



Final
Version
1 of 3

South Bend Wastewater Utility Rates 2010 and beyond

- Meeting the Federal CSO Mandate—a 20 year historic investment in environmental infrastructure
- Demonstrating commitment to best in class environmental stewardship
- Keeping rates as affordable as possible given these goals

Envision South Bend in 2025...

"We will use our imagination, resources, talent and commitment..."

— Mayor Stephen J. Luicke

City Plan
Smart Growth

www.SouthBendCityPlan.org

City Plan
Phase II
Topic Areas

The following Topic Areas will be the focus of discussion for Phase II of the *City Plan* process. They resulted from the visioning sessions during the *City Plan* meetings in the fall of 2003. The 12 topics have been divided into 7 Panels with Civic Alliance members assigned to each. Each Panel will be responsible for overseeing the analysis / prioritizing of issues that exist within their Topic Areas.

1. TRANSPORTATION
2. INFRASTRUCTURE
3. LAND USE / ZONING
4. URBAN DESIGN
5. ENVIRONMENTAL MANAGEMENT
6. PARKS & OPEN SPACES
7. COMMUNITY BUILDING
8. HEALTH & SAFETY
9. HOUSING
10. ECONOMIC DEVELOPMENT
11. ARTS & CULTURE
12. EDUCATION

For further information on these Panels, please call the Division of Community Development at 574.235.9500

Getting Things Done

We design, bid, build and maintain the transportation system---make it reflect what community wants in terms of safety, capacity, pedestrian and bicycle friendliness

We design, bid, build and maintain water, sewer, road, drainage and metronet infrastructure

We manage the public right of way where private buildings interface with public space and are responsible for preserving balance of needs to serve the public with dense urban character that is durable and attractive

We manage Safe Drinking Water, Clean Water Act facilities such as wastewater treatment plant, combined sewer system improvements, Organic Resources, Brownfields Projects, and Energy/Environmental practices for a cleaner, greener City

Sanitary and Storm Sewers and Wastewater Treatment Building Blocks

People want Cities to be cleaner and greener--- good environmental stewards. South Bend is a leader--

- Sanitary, Storm and Combined sewers
- Collection system storage and conveyance
- Wastewater Treatment---National Pollution Discharge Elimination System (NPDES) permit – discuss CSO LTCP and Consent Decree
- Biosolids residual management
- Pretreatment Program

