

2nd Quarter
June 7, 2016



SJRBC
St. Joseph River Basin Commission

Financials

- **Financial Report**
- **Approval of Claims**
- **Budget Revision**
- **Banking Resolution**

Old Business

- Basin Updates

Old Business

- Basin Updates
- St. Joseph River Basin Filter Strip Initiative



Bank Instability Results in More than Soil Loss

It's Not Just the Environment

Land along waterways can be filled with surprises. Unstable bank tops may be hidden by flowing water that has undercut the bank. Weight and vibration of heavy farm equipment might just be the formula for the remaining bank to collapse with the equipment still on it!

Filter strips provide that cushion of safety. Properly chosen plants, provide deep roots to strengthen the structure of the soil. The width of the filter strip insures that equipment will not get close to instability if undercutting occurs in the banks.

Eroded soils deposit in slow-flow areas down stream from their source. These deposits alter stream flow, resulting in upstream flooding or damage to the stream structure. This necessitates more frequent and more severe maintenance. Controlling soils before they enter streams and ditches, helps reduce the frequency and severity of drain maintenance—saving taxpayers money.

Who To Contact

For technical assistance and funding opportunities to develop and maintain a filter strip, contact your local **Natural Resource Conservation Service** and **Soil and Water Conservation District**.

For more information regarding Indiana's Filter Strip Law and tax assessment reductions, contact your **County Surveyor and Drainage Board** and **County Assessor**.

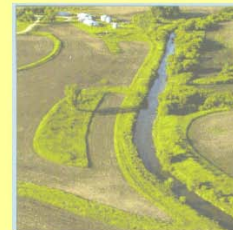


Filter Strips Protect Wildlife habitat

ST. JOSEPH RIVER BASIN COMMISSION

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IMPROVING WATER QUALITY THROUGH GOOD CONSERVATION PRACTICES



IC

**6-1.1-6.7
Indiana's
Filter
Strip Law**

Old Business

- Basin Updates
- St. Joseph River Basin Filter Strip Initiative
- **IWLA Scholarship**
 - **Randy Sexton, Noble County Surveyor**
 - **2017 Scholarship**



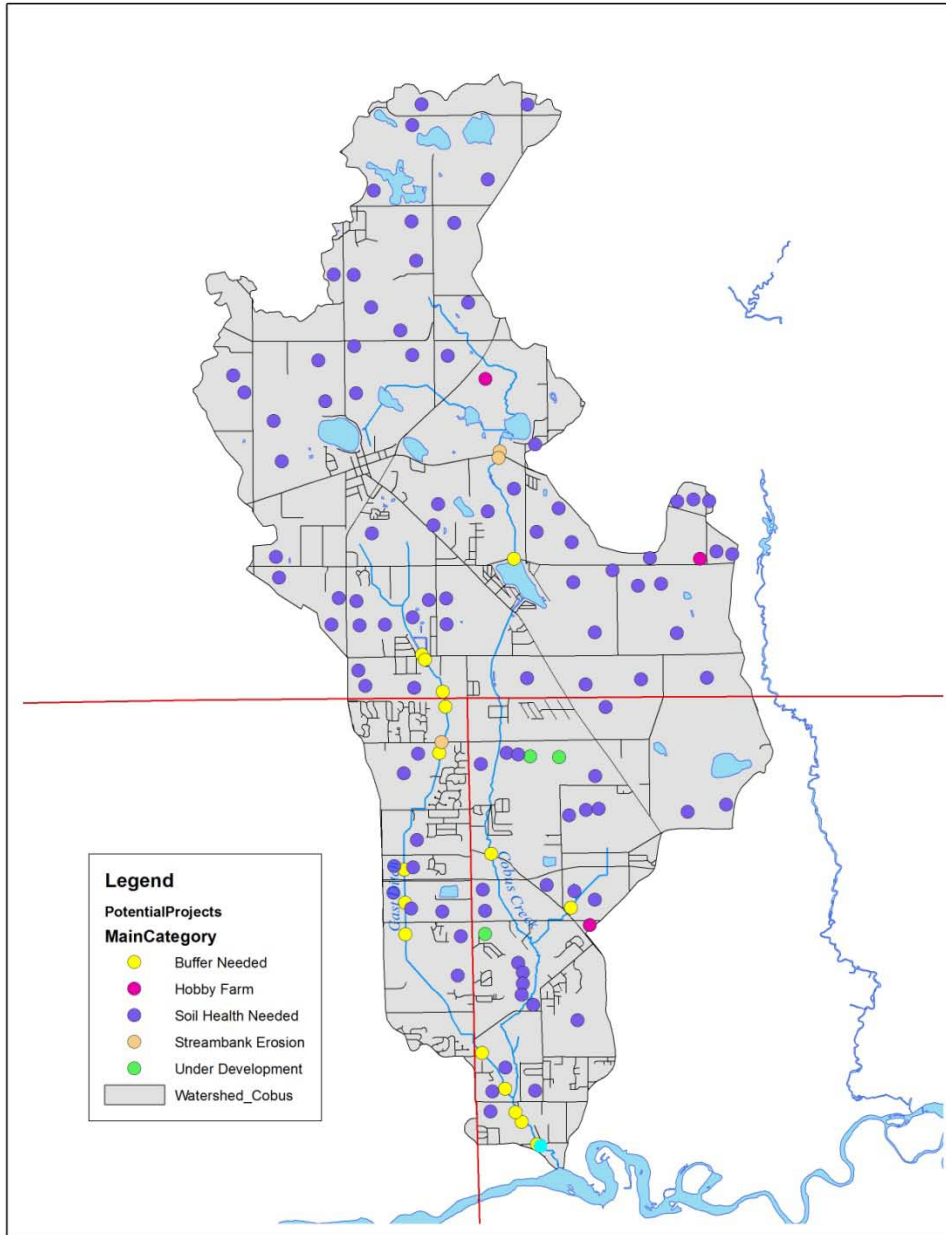
Old Business

- Basin Updates
- St. Joseph River Basin Filter Strip Initiative
- IWLA Scholarship
- **Cobus Creek Watershed Diagnostic Study**



Cobus Creek WDS

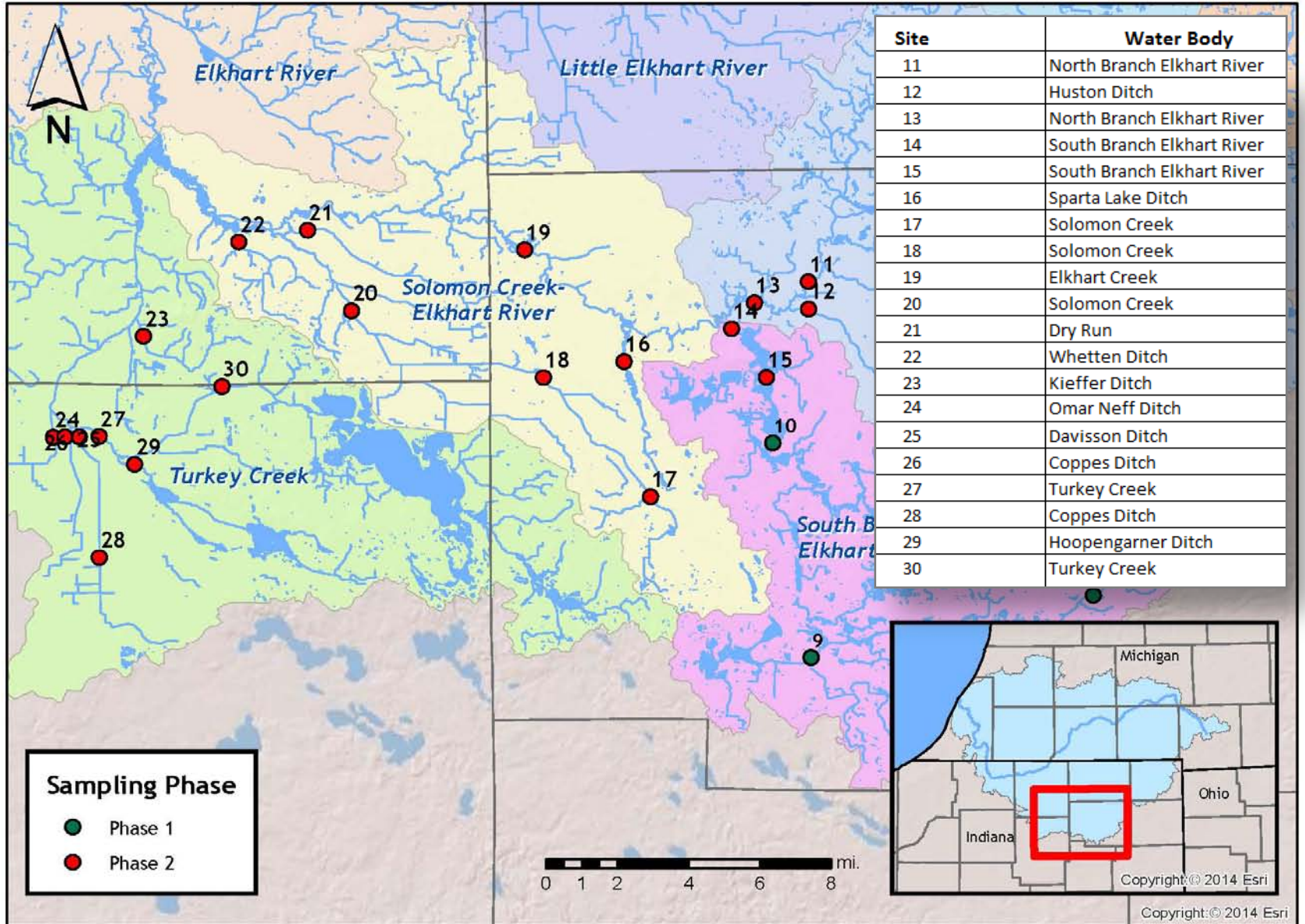
- Wind-shield survey complete***
 - ~8,720 acres ag bmps needed
 - ~0.9 miles bank stabilization needed
 - ~3.2 miles riparian buffer needed
- Aquatic organisms surveys started
- Chemical testing beginning soon
- Scheduling sites visits to public properties, Elkhart Conservation Club, & Edwardsburg
- Fish Passage Survey in September
- Draft Document early 2017
- Approval March 2017



