STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

VERIFIED PETITION OF CITIZENS WASTEWATER OF WESTFIELD, LLC FOR (1) AUTHORITY TO INCREASE RATES AND CHARGES FOR WASTEWATER UTILITY SERVICE AND APPROVAL OF A NEW SCHEDULE OF RATES AND CHARGES; AND (2) APPROVAL OF CERTAIN REVISIONS TO ITS TERMS AND CONDITIONS APPLICABLE TO WASTEWATER UTILITY SERVICE	)	**CAUSE NO. 44835**

REVISED REDACTED TESTIMONY OF

JAMES T. PARKS – PUBLIC'S EXHIBIT NO. 3

ON BEHALF OF THE

INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

DECEMBER 30, 2016

Respectfully submitted,

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CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing ***OUCC's Revised Redacted Testimony of James T. Parks: Public's Exhibit No. 3*** has been served upon the following counsel of record in the captioned proceeding by electronic service on December 30, 2016.

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REDACTED TESTIMONY OF OUCC WITNESS JAMES T. PARKS
CAUSE NO. 44835
CITIZENS WASTEWATER OF WESTFIELD, LLC.

I. INTRODUCTION

Q: Please state your name and business address.

A: My name is James T. Parks, P.E., and my business address is 115 West Washington Street, Suite 1500 South, Indianapolis, Indiana 46204.

Q: By whom are you employed and in what capacity?

A: I am employed by the Indiana Office of Utility Consumer Counselor ("OUCC") as a Utility Analyst II in the Water/Wastewater Division. My qualifications and experience are described in Appendix A.

Q: Please describe the review and analysis you conducted to prepare your testimony.

A: I read the Testimonies of Aaron Johnson, and Korlon Kilpatrick. I prepared discovery and reviewed Citizens Wastewater of Westfield, LLC's ("Petitioner") responses. I reviewed multiple wastewater planning reports, the 2006 Master Plan, and Preliminary Engineering Reports. These documents are listed in Attachment JTP-1. I visited Petitioner's wastewater facilities including its Westside Wastewater Treatment Plant (hereafter "Westfield WWTP," or "Westside WWTP"), the Downtown Lift Station, the Washington Woods Lift station, the 156th Street Interceptor project, and the discharge connection to Carmel's wastewater system. I reviewed public documents on the Indiana Department of Environmental Management's ("IDEM") website pertaining to Petitioner's wastewater system.

Q: What is the purpose of your testimony?

A: My testimony recommends the Commission reject Petitioner's proposal to include in rate base certain projects the OUCC considers to be imprudent and unnecessary. Petitioner proposes to include in rate base major projects in the amount of $5,695,562 -- (1) the Downtown Lift Station and force main project to re-route wastewater to the Washington Woods Lift Station, and (2) the 156th Street Interceptor project (Phase 1). The OUCC recommends the Commission exclude all but $500,000 of the cost of these projects.

My testimony explains that Petitioner's major projects are driven by Petitioner's decision to reduce or eliminate wastewater flows it sends to the City of Carmel's wastewater system. I explain this decision was made without analysis or study to determine whether eliminating flows to Carmel is cost effective. I explain that Petitioner would need to incur significant capital costs to route flows away from Carmel. I explain that these capital costs would cause treatment by Petitioner to be at a significantly higher cost than continuing to procure treatment from Carmel. In addition, my testimony includes some observations about Petitioner's operations. More specifically, I note Petitioner's lack of an Infiltration and Inflow ("I&I") control program and its lack of institutional knowledge about its wastewater assets. I make recommendations to correct the foregoing.

Q: What documents are attached to your testimony?

A: My testimony includes the attachments shown in Appendix B.

II. WASTEWATER SYSTEM DESCRIPTION

A. Wastewater Collection System

Q: Please describe Petitioner's wastewater collection system.

A: Notwithstanding Mr. Johnson's testimony (p. 5) that Petitioner owns, operates and maintains approximately 200 miles of gravity sewer lines, Petitioner currently maintains a collection system of approximately 88 miles. According to Petitioner, it operates between 25 to 36 lift stations depending on the source of the information. In its current configuration, Petitioner's collection system is designed to send wastewater for treatment to both Petitioner's Westside WWTP and the Carmel Wastewater Treatment Plant ("Carmel WWTP"), of which Petitioner owns capacity of at least 2.14 MGD.

Q: How did you determine the current length of Petitioner's sewage collection system?

A: There seemed to be disagreement among the Utility's IURC Annual Reports. But according to Petitioner's response to the OUCC's discovery on this subject, Petitioner's total sewer and force main length is 87.6 miles. (Note: Petitioner responded that it has 69.2 miles of gravity sewer lines and 16.6 miles of force mains, which would total 85.8 miles.) *See* Responses to OUCC DR 14.14 and 14.15 in Attachment JTP-2. But this did not appear to include the 3,013 lineal feet ("LF") of 36-inch PVC and 1,350 LF of 42-inch PVC gravity sewer pipe constructed during the 156th Street Interceptor Project – Phase 1 or the 5,200 LF of 16-inch diameter high density polyethylene ("HDPE") force main installed during the

Downtown Lift Station Project. With these additions, Petitioner's total sewer and force main length is 87.6 miles.

Q: What are the types and sizes of Petitioner's sewer and force main inventory?

A: The OUCC asked Petitioner to state the types and sizes of its sewer and force main inventory. But according to Petitioner's responses to OUCC DR 14.14 and 14.15, Petitioner does not know the pipe diameter or pipe type for much of its collection system. Petitioner indicated it does not have information on 58% of its gravity sewers (210,838 feet unknown out of 365,303 feet) and 77% of its force mains (67,268 feet unknown out of 87,644 feet). This type of information is essential to the operation of the system. Petitioner has operated the Westfield system since March 2014. That Petitioner lacks this information on most of its wastewater collection system is problematic and unacceptable. Therefore, I recommend Citizens Wastewater of Westfield be required to develop and implement an asset inventory system to allow it to identify and inventory all sewers and force mains by pipe type, age, condition, diameter, and length.[1]

Q: Is all of Petitioner's sewer system appropriately sized?

A: No. In 2015, Petitioner installed 4,164 feet of 6-inch diameter sewer. *See* 2015 IURC Annual Report at page S-7(a). This is below the 8-inch minimum allowable diameter for gravity sanitary sewers.[2,3]

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[1] On the 2015 IURC Annual Report, Petitioner said it does not have an Asset Management Plan but anticipated starting one on June 1, 2016.

[2] **33.1 Minimum Size** A public gravity sewer conveying raw wastewater shall not be less than 8 inches in diameter. *Recommended Standards for Wastewater Facilities*, Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (Ten States Standards), 2014 Edition.

[3] **327 IAC 3-6-8 Sanitary sewer materials** (g) (2) (A) Gravity sewers shall not be less than eight (8) inches in diameter.

Q: Why is there some question as to the number of lift stations the utility operates?

A: In response to our inquiries, we have not been provided a consistent number. Mr. Johnson testified (p. 5) that there are 28 lift stations, but this may be an error. In response to OUCC discovery, Petitioner identified 26 lift stations. *See* response to OUCC DR 12.7 - Attachment JTP-3. However, Petitioner's response to OUCC DR 12.5 included a sewer map showing 36 lift stations. *See* Attachment JTP-4. On another sewer system map provided as a confidential response to OUCC DR 12.12 Petitioner shows 25 lift stations. *See* Attachment JTP-5.

Q: What is your recommendation regarding a lift station inventory?

A: In conjunction with its sewer system asset inventory, I recommend Petitioner include an inventory listing and condition assessment of all its lift stations. The lift station inventory listing should resolve the discrepancy in lift station count.

Q: Do you have other observations about Petitioner's lift stations?

A: Yes. Through its lift stations, Petitioner has the ability to transport a portion of its wastewater to the Carmel wastewater system for treatment. Petitioner has five larger lift stations capable of pumping between 1,000 to 3,000 gpm. These higher capacity lift stations receive flows from a larger service area and re-pump flows from upstream lift stations. The Merrimac Lift Station, with a design flow of 1,200 gpm, has the flexibility to route wastewater to either Carmel via the Cool Creek Interceptor or to sewers flowing to the Towne Road Lift Station, which pumps to Petitioner's Westside WWTP. *See* the Sewer Map with Lift Stations provided as a confidential response to OUCC DR 12.12 in Attachment JTP-5. Petitioner also has three other lift stations able to send wastewater flow to either the Carmel WWTP

or the Westside WWTP. *See* page 22 of Petitioner's confidential response to OUCC DR 24.22.2 shown in Attachment JTP-6.

Q: Why is Petitioner's ability to route flows to either wastewater plant using its lift stations important?

A: Petitioner can reduce flows to Carmel and can thus lower its purchased wastewater treatment costs. If Petitioner chooses to lower its operating expenses by reducing or eliminating flows to Carmel, it increases wastewater flows to its Westside WWTP, potentially causing a premature need to expand the Westside WWTP. Petitioner's reduced purchased wastewater operating expense would be offset by increases in lift station pumping and operating costs and treatment plant pumping, aeration, chemical, and sludge disposal costs. However, before expanding the Westside WWTP Petitioner should maximize its flows to Carmel, including investigating whether it could secure additional allocated capacity in Carmel's system. I recommend Petitioner discuss additional capacity with Carmel and identify what capital projects would be required to send more flow to Carmel.

Q: Did Petitioner explain how it decides how much flow to route to Carmel?

A: Yes. It appears Petitioner is minimizing its purchased wastewater expense, but stays below 90% of the Westside WWTP's 3 MGD capacity (or 2.7 MGD). In response to OUCC discovery about how Petitioner determines where flows from the new Downtown Lift Station are routed, Petitioner responded as follows:

> Petitioner utilizes the flexibility of the routing of this lift station to *maximize the capacity at the Carmel plant* and at the Westfield WWTP. This is done by monitoring the flows daily that are metered at the Carmel Connection and at the Westfield WWTP. The remainder of the month is then forecasted, to ensure the monthly average, as reported on the MRO, stays below 2.7 MGD or 90-percent of the Westfield WWTP. In months with wet weather the flow is typically turned back toward Carmel so that the threshold of 90-percent stated above is not exceeded.
>
> (Emphasis added)
> *See* response to OUCC DR 20.15 in Attachment JTP-23.

Q: Do you agree that Petitioner's operating strategy maximizes the capacity at the Carmel plant?

A: No. It does the opposite. It minimizes flows to Carmel.

Q: Is Petitioner requesting an increased purchased wastewater expense for treatment at Carmel?

A: Yes. Petitioner seeks a $244,006 increase (36.9%) to $905,649 annually on the basis that the rate it pays Carmel rose 36.9% in 2016. Petitioner used 2015 Test Year wastewater volumes instead of the reduced wastewater volumes it actually now sends to Carmel and applied the higher Carmel treatment rate. With lift stations capable of shifting flows between treatment plants, Petitioner lowered its Carmel flows beginning February 1, 2016. Petitioner operates the Downtown Lift Station to route flows to the Westside WWTP that would have otherwise flowed to Carmel. Petitioner should receive an increase in purchased wastewater treatment expense based on actual flows routed to Carmel. In his testimony, Chuck Patrick discusses Petitioner's requested increase in expenses for purchased wastewater treatment.

Q: How should Petitioner determine the flow split between Carmel and the Westside WWTP?

A: Petitioner should conduct an analysis to determine the lowest cost to ratepayers based on whether it is cheaper to convey and treat wastewater at the Carmel WWTP or the Westside WWTP. For increased flows to the Westside WWTP, the cost analysis would include increased pumping costs at lift stations and the WWTP, increased power costs for aeration, increased chemical costs, and increased sludge processing and disposal costs, offset by decreased pumping costs at Petitioner's Oak Road lift station.

Q: What is your recommendation regarding Petitioner's lift stations?

A: Since Petitioner has the flexibility to route wastewater between basins (either to Carmel's wastewater system or to the Westside WWTP), I recommend that the Commission order Petitioner to do two things: 1) Conduct an analysis to determine the lowest cost for wastewater treatment between the Carmel WWTP and Westside WWTP, and 2) As part of an overall documentation of its purchased wastewater expense, record and provide flow information showing where wastewater was routed from its lift stations able to send flow to either WWTP.

