City of Appleton

100 North Appleton Street
Appleton, WI 54911-4799
www.appleton.org

Meeting Agenda - Final

Utilities Committee

Tuesday, February 9, 2016 | **5:30 PM** | **Council Chambers, 6th Floor**

1. Call meeting to order

2. Roll call of membership

3. Approval of minutes from previous meeting

16-195 Approval of the January 26, 2016 Utilities Committee Meeting Minutes.

Attachments: January 26, 2016 Utilities Committee Meeting Minutes.pdf

4. Public Hearings/Appearances

5. Action Items

16-209 Award the 2016-2018 Biosolids Transportation and Land Application Services Contract to Veolia Environmental Services.

Attachments: Biosolids Transportation and Land Application Services Contract.pdf

16-210 Approve the Purchase and Installation of Emission Control Equipment on AWTF Generators to FABIC Power Systems for $115,718 with a contingency of $15,000 and a project total not to exceed $130,718.

Attachments: UC_Finance Memo_Emissions Control Project 02-05-16.pdf

6. Information Items

16-206 TMDL Update.

Attachments: TMDL Update.pdf

16-196 Appleton Sewer Service Area modification for proposed Grand Chute condominium development.

Attachments: Appleton Sewer Service Area Proposed Modification.pdf

16-208 Change Order #1 extending the Substantial and Final Completion dates for the Water Treatment Clarifier Recoating Project.

Attachments: Change Order 1.pdf

16-207 Department of Public Works 2015 End of Year Performance Indicators.

Attachments: DPW EOY 2015 Performance Indicators.pdf

7. Adjournment

Notice is hereby given that a quorum of the Common Council may be present during this meeting, although no Council action will be taken.

Reasonable Accommodations for Persons with Disabilities will be made upon Request and if Feasible.

For questions on the agenda, contact Chris Shaw at 920-832-5945 or Paula Vandehey at 920-832-6474.

City of Appleton

100 North Appleton Street
Appleton, WI 54911-4799
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Meeting Minutes
Utilities Committee

Tuesday, January 26, 2016 | **5:30 PM** | **Council Chambers, 6th Floor**

1. Call meeting to order

Chairperson Dannecker called the Utilities Committee meeting to order at 5:30 p.m.

2. Roll call of membership

Present: 3 - Alderperson Jirschele, Alderperson Dannecker and Alderperson Baranowski

Excused: 2 - Alderperson Martin and Alderperson Meltzer

3. Approval of minutes from previous meeting

16-098 Approval of the January 12, 2016 Utilities Committee Meeting Minutes.

Alderperson Baranowski moved, seconded by Alderperson Jirschele, that the Minutes be approved. Roll Call. Motion carried by the following vote:

Aye: 3 - Alderperson Jirschele, Alderperson Dannecker and Alderperson Baranowski

Absent: 2 - Alderperson Martin and Alderperson Meltzer

4. Public Hearings/Appearances

5. Action Items

16-134 Award sole source contract for MBC Panel Replacement at the Water Plant to Energy Control and Design, Inc. in the amount of $37,098.

Alderperson Baranowski moved, seconded by Alderperson Jirschele, that the Report Action Item be recommended for approval. Roll Call. Motion carried by the following vote:

Aye: 3 - Alderperson Jirschele, Alderperson Dannecker and Alderperson Baranowski

Absent: 2 - Alderperson Martin and Alderperson Meltzer

16-146 Approve program changes to the 2016 Water Distribution Capital Improvement Program (Business Unit 5371).

Alderperson Jirschele moved, seconded by Alderperson Baranowski, that the Report Action Item be recommended for approval. Roll Call. Motion carried by the following vote:

Aye: 3 - Alderperson Jirschele, Alderperson Dannecker and Alderperson Baranowski

Absent: 2 - Alderperson Martin and Alderperson Meltzer

16-156 Award Digester Improvements Project Base Bid and Alternate Bids #2 and #3 to August Winter Construction in the amount of $363,658 with contingency of $38,000 for a project total not to exceed $418,008.

Alderperson Baranowski moved, seconded by Alderperson Jirschele, that the Report Action Item be recommended for approval. Roll Call. Motion carried by the following vote:

Aye: 3 - Alderperson Jirschele, Alderperson Dannecker and Alderperson Baranowski

Absent: 2 - Alderperson Martin and Alderperson Meltzer

6. Information Items

16-157 Approve positive fund balance transfer of $114,972 from the Bar Screen Project to Digester Improvements Project. This item will be an Action Item at the Finance Committee meeting.

Discussed.

16-158 Approve special consideration of 2015 positive budget transfer of $43,842 to fund O&M painting repairs as part of Digester Improvements Project. This item will be an Action Item at the Finance Committee meeting.

Discussed.

16-153 2015 Industrial Quality and Quantity (Q&Q) and Receiving Station Year End Summaries.

Reviewed.

16-125 1101 E. Sylvan Avenue sump pump complaint.

Discussed.

16-099 Update on large water meter project.

Discussed.

16-100 Water Main Break History.

Reviewed.

16-123 Discussion of the Flint Michigan water issue.

Discussed.

16-101 Monthly Reports for October, November, December 2015:
- Wastewater Treatment Plant Synopsis and Receiving Station Revenue
- Water Treatment Plant Synopsis
- Water Distribution and Meter Team Monthly Report - December

Reviewed.

7. Adjournment

Alderperson Baranowski moved, seconded by Alderperson Jirschele, that the Utilities Committee meeting be adjourned at 6:30 p.m. Roll Call. Motion carried by the following vote:

Aye: 3 - Alderperson Jirschele, Alderperson Dannecker and Alderperson Baranowski

Absent: 2 - Alderperson Martin and Alderperson Meltzer

"...meeting community needs...enhancing quality of life."

Department of Utilities
Wastewater Treatment Plant
2006 E Newberry Street
Appleton, WI 54915-3128
920-832-5945 tel.
920-832-5949 fax

TO: Chairperson Greg Dannecker and Members of the Utilities Committee

CC: Utilities Director Chris Shaw

FROM: Environmental Programs Coordinator Brian Kreski

DATE: February 5, 2016

RE: Award the 2016-2018 Biosolids Transportation and Land Application Services Contract to Veolia Environmental Services.

BACKGROUND:

The Appleton Wastewater Treatment Plant (AWWTP) annually land applies approximately 20,000 wet tons of biosolids to agricultural fields as part of the Biosolids Management Program. The program is committed to effectively manage and utilize 100% of the biosolids produced through beneficial use alternatives such as agricultural land application and biosolids composting. Each year the AWWTP has contracted the transportation, land application, and incorporation of approximately 90% of the biosolids produced to permitted agricultural sites for land application as far away as 80 miles (one way).

The AWWTP has been under contract with Veolia since 1999 and has included two extensions during this time period. Veolia has provided the AWWTP with effective biosolids transportation and land application during the contract period ending on December 31, 2015. Given the time elapsed since the last quotation process (1998) it was determined necessary to seek competitive quotes for 2016. Table 1 below summarizes the bid pricing by individual contractors on an annual cost basis. This annual cost is derived by using an internal 5 year volume average and transportation distances.

QUOTATIONS:

The AWWTP sent out a total of nine (9) RFQs with six (6) submitted back for review. On February 1, 2016 the City reviewed the contractor quotes and verified that all contractors met submittal requirements. The following table summarizes the projected service fee structure for each firm over the three year contract period.

Table 1:

Year	Veolia	Full Service Organics Mgmt.	Bytec	Beneficial Reuse Mgmt.	United Liquid Waste	Synagro
2016	$302,290	$306,866	$325,550	$337,250	$349,774	$485,743
2017	$310,650	$313,007	$323,552	$342,578	$349,774	$492,995
2018	$310,650	$319,299	$333,170	$348,096	$349,774	$500,444
3 year	**$923,590**	**$939,172**	**$982,272**	**$1,027,924**	**$1,049,323**	**$1,479,182**

RECOMMENDATION:

I am requesting that the 2016-2018 Biosolids Transportation and Application Services Contract be awarded to Veolia based on the attached service fee summary.

If you have any questions or require additional information regarding this contract award or the AWWTP biosolids program please contact Brian Kreski at 920-832-5945.