Old Business

- Basin Updates
- St. Joseph River Basin Filter Strip Initiative
- IWLA Scholarship
- Cobus Creek Watershed Diagnostic Study
- **Water Monitoring Program Update**

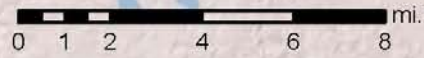
SJRBC Sampling Sites



Site	Water Body
11	North Branch Elkhart River
12	Huston Ditch
13	North Branch Elkhart River
14	South Branch Elkhart River
15	South Branch Elkhart River
16	Sparta Lake Ditch
17	Solomon Creek
18	Solomon Creek
19	Elkhart Creek
20	Solomon Creek
21	Dry Run
22	Whetten Ditch
23	Kieffer Ditch
24	Omar Neff Ditch
25	Davisson Ditch
26	Coppes Ditch
27	Turkey Creek
28	Coppes Ditch
29	Hoopengartner Ditch
30	Turkey Creek

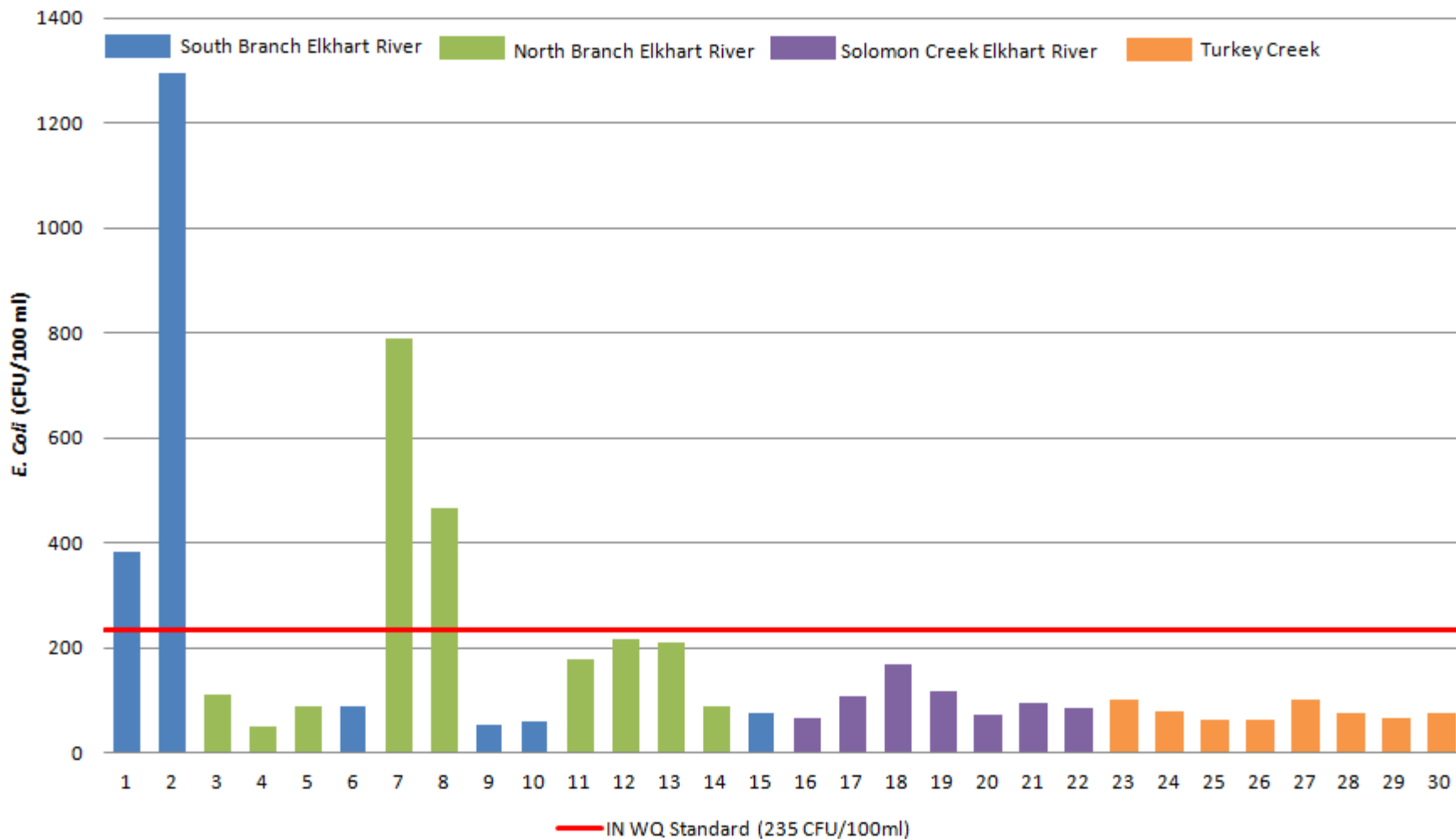
Sampling Phase

- Phase 1
- Phase 2

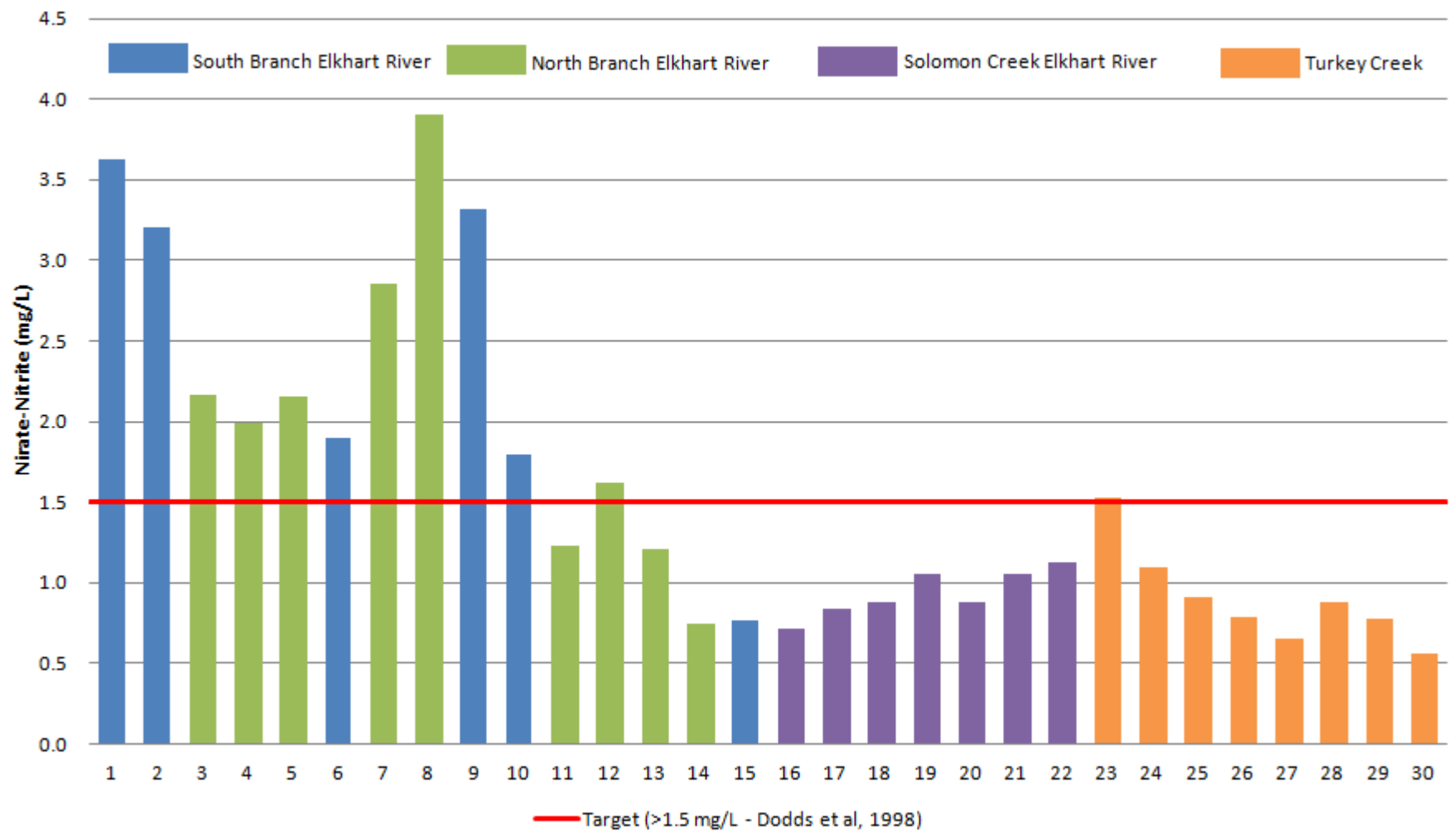


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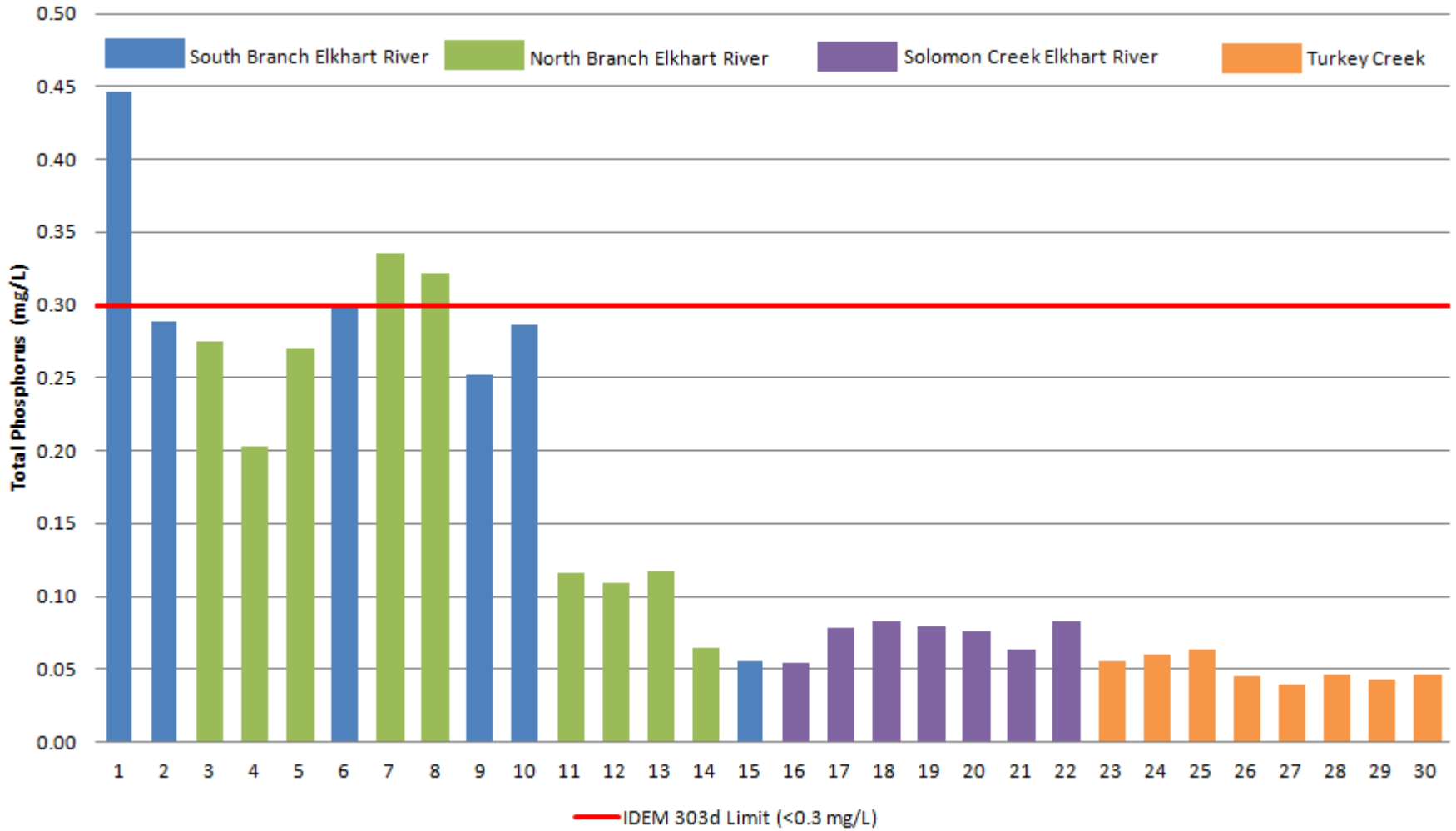
Phase 1-2 E. Coli Averages by Subwatershed



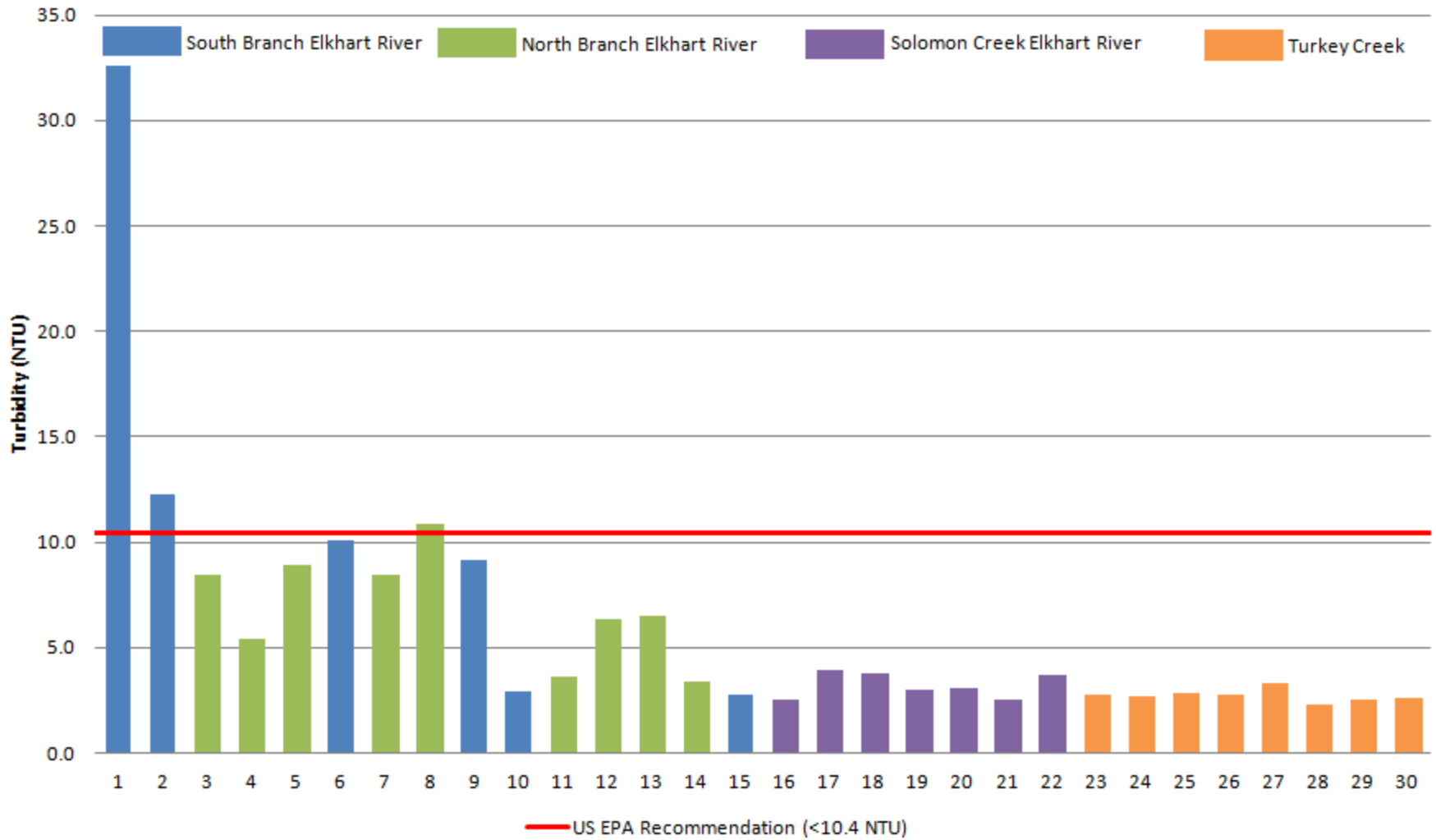
Phase 1-2 Nitrate-Nitrite Averages by Subwatershed