B. Wastewater Treatment Plants

Q: Please describe the history of Westfield's wastewater treatment facilities.

A: Before Citizens acquired Westfield's municipal wastewater system, Westfield's system could be described as having three plants to treat the wastewater produced by its customers. These consisted of (1) the original wastewater stabilization lagoons, (2) the Carmel Wastewater Treatment Plant, of which 17.83% of its

treatment capacity was purchased by Westfield, and (3) the Westside Wastewater Treatment Plant. Under Petitioner's current ownership, only two of these treatment options exist – the Carmel WWTP and the Westside WWTP.

Q: What is the history of the wastewater stabilization lagoons?

A: Prior to 1986, Westfield's wastewater was only treated in waste stabilization lagoons located north of the Public Works Buildings at 2728 East 171st Street. These lagoons are divided into an East Lagoon at 9.61 acres and a West Lagoon at 8 acres. Discharge was to Cool Creek.

Q: How did the wastewater stabilization lagoons cease to be the only treatment method?

A: With funding through the US EPA's Construction Grants program under the Clean Water Act, in 1986 Westfield regionalized with the City of Carmel for wastewater treatment. This regionalization required Westfield to construct the Cool Creek Interceptor and the Oak Road Regional Lift Station. These improvements allowed Westfield to convey wastewater to Carmel's North-South Interceptor. Westfield's flow monitoring and connection point to Carmel's sewer system is located on the north side of 146th Street just west of Cool Creek. *See* Attachment JTP-7 for photos of Westfield's connection point to Carmel's wastewater system and other photos of Petitioner's wastewater system taken during the OUCC's site visit on November 1, 2016.

Q: What happened to Westfield's waste stabilization lagoons?

A: Following wastewater regionalization with Carmel, Westfield no longer needed the lagoons on a daily basis. However, because of infiltration and inflow from older sewers including vitrified clay pipe in the older sections of Westfield, peak flows

sometimes exceeded the sewer capacity during wet weather in Westfield's Cool Creek Interceptor. To address these wet weather peak flows, Westfield continued to use the waste stabilization lagoons, but converted them into a controlled discharge waste stabilization lagoon facility. According to the facility description in the 2013 NPDES permit,[4] Westfield's lagoon facility also operated as an equalization basin in response to wet weather:

> The permittee currently operates a Class I-SP, 0.15 MGD controlled discharge waste stabilization lagoon facility which also operates as an equalization basin on an intermittent basis in response to wet weather flow. During periods of dry weather and less intense wet weather events, flows are directed to the City of Carmel collection system. Flows in excess of 1.4 MGD are stored in the ponds due to a contractual capacity limitation within the Carmel collection system. Stored flow is either bled back into the Carmel interceptor following the storm event or discharged when the storage volume in the ponds is exceeded. Discharge to Cool Creek occurs primarily during heavier and/or recurring wet weather events.

Q: How often were wet weather flows sent to the lagoons?

A: Petitioner's system continued to overflow into the lagoons in 2014 and 2015. From 2012 through 2015, overflows into the lagoons were infrequent -- averaging 16 days per year.[5] In 2016, Petitioner completed the Downtown Lift Station, and no overflows have occurred since. Table 1 summarizes influent flows into the City of Westfield's lagoons.

[4] Treatment Facility Description, NPDES Permit No. IN0021351, Westfield Wastewater Treatment Plant, February 8, 2013

[5] Based on the City of Westfield's Monthly Reports of Operation submitted to IDEM.

Table 1 – Summary of Influent Flows
City of Westfield Lagoons

Year	Total Influent Flow (MG)	Total Influent Days	Average Influent Flow (MGD)	Maximum Influent Flow (MGD)
2012	0.872	6	0.145	0.206
2013	4.343	14	0.310	1.08
2014	3.219	19	0.169	0.603
2015	4.131	23	0.180	0.647
2016	0	0	0	0
Total	12.6	62		
Avg. 2012-15	3.14	16		1.08

Q: Did Petitioner acquire Westfield's wastewater lagoons?

A: No. Petitioner decided not to acquire Westfield's lagoons. OUCC's Margaret Stull addresses in her testimony the impact on rate base of Petitioner's decision not to acquire the wastewater lagoons. The City of Westfield is currently beginning work to "clean close" the lagoons, which IDEM requires because the lagoons are no longer used for wastewater treatment. Clean closure includes sampling and analysis of sludge deposits and removal and off-site disposal of the sludges.[6] Costs for clean closure of the lagoons are being borne by the City of Westfield. The City of Westfield required Petitioner to cease discharge of excess wet weather flows into the lagoons in 2016.

Q: What alternative to using the lagoons in wet weather did Petitioner pursue?

A: In 2012, Citizens Energy Group hired HNTB Corporation to evaluate the lagoons

[6] Approval of the City of Westfield's Lagoon Closure Plan to Clean Close Two Sludge Storage Lagoons (East and West), IDEM, September 15, 2016.

with regard to required facility upgrades that may be needed to comply with the draft NPDES permit. Petitioner asked HNTB to develop options for continued use of the lagoons, for flow equalization, and to end use of the lagoons. In late 2012, HNTB prepared a Technical Memorandum developing, analyzing and describing six options with respect to the lagoons, some of which involved retaining the lagoons. *See* Attachment JTP-8. The lowest capital cost option for conveying and treating peak wet weather flows from the collection system upstream of the lagoons (Option 1 – effluent disinfection) would cost $100,000. Costs for the six options identified by HNTB ranged from $100,000 for Option 1 -continued lagoon use with NPDES upgrades to $1,500,000 for Option 3 - New Regional Lift Station and Lagoon Abandonment.

Q: Did Petitioner select Option 1?

A: No. Petitioner chose not to acquire the lagoons and built Option 3 -- the Downtown Lift Station and Force Main, which ultimately cost $2.4 million. The Technical Memorandum noted the advantages for Option 3 were that an NPDES Permit would no longer be required and 3.2 MGD of flow would be routed away from the Carmel WWTP to the Westside WWTP. (Attachment JTP-8, p. 8)

Q: Why would routing flow away from Carmel WWTP to the Westside WWTP be identified as an advantage?

A: The introduction to the Technical Memorandum noted that "Various options were evaluated and are presented with the understanding of CEG's <u>desire to ultimately reduce or eliminate flow to the City of Carmel</u>." (Emphasis added.) It may have been considered an advantage because it furthered that goal.

Q: Did the introduction to the Technical Memorandum indicate how the desire to reduce or eliminate flow to Carmel would be accomplished?

A: Yes. The Introduction added that "For this to occur, infrastructure upgrades as well as new facilities outlined in the City's master plan would be needed."

Q: Do you consider routing flow away from the Carmel WWTP to be advantageous?

A: No. The introduction to the Technical Memorandum suggests Petitioner would be spending and adding to its rate base to accomplish a goal of reducing or eliminating flow to a facility (the Carmel WWTP) for which Petitioner currently has *excess* capacity. This seems to make little sense.

Q: When did Westfield construct the Westside WWTP?

A: In 1997 and 1998, the City of Westfield constructed the J. Edward Drain Interceptor and the 1.0 MGD Westside Wastewater Treatment Plant at 3303 West 166th Street west of Little Eagle Creek.[7] At the same time, Hamilton Western Utilities constructed the Towne Road Lift Station and force main and connected to the Westside WWTP rather than build a separate WWTP. Westfield acquired a portion of Hamilton Western Utilities in 2002. In 2005 Westfield expanded its Westside WWTP to treat 3.0 MGD with provisions for further modular expansions as growth occurred.

Q: Please describe the Westside WWTP.

A: According to the Treatment Facility Description in NPDES Permit No. IN0059544, the Westside WWTP is a Class III, 3.0 MGD wastewater treatment facility:

[7] The WWTP address is listed as 3303 W. 166th St, Westfield, IN by the Indiana Department of Environmental Management on NPDES Permits but the Hamilton County Property Tax records list the address as 3511 W. 166th St.

> . . . consisting of a coarse bar rack, a mechanical fine bar screen, grit removal, three sequential batch reactors, phosphorus removal, ultraviolet light disinfection, post aeration, four aerobic digesters, and influent and effluent flow meters. The collection system is 100% sanitary sewers by design with no overflow or bypass points.

The treatment plant is located on a 40.11 acre site primarily located west of Little Eagle Creek. Wastewater flows to the plant via two main lines, the J. Edward Drain Interceptor constructed at the same time as the original plant (also called the North line) and the 18-inch diameter force main from the Towne Road Lift Station constructed in 1997 (also called the South line).

Q: Have there been any recent changes?

A: Yes. In early 2016, Petitioner began routing flows from the Washington Woods Lift Station to the previously constructed but essentially unused Westside Interceptor. The Washington Woods Lift Station started receiving pumped flow from the Downtown Lift Station in February 2016.

Q: How much wastewater is treated at the Westside WWTP?

A: Between January 1, 2011 and January 31, 2016, the Westside WWTP treated a daily average flow of 1.74 MGD. The Westside WWTP operated at 58% of its design average flow capacity (1.74 MGD daily average flow / 3.0 MGD design average flow). After Petitioner diverted flow away from Carmel beginning on February 1, 2016 with start-up of the new Downtown Lift Station, average treated flows at the Westside WWTP have increased 44% to 2.51 MGD. Petitioner is now operating the Westside WWTP at 84% of its 3.0 MGD design average flow capacity. Raw sewage influent and flows to Carmel are shown in Attachment JTP-9.

III. DISCHARGES TO THE CARMEL WASTEWATER SYSTEM

Q: What are Petitioner's plans for the Westside WWTP?

A: Petitioner appears to be currently planning to double the capacity of the Westside WWTP to 6.0 MGD with provision to double capacity again to 12.0 MGD. Petitioner hired Wessler Engineering to prepare a WWTP Facility Expansion Plan, but Petitioner has not provided any design summary information in response to our discovery requests. *See* Petitioner's responses to OUCC DRs 20.23, 21.20 and 24.27 provided in Attachment JTP-10. Petitioner has also obtained Preliminary Effluent Limits for both a 6.0 MGD and 12.0 MGD plant expansion.[8] *See* Attachment JTP-11. In its application to IDEM, Petitioner stated it plans to expand its Westside wastewater treatment plant two times within 20 years:

> It is expected the existing Westfield Wastewater treatment plant will be expanded twice over the next 20 years. The initial expansion will increase the Average Daily flow capacity [*sic*] to 6 MGD from the present 3 MGD. The final expansion capacity is expected to be 12 MGD.

Q: When does Petitioner plan to expand the Westside WWTP?

A: In the Waste Load Allocation Update, HNTB Corporation presented a schedule coordinated with renewal of the NPDES Permit in 2017 and expansion being completed in 2019. *See* confidential response to OUCC DR 24.22.2 in Attachment JTP-6. (That expansion is not a major project in this case.)

[8] Preliminary Effluent Limits, Proposed Upgrade of the Citizens Wastewater of Westfield, LLC (Westfield Westside) Wastewater Treatment Plant, NPDES Permit No. IN0059544, Indiana Department of Environmental Management, May 19, 2016.

Q: Did Carmel construct improvements south of 146th Street, allowing it to receive Westfield wastewater for treatment?

A: Yes. Carmel upsized its North-South Interceptor and the 106th Street Lift Station to accept a peak hourly flow of 3.7 MGD from Westfield. Attachment JTP-12 is a peak hourly flow schematic showing major components of Carmel's wastewater system.[9] The design average flow capacity of the Carmel WWTP was also expanded in the 1980s from 6.0 MGD to 8.88 MGD.[10] In the mid 1980s, Westfield paid for conveyance capacity in Carmel's upsized North-South Interceptor and treatment capacity in the Carmel WWTP.[11] *See* Attachment JTP-13 for a copy of the Wastewater Services Agreement with Carmel provided in response to OUCC DR 3.16.

Q: Has Westfield continued to discharge wastewater to Carmel's wastewater system?

A: Yes. In 2011 Westfield sent a daily average flow of 1.64 MGD to Carmel. Due to the severe drought in 2012, the daily average flow temporarily dropped to 1.47 MGD.

Q: Did Citizens Wastewater of Westfield continue discharging wastewater to Carmel after it acquired Westfield's wastewater system?

A: Yes. From April 1, 2014 through January 31, 2016, Petitioner discharged to Carmel a daily average flow of 1.64 MGD.