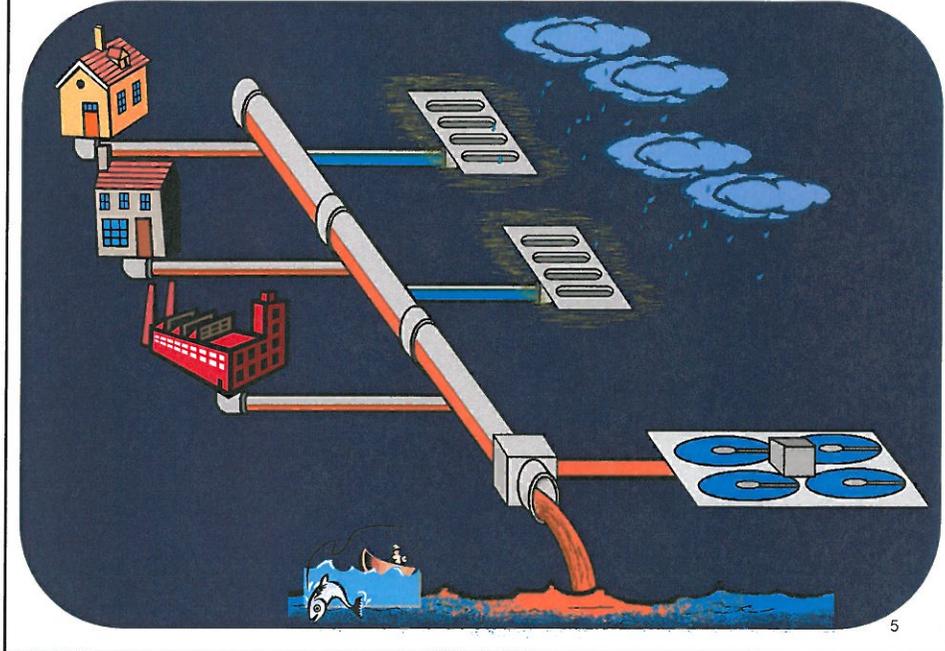


CSO Long Term Control Plan

- Largest environmental infrastructure program cities and towns have ever faced
- 772 in US, 105 in Indiana---South Bend is one of the communities of national interest
- St Joseph river flows from Michigan into Indiana and turns north at South Bend and flows to Lake Michigan - two different Water quality standards



Combined Sewer Overflows



CSO LTCP Status Report

- Four steps in rates produced 79% of forecast revenue increase
- 2006 was 29% increase producing \$ 7 Million CIP, 2007 was 15% increase producing \$16 Million CIP, 2008 was 11% increase producing \$ 16 Million CIP and 2009 was 9% increase producing \$ 4 Million CIP.
- **Compound impact totals 79% increase producing \$43 Million CIP.**
- \$43 Million versus the Expected \$53 Million
- could not do full last revenue bond---would be short of P&I coverage 40% and DS Reserve, so held for Common Council rate action ---want to recognize current economic conditions, but continue progress on CSO LTCP—let's review what we have done.



Sewer Rate History

- 1989 was last rate increase for 14 year period until
- 2003 rate increase of 24 % for State Revolving Loan repayment to start on \$ 24 million in wastewater treatment plant improvements
- 2004 was an additional 5 % for increased Operation and Maintenance of the improved WWTP

More Recent Wastewater Rate History

Percent Increase steps in 2005 Rate ordinance

- | | |
|--------|------|
| • 2006 | 29 % |
| • 2007 | 15 % |
| • 2008 | 11 % |
| • 2009 | 9 % |
- Was to have generated \$ 53 million of revenue bond capital toward Phase 1 of CSO Long Term Control Plan.

Need to talk in early 2010 about rates for the next 4 years to continue investment in CSO Long Term Control Plan





CSO LTCP Status Report

- Wastewater Plant – Brought wet weather capacity to firm 77 MGD as required in NPDES
- Technology – CSONet Phase 1 done, Phase 2 pending with stimulus grant and loan
- Green Solutions – Kennedy Park Area, others coming
- ND Re-Route – Avoid CSOs from Angela River Crossing along Riverside to the treatment plant.
- Phase 1 Combined Sewer Separations – in neighborhoods with chronic basement backups
- CSO LTCP Planning and Consent Decree Negotiation Status



CSO LTCP Status Report

WWTP PROGRESS/NEEDS/STATUS

- Primary Tanks Freeboard: Done
- Blower 1 A & 1B: Pending with energy payback
- Scum Handling: Pending
- Digester Evaluation: Pending... cost estimated higher than planned, rethinking
- Secondary Clarifier Valves, Etc.: Done
- Raw Pumping: At design stage
- Aeration: At design... improve step feed activated sludge biological process control and oxygen transfer efficiency upgrades

Wastewater Treatment Plant- Maximize Wet Weather Flow



Remove hydraulic and Process Bottlenecks

Expand from 65 to 77 to 100 MGD

Phase 1 - WWTP Improvements

Increased Primary Sedimentation Tanks Capacity



- Eliminated hydraulic bottlenecks in primary tanks to increase WWTP capacity to 77 MGD
- \$4.1M capital cost

*Completed Fall 2008





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MAJOR SEPARATION PROJECTS COMPLETE

- Harter Heights Area
- Edison Park Area
- Cedar, Rockne, Madison
- Fairfax, North Falls Church Court
- Kensington/Crest Manor Area
- Notre Dame Re-Route
- West Washington, Burke
- Brookfield, Woodlawn
- Pleasant Street
- Memorial Hospital Storm Sewer
- Huey/Adams Storm Sewer Extension
- Donald and Fox St Sewer Separation