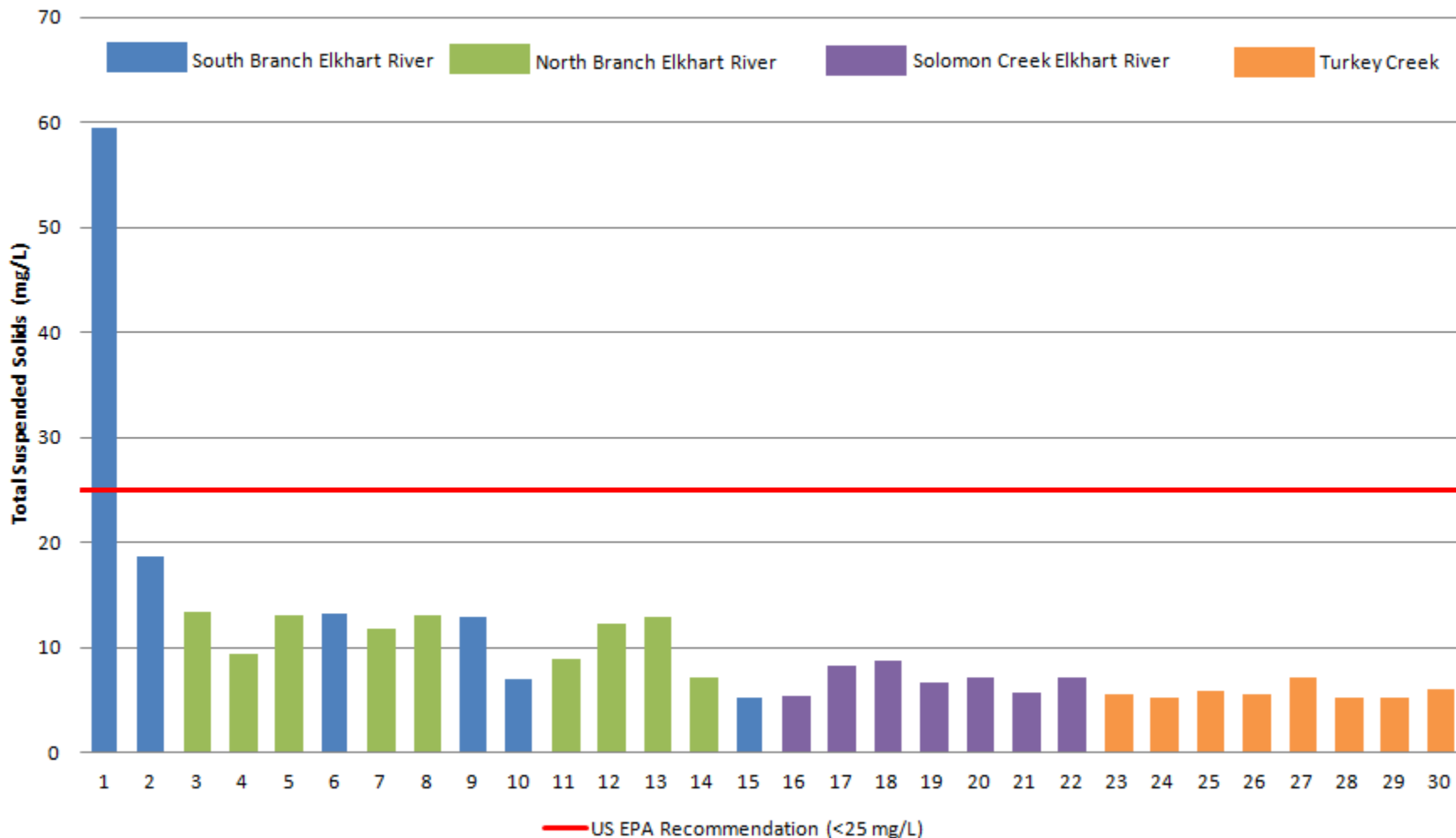
Phase 1-2 Total Phosphorus Averages by Subwatershed



Phase 1-2 Turbidity Averages by Subwatershed



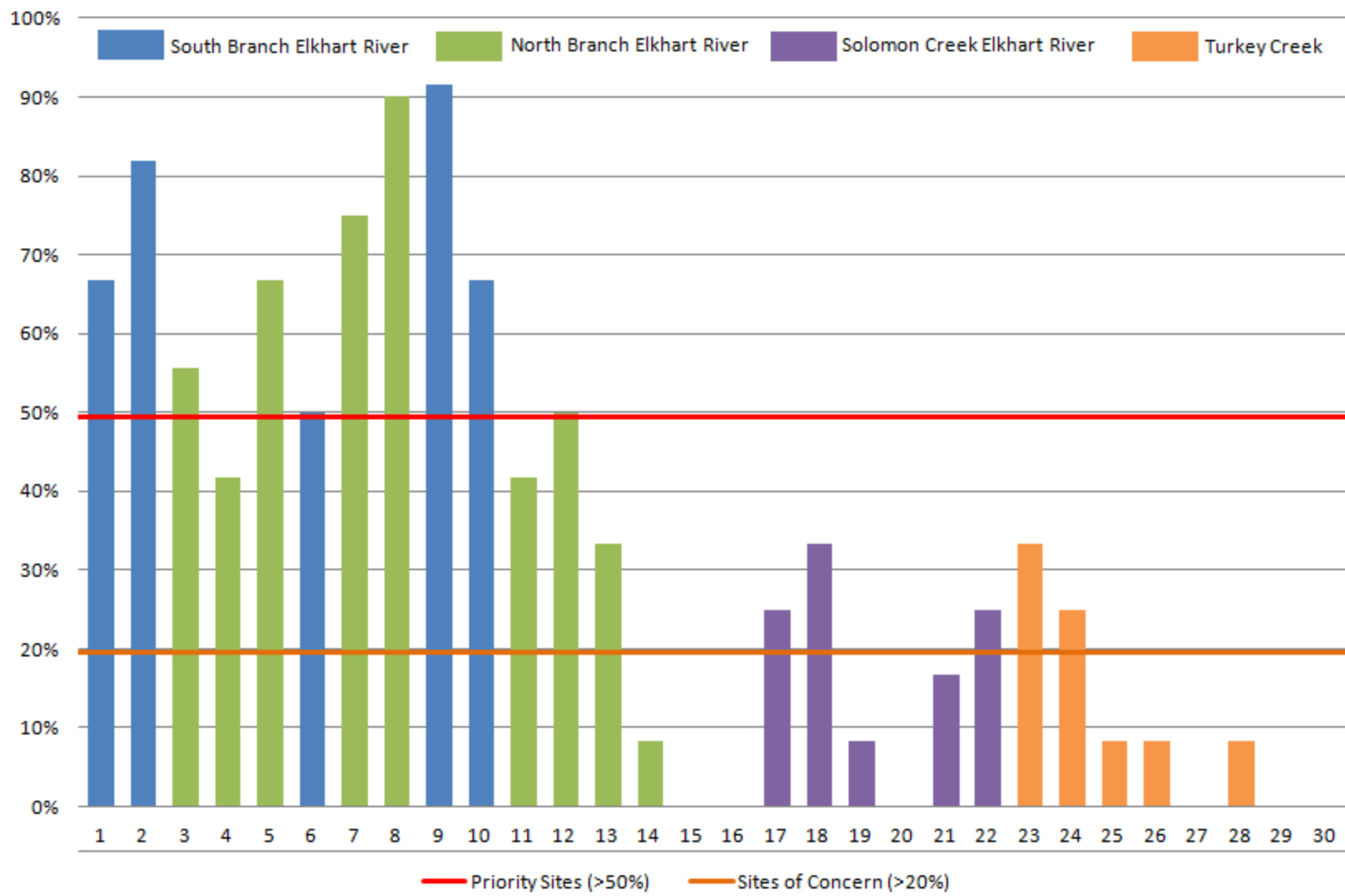
Phase 1-2 Total Suspended Solids Averages by Subwatershed