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[9] Attachment to IDEM Construction Permit No. 18529 prepared by Jones & Henry Engineers, Ltd., March 9, 2007.

[10] Section 11.241 (a) Design Average Flow - The design average flow is the average of the daily volumes to be received for a continuous 12 month period. *Recommended Standards for Wastewater Facilities*, Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (Ten States Standards), 2014 Edition.

[11] Section 11. B Capital Costs, Municipal Wastewater Service Agreement between the City of Carmel and the Town of Westfield.

Q: How much wastewater is Petitioner allowed to discharge to Carmel?

A: According to the Wastewater Service Agreement, Petitioner can discharge at a daily average flow rate of 2.14 MGD or 781 million gallons ("MG") annually. Petitioner can also discharge up to 2,600 gallons per minute ("gpm") for up to three hours and a peak day flow of 2.84 MGD.[12] The City of Westfield's Wastewater Service Agreement with Carmel, dated August 30, 2007, was transferred to Petitioner when it acquired Westfield's wastewater assets. *See* page 7 of revised Attachment B of Citizens-Westfield Revised Reports of Utility Plant Conveyed by City of Westfield dated October 28, 2015 in Attachment JTP-14.

Q: Does Petitioner have unused capacity available to it in Carmel's wastewater system?

A: Yes. Petitioner had a 500,000 gallons per day reserve in 2015 between the 1.64 MGD it sent to Carmel and the 2.14 MGD available to it under the Wastewater Services Agreement. Petitioner could increase its wastewater flows to Carmel by more than 30% without exceeding or increasing the flow capacity allowed under the agreement.

Q: Has Petitioner changed the wastewater volume it sends to Carmel?

A: Yes. Rather than increase its flow, Petitioner has decreased the wastewater flow it sends to Carmel. After Petitioner completed the Downtown Lift Station project in 2016, flows dropped by nearly one-third to an average of 1.07 MGD. The new Downtown Lift station intercepts and re-routes wastewater north to the upgraded Washington Woods Lift Station. From the Washington Woods Lift Station, flows

[12] Section 11. C Maximum Flows, Municipal Wastewater Service Agreement between the City of Carmel and the Town of Westfield.

are now pumped west to Petitioner's Westside WWTP. Such flow previously would have been sent to the Carmel treatment plant for all but the excess peak wet weather flow that could not be handled by the Cool Creek Interceptor.

Q: What is Petitioner's current reserve capacity in Carmel's wastewater system?

A: Based on 2016 flows, the unused reserved capacity available to Citizens Wastewater of Westfield is now over 1 million gallons per day. The 2016 wastewater volume sent to Carmel dropped to an average of 1.07 MGD from February 1, 2016 through October 31, 2016 compared to Westfield's allocation of 2.14 MGD.

Q: Is treatment by Carmel and the existence of available capacity beneficial to Petitioner's operations?

A: Yes. Functionally, Petitioner has two wastewater treatment plants. First, it has the 3.0 MGD Westside WWTP, which it owns and operates. Second, it has use of Carmel's WWTP, of which 17.83% (2.14 MGD) is reserved for Petitioner's wastewater. Petitioner has significant unused capacity available to it at the Carmel WWTP. Westfield has already paid for this capacity when it regionalized with Carmel and included that cost in rates. Westfield has also already built the sewers, lift stations, and force mains needed to send its wastewater to the Carmel WWTP. In acquiring the wastewater utility, Petitioner has secured the benefits of those earlier investments. Petitioner should maximize wastewater flows to Carmel as the least cost option for Petitioner's ratepayers. Maximizing flows to Carmel pursuant to the existing Wastewater Service Agreement will delay the need to expand the

Westside WWTP and more importantly will eliminate the cost of constructing new lift stations, sewers, and force mains to re-route flows away from Carmel.

Q: What is the combined WWTP capacity available to Petitioner?

A: The combined daily average flow capacity available to Petitioner from both the Carmel and the Westside wastewater treatment plants is 5.14 MGD with a peak day capacity of 10.34 MGD. Westfield's combined flow to both WWTPs averaged 3.24 MGD for 2014 and 2015 or 63% of its combined average hydraulic capacity.

Q: Does Carmel itself have unused WWTP capacity?

A: Yes. The Carmel WWTP's design average flow is 12 MGD with a peak flow of 24 MGD. It was sized to treat wastewater in 2017 from 106,030 people including people from the City of Westfield. Carmel's estimated 2015 population was 88,713 people.[13] In 2015 Carmel treated an average daily flow of 9.3 MGD and is at 77% of its hydraulic capacity. In 2007, Carmel designed an expansion of its wastewater treatment plant to increase its capacity to 14 MGD, but plans were shelved because of the housing recession.

Q: During the acquisition proceedings under Cause No. 44273, did Petitioner disclose its intent to reduce or eliminate its wastewater discharges to Carmel?

A: No. The OUCC knew that Petitioner was still considering whether to acquire the wastewater lagoons. However, the OUCC was not aware of Petitioner's plans to construct new sewers, force mains, interceptors, and lift stations and expand the Westside WWTP to replace existing wastewater infrastructure currently used to convey and treat wastewater flows at Carmel.

[13] Population Estimates for Indiana's Incorporated Places 2011-2015, Stats Indiana, Indiana Business Research Center, Indiana University Kelly School of Business, http://www.stats.indiana.edu/population/sub_cnty_estimates/2015/e2015_places.asp.

Q: What is Petitioner's justification for reducing or eliminating discharge to Carmel's wastewater system?

A: I am not aware that Petitioner has stated a justification for reducing or effectively ending regionalization with Carmel.

IV. MAJOR CAPITAL PROJECTS

Q: Did Petitioner provide information in its case that allowed you to determine whether the projects were reasonable and prudent?

A: No. Mr. Johnson briefly described each project in his testimony. *See* the Direct Testimony of Aaron D. Johnson, pages 11 and 12. However, neither his testimony nor any other witnesses' testimony supports a conclusion that the major projects as constructed are necessary, reasonable or prudent. Petitioner provided only very basic information in its case-in-chief regarding the two major projects it is seeking to include in rate base.

Q: Did you seek information through the discovery process to determine whether the projects were reasonable or prudent?

A: Yes. As a result of responses to discovery, I will testify below that the cost of some projects should not be included in rate base.

A. Downtown Lift Station

Q: Describe Citizens Wastewater of Westfield's Downtown Lift Station Project.

A: The Downtown Lift Station project is a new high capacity triplex[14] lift station that intercepts wastewater flowing south and re-directs it north via a new force main to an upgraded Washington Woods Lift Station. The Washington Woods Lift Station has been upgraded to pump up to 2,950 gpm (4.25 MGD). *See* Petitioner's response

[14] Three pumps with two duty pumps and one standby pump.

to OUCC DR 12.7 in Attachment JTP-3. In its Verified Petition, Petitioner described the Downtown Lift Station project as follows:

> Downtown Lift Station Project -- Construction of a new lift station with three 20.1 horsepower pumps with variable frequency drives and approximately 5,200 lineal feet of 16-inch diameter force main with approximately 2.6 MGD peak capacity that flows to Petitioner's Washington Woods lift station, as well as associated upgrades to three pumps at the Washington Woods lift station to accommodate the additional flows. This project was placed in service on February 1, 2016 at an estimated final cost of $2,404,404.

Verified Petition at 4.

The Downtown Lift Station is also called the Roudebush Lift Station because of the property where it is located. The lift station's design capacity is 1,800 gpm (2.6 MGD). The pumps are equipped with variable frequency drives ("VFDs") that can vary pumping rates.

Q: Did Petitioner include the Downtown Lift Station project in its projected capital expenditures for 2013 and 2014?

A: No. Petitioner identified projected capital expenditure needs of $1,030,000 in 2013 and $2,100,000 for 2014, but did not include the Downtown Lift Station. *See* Direct Testimony of Donald S. Lukes, Cause No. 44273, page 8, lines 9-10. In Cause No. 44273, the OUCC asked Petitioner for a detailed breakdown of its capital expenditure needs, but in its response to OUCC DR 20.2, dated April 15, 2013, Petitioner again did not indicate it was planning the Downtown Lift Station. *See* Attachment JTP-15.

Q: What is the purpose of the Downtown Lift Station and force main?

A: In the Wastewater Infrastructure Planning report, HNTB describes the purpose as follows:

> The purpose of the Westfield Downtown Lift Station project is to "temporarily" send flow north to the existing Washington Woods Lift Station until future long-term infrastructure is in place to re-direct flow currently sent to Carmel to the planned 156th Street Interceptor.

Petitioner's confidential response to OUCC DR 12.1. *See* Attachment JTP-16.

Capacity in the Washington Woods Lift Station, allocated to serve future development in areas north and east of downtown Westfield, is temporarily being used for flows from the Downtown Lift Station.

Q: From the Washington Woods Lift Station where is the wastewater pumped?

A: This lift station previously discharged to the J. Edward Drain Interceptor. The City of Westfield also included the flexibility to connect to the Westside Interceptor. The Westside Interceptor appears to have been constructed sometime between 2007 and 2011. *See* Attachment B of Citizens-Westfield Revised Reports of Utility Plant Conveyed by City of Westfield, Oct. 28, 2015 in Attachment JTP-14. It is a large diameter interceptor with 48-inch, 54-inch, and 60-inch diameter sewer pipes that the City of Westfield built in anticipation of development on the west side of Washington Township west of U.S. 31. This growth has not yet materialized as demonstrated by this interceptor not being used until 2016 when it was needed to convey flows from the Downtown Lift Station.

Due to the high flows being re-routed north and capacity concerns in the J. Edward Drain Interceptor, the Downtown Lift Station project included a tie-in and

opening of the Westside Interceptor in February 2016. From the Westside Interceptor, Petitioner pumps wastewater again at the Westside WWTP pumping station to bring flow into the treatment plant. Thus to reach the Westside WWTP, Downtown Lift Station flows are pumped three times by Petitioner.

Q: What flows are pumped by the Downtown Lift Station?

A: The lift station intercepts wastewater mainly from Westfield's downtown area that is flowing south in two 15-inch and one 21-inch PVC sewers. This flow includes sanitary sewage from residential and commercial customers and infiltration and inflow ("I&I") from the old sewers in the downtown area.

Q: Where did this wastewater previously flow?

A: This wastewater previously flowed south to the Cool Creek Interceptor and the Oak Road Regional Lift Station constructed when Westfield regionalized with Carmel. The flow was treated in the Carmel wastewater system.

Q: Could Petitioner today still allow wastewater reaching the Downtown Lift Station to flow south as in the past?

A: Yes. During normal flow conditions, all wastewater could still flow by gravity south in existing sewers to the Cool Creek Interceptor, if the Downtown Lift Station pumps are not operating. During wet weather when flows increase due to I&I, some or all of the wastewater could still flow south by gravity depending on the incoming flow rates and the VFD settings of the Downtown Lift Station pumps.

Q: Does Petitioner allow the wastewater to flow south by gravity?

A: No. It appears Petitioner may be capturing nearly all of the flows received at the Downtown Lift Station and pumping them back north to the Washington Woods Lift Station. As explained previously in my testimony, with start-up of the

Downtown Lift Station on February 1, 2016, Petitioner increased flows to the Westside WWTP by 44% to an average daily flow of 2.51 MGD in 2016 and is now operating the Westside WWTP at 84% of its 3.0 MGD design average flow capacity.[15]

Q: Why is the 84% capacity utilization of the WWTP important?

A: Petitioner's decision to reduce or eliminate wastewater discharges to Carmel is causing the Westside WWTP to operate closer to its hydraulic design average flow. This could prematurely force a treatment plant expansion project which is unwarranted. IDEM could issue an early warning of a potential sewer connection ban to Petitioner when the Westside WWTP's utilization reaches 90% of the 3.0 MGD design average flow capacity or 2.7 MGD.[16] The purpose of IDEM's early warning is to alert treatment plant owners that they need to begin the process of expanding their wastewater facilities.

Q: How does IDEM calculate a treatment plant's capacity utilization?

A: For calculating a treatment plant's percent flow utilization, IDEM averages 365 consecutive daily influent flows and divides by the Design Average Flow.[17] The same basic calculation is performed for the treatment plant's organic loading expressed on the basis of the influent's 5-day carbonaceous Biochemical Oxygen Demand ("$cBOD_5$").

