	13.32	14500	River	Milwaukee	Unknown Pollutant	Chronic Aquatic	303d Listed
Unnamed	Waxdale Creek	0	2.91	2300	River	Racine	Unknown Pollutant	Chronic Aquatic	Pollutant Removed
Hoods Creek	Hoods Creek	0	9.7	3100	River	Racine	Unknown Pollutant	Degraded Biological	Proposed for List
Root			.72	4300	River	Milwaukee, Racine	Total Phosphorus	Low DO	303d Listed
R			.82	2900	River	Racine	Total Phosphorus	Impairment Unknown	303d Listed
O			.32	14500	River	Milwaukee	Total Phosphorus	Degraded Biological	303d Listed
Uppe	Kelly Lake			7100	Lake	Milwaukee,	Total Phosphorus	Impairment Unknown,	303d Listed
S	Scout Lake			6100	Lake	Milwaukee	Total Phosphorus	Impairment Unknown	303d Listed
West	West Branch Root	0	.43	4500	River	Racine	Total Phosphorus	Low DO	303d Listed
R	Root River	25.8	.69	2900	River	Milwaukee,	Total Phosphorus	Low DO, Degraded	303d Listed
Hu	Husher Creek	0	.4	3500	River	Racine	Total Phosphorus	Degraded Biological	303d Listed
P	Pike River	0	.45	1300	River	Kenosha	Total Phosphorus	Degraded Biological	303d Listed
R	Root River	20.48	.5.8	2900	River	Milwaukee, Racine	Total Phosphorus	Low DO, Degraded	303d Listed
P	Pike River	1.45	.9.5	1300	River	Kenosha	Total Phosphorus	Degraded Biological	303d Listed
R	Root River	5.82	.0.48	2900	River	Milwaukee, Racine	Total Phosphorus	Degraded Biological	303d Listed
U	Local Water	0	.18	6300	River	Milwaukee,	Total Phosphorus	Impairment Unknown	Proposed for List
U	Jess Corners Creek	0	.7.3	6200	River	Milwaukee,	Total Phosphorus	Impairment Unknown	Proposed for List
U	Unnamed Trib to W Br	0	.3.9	4840	River	Racine	Total Phosphorus	Impairment Unknown	Proposed for List
R	Ryan Creek	0	.86	5100	River	Milwaukee	Total Phosphorus	Degraded Biological	Proposed for List
U		0	.92	3385	River	Milwaukee, Racine	Total Phosphorus	Impairment Unknown	Proposed for List
Lak				20	Great Lakes Beach	Milwaukee	E. coli	Recreational	303d Listed
Lak				20	Great Lakes Beach	Kenosha	E. coli	Recreational	303d Listed
Lak	Michigan	Pichelman Beach		20	Great Lakes Beach	Kenosha	E. coli	Recreational	303d Listed
Lak				20	Great Lakes Beach	Kenosha	E. coli	Recreational	Water Delisted
Lak				20	Great Lakes Beach	Kenosha	E. coli	Recreational	303d Listed
Lak	Michigan	Bender Beach Park		20	Great Lakes Beach	Milwaukee	E. coli	Recreational	Water Delisted
Lak	Michigan	Grant Park Beach		20	Great Lakes Beach	Milwaukee	E. coli	Recreational	303d Listed
Lak				20	Great Lakes Beach	Racine	E. coli	Recreational	303d Listed
Lak				20	Great Lakes Beach	Milwaukee	E. coli	Recreational	Water Delisted
Lak	Michigan	Southport Park Beach		20	Great Lakes Beach	Kenosha	E. coli	Recreational	Delist
R			.82	2900	River	Racine	PCBs	Contaminated Fish	303d Listed
P			.45	1300	River	Kenosha	PCBs	Contaminated Fish	303d Listed
U			.8	15550	River	Milwaukee	Fecal Coliform	Recreational	TMDL Development
Root	Root River Canal	0	.72	4300	River	Milwaukee, Racine	Sediment/Total	Low DO	303d Listed
North		0	.23	1900	River	Kenosha, Racine	Sediment/Total	Degraded Habitat	303d Listed
West		0	.43	4500	River	Racine	Sediment/Total	Low DO	303d Listed
U		0	.91	2300	River	Racine	Sediment/Total	Degraded Habitat	303d Listed
R	Root River	25.8	.69	2900	River	Milwaukee,	Sediment/Total	Low DO	303d Listed
R	Root River	20.48	.5.8	2900	River	Milwaukee, Racine	Sediment/Total	Low DO	303d Listed
P	Pike Creek	0	.69	1200	River	Kenosha	Chloride	Chronic Aquatic	303d Listed
R	Root River	25.8	.3.69	2900	River	Milwaukee,	Chloride	Chronic Aquatic	303d Listed
O	Oak Creek	0	.3.32	14500	River	Milwaukee	Chloride	Chronic Aquatic	303d Listed
Unnamed	North Branch Oak	0	5.7	14900	River	Milwaukee	Chloride	Chronic Aquatic	Proposed for List
North Branch Pike	North Branch Pike	5.23	7.87	1900	River	Racine	Chloride	Chronic Aquatic	Proposed for List
Pike River	Pike River	0	1.45	1300	River	Kenosha	Chloride	Chronic Aquatic	303d Listed