Request for Quotation
Biosolids Land Application Services

	Veolia			Full Service Organics			Bytec			Beneficial Reuse Mgmt			United Liquid Waste			Synagro		
Mileage Range	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
0-15.9	$10.01	$10.31	$10.31	$10.01	$10.21	$10.41	$13.00	$13.00	$13.39	$10.90	$11.05	$11.21	$10.97	$10.97	$10.97	$13.47	$13.67	$13.88
16-20.9	$10.90	$11.22	$11.22	$10.90	$11.12	$11.34	$13.00	$13.00	$13.39	$11.24	$11.40	$11.56	$11.67	$11.67	$11.67	$14.93	$15.15	$15.38
21-25.9	$11.47	$11.81	$11.81	$11.47	$11.70	$11.93	$13.00	$13.00	$13.39	$12.08	$12.26	$12.44	$12.42	$12.42	$12.42	$16.33	$16.57	$16.82
26-30.9	$12.56	$12.93	$12.93	$12.56	$12.81	$13.07	$14.95	$14.95	$15.40	$12.93	$13.12	$13.32	$13.20	$13.20	$13.20	$17.73	$18.00	$18.27
31-35.9	$12.76	$13.14	$13.14	$12.56	$12.81	$13.07	$14.95	$14.95	$15.40	$13.69	$13.90	$14.11	$14.00	$14.00	$14.00	$19.12	$19.41	$19.70
36-40.9	$13.00	$13.39	$13.39	$13.00	$13.26	$13.53	$14.95	$14.95	$15.40	$14.54	$14.77	$14.99	$14.86	$14.86	$14.86	$20.52	$20.83	$21.14
41-45.9	$13.50	$13.90	$13.90	$13.50	$13.77	$14.05	$16.95	$16.95	$17.43	$15.39	$15.63	$15.87	$15.80	$15.80	$15.80	$21.95	$22.28	$22.61
46-50.9	$14.01	$14.43	$14.43	$14.01	$14.29	$14.58	$16.95	$16.95	$17.43	$16.15	$16.41	$16.67	$16.74	$16.74	$16.74	$23.38	$23.73	$24.09
51-55.9	$14.91	$15.35	$15.35	$15.41	$15.72	$16.03	$16.95	$16.95	$17.43	$17.00	$17.27	$17.55	$17.68	$17.68	$17.68	$24.78	$25.15	$25.53
56-60.9	$15.41	$15.87	$15.87	$16.12	$16.44	$16.77	$19.00	$19.00	$19.57	$17.76	$18.05	$18.34	$18.62	$18.62	$18.62	$26.17	$26.56	$26.96
61-65.9	$16.12	$16.60	$16.60	$16.93	$17.27	$17.62	$19.00	$19.00	$19.57	$18.53	$18.83	$19.13	$19.56	$19.56	$19.56	$27.60	$28.01	$28.43
66-70.9	$16.93	$17.43	$17.43	$17.75	$18.11	$18.47	$22.25	$22.25	$22.91	$19.29	$19.61	$19.93	$20.50	$20.50	$20.50	$29.03	$29.47	$29.91
71-75.9	$17.75	$18.28	$18.28	$17.95	$18.31	$18.68	$23.95	$22.25	$22.91	$20.05	$20.39	$20.72	$21.44	$21.44	$21.44	$30.43	$30.89	$31.35
76-80.9	$19.03	$19.60	$19.60	$19.15	$19.53	$19.92	$25.95	$25.95	$26.72	$20.82	$21.17	$21.52	$22.35	$22.35	$22.35	$31.83	$32.31	$32.79
Straw cost/bale	$5.00	$5.00	$5.00	$5.00	$5.10	$5.20	$1,500 /year	$1,500 /year	$1,500 /year	$5.00	$5.25	$5.50	$5.00	$5.00	$5.00	$8.83	$8.96	$9.10
Incorporating cost/acre	$24.00	$24.00	$24.00	$17.78	$18.14	$18.50	$2,000/ year	$2,000 /year	$2,000 /year	$18.00	$18.25	$18.50	$17.50	$17.50	$17.50	$18.85	$19.13	$19.42

"…meeting community needs…enhancing quality of life."

Department of Utilities
Water Treatment Facility
2281 Manitowoc Road
Menasha, WI
920-832-5945 tel.
920-832-5949 fax

TO: Chairperson Greg Dannecker and Members of the Utilities Committee
Chairperson Kathy Plank and Members of the Finance Committee

FROM: Utilities Director Chris Shaw

DATE: February 5, 2016

RE: ***Utilities Committee Action: Approve the Purchase and Installation of Emission Control Equipment on AWTF Generators to FABIC Power Systems for $115,718 with a contingency of $15,000 and a project total not to exceed $130,718***

Finance Committee Action: Approve positive fund balance transfer of $130,718 from the Regulatory Upgrade and Process Improvement Project to the AWTF Generator Emissions Control Project

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BACKGROUND:

Since 2001, the AWTF has been engaged in a capacity program contract with Wisconsin Public Power Inc. (WPPI). The agreement and subsequent amended agreement have provided WPPI with additional electrical capacity from the City's 3.5 Mw generators. In return, the Utility has received $70,000 - $100,000 in annual revenues. The 2013 U.S. Environmental Protection Agency (EPA) RICE rule (for reciprocating internal combustion engines) was created with the goal to reduce emissions of toxic air pollutants from "non-emergency" engines. The AWTF stand-by generators are used for emergency back-up power during power outages which are not restricted by EPA RICE rules as well as for non-emergency purposes which include maintenance, testing, and run hours associated with a capacity agreement. The 2013 RICE rules necessitated a modified WPPI capacity agreement to restrict non-emergency hours and ensure federal compliance. In doing so it decreased payments from WPPI to the AWTF $4.00/kW to $3.00 per kW.

The AWTF generator run hours have historically been less than EPA RICE thresholds for emergency generators specified within 40 CFR 63 Subpart ZZZZ, Sect 63.6640(f). However, recent challenges to the EPA RICE rules is anticipated to result in an amendment that will decrease non-emergency operation from 100 hours to 50 hours placing at risk the WPPI capacity agreement and compliance with EPA Clean Air Act regulations. WPPI has indicated that they would not be able to continue the current agreement following a federal rule change.

In order to continue to generate revenues from WPPI the City is required to engage in a project to install generator pollution control equipment. In doing so, WPPI would reestablish the original capacity agreement rate of $4.00/kW which would generate revenues closer to $100,000/year at current maximum energy demand. If the City completes this project by June 1, 2016 the existing agreement would be amended to include greater runtime thresholds and the higher rate. If the project is not completed until later in the year the City could make arrangements for an agreement in 2017.

PROJECT FUNDING SOURCE:

This project was not accounted for in the 2016 budget and a budget transfer will be necessary to move the project forward. The Regulatory Upgrade and Process Improvement Project (RUPIP) has available funding that would cover the project equipment and installation shortfall.

RECOMMENDATION:

Approve purchase and installation of emission control equipment to FABIC Power Systems in the amount of $115,718 with a contingency of $15,000 and a project total not to exceed $130,718

Approve positive fund balance transfer of $130,718 from the Regulatory Upgrade and Process Improvement Project to the AWTF Generator Emissions Control Project.

If you have any questions regarding this project please contact Chris Shaw at ph: 920-832-5945

Phosphorus Treatment and TMDL Compliance

Utilities Committee Update

February 9, 2016

In Association with

CH2MHILL

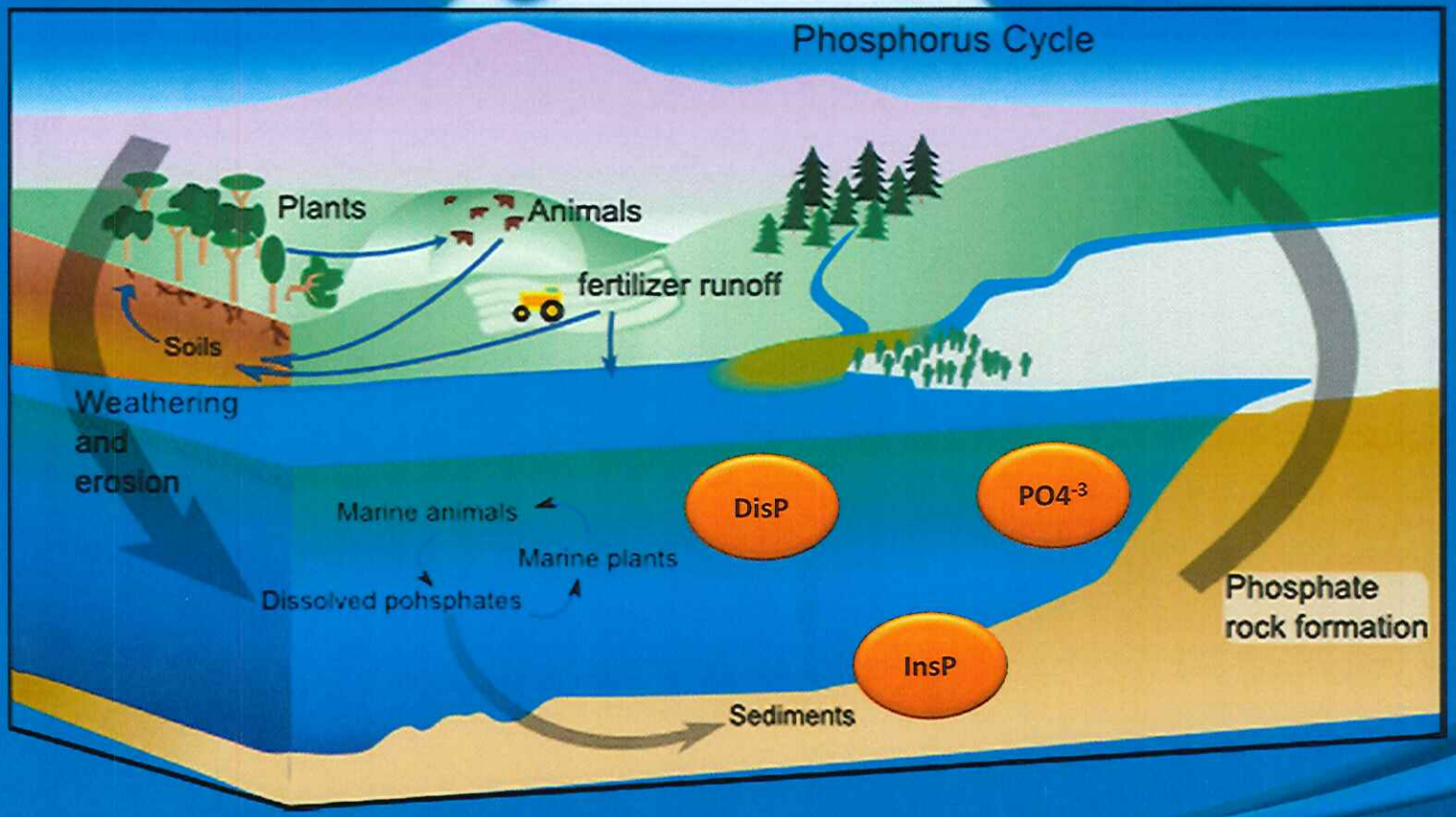
And

McMAHON
ENGINEERS | ARCHITECTS

Agenda

- Phosphorus and TMDL Overview
- AWWTP TMDL Project Overview
- Full Scale Demonstration Results
- Adaptive Management
- Water Quality Trading
- TMDL Compliance Alternatives Cost Summary