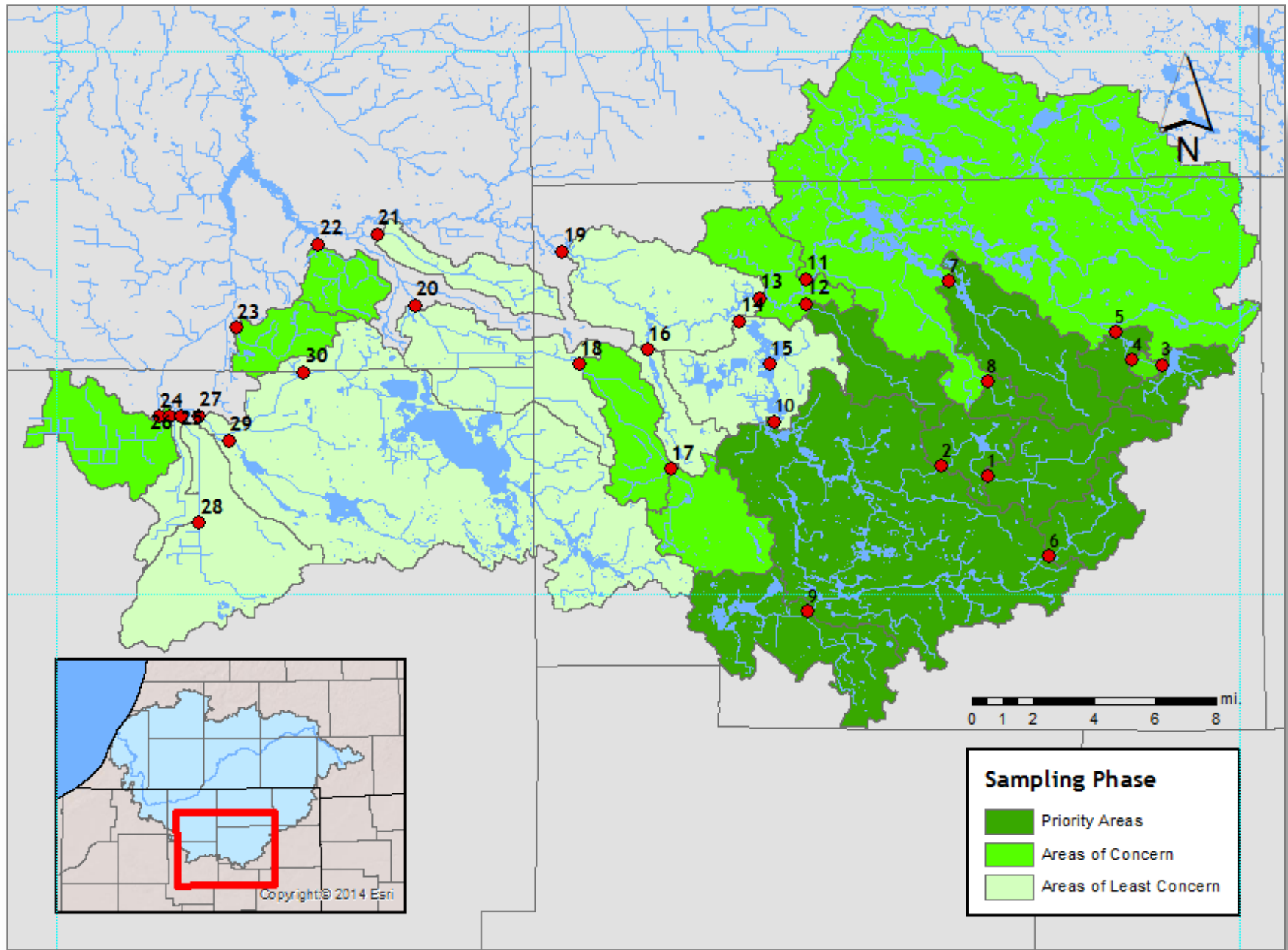


The number of sampling events exceeding water quality targets tells an even darker story...

Average by Site	<i>Escherichia coli</i>	Nitrate-Nitrite mg/l	Total Phosphorus mg/l	Turbidity ntu	Total Suspended Solids mg/l	# Samples Exceeding Targets	% Samples Exceeding Targets
1	4	8	7	7	8	8	67%
2	5	8	5	4	3	9	82%
3	1	5	2	3	2	5	56%
4	0	5	1	2	2	5	42%
5	1	7	5	4	1	8	67%
6	2	6	3	3	2	6	50%
7	2	9	4	4	2	9	75%
8	3	8	3	2	2	9	90%
9	0	11	3	2	1	11	92%
10	1	5	4	0	1	8	67%
11	2	4	0	0	0	5	42%
12	2	6	0	2	1	6	50%
13	2	3	0	2	2	4	33%
14	0	0	0	1	0	1	8%
15	0	0	0	0	0	0	0%
16	0	0	0	0	0	0	0%
17	2	0	0	1	0	3	25%
18	4	0	0	1	0	4	33%
19	1	0	0	0	0	1	8%
20	0	0	0	0	0	0	0%
21	1	2	0	0	0	2	17%
22	0	3	0	1	0	3	25%
23	1	4	0	0	0	4	33%
24	0	3	0	0	0	3	25%
25	0	0	0	1	0	1	8%
26	0	0	0	1	0	1	8%
27	0	0	0	0	0	0	0%
28	1	1	0	0	0	1	8%
29	0	0	0	0	0	0	0%
30	0	0	0	0	0	0	0%

Phase 1-2 Site Prioritization Based on % Exceeding WQ Standards





Old Business

- Basin Updates
- St. Joseph River Basin Filter Strip Initiative
- IWLA Scholarship
- Cobus Creek Watershed Diagnostic Study
- Water Monitoring Program Update
- **Elkhart River Conservation Initiative**
 - **A collaborative effort to implement sustainable projects in Elkhart River Watershed**

Elkhart River Conservation Initiative

- Workshop Held: March 29, 2016
 - What projects would you like to see implemented?



WATER QUANTITY DRAINAGE		
PROJECT Idea	LOCATION	OWNER
Utilize + Strengthen zoning ordinances	West Lake Area / North Branch Elkhart	Local Gov'ts
Install grade control structures	Hase Drain	Surveyors Office
Clean Sediment traps	Upstream Cree Lake	Lake ass / Surveyor
GATHERING DATA	NORTH BRANCH ELKHART RIVER	
REMOVAL OF LOGS + VEGETATION	TRANSITION AREA	→ SUBMIT IDEA TO AIDE @ DNR
MAINTENANCE OF CHANNEL	NORTH BRANCH ELKHART RIVER	FORMING AN ORGANIZATION?