OPPOSING FORCES

- "A **one acre** wetland, one foot deep, can hold approximately **330,000** gallons of water."*
- **90%** of the Pike River's wetlands are altered or gone.[1]

* *Source: Brian K. Miller, Purdue University*

- *1 Source: Pike River Nine Key Element Watershed Restoration Plan (2013)*

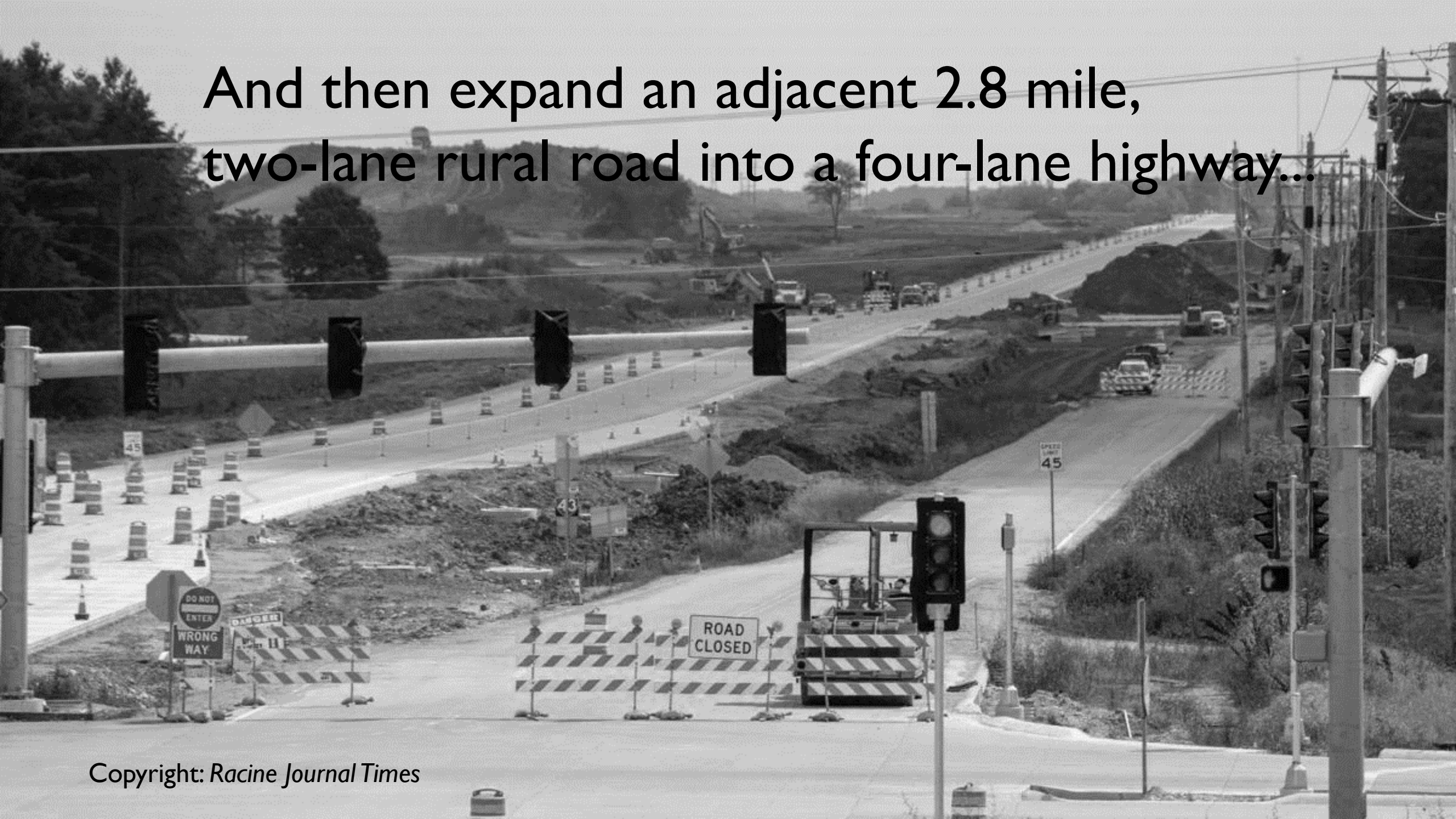
STORMWATER SOLUTIONS ENGINEERING LLC

WATERSHED INITIATIVE NETWORK WIN ROOT-PIKE


The Restored North Branch of the Pike River


Now, add the largest development
in North America (1500 acres)…

And then expand an adjacent 2.8 mile, two-lane rural road into a four-lane highway...