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[15] Based on monthly flow data for the Westside WWTP from February through October 2016.

[16] 327 IAC 4-1-3 Early warning system

Sec. 3. Whenever, in the determination of the commissioner, a semipublic facility or POTW has reached or is approaching ninety percent (90%) of its hydraulic or organic design capacity, the commissioner shall notify the semipublic facility or POTW that it may be necessary, because of such condition, to impose a sewer connection ban if action is not taken by the semipublic facility or POTW to accommodate additional flow or loading.

[17] For example in 2015, the Westside WWTP influent flow averaged 1.88 MGD and operated at 60% of its design average flow capacity calculated as 1.88 MGD divided by 3.0 MGD design average flow.

Q: What could Petitioner do to reduce flows at the Westside WWTP to delay the need for a plant expansion?

A: To decrease peak wet weather flows that exceed the carrying capacity of the downstream Cool Creek Interceptor, Petitioner should locate and remove infiltration and inflow sources entering the old downtown sewers. These peak flows previously overflowed to the lagoons, which Petitioner chose to not acquire. Petitioner should also limit the Downtown Lift Station operation to days when peak flows might cause sanitary sewer overflows ("SSOs") within the collection system. For normal flow conditions and non-peak wet weather events that account for the majority of days each year, Petitioner should resume routing wastewater south by gravity flow as in previous years to the Carmel wastewater system. Based on lagoon flow data discussed previously, I estimate the Downtown Lift Station should typically operate less than 5% of the time or an average of 16 wet weather days annually to prevent overflows. After completing I&I control, the need to operate the Downtown Lift Station should decrease even more.

Q: Does Petitioner have an ongoing I&I control program?

A: Not currently. Petitioner reported that to date, no I&I projects have been completed within the requested timeframe of 2014 to 2016, but that it is budgeting $300,000 in the five year capital budget for 2017 to 2021. *See* Petitioner's response to OUCC DRs 13.17, 13.18, and 13.19 in Attachment JTP-17. A meaningful I&I program can be a means of preventing or delaying certain capital improvement projects and the rate increases required for such projects. I recommend Petitioner pursue such a program.

Q: What is the Downtown Lift Station's total capital cost that Petitioner seeks to include in rate base?

A: The cost for the Downtown Lift Station is $2,413,028 as of October 31, 2016 according to Petitioner's 3rd Major Projects update filed under this Cause.

Q: How should Petitioner have addressed the peak wet weather flows that periodically overflowed into the Westfield lagoons during wet weather events?

A: The lowest cost option for ratepayers would have been to acquire the wastewater lagoons for $400,000 and construct disinfection facilities to meet the NPDES Permit limits as outlined in the HNTB Technical Memorandum.[18] This would have allowed a continuation of Westfield's program for capture and treatment of wet weather flows that included flow equalization in the lagoons, continued wastewater discharge to Carmel, and treated effluent controlled discharge to Cool Creek. HNTB estimated the 2012 cost for disinfection facilities at $100,000. Instead Petitioner built the most expensive option identified by HNTB to achieve what appears to be Petitioner's primary objective of reducing or eliminating flow to Carmel, while also curtailing overflows into the lagoons and sanitary sewer overflows ("SSOs") in the upstream sewer system.

Q: Do you recommend including the Downtown Lift Station's $2,413,028 in costs in rate base?

A: No. Petitioner spent $2.4 million to accomplish a result it may have accomplished by acquiring the lagoons for $400,000 and installing disinfection facilities at a cost of $100,000 (Option 1). Foregoing that option seems to have been driven by the desire to reduce or eliminate flow to the Carmel WWTP. That decision has not

[18] *Technical Memorandum, Lagoon Infrastructure – Alternatives Analysis*, HNTB Corporation, November 28, 2012, 12 pages (confidential response to OUCC DR 23.6 in Attachment JTP-23).

been supported by any proof and the cost of the Downtown Lift Station (Option 3) should be disallowed. However, because Petitioner would have incurred $400,000 to purchase the lagoons and $100,000 to install disinfection facilities, I recommend that $500,000 of the $2,413,028 be allowed in rate base. Ms. Stull has incorporated this allowance in her schedules.

Q: Do you have other recommendations regarding the Downtown Lift Station?

A: Yes. Petitioner should not route all lift station flows to the Westside WWTP every day but should instead maximize flows to Carmel's wastewater system using already existing infrastructure. Westfield's ratepayers are already paying a return on this infrastructure.

Q: What does Carmel charge Petitioner to convey and treat wastewater?

A: Carmel currently charges Petitioner $1.51462 per thousand gallons treated. Carmel increased this cost in 2016 in accordance with the Wastewater Service Agreement.

Q: What is Petitioner's cost to convey and treat wastewater within its system?

A: I have not calculated a precise number. But using rough methods, I estimated Petitioner's current total cost to treat wastewater within its own system (i.e. using its Westside WWTP) could be nearly $6 per thousand gallons using existing infrastructure. (The $6 per thousand gallon cost does not include the major projects and the other capital costs that would be need to be incurred to route flow away from the Carmel WWTP.) I estimate Petitioner's current cost to convey and treat wastewater within its own system is about 50% higher than Petitioner's current cost to send wastewater to Carmel.

Q: How did you determine the cost to treat wastewater at the Westside plant for purposes of this comparison?

A: In its 2015 IURC Annual Report, Petitioner reported Total Operating Expenses of $6,249,892. In 2015 Petitioner paid Carmel $661,630 for purchased wastewater service. I estimated approximately $1,684,000 of other utility operating expenses including labor, power, depreciation and taxes. Thus, I assumed it cost $2.35 million to send 598 million gallons of wastewater per year for treatment by Carmel or $3.92 per thousand gallons. This left $3.9 million as the cost to convey and treat 677 million gallons of wastewater within the Westfield system ($6,249,892 - $2,350,000 = $3.9 million). Dividing $3.9 million by 677 MG of wastewater yields a cost of $.00576 per gallon or $5.76 per 1000 gallons.

Q: In making this calculation, what assumptions did you make?

A: I assumed all chemical costs, all sludge treatment and disposal, 80% of the purchased power costs and 50% to 75% of the other expenses were attributable to flows treated at the Westside WWTP. My cost calculations and assumptions were based on 2015 flows and costs from Petitioner's 2015 Annual Report and are shown in Attachment JTP-26. As such, this comparison did not take into account any construction costs that may be required to divert more flow away from Carmel to the Westside WWTP.

Q: Are there things to consider when comparing having wastewater treated at the Carmel WWTP or by Westfield within its system?

A: Yes. Expanding the amount of treatment at the Westside WWTP instead of the Carmel WWTP has required or would soon require significant plant expansions that will cause rates to increase. One of those projects that seems to be caused by the decision to reduce or eliminate wastewater to Carmel is the 156th Street

Interceptor project. Costs associated with that project may be considered driven by "CEG's desire to ultimately reduce or eliminate flow to the City of Carmel."

B. 156th Street Interceptor Project

Q: What is the 156th Street Interceptor project – Phase 1?

A: The 156th Street Interceptor project – Phase 1 appears to be the first phase of a 16,575 feet long gravity sewer from the Zephyr Way and 156th Street intersection west to the Westside WWTP. As noted above, according to HNTB's technical memorandum Petitioner desires to reduce or eliminate wastewater discharges to Carmel's wastewater system and directed its consultant, HNTB Corporation, to oversize the 156th Street Interceptor to convey not only future development flows from the 156th Street basin but all Westfield wastewater routed to Carmel's wastewater system.

Phase 1 consists of large diameter 36-inch and 42-inch PVC sewers installed on the north side of 156th Street. Petitioner also constructed a 550 gpm temporary lift station located 1,300 feet west of Ditch Road. This lift station, which has also been completed but is not receiving wastewater, is piped to discharge across the street to an existing gravity sewer flowing west to the existing Towne Road Lift Station.

Q: Why do you believe the 156th Street Interceptor and lift station are not in service and are not receiving and conveying wastewater?

A: Based on my review of Record Drawings, there appears to be no active sewer tied into the interceptor. There is one connection to the interceptor but this is only a 28 feet long 8-inch PVC sewer stub to manhole #N28 at the 156th Street and Ditch

Road intersection. *See* confidential Record Drawings provided in response to OUCC DR 21.8 in Attachment JTP-18.

Q: Was there already an existing gravity sewer and force main along 156th Street?

A: Yes. Petitioner owns an existing gravity sewer, which receives flow from the Viking Meadows Lift Station's 15-inch force main and conveys it to the existing Towne Road lift station. Both lines are on the south side of 156th Street. The gravity sewer is shown in Attachment JTP-19 on a sewer system map Petitioner provided under Cause No. 44273 as Joint Petitioner's Exhibit LCL-7. The sewer diameter is color coded on the map, but its size is unclear. It may be either a 15 or 21-inch sewer.

Q: How did Petitioner describe the 156th Street Interceptor Project?

A: In its Verified Petition, Petitioner described the projects as follows:

> 156th Street Interceptor Project -- Installation of approximately 1,400 lineal feet of 42 inch diameter and 3,600 lineal feet of 36 inch diameter PVC sanitary sewer lines and a lift station with two 15 horsepower pumps to service a portion of Petitioner's service territory bounded by 161st Street to north, U.S. 31 to the east, 146th Street to the south and Towne Road to the west. This project was placed in service on May 10, 2016 at an estimated final cost of $3,291,158.

Q: Does this accurately describe the project?

A: Partially. Sewer diameter and pipe type are correct, but sewer lengths are incorrect. Based on Record Drawings Petitioner provided, the 36-inch and 42-inch pipe lengths are shorter at 3,013 and 1,350 feet respectively.[19] The service area description is also incorrect. The actual service area used to size the interceptor is probably twice as large as Petitioner reports. According to the project's Preliminary

[19] Petitioner's confidential response to OUCC DR 21.8.

Engineering Report, the sewers are sized to also include flow from the entire area regionalized in the 1980s with Carmel.[20] *See* Figure 1 – Proposed 156th Street Interceptor Contributing Area on page 7 of the confidential 156th Street Interceptor and Towne Road Lift Station Preliminary Engineering Report in confidential Attachment JTP-20.

Q: Was this the same description given to contractors invited to submit proposals for the project?

A: No. Petitioner gave the following description to contractors invited to submit proposals:

> The 156th Street interceptor and Lift station project includes the installation of a 42-inch gravity interceptor and lift station. The project includes 5,400 linear feet of 42-inch gravity sewer main approximately 20 to 35 feet deep. The proposed lift station is a 2.6 MGD lift station. The new interceptor and lift station are located within easements along 156th Street between Ditch Road and Towne Road. This project will also include the decommissioning of the existing lift station at Towne and 156th. The existing sewers in 156th Street and Towne Road will be connected to the new sewer. The interceptor is from 156th Street, Towne Road to Ditch Road with the lift station being located at Towne Road, Westfield, Indiana.

See response to OUCC DR 21.8 in Attachment JTP-21 (pp. 1 to 18 only).

Q: Did Petitioner competitively bid the interceptor project?

A: No. It appears Petitioner solicited cost proposals from invited contractors based on the above project description, but did not conduct competitive bidding.[21] Competitive bidding includes open advertisement of the project and receipt of

[20] *156th Street Interceptor and Towne Road Lift Station Preliminary Engineering Report*, HNTB Corporation, February 2015, 99 pages (confidential response to OUCC DR 20.19).

[21] Petitioner also solicited cost proposals from invited contractors for the Downtown Lift Station project using the same process it calls Competitive Sourcing.

sealed bids on a specified bid date that are opened and read in public in front of all bidders who choose to be present.

Competitive bidding also includes an Engineer's cost estimate prepared before bidding used to set the budget and compare the bids received. However, Petitioner reports that an Engineer's cost estimate for the 156th Street Interceptor project does not exist for the current project scope. See Petitioner's response to OUCC DR 21.10 in Attachment JTP-22.

Q: Did Petitioner build the interceptor project as described to contractors?

A: No. Petitioner did not proceed with the project as described and for which it received cost proposals.[22] Instead, Petitioner apparently awarded a modified project to Eagle Valley, Inc. that was shifted further east along 156th Street which included both 36-inch and 42-inch pipe and a smaller lift station on the north side of 156th Street. Petitioner did not provide project documents or cost proposals to the OUCC for the actual project it constructed.