New Business

- **2016 – 2017 Budget & Workplan**

New Business

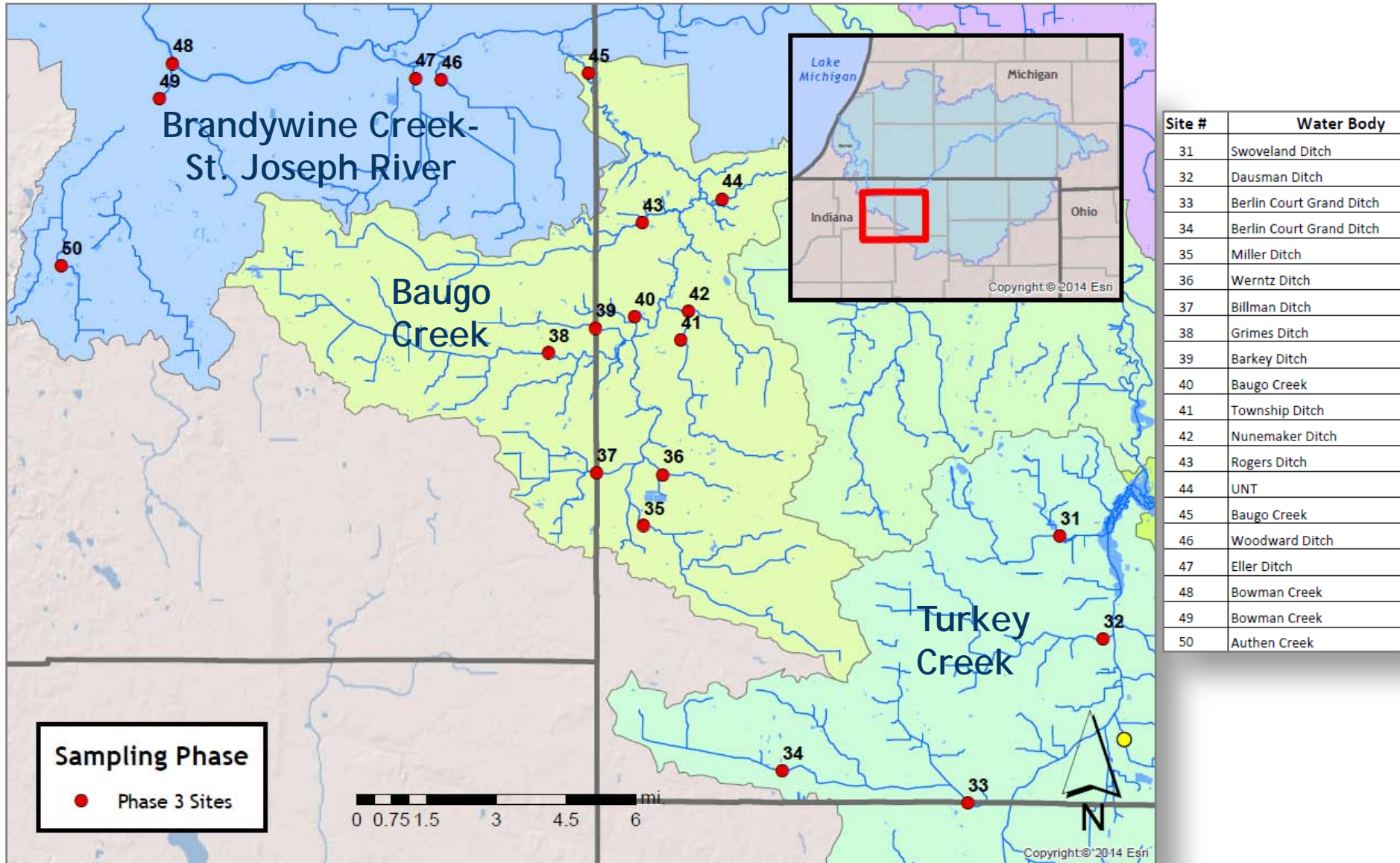
- 2016 – 2017 Budget & Workplan
- **IN-MI St. Joseph River Basin Symposium Recap**



New Business

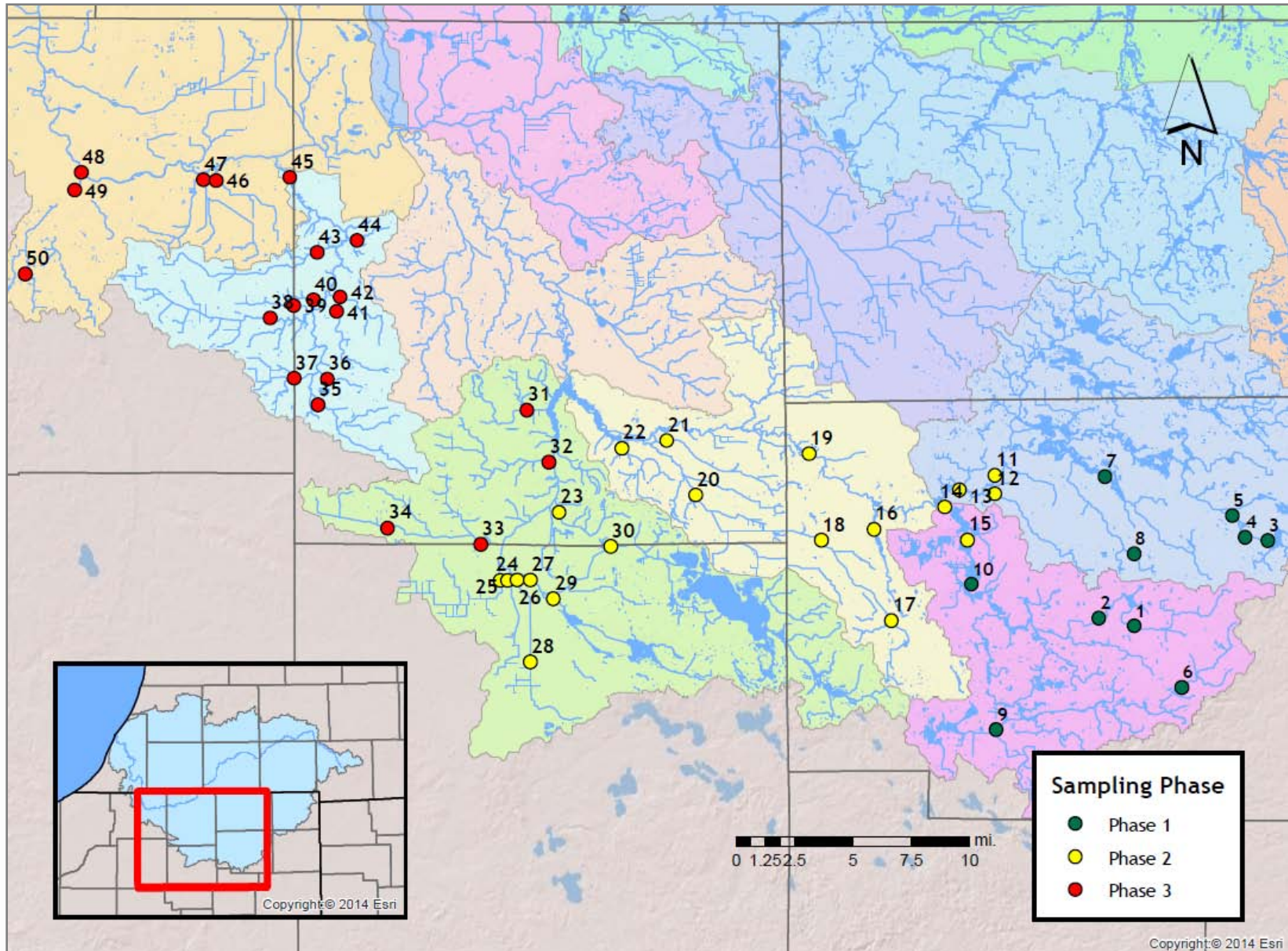
- 2016 – 2017 Budget & Workplan
- IN-MI St. Joseph River Basin Symposium Recap
- **2016-2017 Water Monitoring Sites (Phase 3)**

2016-2017 Water Monitoring Sites (Phase 3)



2016-2017 Water Monitoring Sites (Phase 3)

Site #	Date	Did it rain within 48 hrs. of	Baseflow /Wet Flow	pH	Temp °C	Dissolved O mg/l	BOD mg/l &%	Chlorides mg/l	Conductivity µS/CM	Total Dissolved Solids mg/l	<i>E. coli</i>	Nitrate-Nitrite mg/l	Total Phosphorus mg/l	Turbidity ntu	Total Susp Solids-mg/l	Flow cf/s
31	4/30/2016	Y	WW	8.11	14.6	8.70	1.3/14.94	8.3	477	262	100	0.9	0.07	3	8	9.068
32	4/30/2016	Y	WW	7.93	14.8	8.56	1.3/15.19	8.1	481	265	200	1.2	0.11	3	8	4.082
33	4/30/2016	Y	WW	7.70	14.9	10.28	1.2/11.67	8.7	479	263	250	1.2	0.11	6	14	13.038
34	4/30/2016	Y	WW	7.64	15.6	8.52	1.1/12.91	8.4	489	269	250	1.1	0.15	4	11	5.840
35	4/30/2016	Y	WW	8.10	14.5	9.83	1.2/12.21	8.8	489	269	50	0.8	0.08	3	9	6.048
36	4/30/2016	Y	WW	8.08	14.8	8.98	1.1/12.25	8.9	479	263	150	1.3	0.11	3	9	1.944
37	4/30/2016	Y	WW	8.19	16.2	9.04	1.0/11.06	8.3	483	266	150	0.8	0.07	3	8	2.948
38	4/30/2016	Y	WW	8.01	15.1	9.31	1.2/12.89	8.7	497	273	100	0.9	0.09	4	11	17.617
39	4/30/2016	Y	WW	8.07	14.6	9.76	1.2/12.30	8.9	503	277	100	0.9	0.11	3	8	2.227
40	4/30/2016	Y	WW	8.03	15.8	9.02	1.3/14.41	9.5	521	287	200	0.7	0.07	3	10	53.946
41	4/30/2016	Y	WW	7.99	15.8	9.74	1.3/13.35	9.1	518	285	100	1.1	0.14	3	9	4.731
42	4/30/2016	Y	WW	8.10	15.4	10.15	1.1/10.84	8.9	498	274	500	1.5	0.24	3	9	1.856
43	4/30/2016	Y	WW	8.20	15.2	10.15	1.3/12.81	8.7	513	282	150	1.1	0.17	3	9	1.386
44	4/30/2016	Y	WW	8.16	15.3	9.97	1.2/12.04	9.1	495	272	100	0.9	0.11	2	6	1.879
45	4/30/2016	Y	WW	8.11	15.7	9.07	1.3/14.33	8.9	517	284	200	0.9	0.11	5	13	62.735
46	4/30/2016	Y	WW	8.10	15.1	9.88	1.1/11.13	8.2	523	288	50	1.4	0.13	3	8	7.582
47	4/30/2016	Y	WW	7.99	14.8	10.15	1.1/10.84	8.2	519	285	50	0.8	0.09	2	6	7.946
48	4/30/2016	Y	WW	8.41	16.3	9.82	1.3/13.24	9.2	573	315	100	1.3	0.14	2	6	2.457
49	4/30/2016	Y	WW	8.39	16.1	9.74	1.2/12.32	9.1	568	312	100	1.2	0.12	2	6	2.232
50	4/30/2016	Y	WW	8.39	17.1	10.27	1.2/11.68	8.4	497	273	100	1.1	0.11	3	9	1.932