Phosphorus Cycle



TMDL = Total Maximum Daily Load

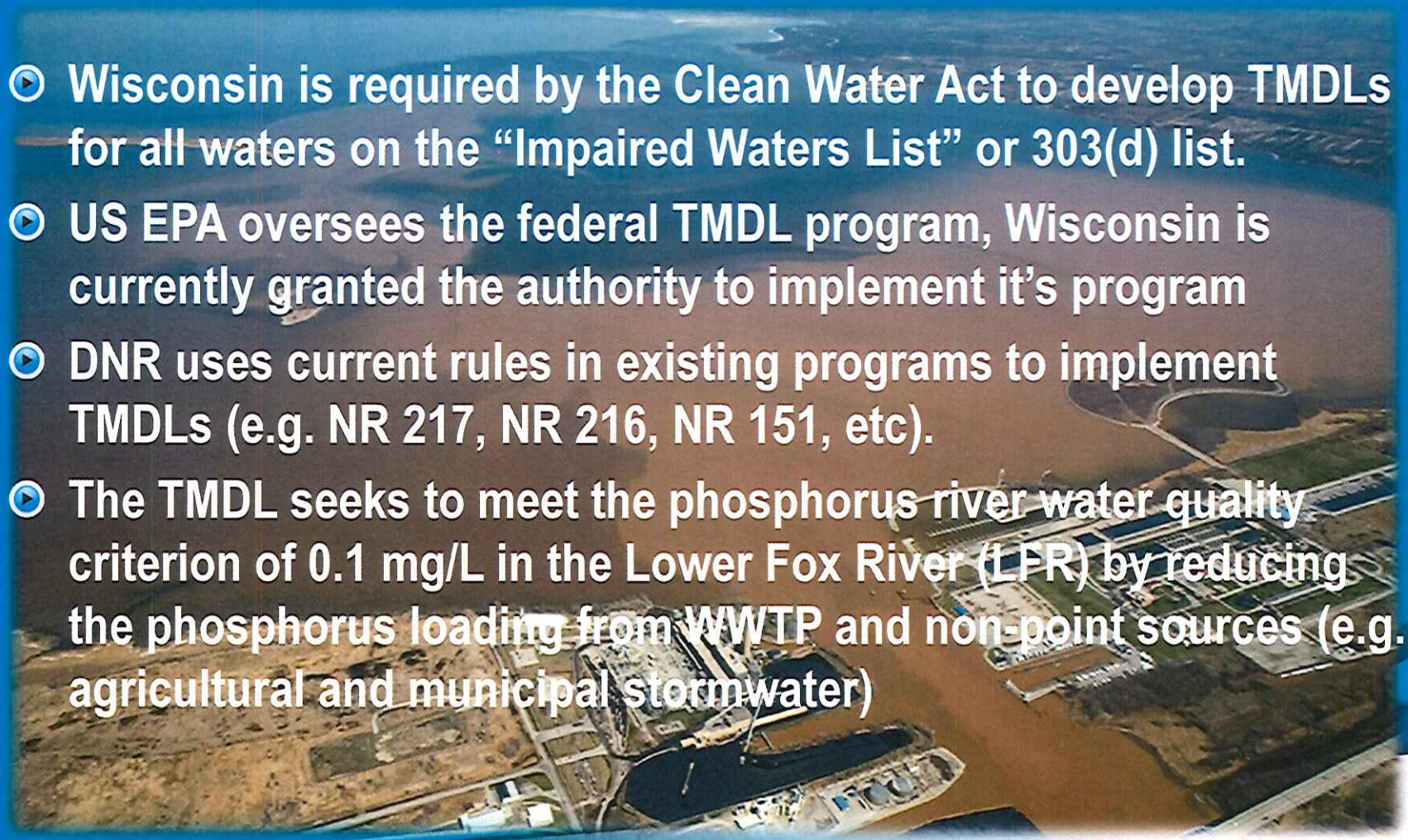
- Phosphorus as a nutrient
- The amount of a pollutant a waterbody can assimilate before exceeding water quality standards.
- Based on targets and allocations; reflects what is needed to meet water resource goals

TMDL – Water Quality Standards

- **Designated Uses**
  - Fish & Aquatic Life
  - Public Health
  - Recreational Uses
- **Water Quality Criteria**
  - Numeric (measured number)
  - Narrative

Rivers	Streams	Reservoirs	Inland Lakes	Lake Michigan
0.10 mg/L	0.075 mg/L	0.030-0.040 mg/L	0.015-0.030 mg/L	0.007 mg/L

TMDL Overview



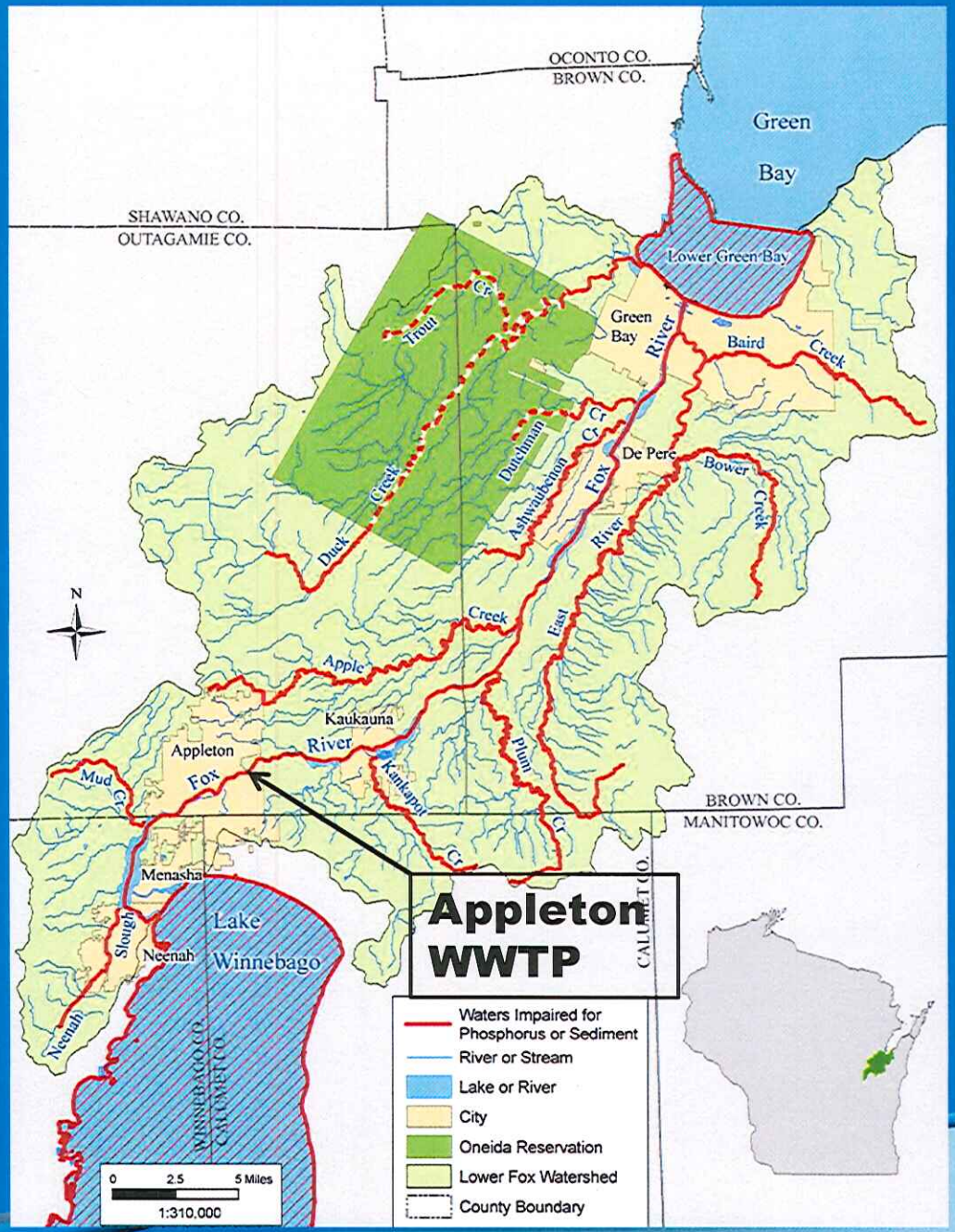
- Wisconsin is required by the Clean Water Act to develop TMDLs for all waters on the "Impaired Waters List" or 303(d) list.
- US EPA oversees the federal TMDL program, Wisconsin is currently granted the authority to implement it's program
- DNR uses current rules in existing programs to implement TMDLs (e.g. NR 217, NR 216, NR 151, etc).
- The TMDL seeks to meet the phosphorus river water quality criterion of 0.1 mg/L in the Lower Fox River (LFR) by reducing the phosphorus loading from WWTP and non-point sources (e.g. agricultural and municipal stormwater)