Q: Did Petitioner provide supporting documentation in its case to justify building the 156th Street Interceptor project or including the cost in rate base?

A: No. Petitioner provided no information other than a brief project description.

Q: What is the 156th Street Interceptor Project's purpose according to Petitioner?

A: Petitioner did not state in its case-in-chief why it needed to build the project, how it was sized, what alternatives it evaluated to serve the area, the anticipated timetable for development or why it chose to build the interceptor now.

[22] Petitioner received base cost proposals ranging from $3.97 to $8.58 million for the originally described project scope to install 5,400 feet of 42-inch sewer and a new lift station between Towne Rd. and Ditch Rd. Of six contractors invited to submit cost proposals, three contractors responded.

Q: Did the OUCC ask Petitioner to explain the project's purpose?

A: Yes. The OUCC asked Petitioner to explain why the project was planned (OUCC DR 16.10). Petitioner stated it "was built for the incoming developments Harmony, Wilshire and West Rail as well as to serve other areas within the sewer basin." *See* response to OUCC DR 16.10. Petitioner offered no other information about what other areas might be served. Petitioner's responses to OUCC discovery about the 156th Street Interceptor project are provided in Attachment JTP-22.

Q: Do these three residential developments justify the sewer sizes Petitioner installed?

A: No. Wastewater from these developments do not justify such large diameter sewers. Harmony subdivision Section 1 (of five planned sections) appears to be already served by existing sewers and the Towne Road Lift Station. On construction permit applications Petitioner indicated 1,379 equivalent dwelling units (EDUs) would generate average sewage flows at 0.43 MGD and peak flow of 1.7 MGD. These flows could have been conveyed in a smaller and less costly 15-inch PVC gravity sewer. As I noted above, there is already an existing gravity sewer and force main along 156th Street that may have been appropriate for this purpose. Alternatively, instead of installing 36-inch and 42-inch sewers, Petitioner could have required the developers to construct a lift station and force main to pump to the existing sewer along 156th Street, which would have been less expensive and not included in rate base.

Q: How much flow can the installed large diameter sewers in the 156th Street Interceptor convey?

A: I calculated the 36-inch and 42-inch sewers flowing full can handle approximately 10 MGD and 13 MGD respectively. This is six to eight times greater than the peak

flow Petitioner listed on the construction permit application. These sewers are significantly oversized to serve the planned developments and must be sized to convey wastewater from some other area.

Q: Did the OUCC ask for studies or reports to support the 156th Street Interceptor?

A: Yes. The OUCC also asked Petitioner to include any studies or reports supporting the building of the 156th Street Interceptor (OUCC DR 20.19). Petitioner referred the OUCC to the confidential Preliminary Engineering[23] and Wastewater Infrastructure Planning reports.[24]

Q: Did your review of the reports reveal why Petitioner oversized the 156th Street Interceptor?

A: Yes. Petitioner oversized the sewer pipes to allow it to send wastewater that would otherwise be conveyed to and treated by the Carmel WWTP to the Westside WWTP. This is a major change from Westfield's practice of sending flow to Carmel for treatment after regionalizing 30 years ago. Again, HTNB Corporation summarized the 156th Street Interceptor's service area to include the goal of eliminating the need for treatment by the City of Carmel by conveying flows to the Westfield WWTP:

[23] *156th Street Interceptor and Towne Road Lift Station Preliminary Engineering Report*, HNTB Corporation, February 2015, 99 pages (confidential response to OUCC DR 20.19) *See* Attachment JTP-20.
[24] *Wastewater Infrastructure Planning*, HNTB Corporation, February 2015, 54 pages (confidential response to OUCC DR 12.1) *See* Attachment JTP-16.

> Wastewater from the Carmel Service Area and part of the Viking Meadows Basin is currently diverted to the City of Carmel WWTP. It is the desire of Citizens Westfield to eliminate the need for treatment by the City of Carmel by conveying flow from these areas to the Westfield WWTP. A series of future infrastructure projects, outlined in the Future Planning Study, are needed to connect the Carmel Service Area and the Viking Meadows Basin. Once these projects are constructed, the 156th Street Interceptor would be able to carry flow currently treated by Carmel to the Westfield WWTP. (Emphasis added)

See Attachment JTP-20, page 6.

Petitioner's decision to eliminate its longstanding discharge to Carmel's system, if allowed by the Commission, would effectively end regionalization and adversely impact Petitioner's ratepayers by greatly and unnecessarily increasing sewer rates.

Q: What else would ending regionalization with Carmel do?

A: While it may eliminate Petitioner's operating expense for purchased wastewater treatment, it would cause flows to the Westside WWTP to exceed the current 3 MGD Design Average Flow capacity, necessitating a premature and unneeded WWTP expansion.

Q: What would happen to Petitioner's allocated 17.83% portion of Carmel's 12 MGD wastewater treatment plant, which is reserved for Westfield?

A: Again, Petitioner is silent about its future plans for its reserved treatment capacity in Carmel's system.

Q: What Infrastructure would Petitioner need to construct to eliminate its discharge to Carmel?

A: The OUCC asked Petitioner this question, but Petitioner provided no response other than to direct the OUCC to read a 2015 planning report by HNTB Corporation. *See* response to OUCC DR 23.2 in Attachment JTP-23. Table 5-10, Summary of Capital Projects with Estimated Project Costs from HNTB's Wastewater

Infrastructure Planning report[25] provides the answer regarding what capital projects would need to be constructed. *See* page 36 of Petitioner's confidential response to OUCC DR 12.1 in Attachment JTP-16.

Based on my review, the projects listed in Table 2 totaling an estimated $28 million would be necessary. Since a portion of each project except the Carmel Connection Lift Station project could also serve additional customer growth within Petitioner's service area, I allocated a portion of HNTB's estimated costs based on my engineering judgment of what would be required solely to achieve Petitioner's goal of eliminating flow to Carmel.

Table 2 – Capital Projects Required to Eliminate Wastewater Discharges to Carmel's System

Project No.	Project Name	HNTB Estimated Project Cost	OUCC Project Cost Estimate Attributable to Eliminating Carmel Discharges
11	156th Street Interceptor[26]	$14,500,000	$10,000,000
12	Carmel Connection Lift Station and Force Main	$3,700,000	$3,700,000
13	Viking Meadows Lift Station and Force Main	$5,000,000	$2,500,000
15	Re-routing the Downtown Lift Station Flows south	$2,000,000	$2,000,000
16	Westside WWTP Upgrade[27]	$12,000,000	$7,800,000
Other	Other improvements to route Carmel flows to Westside and Overhead costs at 20%	$7,400,000	$2,000,000
Total		$44,600,000	$28,000,000

[25] *Wastewater Infrastructure Planning*, HNTB Corporation, February 2015, 54 pages (confidential response to OUCC DR 12.1) *See* Attachment JTP-16.
[26] Includes the Phase 1 section completed in 2016.
[27] HNTB calls this project an upgrade but it should actually be named an expansion project since design flows would double to 6 MGD. Carmel disconnect share of expansion costs are estimated at 65%.

Q: What would be the effect on cost to treat per thousand gallons from the $28 million in capital costs estimated for disconnecting from Carmel's wastewater system?

A: To convey and treat flows sent to Carmel at its Westside WWTP instead, Petitioner would see its cost per thousand gallons triple or quadruple. Depending on the weighted cost of capital, the cost per thousand gallons would increase from Carmel's current charge of $1.51462 per thousand gallons to between $4.75 and $6.28 per thousand gallons. The OUCC's cost calculations including increased operating expenses for additional purchased power, chemical expense, and sludge treatment and disposal are provided in Attachment JTP-24. Therefore, Petitioner's decision to reduce or eliminate the flows it sends to Carmel is uneconomic and contrary to ratepayer interests. In Attachment JTP-25 I have compared Westfield's annual rate increases beginning in 2013 and Petitioner's proposed rate increase with the wastewater disposal rates charged by Carmel. The ratepayers in Westfield have been subject to significant and frequent increases. Adding to rate base the capital costs for sewers, lift stations, force mains, WWTP expansions, and other improvements needed to route wastewater away from Carmel will subject Petitioner's customers to further rate increases. Such improvements should be considered unnecessary and imprudent.

Q: What is Petitioner's timetable for disconnecting from Carmel's wastewater system?

A: Petitioner states that no phasing or schedule currently exists for the future Carmel Connection Lift Station or for re-routing flows from the Downtown Lift Station south for conveyance to the Westside WWTP. *See* Petitioner's responses to OUCC discovery regarding reducing or eliminating wastewater discharges to Carmel's

wastewater system in Attachment JTP-23. Petitioner also stated that there is no tentative or planned schedule for disconnecting from the Carmel wastewater system. *See* Petitioner's response to OUCC DR 23.3 in Attachment JTP-23.

Q: Why does Petitioner desire to eliminate the need for treatment by the City of Carmel?

A: Petitioner responded that its "desire to eliminate the need for treatment from the City of Carmel is part of an overall strategy to consider various alternatives that might be further analyzed to potentially reduce O&M expenses and provide more flexibility and control over the operations of the entire system." *See* Petitioner's response to OUCC DR 23.1 (a) in Attachment JTP-23.

Q: How did Petitioner make the decision to eliminate the need for treatment by the City of Carmel?

A: Petitioner responded that "At this time, no decision has been made to completely eliminate flows to Carmel." *See* Petitioner's response to OUCC DR 23.1 (b) in Attachment JTP-23.

Q: Did Petitioner use an analysis or study to determine the cost effectiveness of disconnecting from Carmel's wastewater system and if not, did it explain why not?

A: No to both questions. Petitioner stated that "No formal analysis has been done at this time as no decision has been made." *See* Petitioner's response to OUCC DR 23.1 (c) in Attachment JTP-23.

Q: Has Petitioner communicated with the Cities of Westfield and Carmel its intent to reduce or eliminate its discharge to Carmel?

A: No. Petitioner repeated its statement that no decision to disconnect has been made. *See* responses to OUCC DR 21.2 and 23.5 in Attachment JTP-23.

Q: What is your opinion of Petitioner's statements that it has not made a decision to disconnect from Carmel?

A: Petitioner's statements do not agree with its planning reports or with capital projects it is constructing per those planning reports that further its goals to disconnect.

Q: What is your recommendation regarding Petitioner eliminating its discharge to Carmel?

A: Based on my reviews of Petitioner's planning and engineering reports obtained through discovery and my review of Petitioner's two major projects that it is seeking to include in its rate base in this Cause (i.e. the Downtown Lift Station and the 156th Street Interceptor), it seems clear Petitioner is moving forward with the initial projects needed to achieve its goal of eliminating flow to the Carmel WWTP. The prudence of such a step has not been supported or considered by Petitioner. I recommend that the Commission disallow inclusion of all but $500,000 of the $5,739,385 that Petitioner is seeking to include in rates for the two major projects.

V. SUMMARY

Q: Please summarize your testimony.

A: Without conducting an analysis of the life cycle costs and cost impact on ratepayers, Petitioner decided to reduce or eliminate the flow of wastewater discharges to Carmel's wastewater collection system and WWTP. Petitioner has acted on its decision to reduce or eliminate wastewater flow to Carmel by constructing two major projects: (1) the Downtown Lift Station and force main project to re-route wastewater to the Washington Woods Lift Station, and (2) the 156th Street Interceptor project (Phase 1) to accept flows from the future Carmel Connect Lift

Station and the southern part of Washington Township. Both projects are necessary components of Petitioner's plan to eliminate flow to the Carmel WWTP.

Although not included in the rate request in this Cause, Petitioner also is in the process of designing an increase in its Westside WWTP capacity from 3.0 MGD to 6.0 MGD, which is also necessary for and driven by the desire to reduce and eliminate flow to the Carmel WWTP. Unfortunately, the evidence indicates that it is less expensive for Petitioner to rely on the Carmel WWTP, a portion of which capacity is owned by Petitioner, than to treat its wastewater at its Westside WWTP. Petitioner's current wastewater collection system is designed to send wastewater to the Carmel WWTP. Expenditures required to reroute wastewater from the Carmel WWTP to the Westside WWTP represent a significant and unnecessary cost that should be considered imprudent and not included in rate base.