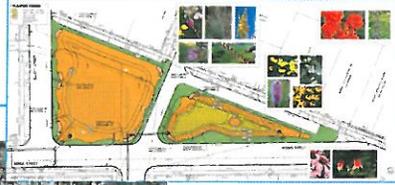
CSO LTCP Status Report

SEPARATION PROJECTS IN PROGRESS

- Kennedy Park Area (Bendix to Olive, Lincoln Way West to Park)-Construction in progress
- Twyckenham (River South to Ridgedale)-construction in progress
- Pleasant Street Phase 2 (design)
- Diamond Avenue (design)
- North of Lincoln Way West, near Bendix (design)

Rainwater Green Solutions

Kennedy Park Sewer Separation Green Infrastructure



Basic Neighborhood Stormwater Facts

- Average Annual Precipitation: 14.27 in 3.12 per year
- Project Boundary Area: 0.201,060 square feet or 2.3,63 acres
- Total Annual Runoff Volume: 17,817,470 cubic feet or 132,519,126 gallons
- Type of Neighborhood Storm Runoff: 10% of area
- Current Total Storm Volume to Combined System: 18,786,882 gallons
- New Storm Volume in Combined System: 9 gallons
- Current Treatment Costs: \$131,560 per year

Bioswale Area

Bioswales are a water quality and quantity control practice that uses the chemical, biological and physical properties of plants, structures and soils for removal of pollutants from storm water runoff. They are also used as storage capacity for runoff events.

Rain Garden

A rain garden is a flat-to-sloped depression in the ground that is used as a landscape tool to improve water quality.

Trails

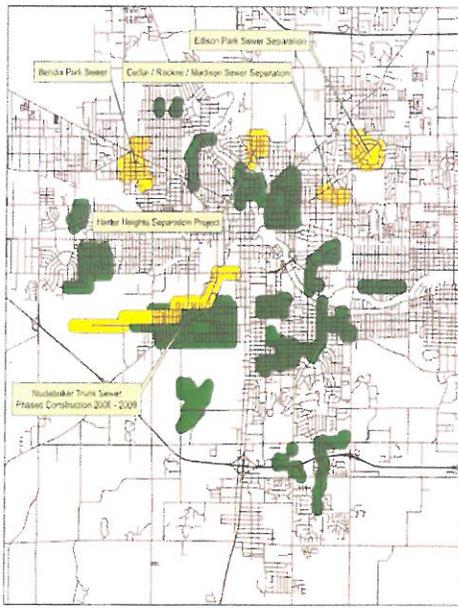
Trails are simple shallow, low depression in the ground designed to encourage the accumulation of rain during storms to let it soak into the soil. Trails lined with trees can reduce storm water runoff by 4,100 gallons per foot a year.