Compliance with TMDL

- **TMDL mass limits are equivalent to an average WWTP effluent phosphorus concentration of approximately 0.2 mg/L based on flows during the TMDL study period (2003-2007)**
- **If implementation of TMDL limits does not result in achieving the river phosphorus concentration of 0.1 mg/L within 15 to 20 years, WWTPs will be required to meet the WQBEL effluent limit of 0.1 mg/L.**
- **WPDES Permittee Options for Compliance**
  1. Operational changes
  2. Construction
  3. Adaptive management
  4. Water quality trading

  ***Or combinations of 1-4**

Impaired Waters in the Lower Fox River Basin



638 sq. miles

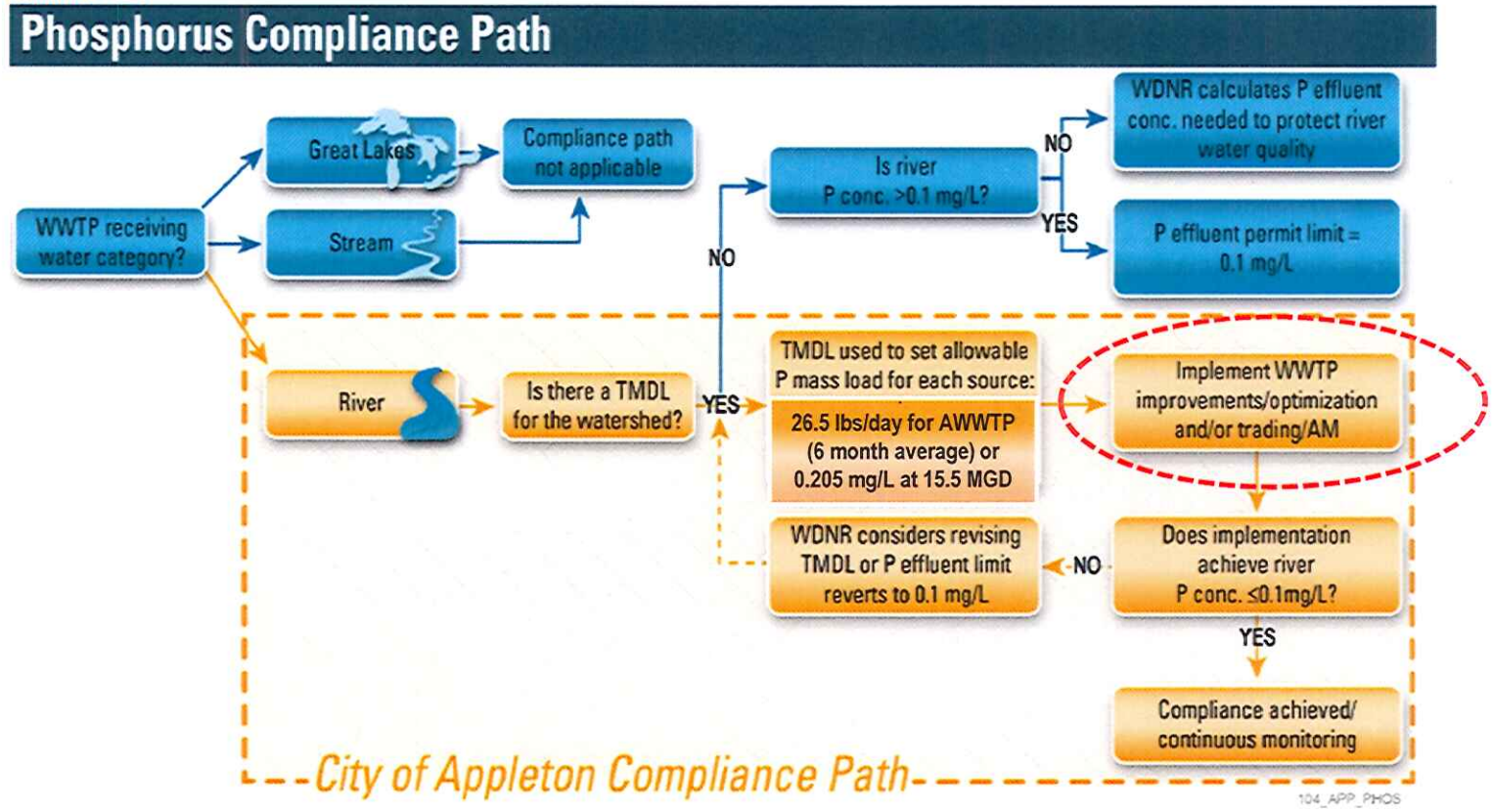
14 impaired waters listed for TSS and TP

AWWTP TMDL Project Approach (2013 – 2015)

- Provide the City with the information required to select the most beneficial compliance path
- Established goals of the City to integrate them into decision-making
- Frequent WDNR communication
- Build upon past and ongoing work for watershed evaluations
- Consider future regulations such as nitrogen
- Ensure maximum benefit from treatment optimization to reduce costs

Project Approach: Compliance Path

EXHIBIT 3-1



AWWTP WPDES Permit Today and Future -- Phosphorus Limits

- The current "Interim" WPDES limit for Phosphorus is 1 mg/L
- TMDL for Appleton WWTP is 26.5 lbs/day with a six-month period and 79.5 lbs/day monthly
- The LFR water quality standard or WQBEL is 0.1 mg/l Phosphorus
- Flow averaged 12.2 mgd in recent years
- Design average flow rating of plant is 15.5 mgd

NOTE: 26.5 lbs/day is equivalent to about 0.26 mg/L at 12.2 mgd or 0.205 mg/L at 15.5 mgd. ⬆ Flow ⬇ Concentration Limit = TMDL

Project Approach: Implement WWTP Improvements/ Optimization and/or Trading/Adaptive Management

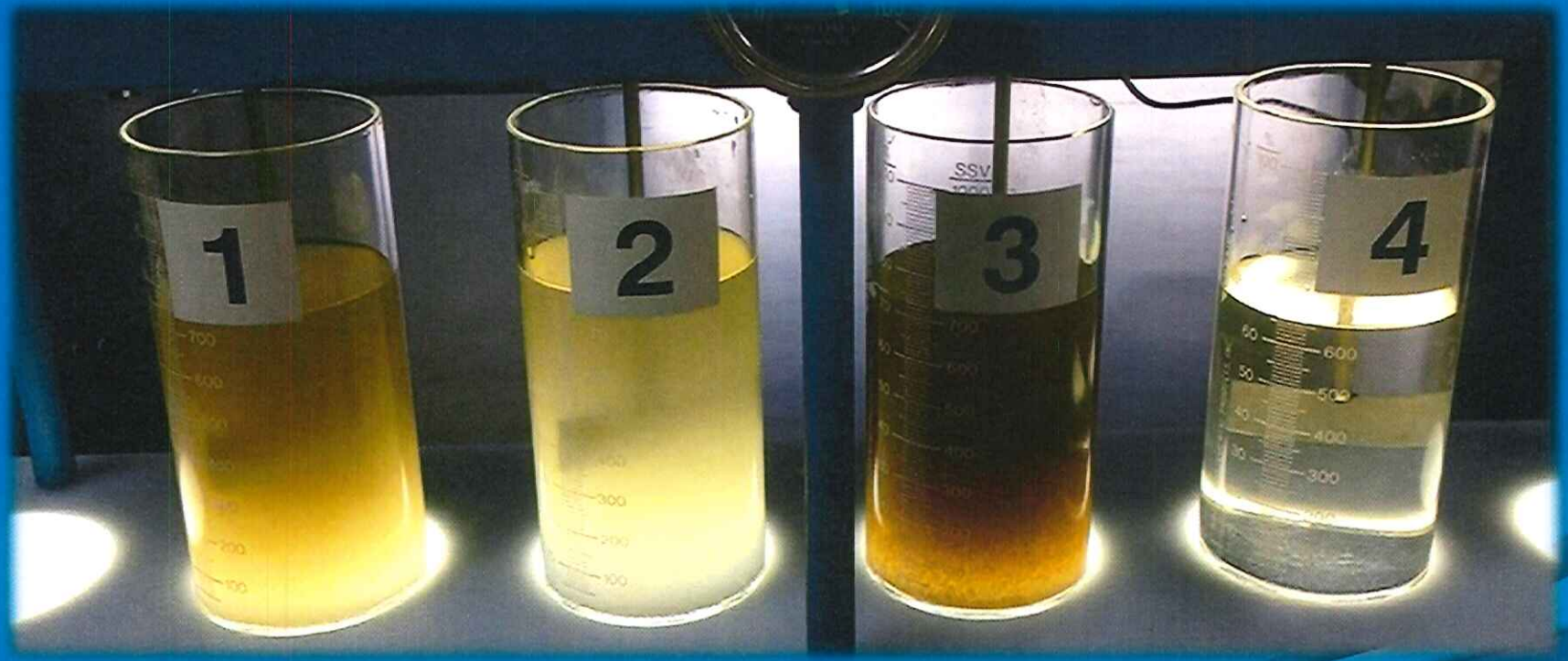
- Comprehensive evaluation of alternatives to ensure future compliance using the most cost effective approach
  - Source Reduction
  - Treatment Optimization
  - Higher Chemical Dose
  - Biological Phosphorus Removal
  - Tertiary Treatment
  - Water Quality Trading
  - Adaptive Management
  - Wisconsin Statewide Variance (*Outagamie Co. not eligible*)