In addition to requiring the two major projects included in this cause, the decision to reroute wastewater away from Carmel for treatment will prematurely require expansion of the Westfield WWTP, which should likewise be considered imprudent. Petitioner's ratepayers should not be required to pay a higher return through their rates as a result. In addition to the foregoing, Petitioner does not have an accurate inventory of its sewer system assets. Finally, Petitioner does not have meaningful infiltration & inflow ("I&I") control program for its older sewer system, which includes clay sewer pipes, particularly in the downtown area along Cool Creek. Petitioner should be required to implement and maintain an asset inventory program and take steps to address its I&I.

VI. OUCC RECOMMENDATIONS

Q: Please summarize your recommendations to the Commission in this cause.

A: I recommend the Commission order Citizens Wastewater of Westfield to:

1. Develop and implement an asset inventory system to allow the Petitioner to identify and inventory all sewers and force mains by pipe type, age, condition, diameter, and length.
2. Include an inventory listing and condition assessment of all its lift stations in its asset inventory system.
3. Conduct an infiltration and inflow reduction program to locate and remove sources of clear water in its downtown sewer system.
4. Revise its operating procedures for the Downtown Lift Station to restore gravity flow of wastewater south to the Carmel wastewater system and only use the Downtown Lift Station pumps during peak wet weather events to prevent sanitary sewer overflows caused by excessive infiltration and inflow in the downtown sewers.
5. Maximize flows sent to Carmel as the least cost option to Westfield ratepayers and to delay large capital improvement projects and their associated costs to expand Petitioner's collection and treatment systems.
6. Investigate the cost of increasing wastewater flows to the Carmel system and investigate purchasing additional capacity in Carmel's wastewater system.

In addition, I recommend the Commission disallow or exclude from rate base:

7. The entire cost of the 156th Street Interceptor-Phase 1 project, which Petitioner proposes to include in rate base as a major project.

8. All but $500,000 of the cost for the Downtown Lift Station, which Petitioner proposes to include in rate base as a major project.

Q: Does this conclude your testimony?

A: Yes.

APPENDIX A

Q: Please describe your educational background and experience.

A: In 1980 I graduated from Purdue University, where I received a Bachelor of Science degree in Civil Engineering, having specialized in Environmental Engineering. I then worked with the Peace Corps for two years in Honduras as a municipal engineer and as a Project Engineer on self-help rural water supply and sanitation projects funded by the U.S. Agency for International Development (U.S. AID). In 1984 I earned a Master of Science degree in Civil Engineering and Environmental Engineering from Purdue University. I have been a Registered Professional Engineer in the State of Indiana since 1986. In 1984, I accepted an engineering position with Purdue University, and was assigned to work as a process engineer with the Indianapolis Department of Public Works at the City's Advanced Wastewater Treatment Plants ("WWTP"). I left Purdue and subsequently worked for engineering consulting firms, first as a Project Engineer for Process Engineering Group of Indianapolis and then as a Project Manager for the consulting firm HNTB in Indianapolis. In 1999, I returned to the Indianapolis Department of Public Works as a Project Engineer working on planning projects, permitting, compliance monitoring, wastewater treatment plant upgrades, and combined sewer overflow control projects.

Q: Have you previously testified before the Indiana Utility Regulatory Commission ("Commission")?

A: Yes.

APPENDIX B

Attachment JTP-1	List of Wastewater Planning Reports
Attachment JTP-2	Petitioner responses to OUCC DRs 13.12, 14.14 and 14.15 regarding lengths of sewer mains and force mains by pipe type and diameter
Attachment JTP-3	Lift Station List (Response to OUCC DR 12.7)
Attachment JTP-4	Collection System Map (confidential response to OUCC DR 12.5)
Attachment JTP-5	Sewer Map with Lift Stations (confidential response to OUCC DR 12.12)
Attachment JTP-6	Wasteload Allocation Update, HNTB Corporation, August 2014 (confidential response to OUCC DR 24.22.2))
Attachment JTP-7	Site Visit Photos
Attachment JTP-8	Technical Memorandum, Lagoon Infrastructure – Alternatives Analysis, HNTB Corporation, November 28, 2012 (confidential response to OUCC DR 23.6)
Attachment JTP-9	Westside WWTP and Flows to Carmel
Attachment JTP-10	Responses to OUCC DRs 20.23, 21.20 and 24.27
Attachment JTP-11	Preliminary Effluent Limits, Westside WWTP Expansion to 6.0 MGD and 12.0 MGD, May 19, 2016
Attachment JTP-12	City of Carmel Wastewater Treatment Peak Hourly Flow Schematic, Jones & Henry Engineers, Ltd., January 2007

Attachment JTP-13	Municipal Wastewater Service Agreement between the City of Carmel and the Town of Westfield
Attachment JTP-14	Attachment B of Citizens-Westfield Revised Reports of Utility Plant Conveyed by City of Westfield, Oct. 28, 2015
Attachment JTP-15	Response to OUCC DR 20.2 under Cause No. 44273 – 2013 and 2014 Capital Expenditure Needs
Attachment JTP-16	Wastewater Infrastructure Planning, HNTB Corporation, February 2015 (confidential response to OUCC DR 12.1)
Attachment JTP-17	Responses to OUCC Discovery related to Infiltration and Inflow control, sewer cleaning and televising
Attachment JTP-18	156th Street Interceptor Project Record Drawings (confidential response to OUCC DR 21.8)
Attachment JTP-19	Sewer System Map – Joint Petitioner Exhibit LCL-7 under Cause No. 44273
Attachment JTP-20	156th Street Interceptor and Towne Road Lift Station Preliminary Engineering Report, HNTB Corporation, February 2015 (confidential response to OUCC DR 20.19)
Attachment JTP-21	156th Street Interceptor Project Contract Documents provided to contractors (response to OUCC DR 21.8, pages 1 to 18 only)
Attachment JTP-22	Petitioner's responses to OUCC discovery about the 156th Street Interceptor project

Attachment JTP-23	Petitioner's responses to OUCC discovery about reducing or eliminating wastewater discharges to the Carmel wastewater system
Attachment JTP-24	Treatment Cost Comparison for flows sent to Carmel based on assumed weighted cost of capital and estimated operating cost increases
Attachment JTP-25	Rate Increases Compared to Carmel's Rates
Attachment JTP-26	OUCC Estimates of Costs to Treat at the Westside and Carmel WWTPs

List of Wastewater Planning Reports
Citizens Wastewater of Westfield

1. *Wastewater Master Plan*, Town of Westfield, Indiana, HNTB Corporation, September 2006, 84 pages (confidential response to OUCC DR 24.22.1)

2. *Technical Memorandum, Lagoon Infrastructure – Alternatives Analysis*, HNTB Corporation, November 28, 2012, 12 pages (confidential response to OUCC DR 23.6)

3. *30% Design Memorandum, Westfield Downtown Lift Station and Force Main*, HNTB Corporation, July 2013, 31 pages (confidential response to OUCC DR 3.30)

4. *Citizens Wastewater of Westfield, LLC Waste Load Allocation Update*, HNTB Corporation, August 2014, 24 pages (confidential response to OUCC DR 24.22.2)

5. *Technical Briefing Memorandum, Wastewater Growth Plan – Westfield Wastewater*, HNTB Corporation, February 2015, 7 pages (response to OUCC DR 13.21)

6. *Wastewater Infrastructure Planning*, HNTB Corporation, February 2015, including Appendix B Supplement March 2016 54 pages (confidential response to OUCC DR 12.1)

7. *156th Street Interceptor and Towne Road Lift Station Preliminary Engineering Report*, HNTB Corporation, February 2015, 99 pages (confidential response to OUCC DR 20.19)

8. *Grand Junction Sanitary Planning, Preliminary Engineering Report*, HNTB Corporation, June 2015, 64 pages (confidential response to OUCC DR 24.24)

9. *I/I Basin Study Desktop Review, J. Edward Drain Westfield*, Arcadis, April 2016, 46 pages (confidential response to OUCC DR 13.19)

10. *I/I Basin Study Desktop Review, Downtown Westfield* – New Meter Locations, Arcadis, August 2016, 14 pages (confidential response to OUCC DR 13.19)

11. *I/I Basin Study Desktop Review, Downtown Westfield Update*, Arcadis, August 2016, 19 pages (confidential response to OUCC DR 13.19)

Citizens Wastewater of Westfield
NAME OF UTILITY

YEAR OF REPORT
December 31, 2015

COLLECTION AND FORCE MAINS

(a)	(b)	(c)	(d)	(e)
Collection Mains:				
Size (inches).....	36"	4"	6"	8"
Type of main (PVC, VCP, etc.)..	DIP	PVC	PVC	PVC
Length of main (nearest ft.):				
Beginning of year.....	36	148	1,905	107,214
Added during year.....	-		4,164	19,175
Retired during year.....				
End of year.....	36	148	6,069	126,389
Of the main added, how much was for replacement of pipe?				
Collection Mains (con't):				
Size (inches).....	10"	12"	15"	24"
Type of main (PVC, VCP, etc.)..	PVC	PVC	PVC	PVC
Length of main (nearest ft.):				
Beginning of year.....	7,060	5,801	8,931	1
Added during year.....	-	30		
Retired during year.....				
End of year.....	7,060	5,831	8,931	1
Of the main added, how much was for replacement of pipe?				

(a)	(b)	(c)	(d)	(e)
Force Mains:				
Size (inches).....	12"	4"	6"	8"
Type of main (PVC, VCP, etc.)..	HDPE	PVC	PVC	PVC
Length of main (nearest ft.):				
Beginning of year.....		1	143	8,483
Added during year.....	198		891	
Retired during year.....				
End of year.....	198	1	1,034	8,483
Of the main added, how much was for replacement of pipe?				

Citizens Wastewater of Westfield
NAME OF UTILITY

YEAR OF REPORT
December 31, 2015

COLLECTION AND FORCE MAINS

(a)	(b)	(c)	(d)	(e)
Collection Mains:				
Size (inches).....	Unknown			
Type of main (PVC, VCP, etc.)..	Unknown			
Length of main (nearest ft.):				
Beginning of year.....	210,838			
Added during year.....	-			
Retired during year.....				
End of year.....	210,838			
Of the main added, how much was for replacement of pipe?				
Collection Mains (con't):				
Size (inches).....				
Type of main (PVC, VCP, etc.)..				
Length of main (nearest ft.):				
Beginning of year.....				
Added during year.....				
Retired during year.....				
End of year.....				
Of the main added, how much was for replacement of pipe?				

(a)	(b)	(c)	(d)	(e)
Force Mains:				
Size (inches).....	10"	12"	15"	Unknown
Type of main (PVC, VCP, etc.)..	PVC	PVC	PVC	Unknown
Length of main (nearest ft.):				
Beginning of year.....	5,259	824	2,421	67,268
Added during year.....	-	1,796		
Retired during year.....				
End of year.....	5,259	2,620	2,421	67,268
Of the main added, how much was for replacement of pipe?				

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 12:

Does Citizens Wastewater of Westfield conduct sewer televising of new sewers installed by developers before they are accepted by Citizens Wastewater of Westfield? If so, please state how many feet of new sewers were televised in 2014, 2015, and 2016.