Infiltrator Basin

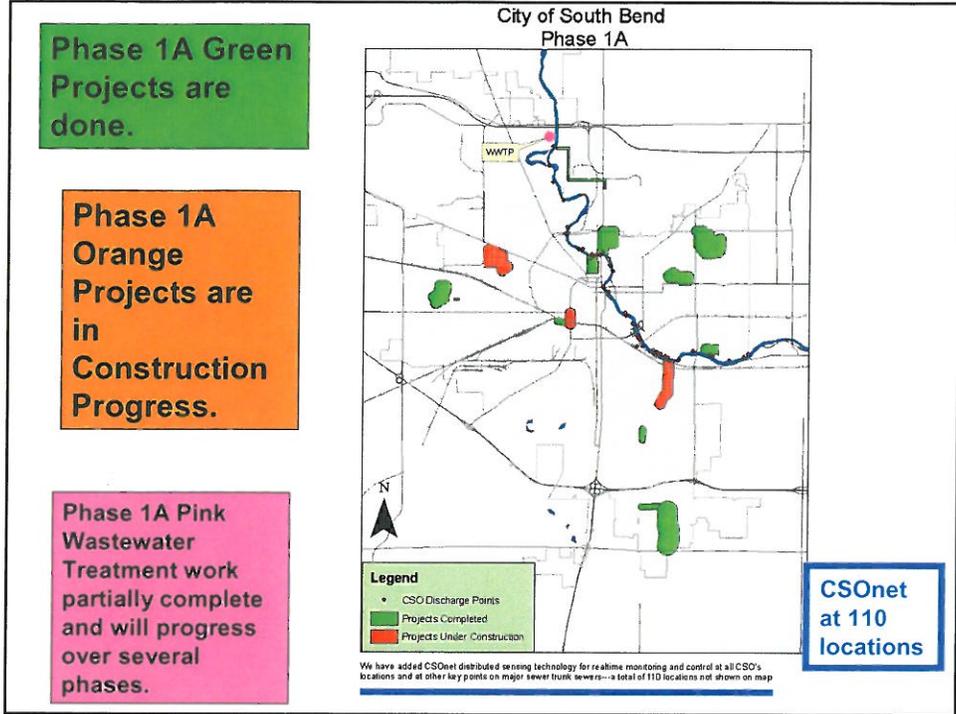
An infiltrator basin is designed to collect stormwater into the soil. Infiltrator basins are located underground which reduces disruption as well as space formation for local use. The structure helps mitigate the groundwater, thus reducing low flows to streams.

Progress on
Combined Sewer
Separation
and Improved
Larger Storm
Drainage Plan

PLANNED SEWER SEPARATION PROJECTS



The Office of Planning and Development
 21. Planned areas on the map show the location of planned projects. The actual location of projects is subject to change. The City of Chicago does not warrant or guarantee the accuracy of the information provided on this map. For more information, please contact the Office of Planning and Development at (773) 304-3100.



Phase 1 - CSOnet Potential

(actual system data is in process of being verified)

- Goals
 - Maximize flow to interceptor
 - Maximize inline storage in existing system
 - Monitor collection system operation
- Method
 - Use real time control decentralized network to reduce discharges
- Phase 1 Installation – 114 sites
 - 19 Gateway Nodes (controls)
 - 95 Instrument Nodes (pressure sensors, manhole antennas)
 - ~30 Radio Nodes (communication)
- Designing pilot control valve installation



What is CSOnet?

CSOnet is a solution for CSO abatement

- Wireless Network of Control Points and Sensors
- Monitoring of hydraulics and water quality
- Distributed Control Strategy and Software
- Data gathering and reporting



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O&M LEARNING CURVE PROGRESS:

- Large Diameter cleaning/grit removal
- Advances in PM – Real time monitoring
- Best Management Practices-- sweeping, Catch Basin cleaning, Inlets, manhole rehab, high pressure sewer cleaning/vac solids removal
- Camera digital video diagnostics/tie data to GIS
- Trenchless technologies
- Technology in the vehicles-notebooks and GIS map data
- Learning to work with much more information, what is normal vs. what requires emergency attention
- Proactive lift station maintenance
- Work on river crossings –looking for innovation in approach



CSO LTCP Status Report



HINT OF WHAT'S COMING OUT OF DESIGN WITH CITY PLAN IN MIND

Show Angela at Riverside Concept Design --
Diamond Ave Stormwater Project outfall at
Angela and Riverside