Treatment Chemical Studies

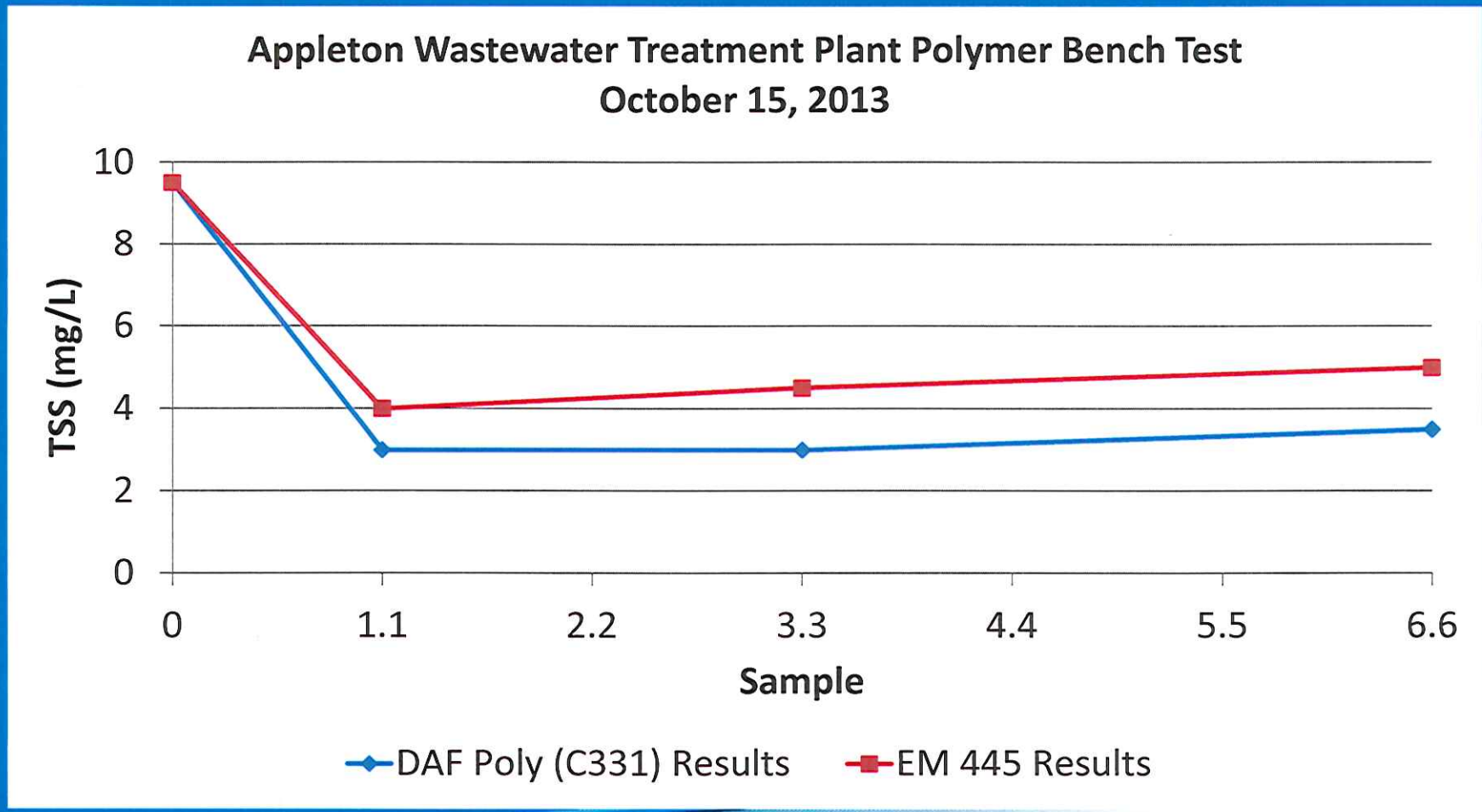
October 2013 Polymer Bench Study

2014 Iron Salt Demonstration Study

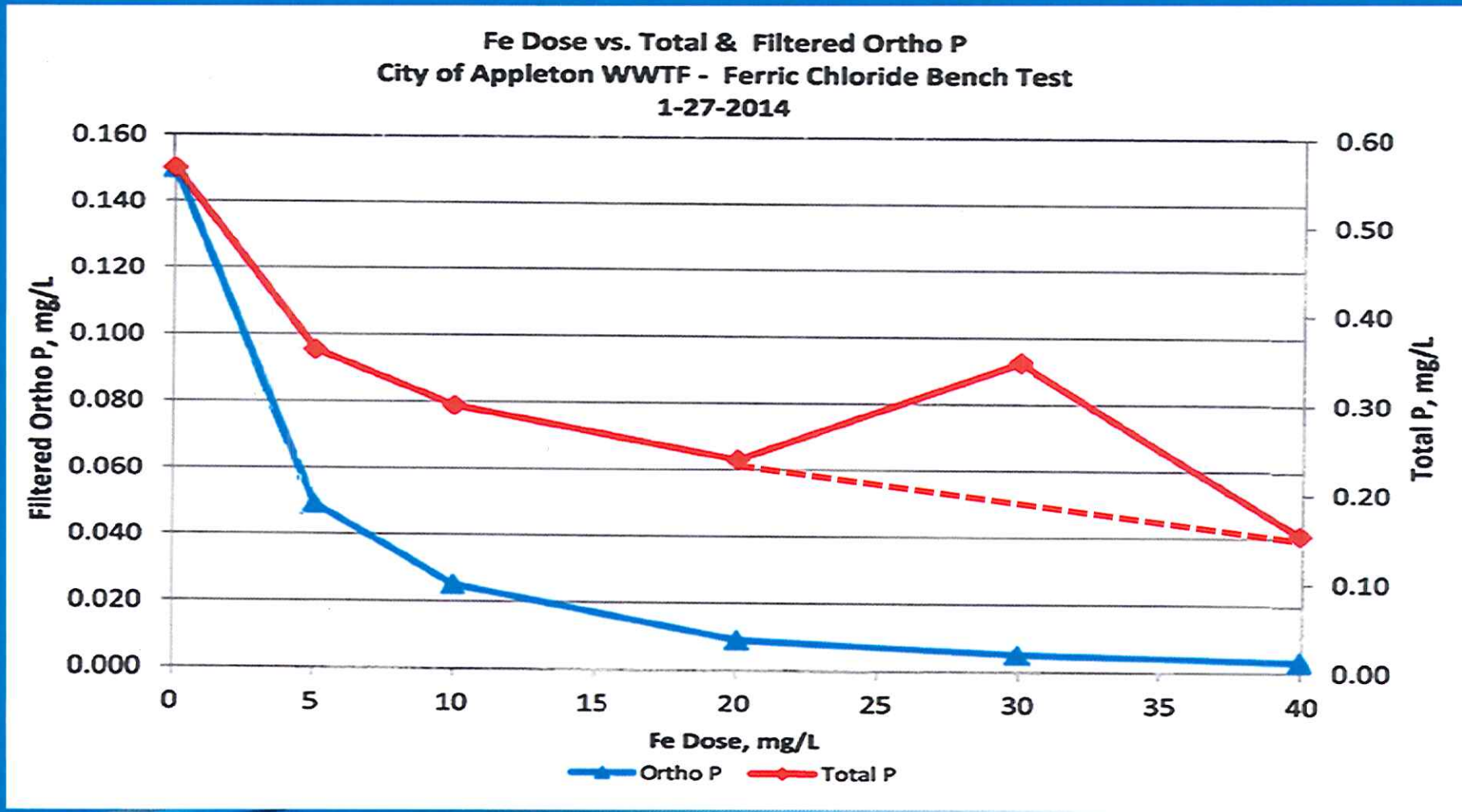
Chemical Treatment Jar Testing Trials



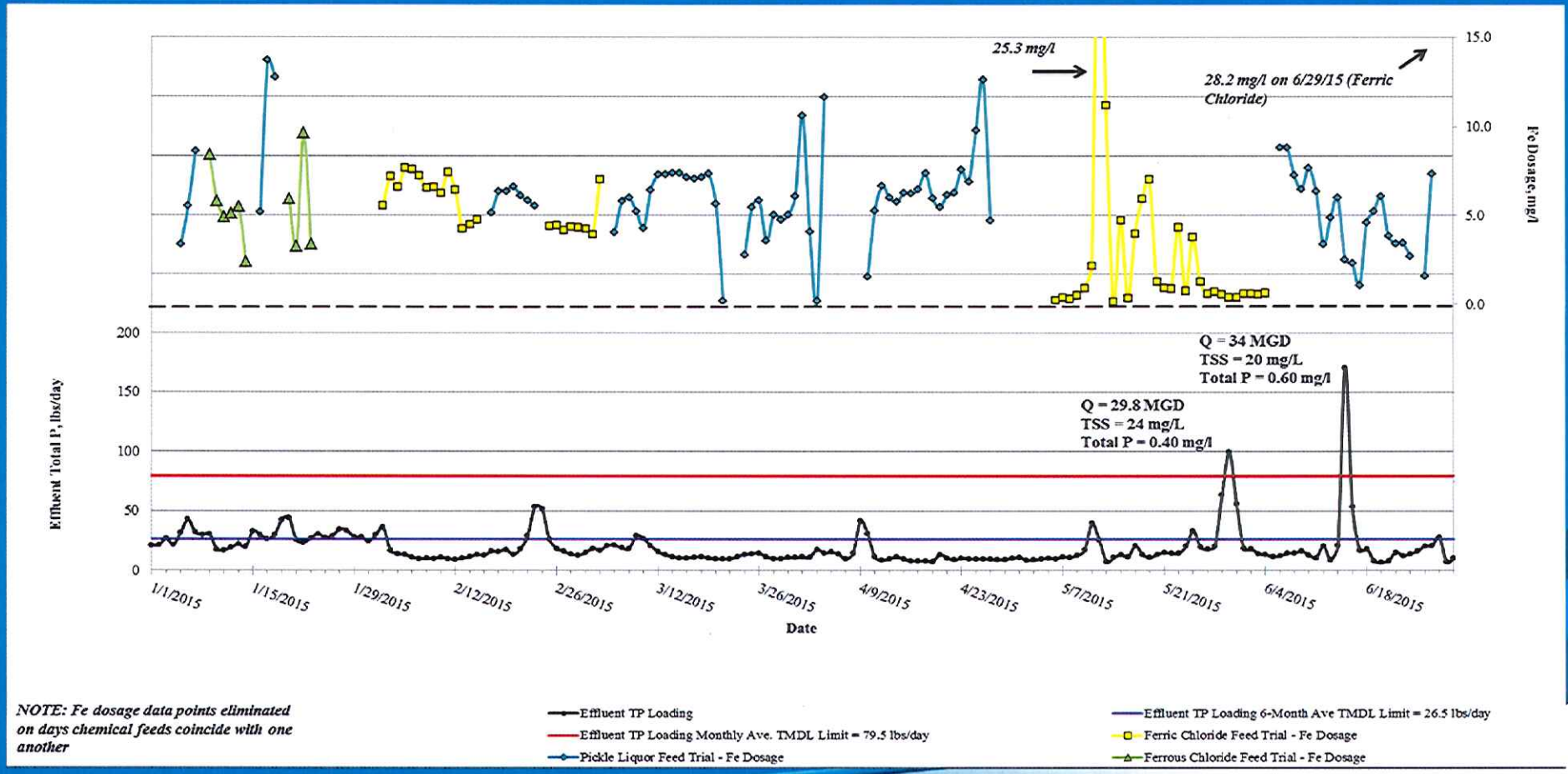
Polymer Bench Study Results: 10-15-2013



Iron Salt Bench Study
Results: 01-27-2014



High Chemical Dosing / Iron Salt Trial Summary
Results: 1/1/15 - 6/30/15



NOTE: Fe dosage data points eliminated on days chemical feeds coincide with one another

Estimated Ferric Chloride Costs Based on Full-Scale Trial with Hach Analyzer

- Assume Ave Influent Q = 12.2 MGD
- 38% Ferric Chloride (FeCl3)
  - $1.21 per gallon
  - 1.529 lbs Fe/gallon

Target Effluent Total P, mg/L	Estimated FeCL3 Dose as Fe	Estimated FeCL3 required	Estimated Annual Chemical Cost
0.30	0.5 mg/L	33.3 gpd	$14,700
0.26	1.2 mg/L	79.9 gpd	$35,300
0.18	2.4 mg/L	160 gpd	$70,700

Tertiary Treatment Option

- New pump station to tertiary treatment (assumed submersible pumps)
- Two 14.2 mgd Actiflo units for 28.4 mgd capacity (historical peak month flow)
- New FeCl3 storage and feed system