RESPONSE:

Yes, Petitioner requires televising before acceptance. The footage of new sewers televised over these time periods is:

2014 (March 21 –Dec 31)	2015	2016 thru August
68,000 lineal feet (est)	72,000 lineal feet (est)	62,473 lineal feet

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Fourteenth Set of Data Requests

DATA REQUEST NO. 14:

Please use the following tables as a guide and state the total feet of gravity sanitary sewers in the Citizens Wastewater of Westfield collection system by diameter and pipe type that are connected to the:

A. Westfield Wastewater Treatment Plant
B. Carmel Wastewater Treatment Plant

A. Westfield WWTP - Gravity Sewer Length (feet) by Pipe Diameter and Type								
Gravity Sewer Dia. (inches)	PVC Truss	Clay	PVC	Asbestos Cement	Plain Concrete	Reinforced Concrete	Other (please specify type)	Total Length (feet)
4	NA					NA		
6	NA					NA		
8						NA		
10						NA		
12								
14								
15								
18	NA							
21	NA							
24	NA							
27	NA							
30	NA							
33	NA		NA	NA				
36	NA							
39	NA		NA	NA	NA	NA		
42	NA			NA	NA			
48	NA	NA		NA	NA			
Total								

B. Carmel WWTP - Gravity Sewer Length (feet) by Pipe Diameter and Type								
Gravity Sewer Dia. (inches)	PVC Truss	Clay	PVC	Asbestos Cement	Plain Concrete	Reinforced Concrete	Other (please specify type)	Total Length (feet)
4	NA					NA		
6	NA					NA		
8						NA		
10						NA		
12								
14								
15								
18	NA							
21	NA							
24	NA							
27	NA							
30	NA							
33	NA		NA	NA				
36	NA							
39	NA		NA	NA	NA	NA		
42	NA			NA	NA			
48	NA	NA		NA	NA			
Total								

RESPONSE:

Petitioner objects to the foregoing Data Request to the extent that it requests that Petitioner conduct a study or perform an analysis that does not currently exist. Subject to and without waiving the foregoing objection, Petitioner states that no information exists regarding sanitary sewer flowing to each treatment plant. However, the total system breakdown as of 12/31/2015 of the assets on the books are as follows:

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Fourteenth Set of Data Requests

A. Westfield - Gravity Sewer Length (feet) by Pipe Diameter and Type								
Gravity Sewer Dia. (inches)	PVC Truss	Clay	PVC	Asbestos Cement	Plain Concrete	Reinforced Concrete	Ductile Iron	Total Length (feet)
4			148					148
6			6069					6069
8			126,389					126,389
10			7060					7060
12			5831					5831
14								
15			8931					8931
18								
21								
24			1					1
27								
30								
33								
36						36		36
39								
42								
Unknown			210,838					210,838
Total			356,267			36		356,303

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Fourteenth Set of Data Requests

DATA REQUEST NO. 15:

A. Please use the following tables as a guide and state the total feet of force mains in the Citizens Wastewater of Westfield collection system by diameter and pipe type that are connected to the: Westfield Wastewater Treatment Plant

B. B.Carmel Wastewater Treatment Plant

A. Westfield WWTP – Force Main Length (feet) by Pipe Diameter and Type							
Force Main Dia. (inches)	Cast Iron	Ductile Iron	PVC	HDPE	Other (please specify type)	Other (please specify type)	Total Length (feet)
1-1/2							
2							
3							
4							
6							
8							
10							
12							
14							
15							
16							
18							
21							
24							
Total							

B. Westfield – Force Main Length (feet) by Pipe Diameter and Type							
Force Main Dia. (inches)	Cast Iron	Ductile Iron	PVC	HDPE	Other (please specify type)	Other (Unknown)	Total Length (feet)
Unknown							
2							
3							
4							
6							
8							
10							
12							
14							
15							
16							
18							
21							
24							
Total							

RESPONSE:

Petitioner objects to the foregoing Data Request to the extent that it request that Petitioner conduct a study or perform an analysis that does not currently exist. Subject to and without waiving the foregoing objection, Petitioner states that no information exists regarding sanitary sewer flowing to each treatment plant. However, the total system breakdown as of 12/31/2015 of the assets on the books are as follows:

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Fourteenth Set of Data Requests

B. Westfield – Force Main Length (feet) by Pipe Diameter and Type							
Force Main Dia. (inches)	Cast Iron	Ductile Iron	PVC	HDPE	Other (please specify type)	Other (Unknown)	Total Length (feet)
Unknown						67,268	67,268
2							
3							
4			1				1
6			1034				1034
8			8843				8843
10			5259				5259
12			2620	198			2818
14							
15			2421				2421
16							
18							
21							
24							
Total			20,178	198		67,268	87,664

WITNESS:

Aaron D. Johnson

Cause No. 44835
Attachment JTP-3
Page 1 of 1

L/S	LOCATION	FACILITY DESCRIPTION	# OF PUMPS	YR. START-UP	H/P	MANUFACTURE	FLOW(GPM)	Last Upgrade	Standby Power
21	[redacted]	South Union	2	1976	10	Hydromatic	100	2014	[redacted]
22	[redacted]	Cool Creek	2	2000	10	Ingersoll	100		[redacted]
23	[redacted]	Oak Road	3	1986	20	Chicago	650		[redacted]
24	[redacted]	Brookside	3	2004	18	Flygt	659		[redacted]
25	[redacted]	Setters Run	3	2006	30	Hydromatic	1125		[redacted]
27	[redacted]	Viking Meadows	2	2006	50	Hydromatic	563		[redacted]
28	[redacted]	Chatham Hill	2	2016		Barnes	330		[redacted]
29	[redacted]	Tank Barn	2	1972	5	Flygt	256		[redacted]
30	[redacted]	Adios Pass	3	1986	20	Barnes	371	2012	[redacted]
31	[redacted]	AMLI	2	1997	5	Flygt	350		[redacted]
32	[redacted]	Merrimac	2	1997	35/30	Flygt/Hydromatic	1200		[redacted]
33	[redacted]	Towne Road	2	1997	47/30	Flygt/Barnes	1800		[redacted]
34	[redacted]	Springdale Farms	2	1994	10	Flygt	320		[redacted]
35	[redacted]	GTE	2	1986	7.5	Hydromatic	130	2014	[redacted]
36	[redacted]	South Park	2	2001	25	Hydromatic	350		[redacted]
37	[redacted]	Westfield Park	2	1993	3	Flygt	110	2002	[redacted]
38	[redacted]	181st Street	2	1999	15	Barnes	328	2014	[redacted]
39	[redacted]	Roudebush	3	2016	20.1	ABS	1800		[redacted]
40	[redacted]	Sandpiper Lakes	2	1997	7.5	Hydromatic	410	2009	[redacted]
43	[redacted]	Tomlinson Road	2	2003	60	Barnes	780	2015	[redacted]
44	[redacted]	Bridgewater Club	2	2003	3	Hydromatic	30		[redacted]
45	[redacted]	Washington Woods	3	2006	84.5	ABS	2950	2016	[redacted]
46	[redacted]	Andover	2	2005	10	Hydromatic	320	2010	[redacted]
	[redacted]	WWTP	2	2006	70	Flygt	3060		[redacted]
26	[redacted]	Greyhound Pass	2	2007	3	Hydromatic	48		[redacted]
47	[redacted]	Farr Hills	2	2014	15	Barnes	140		[redacted]
48	[redacted]	156 th St.	2	2016	15	Barnes	550		[redacted]

Attachment JTP-4
Cause No. 44835
CONFIDENTIAL

Attachment JTP-5
Cause No. 44835
CONFIDENTIAL

CITIZENS WASTEWATER OF WESTFIELD, LLC
WASTE LOAD ALLOCATION UPDATE
AUGUST 2014

INTRODUCTION

At the request of Citizens Wastewater of Westfield, LLC (Citizens Westfield), HNTB has evaluated the current state of the waste load allocation associated with the City of Westfield wastewater system. The intent of this evaluation is to provide a tool for Citizens Westfield to use in evaluating proposed new developments as well as be used to assess the current allocated capacity of the collection system and Wastewater Treatment Plant (WWTP). The updated allocation can be used with future home development projections to further evaluate and plan the system and WWTP improvements. This evaluation will also show how future developments, currently under review, will impact the sanitary system overall.

In 2006, HNTB developed a wastewater master plan for the City of Westfield. The report produced was not a true master plan in the traditional sense, but rather a theoretical evaluation of the then current capacity of the collection system, as well as ultimate future build out of the system assuming 100-percent development of available land within Washington Township. The plan included the waste allocation for each drainage basin within the sanitary service area. The 2006 Master Plan was necessary to assess the ability of the collection system to handle the rapid development of the City of Westfield. It was used to plan capital projects for improvement and expansion of the existing wastewater system.

This current update provides a waste load allocation evaluation based on actual developments and infrastructure capacities as of July 2014. This update replaces assumptions about development made in the Master Plan with actual waste loads allocated since 2006. The new allocations are based on approved allocations provided to HNTB by Citizens Westfield. It is important to consider that a waste load allocation is a planning tool and does not equate to actual metered flow. The waste load allocation takes into account existing and planned flow by summarizing assumed and known Equivalent Dwelling Units (EDUs), peaking factors, and lift station and sewer capacities to come up with a "theoretical" capacity of the existing and planned infrastructure used for planning purposes. This is an accepted tool used in the absence of long-term flow monitoring, which has not been conducted within the Westfield system.

The City continues to have significant growth plans, so in addition to the July 2014 allocation status, a separate evaluation is included that considers the impact of select future developments on the collection system. All other undeveloped land not meeting the criteria outlined in this evaluation was not considered to contribute to the current waste load allocation.

Prior to this evaluation, the most recent update of the waste load allocation was completed by HNTB in 2009. Regular updates of the waste load allocation to include future developments and sewer infrastructure projects should be completed in order to maintain a valid tool for assessing the capacity of

the collection system for future development. Recommendations for improvements to the current allocation tools are included at the end of this memo.

BACKGROUND AND ASSUMPTIONS

Assumptions for Basin Development in the 2006 Master Plan

The current wastewater basins within the Citizens Westfield collection system are shown on **Figure 1**. The wastewater basins were delineated as part of the 2006 Master Plan. This Section provides a brief summary of the assumptions made in delineating the basins and sub-basins in 2006. Sub-basin divisions are depicted on **Figure 2**. Sub-sub-basin delineations were completed in 2006 but are not included in this evaluation. For detailed basin descriptions refer to the 2006 Master Plan.

Basins

- Basins were delineated based on existing parcel lines, even though the parcels may be subdivided in the future.
- Basins were delineated by utilizing the two-foot contours available from the Hamilton County GIS website.
- Basins were determined based upon the major interceptors or regional lift stations that flow to Carmel or to the Westfield WWTP (currently or in the future). Names were assigned as listed in **Table 1**.

TABLE 1
Basin Names and Abbreviations

Basin Name	*Abbreviation*
Cool Creek Interceptor/Oak Road LS Basins	Refer to Table 2.1 for Listing
J. Edwards Drain Interceptor Basin	JED
Westside Interceptor Basin	WEST
Washington Woods Lift Station Basin	WWLS
Viking Meadows Lift Station Basin	VMLS
156th Street Interceptor Basin	156TH
Northwest Interceptor Basin	NW
Southwest Interceptor Basin	SW

Sub-Basins

- Sub-basins were delineated based upon major branches of the interceptor sewers.
- Sub-basins were delineated by utilizing the two-foot contours available from the Hamilton County GIS website.

Sub-Sub-Basins

- Sub-sub-basins were delineated based upon the land use within the sub-basin. For instance, a subdivision or a commercial development is one sub-sub-basin.

Attachment JTP-6

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Attachment JTP-6

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Assumptions for Waste Load Allocation in the 2006 Master Plan and Current Update

The 2006 Master Plan was a theoretical evaluation of the collection basin assuming 100-percent development of all available land within Washington Township. Each parcel within the basin area, developed or undeveloped, was assigned a waste load in the form of EDUs. One (1) EDU represents 310 gallons per day (gpd) of wastewater flow. The number of EDUs per parcel was determined by land use. In general, for developed areas, the following EDU values were assigned:

- Existing single family residences = 1 EDU;
- Existing multifamily residences and apartments = 7.0 EDUs per acre;
- Existing commercial areas = 3.0 EDUs per acre;
- Existing employment areas = 1.5 EDUs per acre; and
- Existing schools or churches = based on 70 percent of water usage (provided by Westfield Public Works Department).

For undeveloped areas, assumptions were made regarding future land use. In general, the following EDU values were assigned to undeveloped parcels:

- Undeveloped residential areas = 2.6 EDUs per acre (3.0 multiplied by 85 percent to account for roads and green spaces not contributing to the waste load);
- Undeveloped multifamily residences and apartments = 7.0 EDUs per acre;
- Undeveloped commercial areas = 3.0 EDUs per acre; and
- Undeveloped employment areas = 1.5 EDUs per acre.

In addition, Planned Unit Developments (PUDs) were included and EDUs were allocated to undeveloped parcels in which they were assigned. An approved PUD was considered as an assumed development for use in allocating flow.