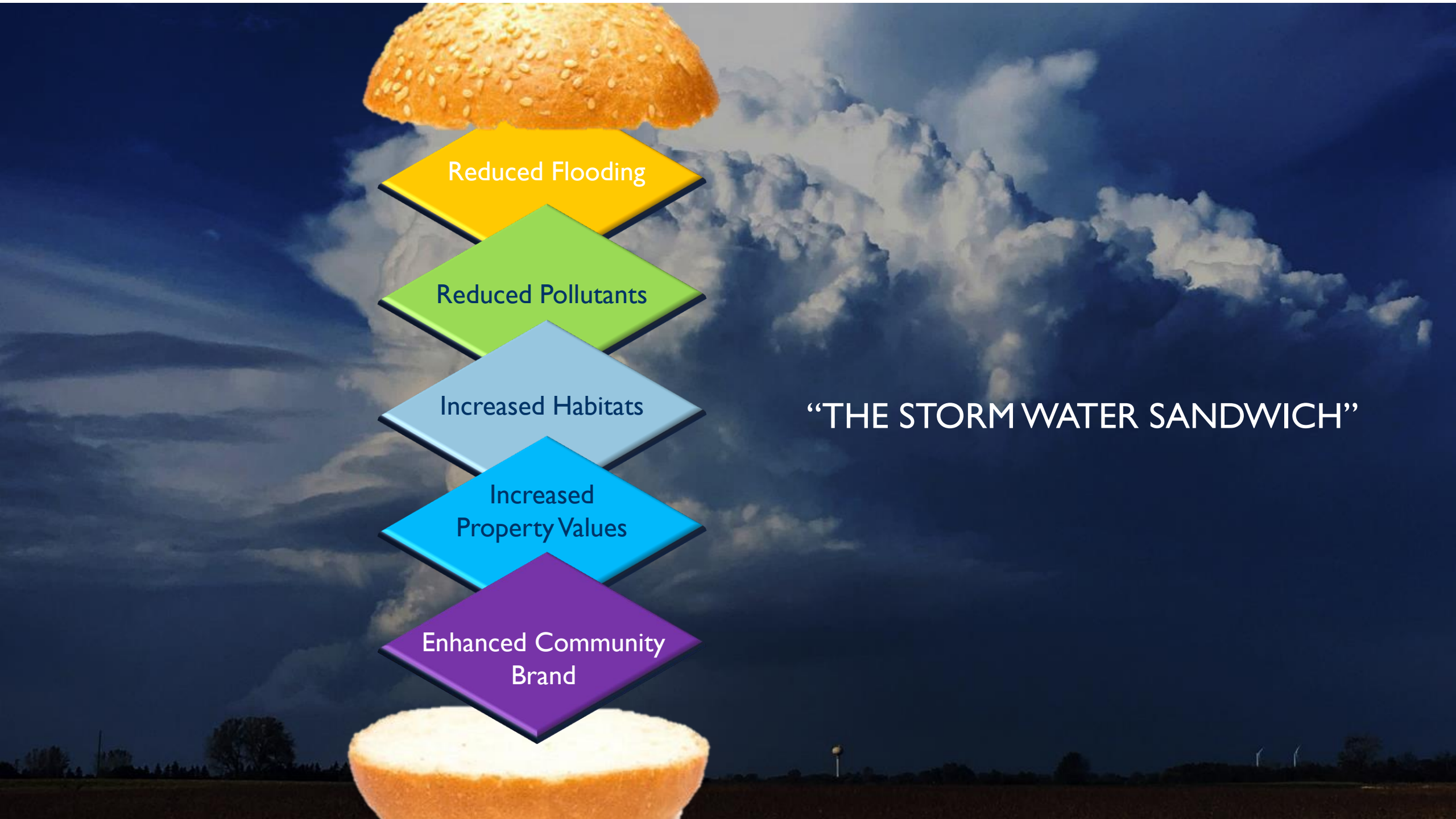



Caledonia
Franksville
Mt. Pleasant
Sturtevant
Somers
Elmwood Park
Colonial Park
Petrifying Springs Park
Kenosha
Pike Creek
Turtle Creek
Hoods Creek
Root River
North Branch - Pike River
South Branch - Pike River
Pike River
94
7.5 Miles of Stream and Buffer Restored

OUR RESPONSE

Champion $1 Million
for Three Community-based
Watershed Restoration Plans

1) Pike River
2) Root River
3) Wind Point



"THE STORM WATER SANDWICH"

BEGIN WITH THE END IN MIND

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STATE JOURNAL

ECONOMICS AND ENVIRONMENT

DOT, DNR, Kenosha County and Root-Pike WIN Restore North Branch While Expanding CTH KR

The expansion of highway KR yielded some unexpected benefits this week as a local and state entities got together to find a WIN/WIN for Foxconn transportation, Kenosha County… and the environment. The DOT looked at some innovative new approaches and is working with a local non-profit to exceed the requirements of water quality. In a statement today….


CTH KR
Proposed DOT
Stormwater Pond
STH 31
CAN WE BE MORE INNOVATIVE?
OLD GREEN BAY RD