- New liquid polymer system

Adaptive Management/Trading

Adaptive Management/Trading Considerations

- Phosphorus offsets needed and where to find them
- Existing conditions and target soil P levels
- BMP and nutrient trading costs
- Rate of conservation practice implementation
- Partnerships
- Contracts
- Lake Winnebago impacts
- "Point of Compliance"
- DNR Guidance Interpretation and "Flexibility"

TMDL Compliance Alternatives Cost Summary

Alternative	Capital Cost	Annual Cost	20-yr Present Worth Annual Cost	Total 20-yr Present Worth
Ferric Dosing (Effluent P = 0.18 mg/L)	$0	$70,600	$1,158,000	$1,158,000
Bio-P plus Chemical Dosing	$1,884,000	$56,000	$924,200	$2,808,000
Tertiary Treatment (Actiflo)	$14,817,000	$319,000	$6,233,000	$20,050,000
Adaptive Management with AWWTP Optimization	-	-	-	$23,300,000 to $44,200,000
Trading with AWWTP Optimization (*preliminary costs*)	$49,000 to $117,000	$294,000 to $352,000	$4,822,000 to $5,773,000	$4,871,000 to $5,890,000

Anticipated Permit Timeline

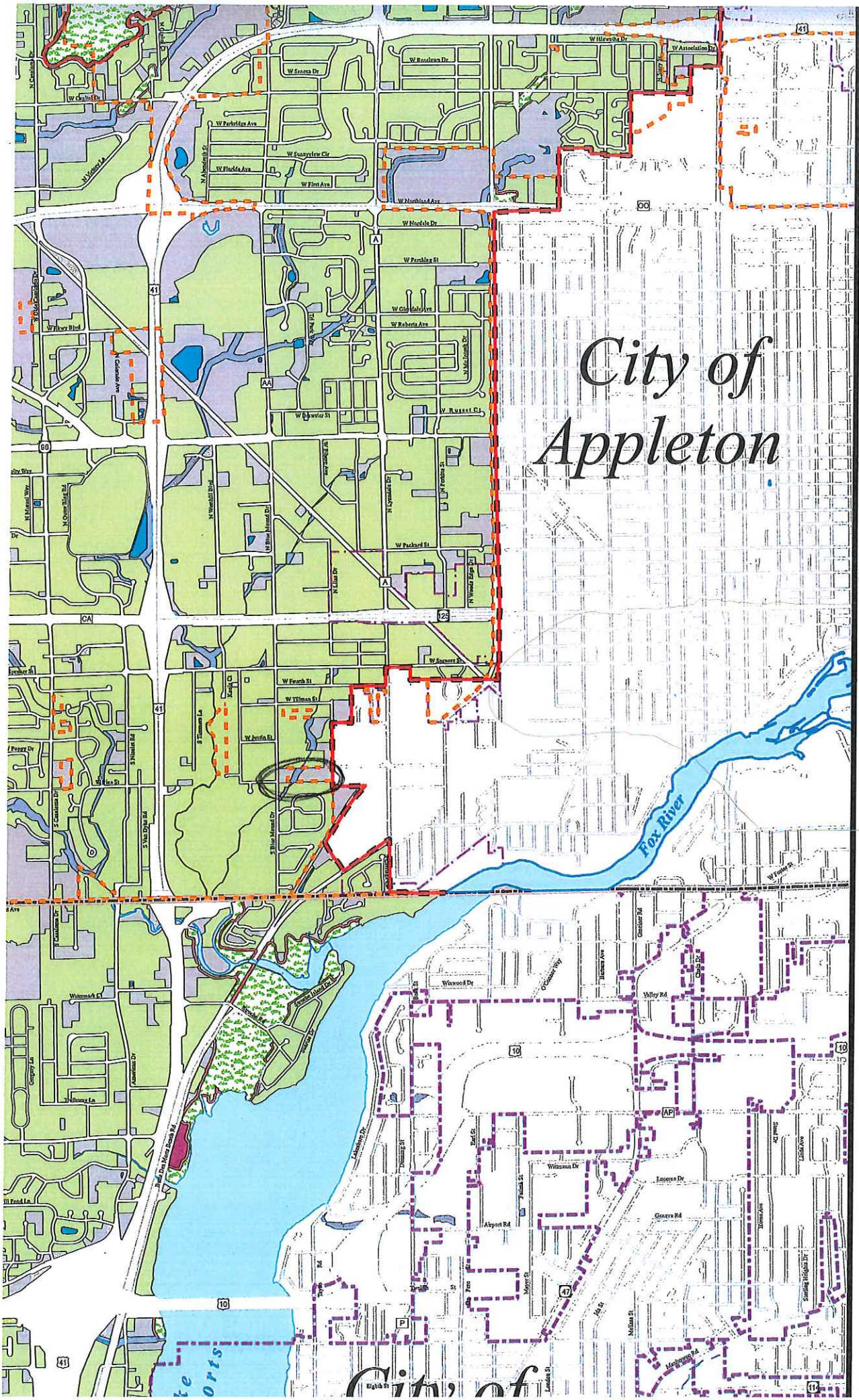
2016
- **1st Permit Term:** Interim Limit = 1 mg/L