The City of South Bend
Diamond Ave. Stormwater Project



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PROJECT MANAGEMENT IN CONSENT DECREE CONTEXT

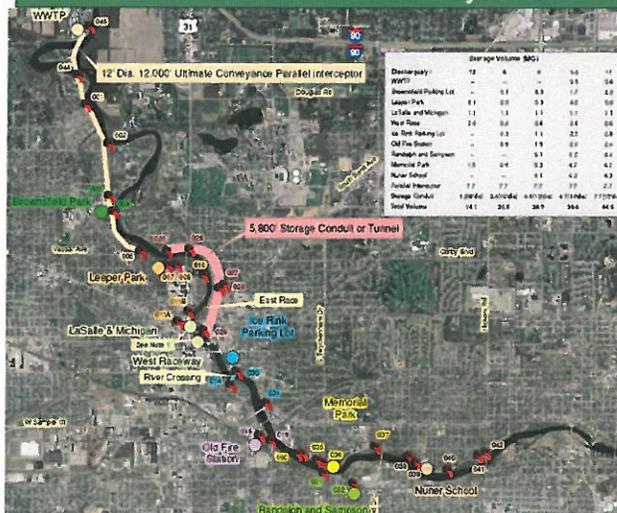
- Stipulated penalties
- Performance certification
- Time, money, spec to ensure outcome meets performance Standards.
- Scoping with technology innovations, with green solutions, with City Plan in mind to build a better city, with need to perform on time, on budget, and per spec.

Phase 2 - LTCP Approach

- Provide ultimate conveyance
- No untreated CSO overflows/discharges
- 94.6% of wet weather flow to receive full secondary treatment at WWTP/5.4% of flow to receive partial treatment (screening, settling)
- Reduce 36 overflow locations to 0. Nine **treated** discharge locations.
- Captures first flush
- Meets EPA's Presumptive Approach
 - Chapter 3 EPA's "Combined Sewer Overflows Guidance for Long Term Control Plans"



Phase 2 - Preferred Alternative Alternative 1 - 9 Storage/Treatment Facilities with Ultimate Conveyance



•All wet weather flow receives treatment

•94.6% full secondary treatment

•5.4% screening and solids removal

•Level of control is 0 annual CSO overflows

•4 to 12 **treated** discharges per year

•Green solutions

•CSOnet

•2% median household income



EPA,DOJ Feedback

- Thanked us for our plan which they understood as treated discharge from storage and treatment basins with zero overflows of raw sewage from any of the 36 CSO's
- Would rather see no more than 4 OF per year from 36 CSO's—a plan that costs \$ 100 million more and is beyond hardship level of financial capability for our MHI
- Obviously 4 OF/year Level of Control is the key issue for them



Water Rates

Survey of Water Rates
Indiana Cities and Towns Over 30,000 Population

City/Town	2001 Census Population	County	Private or Municipal Ownership	Effective Date of Water Rate	Residential 5/8" Meter Monthly Water Billing for 6.68 CCF or 5,000 Gallons
Kokomo	46,113	Howard	Private	2007	\$ 34.41
Terre Haute	59,614	Vigo	Private	2007	30.15
Richmond	39,124	Wayne	Private	2007	30.12
New Albany	37,603	Hoyt	Private	2007	30.00
Greenwood	36,037	Johnson	Private	2007	29.97
Lawrence	36,915	Marion	Municipal	2006	28.99
Muncie	67,430	Delaware	Private	2007	27.36
Marion	31,320	Grant	Municipal	2005	27.01
Portage	33,496	Porter	Private	2007	26.59
Gary	102,746	Lake	Private	2007	24.22
Michigan City	32,900	LaPorte	Municipal	2004	20.92
Fishers	37,835	Hamilton	Municipal	2007	20.37
Indianapolis	781,870	Marion	Municipal	2007	20.37
Anderson	59,734	Madison	Municipal	2007	18.98
Fort Wayne	205,727	Allen	Municipal	2006	17.25
Bloomington	69,291	Monroe	Municipal	2005	15.20
Mishawaka	46,357	St. Joseph	Municipal	2002	15.13
Elkhart	51,874	Elkhart	Municipal	2007	14.97
*** South Bend	107,789	St. Joseph	Municipal	2006	13.33
Evansville	121,582	Vanderburgh	Municipal	2008	12.65
Lafayette	56,397	Tippecanoe	Municipal	2001	12.13
Columbus	39,059	Bartholomew	Municipal	1992	11.43
Carmel	37,733	Hamilton	Municipal	1993	10.50
Hammond	83,048	Lake	Municipal	1985	3.00