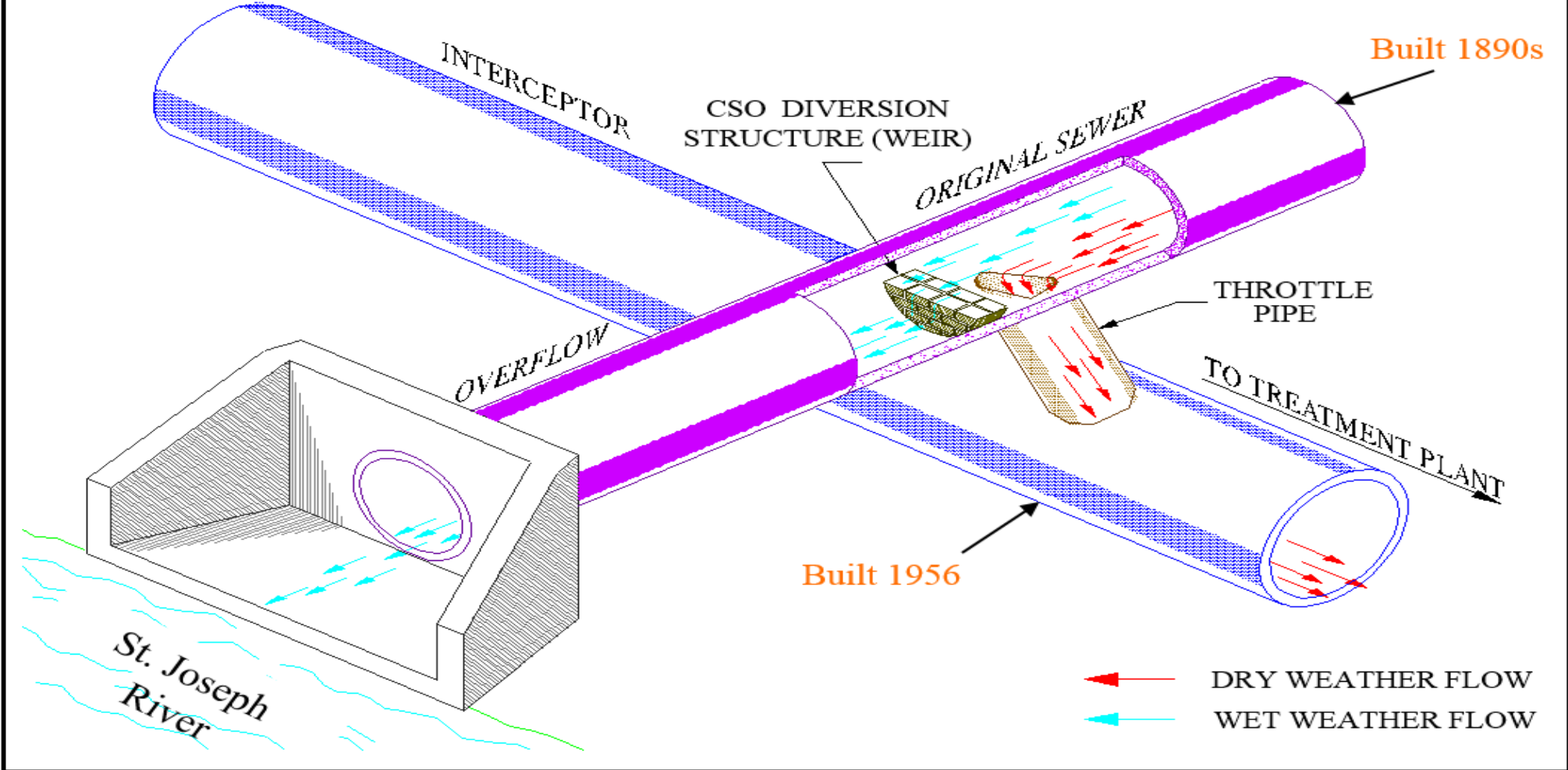
LTCP Overview & Update

City of South Bend Department of Public Works

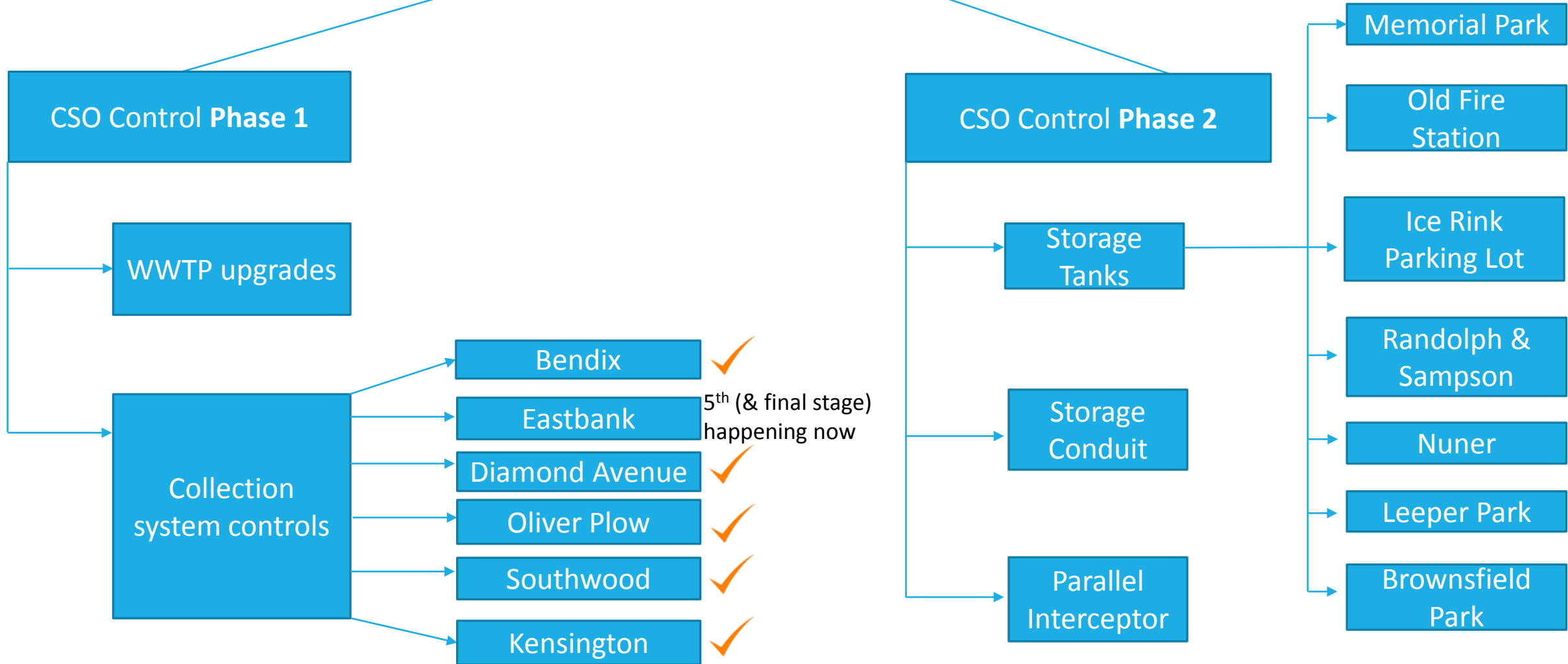


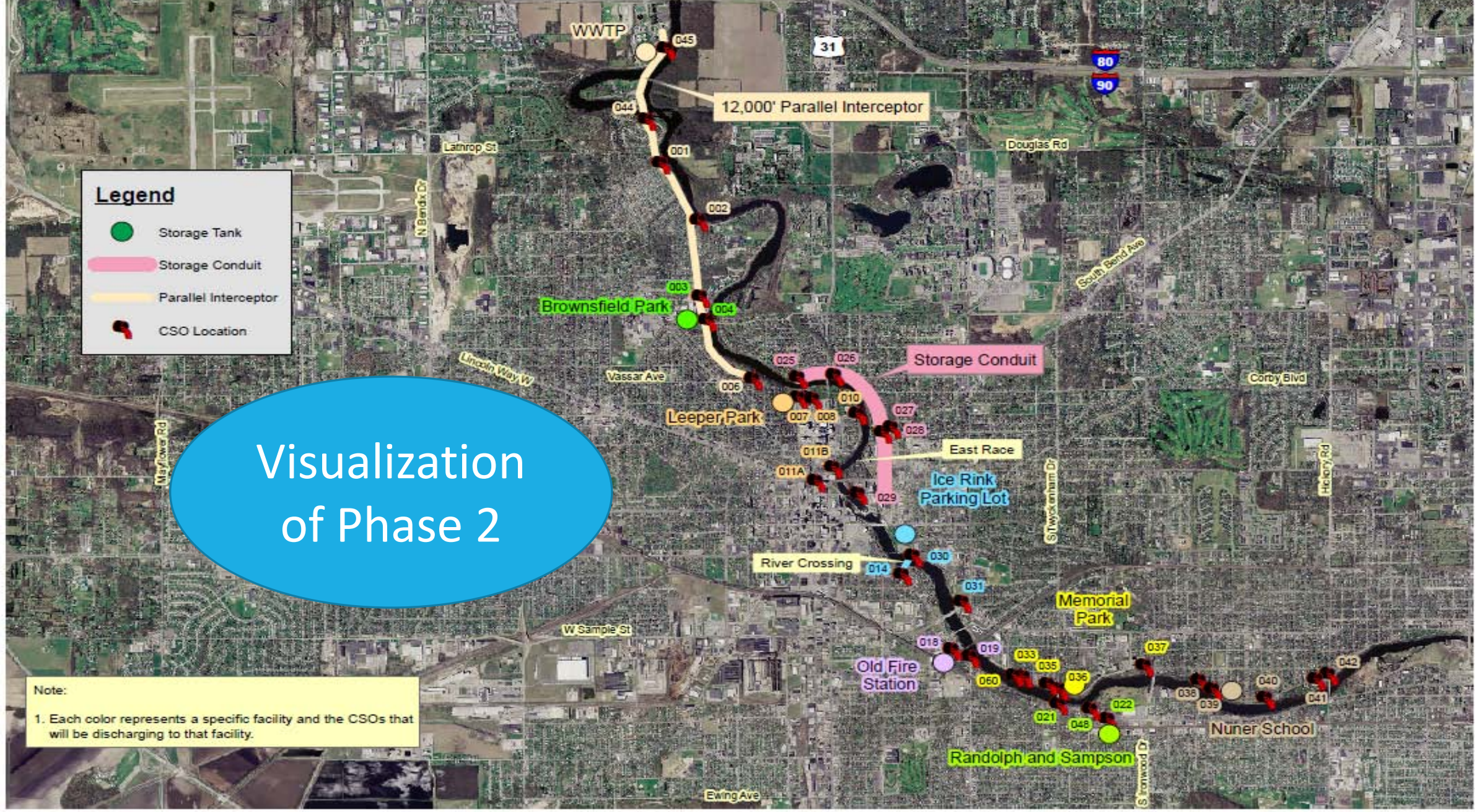
St. Joseph River Basin Commission, June 2016

Combined Sewer Overflow



LTCP





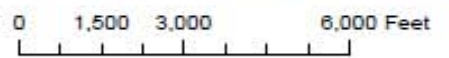
Legend

- Storage Tank
- Storage Conduit
- Parallel Interceptor
- CSO Location

Visualization
of Phase 2

Note:
1. Each color represents a specific facility and the CSOs that will be discharging to that facility.

CSO Control Phase 2
1 inch = 3,000 feet



LTCP

CSO Control Phase 1

CSO Control System

\$600M+

Southwood ✓

Kensington ✓

Storage Conduit

Parallel Interceptor

Memorial Park

Old Fire Station

Ice Rink
Parking Lot

Randolph & Sampson

Nuner

Leeper Park

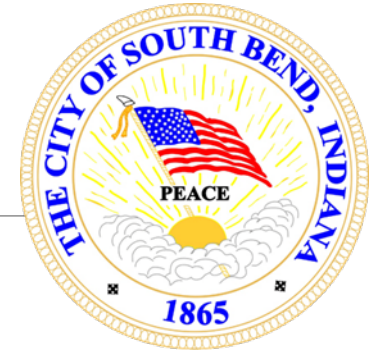
Brownsfield Park

The Relook at Phase 2

City is examining alternatives to/variations of the **current plan**, due to:

- New EPA Policies on e.g. Integrated Planning, Green Stormwater Infrastructure. Meaning less focus on just grey solutions. Holistic solutions = Green Stormwater Infrastructure, Real time sewer flow control, downspout disconnection etc.
- Flaws in current plan re tank sizing (+/-) and locating. Better understanding of St. Joseph River flow dynamics in SB.
- & Obviously cost.

State of the City Speech



*“...when it comes to our federally mandated plan to separate City sewers to comply with the clean water act. With hundreds of millions of dollars of spending required, we will be using **every tool** available to us—technical, legal, and political—to minimize the impact this work will have on ratepayers.”*

- Mayor Pete Buttigieg, January 2016.

Therefore:

New Team, New Vision, New multi-fronted Approach

Driven by: An initiative to improve water quality and alleviate many wastewater concerns by focusing on these Four areas:

1. GSI- Getting the Rain Out
2. Repairing and Maintaining
3. Smarter Sewers
4. Building New Infrastructure



1. GSI (*or GRO*)- Getting the Rain Out (*Green Stormwater Infrastructure*)



<https://www.epa.gov/soakuptherain>