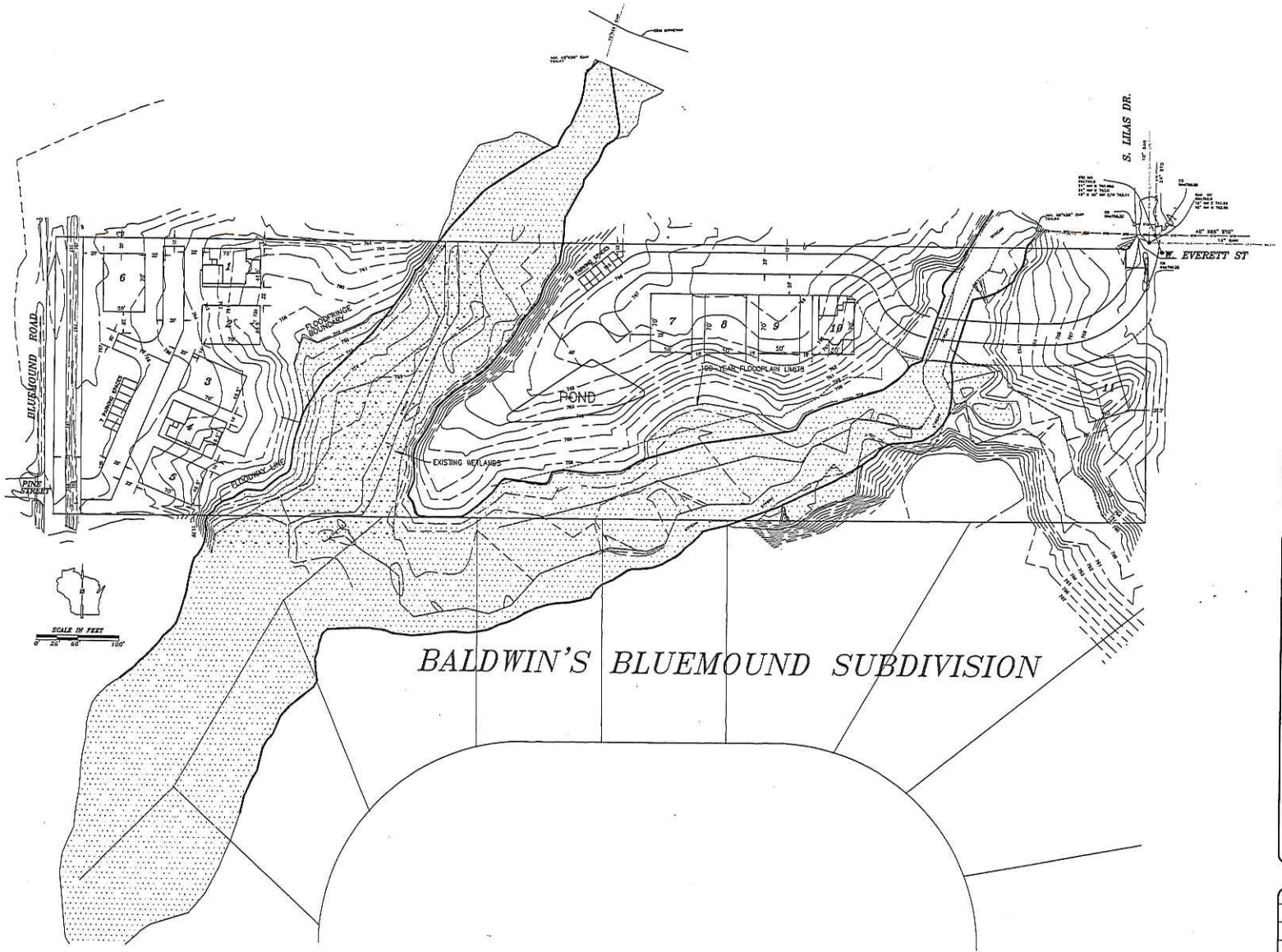
2021
- **2nd Permit Term:** TMDL Limit = 0.2 mg/L

2026
- **3rd Permit Term:** TMDL Limit = 0.2 mg/L

2031
- **4th Permit Term:** WQBEL = 0.1 mg/L

Additional Discussion


City of
Appleton
Fox River



REVISIONS

SCHULER & ASSOCIATES, INC.
LAND SURVEYORS & ENGINEERS
2111 N. MASON STREET, Suite F APPLETON, WI 54914-3186 (920) 731-0107

CONCEPTUAL PLAN
FORESTBROOK CONDOMINIUMS
TOWN OF GRAND CHUTE, OUTAGAMIE COUNTY, WISCONSIN
FOR: CYPRESS HOMES
1230 W College Ave, Appleton, WI 54914

DRAWN MJF
DATE 12-10-15
SCALE 1"=50'
JOB NO. 4324
SHEET 1 OF 1 SHEETS

C:\Carlson Projects\4300\4324\TOPO-PRELAYOUTOPTIONS.dwg, 12/16/2015 10:10:23 AM, DWG To PDF.pc3

OWNER COPY
ENGINEER COPY
CONTRACTOR COPY
FILE COPY

SECTION 00 63 63
CHANGE ORDER

No. 1

Date of Issuance: January 14, 2016 Effective Date: January 14, 2016

Project: Water Treatment Clarifier Recoating	Owner's Contract No.: **861-15-01**
Engineer's Contract No.: **861-15-01**	Contractor: Howard Grote & Sons
Date of Contract Start: November 12, 2015	Original Contract Amount: $497,612.00

The Contract Documents are modified as follows upon execution of this Change Order:

Description:
Adjust project milestone, substantial and final completion dates.

Attachments (list documents supporting change):
Refer to attached revised 4.02 Project Milestones and 4.03 Substantial and Final Completion.

Reason for Change Order: Delay in contract start *(example: project enhancement)*

It is agreed by the Contractor that this Change Order includes any and all costs associated with or resulting from the change(s) ordered herein, including all impact, delays, and acceleration costs. Other than the dollar amount and time allowance listed herein, there shall be no further time or dollar compensation as a result of this Change Order.

CONTRACT PRICE		CONTRACT TIMES (Calendar Days)	To Substantial Completion	To Final Completion
Original:	$497,612.00	Original:	4/1/2016	5/1/2016
Previous C.O.s (Add):	$0.00	Previous C.O.s (Add/Deduct)	0	0
This C.O. (Add):	$0.00	This C.O. (Add/Deduct):	106	106
Total CO Value	$0.00	REVISED:	07/15/16	08/15/16
Contract Price with all approved Change Orders:	$497,612.00	Original Completion Date:	4/1/2016	5/1/2016
		Revised Completion Date:	7/15/2016	8/15/2016

RECOMMENDED:

By Taylor Sisler Robert E Lee & Associates 1/14/16
Engineer *(company name here)* Date

ACCEPTED:

Howard Grote Sons 2-1-16
Contractor *(company name here)* Date

APPROVED:

2/5/16
Owner *(company name here)* Date

APPROVED:

Funding Agency *(If Applicable)* Date

4.02 Project Milestones

A. MILESTONE NO. 1: Work on-site for ***initial*** water treatment clarifier shall not commence prior to **October 1, 2015** and in accordance with paragraphs 14.04, 14.05, 14.06, and 14.07 of the General Conditions; all work associated with Milestone No. 1 shall be substantially completed by March 15, 2016.

4.03 Substantial and Final Completion/Payment

A. Work on-site for ***additional*** water treatment clarifier shall not commence prior to February 1, 2016 and in accordance with paragraphs 14.04, 14.05, 14.06, and 14.07 of the General Conditions; however, all work shall be substantially completed by July 15, 2016.

Substantial Completion: July 15, 2016 Dates
Final Completion and Payment: August 15, 2016 Dates

For the Twelve Months Ending December 31, 2015

Description	Year to Date Expense	Encumbered Amount	Total Expended and Encumbered	Full Year Amended Budget	Percent of Amended Budget
Stormwater Administration	5,224,277	420	5,224,697	5,496,077	95.1 %
Facilities Maintenance	1,349,615	0	1,349,615	1,582,584	85.3 %
Leaf Collection	426,931	0	426,931	439,220	97.2 %
Capital Construction	4,535,431	0	4,535,431	5,747,068	78.9 %
Total	11,536,254	420	11,536,674	13,264,949	87.0 %

DEPARTMENT OF PUBLIC WORKS
YEAR-END REVIEW

All figures through December 31, 2015

STORMWATER

Administration **Business Unit 5210**

Significant 2015 Events:

Performance Data:

Client Benefits/Impacts	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Target 2015	Actual 2015
Economic development						
Master plans completed	0	5	1	4*	0	0
Strategic Outcomes						
Alternative sources of revenue						
# of grants applied for	0	2	0	0	0	0
Value of grant dollars awarded or applied	$0	$300,000	$0	$0	$0	$0
for future reimbursement						
Safe, reliable future level of service						
Acre feet of storage identified for future use	0	25	61	0	0	0
# of DNR non-compliance notices received	0	1	0	0	0	0
Work Process Outputs						
Preventive maintenance of system						
Erosion control plans reviewed (permits)	51	50	30	15	25	48

* Bellaire study, Citywide SWMP, Spartan, Flood Hazard Mitigation Plan Update

DEPARTMENT OF PUBLIC WORKS
YEAR-END REVIEW

All figures through December 31, 2015

STORMWATER

Facility Maintenance **Business Unit 5220**

Significant 2015 Events:

Performance Data:

Client Benefits/Impacts	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Target 2015	Actual 2015
Benefit of inspection program						
# of spot repairs identified from TV reports	20	15	17	38*	15	5*
Compliance with regulation						
# of protruding taps identified	12	12	15	23*	16	5*
# of cross connections identified	0	0	0	0	0	0
Strategic Outcomes						
Effectiveness of maintenance program						
# of trouble calls	9	15	24	0	20	19
% of total system televised	9.5%	9.7%	9.6%	8.3%	10%	9.9%
Work Process Outputs						
Preventive maintenance						
Cubic yards of material collected from street sweeping operations	2,995	3,884	4,124	3,920	3,800	5,565
% of total storm sewer system cleaned	14.1%	13.3%	12.8%	9.2%	18.0%	11.3%
Safeguarding health and safety						
# of protruding taps removed	15	10	0	17*	16	23*
# of spot repairs made	5	15	0	19*	15	37*

* Totals vary due to 2014 and 2015 funds bid in 2014 and were completed in 2015

DEPARTMENT OF PUBLIC WORKS
YEAR-END REVIEW

All figures through December 31, 2015

STORMWATER

Leaf Collection **Business Unit 5225**

Significant 2015 Events:

- Increase in the number of collection cycles due to the mild weather in November and December.