Wastewater Rates



Survey of Sewer Rates Indiana Cities and Towns Over 30,000 Population

City/Town	2000 Census Population	County	Private or Municipal Ownership	Effective Date of Sewer Rate	Residential 5/8" Meter Monthly Sewer Billing for 6.68 CCF or 5,000 Gallons
New Albany (1)	37,403	Floyd	Municipal	2008	\$ 32.80
Gary (2)	102,746	Lake	Municipal	2008	32.50
Kokomo	46,113	Howard	Municipal	2006	29.95
Anderson (2)	59,734	Madison	Municipal	2002	28.78
South Bend (1)	107,789	St. Joseph	Municipal	2008	27.63
Fishers	37,835	Hamilton	Municipal	2000	26.00
Bloomington	69,291	Monroe	Municipal	2005	25.06
Lafayette	56,397	Tippecanoe	Municipal	2008	25.01
Columbus	39,059	Bartholomew	Municipal	2006	24.35
Michigan City	32,900	LaPorte	Municipal	2005	24.33
Evansville	121,582	Vanderburgh	Municipal	2008	23.67
Portage	33,496	Porter	Municipal	1997	23.50
Mishawaka	46,557	St. Joseph	Municipal	2006	21.78
Lawrence	38,915	Marion	Municipal	2002	21.39
Elkhart	51,874	Elkhart	Municipal	2003	21.16
Richmond (2)	39,124	Wayne	Municipal	2006	20.51
Muncie (2)	67,430	Delaware	Municipal	2006	19.17
Fort Wayne	205,727	Allen	Municipal	2007	18.99
Indianapolis (2)	781,870	Marion	Municipal	2008	17.01
Terre Haute (2)	59,614	Vigo	Municipal	2005	16.57
Greenwood	36,037	Johnson	Municipal	1998	15.53
Carmel	37,733	Hamilton	Municipal	2005	13.86
Hammond (2)	83,048	Lake	Municipal	2008	13.38
Marion	31,320	Grant	Municipal	1992	10.51

(1) Rate increase expected
(2) Subsidized by property tax

Combined Water and Wastewater Rates



Survey of Combined Water and Sewer Rates Indiana Cities and Towns Over 30,000 Population

City/Town	2000 Census Population	County	Residential 5/8" Meter Monthly Billing for 6.68 CCF or 5,000 Gallons
Kokomo	46,113	Howard	\$ 64.36
New Albany (1)	37,603	Floyd	62.80
Gary (2)	102,746	Lake	56.72
Richmond (2)	39,124	Wayne	50.63
Lawrence	38,915	Marion	50.38
Portage	33,496	Porter	50.09
Anderson (2)	59,734	Madison	47.76
Terre Haute (2)	59,614	Vigo	46.72
Muncie (2)	67,430	Delaware	46.53
Fishers	37,835	Hamilton	46.37
Greenwood	36,037	Johnson	45.52
Michigan City	32,900	LaPorte	45.25
South Bend (1)	107,789	St. Joseph	40.96
Bloomington	69,291	Monroe	40.26
Marion	31,320	Grant	37.52
Indianapolis (2)	781,870	Marion	37.38
Lafayette	56,397	Tippecanoe	37.14
Mishawaka	46,557	St. Joseph	36.91
Evansville	121,582	Vanderburgh	36.32
Fort Wayne	205,727	Allen	36.24
Elkhart	51,874	Elkhart	36.13
Columbus	39,059	Bartholomew	35.78
Carmel	37,733	Hamilton	24.36
Hammond (2)	83,048	Lake	16.38

(1) Rate increase expected
(2) Subsidized by property tax



CSO LTCP Status Report

NEXT MEETING

- Project needs next four years
- How that fits in CSO LTCP
- Costs, priorities, rate requirements
- To produce revenue for Operation & Maintenance & Replacement & Debt Service & Capital.