Reclaim stormwater naturally, reduce sewer overflows, and minimize basement backups. Improve St. Joseph River.

Reduce the volume of stormwater in our combined sewer - installing landscaping that helps capture rain (near) where it falls, increase aesthetic appeal, improve property values, and attract biota.

2. Repairing and Maintaining

City to spend >2M\$/year on evaluating, repairing and improving our existing system.

Removing Inflow
And Infiltration.



Ensure integrity of current system.
Get the most out of what we have before
we spend.



Improving what we
have.

Continue to aim for
improvements while
maintaining progress
made.

3. Smarter Sewers

Not just with what we have now but with new phases.

We've been water quantity focused, lets get smart about water quality too.

A mechanism to clarify our impact (e.g. E. Coli) on the St. Joseph River. E. Coli source knowledge (human, non-human). CSO auto sampler campaign.

4. Building new Infrastructure

Build to bridge the gap after exhausting 1, 2 & 3.

Always spending wisely. Locally where possible.

Less Gray Infrastructure. Different Gray infrastructure, better located, better sized. Less invasive on the City?



Where are we now: honing alternatives

With existing Consent Decree- full compliance, and finalizing Phase 1.

With our considerations for Phase 2: Multi consultancy team (MWH, American Structurepoint, EmNet, LimnoTech, Morgan & Lewis), finalizing alternatives currently.

- GSI with less tanks
- GSI with a large tunnel
- GSI with a short tunnel and consolidation sewer network.

Currently we are detailing these alternatives with regards to locations, sizes, costs, impacts, funding options etc.

Complex Matrix. Ingredients. Quantities. Methods.



Where next

If best alternative requires renegotiation with

-EPA

-DOJ

-IDEM

It'll be a major issue/task.

? Questions

In the meantime we must ensure continued compliance with our Consent Decree.

2nd Quarter
June 7, 2016



SJRBC
St. Joseph River Basin Commission

Next Meeting
September 6th, 2016



SJRBC
St. Joseph River Basin Commission