Performance Data:

Client Benefits/Impacts	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Target 2015	Actual 2015
Service provided						
Number of collection cycles	5	4	4	3.25	3	5
Strategic Outcomes						
Cost effective service provided						
Cost/cubic yard collected	$8.86	$8.10	$12.71	$9.82	$10.75	$11.00
Work Process Outputs						
Safer streets and cleaner storm water system						
Cubic yards of leaves collected	30,960	41,180	25,510	33,160	35,000	37,100

DEPARTMENT OF PUBLIC WORKS
YEAR-END REVIEW

All figures through December 31, 2015

STORMWATER

Capital Construction **Business Unit 5230**

Significant 2015 Events:

Performance Data:

Client Benefits/Impacts	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Target 2015	Actual 2015
Solutions to system discrepancies						
Residential mini-sewer/drainage complaints						
Solved	92	115	99	84	100	99
Outstanding	456	400	360	113*	350*	95*
Strategic Outcomes						
Improvements to the stormwater system						
Total miles of storm sewer in the city	286	278.17 **	282	282	289	292
% of total miles reconstructed	0.19%	0.37%	0.23%	0.01%	1.07%	0.29%
Acres of new land available	0	56	0	0	0	0
Integrity and growth of the system						
Acre feet of storage developed	37.0	0.0	35.0	14.1	10.0	3.5***
Work Process Outputs						
Restoration of storm sewers						
Miles of storm sewer reconstructed	0.53	1.02	0.66	0.35	2.98	0.85
Expansion of storm sewer system						
Miles of new storm sewer added	1.72	0.052	0.66	0.21	0.00	0.34

* Audited/cleaned up list in 2014 after 2015 Target was developed, 90 on CSR list & 23 on Clearwater inspection list ***Birchwood Pond

** Moved from a manual tracking system to a more comprehensive system - GIS

2/4/2016

Description	Year to Date Expense	Encumbered Amount	Total Expended and Encumbered	Full Year Amended Budget	Percent of Amended Budget
Wastewater Collection Systems	920,241	0	920,241	1,027,718	89.5 %
Public Works Capital Improv.	1,660,027	0	1,660,027	2,875,712	57.7 %
Total	2,580,268	0	2,580,268	3,903,430	66.1 %

DEPARTMENT OF PUBLIC WORKS
YEAR-END REVIEW

All figures through December 31, 2015

WASTEWATER UTILITY

Collection Systems **Business Unit 5427**

Significant 2015 Events:

Performance Data:

Client Benefits/Impacts	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Target 2015	Actual 2015
Benefit of inspection program						
# of defects identified from TV report	17	16	13	47**	17	3**
Compliance with regulation						
# of protruding taps identified	5	0	1	9**	6	0**
# of cross connections identified	94	52	70	85	80	86
Strategic Outcomes						
Reliability of system maintenance program						
# of trouble calls	38	39	49	57	40	28
# of system blockages removed	4	7	6	7	6	3
% of total system televised	10.7%	11.6%	12.5%	10.0%	11.00%	14.1%
Work Process Outputs						
Maintenance performed						
% of total system cleaned	40.3%	66.4%	51.2%	48.6%	50.0%	46.6%
# of spot repairs made	13	15	0*	13**	13	46**
Safeguarding health and safety						
# of protruding taps removed	4	0	0*	4**	5	3**

* Timing of contract pushes work into 2014.

** Totals vary due to 2014 and 2015 funds were bid in 2014 and were completed in 2015

2/4/2016

DEPARTMENT OF PUBLIC WORKS
YEAR-END REVIEW

All figures through December 31, 2015

WASTEWATER UTILITY

Public Works Capital Improvements **Business Unit 5431**

Significant 2015 Events:

Performance Data:

Client Benefits/Impacts	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Target 2015	Actual 2015
Reduction of wastewater treatment cost						
# of manholes-rehab/rebuilt	22	35	20	39	25	23
Distribution section rating from CMAR	A	A	A	A	A	A
# of laterals replaced	117	181	173	106	200	198
Strategic Outcomes						
Improvements to the sanitary sewer system						
Total miles of sanitary sewer	329	321*	321	320**	322	323
% of total miles of sanitary sewer reconstruct	0.78%	0.55%	0.38%	0.74%	0.76%	0.46%
Work Process Outputs						
Restoration of sanitary sewers						
Miles of existing sanitary sewer reconstruct.	2.58	1.76	1.24	2.39	2.44	1.47
Expansion of sanitary sewer system						
Miles of new sanitary sewer added	0.00	0.00	0.22	0.09	1.10	0.49
Reduction of treatment costs						
# of seals installed (I & I)	67	59	91	75	100	94

* Moved from a manual tracking system to a more comprehensive system - GIS

** The total miles of sanitary sewer main within the system decreased due to the City abandoning 2975 feet of sanitary sewer and only installing 494 feet of new sanitary sewer main.

For the Twelve Months Ending December 31, 2015

Description	Year to Date Expense	Encumbered Amount	Total Expended and Encumbered	Full Year Amended Budget	Percent of Amended Budget
Distribution Administration	505,363	70,220-	435,143	644,853	67.5 %
Customer Service	220,566	0	220,566	121,114	182.1 %
Distribution Ops. & Maint.	1,117,013	0	1,117,013	1,274,607	87.6 %
Distribution Capital	4,631,610	102,552	4,734,162	5,087,416	93.1 %
Total	6,474,552	32,332	6,506,884	7,127,990	91.3 %

DEPARTMENT OF PUBLIC WORKS
YEAR-END REVIEW

All figures through December 31, 2015

WATER UTILITY

Distribution Administration **Business Unit 5351**

Significant 2015 Events:

- Added property owner notification to tenant occupied properties, increasing customer service and reducing the number of missed appointments.
- Developed customized comparison reports to analyze the new water meter data and worked to correct noted areas.
- Working with new Water Foreman to develop record keeping efficiencies.
- Rearranged water main clamps by size and style in the stockroom.

Performance Data:

Client Benefits/Impacts	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Target 2015	Actual 2015
Efficient customer service						
# Cross connection inspections	New measure ---------->			0	7,000	6,615
# Appointment request letters sent	New measure ---------->			5,265	10,000	11,757
Strategic Outcomes						
Consistent and current information						
Policies reviewed/updated	0	0	1	2	1	1
Turnover ratio of inventory - Annual	0.87	0.76	0.65	0.74	0.80	0.72
Work Process Outputs						
Reporting & recording keeping						
# of reports generated for PSC	1	1	1	1	1	1

DEPARTMENT OF PUBLIC WORKS
YEAR-END REVIEW

All figures through December 31, 2015

WATER UTILITY

Customer Service **Business Unit 5352**

Significant 2015 Events:

- The new Sensus system has enabled us to identify "high water use" in 80 properties in 2015 that ranged from 10 gallons to over 1000 gallons per hour. This software has allowed us to communicate confidently with property owners to find the leak and minimize unneccessary usage.

Performance Data:

Client Benefits/Impacts	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Target 2015	Actual 2015
Reliable, accurate water usage						
# of large meters replaced	2	1	0	0	0	0
# of meters tested	1,584	1,293	428	4,183	7,000	6,981
# of defective meters replaced	115	45	36	17	100	248
# of meters in service	26,990	27,160	27,383	27,589	27,650	27,618
Strategic Outcomes						
Implementation of system upgrade						
# of trace batteries replaced	1,272	802	122	0	0	0
# of new meters replaced	New Measure ---------->		450	4,661	7,000	7,090
Work Process Output						
Service provided						
# of service calls	1,128	1,247	1,472	1,863	1,800	1,497
System growth						
# of new services installed	55	177	233	80	200	120

DEPARTMENT OF PUBLIC WORKS
YEAR-END REVIEW

All figures through December 31, 2015

WATER UTILITY

Distribution Operations and Maintenance **Business Unit 5353**

Significant 2015 Events:

- Water main breaks were below average in 2015, possibly due to the milder winter months.

Performance Data:

Client Benefits/Impacts	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Target 2015	Actual 2015
Reliable source at adequate pressure						
Hydrants						
Replaced/Upgrade	16	6	4	4	5	6
% of hydrants flushed	100%	100%	100%	100%	100%	100%
Water loss reported	2.5%	8.7%	8.5%	9.0%	10%	9.1%
Strategic Outcomes						
Reliability of the system						
# of water main breaks	99	83	87	141	85	71
Work Process Outputs						
Preventive maintenance						
# of services replaced	5	36	24	11	15	0
# of valves exercised	1,152	1,010	869	525	900	796
# of valves replaced	4	5	4	7	5	5
# of curb boxes repaired	599	331	202	248	300	427
# of joint leaks fixed	6	5	4	1	5	1
# of service leaks fixed	4	4	3	3	5	0

DEPARTMENT OF PUBLIC WORKS
YEAR-END REVIEW

All figures through December 31, 2015

WATER UTILITY

Distribution Capital Improvements — **Business Unit 5370**

Significant 2015 Events:

- Contract let and began construction of Glendale Avenue water tower (MPZ).
- Reconstruct of John St water main. Now all 12" dia., College Ave to Calumet St.

Performance Data:

Client Benefits/Impacts	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Target 2015	Actual 2015
Reliable and adequate service						
% of reconstructed streets with relay	100.0%	100.0%	100.0%	100.0%	100%	100.0%
% increase of fire flow capacity	21% - 493%	0% - 175%	0% - 45%	0% - 245%	0% - 200%	0% - 175%
# of low flow hydrants eliminated	7	3	3	5	5	8
Strategic Outcomes						
System size						
Miles of mains	363.24	373*	375.25	373*	375	373.41
% of total miles of mains reconstructed	0.56%	0.63%	0.65%	0.66%	0.82%	0.90%
# of hydrants in the City	3,342	3,277*	3,295	3,313	3,300	3,344
# of low flow hydrants in the City	110	107	104	85	85	77
Work Process Outputs						
System expansion and improvement						
Miles of transmission lines added	1.40	0.17	0.19	1.08	0.00	0.00
Miles of existing mains relayed	2.05	2.3	2.19	2.47	3.06	3.36

* Moved from a manual tracking system to a more comprehensive system - GIS