The purpose of this evaluation is to update the theoretical waste load allocation based on new information acquired since the development of the 2006 Master Plan and 2009 update. For example, a parcel of land may have been assumed to develop into single family residences at 3.0 EDUs per acre in the original Master Plan, but instead, multifamily units were developed that are more equivalent to 7.0 EDUs per acre. For this evaluation, a development was considered to be contributing to the waste load if the development had an approved PUD, a signed Sewer Service Availability Agreement, had applied for a Sanitary Sewer Construction Permit, or had been issued a Water / Wastewater Connection and Availability invoice by the City of Westfield. This was done regardless of the construction status of the development. All other undeveloped areas were not considered as contributing to the waste load. In the case of Sewer Service Availability Agreements, only two (2) developments were identified with signed agreements: Ackerson Farms and Westgate.

It should be noted that updated information is still using an industry standard flow rate for an EDU (310 gpd = 1 EDU). As a result, the assumed flow rates may differ from actual flow meter data.

2014 WASTE LOAD ALLOCATION UPDATE

Procedures for Waste Load Allocation Updates

The information used to develop this waste load allocation update was provided to HNTB by Citizens Westfield between April to July 2014. The list of information included, among other things, new developments within the City of Westfield since 2009, PUD ordinances, sanitary sewer construction permits, water / wastewater connection and availability invoices, and construction drawings and plats. The flow information from the relevant documents was used to update the waste load allocation spreadsheet database developed as part of the 2006 Master Plan. The basic process of updating the spreadsheet was performed as follows:

- Determine the location and extent of a new development based on a site location map, plat, or construction drawing;
- Determine the corresponding parcel number(s) of the new development using GIS;
- Determine the wastewater flow allocated for the new development based on the sanitary sewer construction permit or water / wastewater connection and availability invoice;
- Using the new EDU information, replace the outdated / assumed EDU allocations corresponding to the parcels of the new development within the waste load allocation spreadsheet; and
- Make note of the change for future reference within the waste load allocation spreadsheet.

In some cases the information provided to HNTB was insufficient to update the EDU allocation for a particular development. In this case, a request was made to Citizens Westfield for the missing information. If appropriate, a reasonable assumption was made to account for missing or unavailable information. For example, if a subdivision plat showing 20 single family residences was provided by Citizens Westfield, but information about wastewater flow was unavailable, an assumption of 20 EDUs was made for the development.

Description of Waste Load Allocation Summary Spreadsheet

The waste load allocation summary spreadsheet (**Table 2**) contains development data with results showing the theoretical remaining infrastructure capacity within the Westfield wastewater collection system. For clarity, **Table 2** column-heading definitions are provided in **Table 3**. The sub-basins depicted on these documents are color-coded to identify where the current theoretical capacity stands. For example, a waste load capacity in blue signifies an undeveloped or lightly developed area while red signifies a sub-basin that is near or over capacity based on the assumptions discussed previously in this evaluation. **Figure 3** depicts the resulting waste load allocation shown in **Table 2**.

Basin	Sub Basin/Critical Infrastructure	Acres	EDUs	Average Flow (GPD)	Peak Factor	Peak Flow (MGD)	LS Cap (MGD)	Sewer Size (IN.)	Sewer Cap (MGD)	Avail. Cap. (MGD)	2014 Avail. EDUs	Allocated Capacity	Limiting Infrastructure	Key Notes
COOL CREEK/ OAK RD LS	1_Gray_A	167	710	221,000	3.6	0.78		12	1.08	0.30	268	73%	Gravity Sewer	Drains to Setters Run LS
	1_Gray_B	303	626	195,000	3.6	0.70		8	0.49	-0.21	-189	143%	Gravity Sewer	Drains to Setters Run LS
	Setters Run Lift Station	471	1,337	416,000	3.3	1.38	1.62			0.24	233	85%	Lift Station	
	2_Brook_A	64	78	25,000	4.1	0.10		8	0.49	0.39	304	21%	Gravity Sewer	Drains to Brookside LS
	2_Brook_B	0	0	0	4.5	0.00		8	0.49	0.49	351	0%	Gravity Sewer	Drains to Brookside LS
	2_Brook_C	669	1,319	409,000	3.3	1.36		15	1.62	0.26	252	84%	Gravity Sewer	Drains to Brookside LS
	Brookside Lift Station	733	1,397	434,000	3.3	1.43	0.95			-0.48	-473	151%	Lift Station	Pumps to the 21" Cool Creek Interceptor
	3_Spring	352	895	278,000	3.5	0.96		12	1.08	0.12	107	89%	Gravity Sewer	Drains to the 21" Cool Creek Interceptor
	4_Silver	273	607	189,000	3.6	0.68		8	0.49	-0.19	-171	139%	Gravity Sewer	Drains to the 21" Cool Creek Interceptor
	5_Cool	102	217	68,000	3.9	0.27	0.14			-0.13	-104	190%	Lift Station	
	6_OakMain	0	0	0	4.5	0.00		8	0.49	0.49	351	0%	Gravity Sewer	Drains to 18-inch Cool Creek Interceptor
	7_OakPark	74	76	24,000	4.1	0.10		8	0.49	0.39	306	20%	Gravity Sewer	Drains to the 18-inch Cool Creek Interceptor
	8_OakWoods	37	14	5,000	4.3	0.02		8	0.49	0.47	350	4%	Gravity Sewer	Drains to the 18-inch Cool Creek Interceptor
	9_Oak161	0	0	0	4.5	0.00		8	0.49	0.49	351	0%	Gravity Sewer	Drains to the 18-inch Cool Creek Interceptor
	10_OakMan	175	343	107,000	3.8	0.40		8	0.49	0.09	73	83%	Gravity Sewer	Drains to Oak Road LS
	Kroger	38	106	33,000	4.1	0.13		8	0.49	0.36	283	27%	Gravity Sewer	Drains to Oak Road LS
	II_1	118	371	116,000	3.8	0.44		8	0.49	0.05	46	89%	Gravity Sewer	Drains to Oak Road LS
	II_2	82	229	71,000	3.9	0.28		8	0.49	0.21	177	56%	Gravity Sewer	Drains to Oak Road LS
	II_3	40	88	28,000	4.1	0.11		8	0.49	0.38	296	23%	Gravity Sewer	Drains to Oak Road LS
	II_4	247	673	209,000	3.6	0.75		12	1.08	0.33	301	69%	Gravity Sewer	Drains to Oak Road LS
	II_5	100	310	96,000	3.8	0.37		8	0.49	0.12	105	75%	Gravity Sewer	Drains to Oak Road LS
	II_6	367	499	155,000	3.7	0.57		10	0.75	0.18	159	76%	Gravity Sewer	Drains to Oak Road LS
	II_7	89	87	28,000	4.1	0.11		8	0.49	0.38	296	23%	Gravity Sewer	Drains to Oak Road LS
	II_8	185	219	69,000	3.9	0.27		8	0.49	0.22	183	55%	Gravity Sewer	Drains to Oak Road LS
	II_10	16	66	21,000	4.1	0.09		8	0.49	0.40	314	18%	Gravity Sewer	Drains to Oak Road LS
	II_11	7	3	1,000	4.4	0.00		8	0.49	0.49	355	1%	Gravity Sewer	Drains to Oak Road LS
	II_12	40	36	12,000	4.2	0.05		8	0.49	0.44	336	10%	Gravity Sewer	Drains to Oak Road LS
	Oak Rd Lift Station	588	1,390	430,937	3.3	1.29	1.60			0.31	301	81%	Lift Station	Currently during peak events, flow is re-directed to the lagoons via the Lagoon Pump Station
	18-inch Cool Creek Interceptor	1,617	3,121	29,000	4.1	2.67		18	2.80	0.13	105	95%	Interceptor Sewer	Sanitary sewer located along Oak Road that receives flow from Oak Road LS as well as all flow in the Cool Creek/Oak Road LS Basin north of 151st Street
	21-inch Cool Creek Interceptor	1,719	3,338	97,000	3.8	2.92		21	3.40	0.48	408	86%	Interceptor Sewer	Sanitary sewer that receives flow from the 18-inch Cool Creek Interceptor as well as flow between 146th Street and 151st Street
VIKING MEADOWS LS BASIN	VMLS_1	184	301	94,000	3.8	0.36		10	0.75	0.39	331	48%	Future Sanitary Sewer	
	VMLS_2	104	292	91,000	3.8	0.35		10	0.75	0.40	339	46%	Future Sanitary Sewer	Drains to Springdale Farms LS and eventually to Merrimac LS
	VMLS_3	235	490	152,000	3.7	0.56		15	1.62	1.06	932	34%	Future Interceptor Sewer	Drains to Springmill Villages LS and eventually to Springdale Farms LS
	VMLS_1+_2+_3	523	1,083	337,000	3.4	1.15		15	1.62	0.47	450	71%	Future Interceptor Sewer	
	VMLS_4	656	1,306	405,000	3.3	1.35		15	1.62	0.27	264	83%	Future Interceptor Sewer	
	VMLS_4+1_Gray	1,127	2,643	821,000	3.0	2.50		20	3.09	0.59	631	81%	Future Interceptor Sewer	
	VMLS_5 (Southpark Lift Station)	249	461	143,000	3.7	0.53	0.50			-0.03	-25	106%	Existing Lift Station	Southpark Lift Station
	VMLS_4+_5+1_Gray	1,376	3,103	964,000	3.0	2.86		21	3.24	0.38	409	88%	Future Interceptor Sewer	
	Viking Meadows Lift Station	339	301	93,310	3.8	0.36	0.80			0.44	375	45%	Existing Lift Station	

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Table 2 - Waste Load Allocation

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>100% Cap.
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75% < Cap. <90%
50% < Cap. <75%
25% < Cap. <50%
0% < Cap. <25%

Basin	Sub Basin/Critical Infrastructure	Acres	EDUs	Average Flow (GPD)	Peak Factor	Peak Flow (MGD)	LS Cap (MGD)	Sewer Size (IN.)	Sewer Cap (MGD)	Avail. Cap. (MGD)	2014 Avail. EDUs	Allocated Capacity	Limiting Infrastructure	Key Notes
156TH ST INT. BASIN	156TH_MLS (Merrimac Lift Station)	747	1,949	605,000	3.2	1.92	1.80			-0.12	-118	106%	Existing Lift Station	Merrimac Lift Station
	156TH_MAIN	249	344	107,000	3.8	0.90		48	24.60	23.70	20,220	4%	Future Interceptor Sewer	Future 156th Street Interceptor service area
	Towne Road Lift Station	1,335	3,375	1,049,000	2.9	3.08	2.59			-0.49	-534	119%	Existing Lift Station	Town Road Lift Station
J. EDWARDS DRAIN INTERCEPTOR BASIN	JED_181ST (181st ST LIFT STATION)	47	157	49,000	4.0	0.19	0.47			0.27	222	42%	Existing Lift Station	181st Street Lift Station
	JED_1	55	28	9,000	4.3	1.65		12	1.08	-0.57	-432	153%	Existing Interceptor Sewer	WWLS is to be re-directed to the Westside Interceptor Sewer in 2015 and will free up allocated capacity
	JED_2	274	713	221,000	3.5	2.43		15	1.62	-0.81	-734	150%	Existing Interceptor Sewer	WWLS is to be re-directed to the Westside Interceptor Sewer in 2015 and will free up allocated capacity
	JED_3	300	1,033	321,000	3.2	3.38		18	2.36	-1.02	-1,024	143%	Existing Interceptor Sewer	WWLS is to be re-directed to the Westside Interceptor Sewer in 2015 and will free up allocated capacity
	JED_4	775	2,032	631,000	2.9	5.02		24	4.15	-0.87	-972	121%	Existing Interceptor Sewer	WWLS is to be re-directed to the Westside Interceptor Sewer in 2015 and will free up allocated capacity
WASHINGTON WOODS LS BASIN	WWLS_216TH (Future LS)	0	0	0	4.5	0.00	1.35			1.35	968	0%	Future Lift Station	Future Planned Lift Station
	WWLS_203RD (Future LS)	0	0	0	4.5	0.00	4.50			4.50	3,226	0%	Future Lift Station	Future Planned Lift Station
	WWLS_MAIN_TOM (Tomlinson Rd. Lift Station)	569	1,204	374,000	3.4	1.26	0.50			-0.76	-726	251%	Existing Lift Station	Over allocated due to the EDUs associated with full buildout of Grand Park Sports Complex. Lift Station currently being upgraded.
	Washington Woods sewer 1	576	1,215	377,667	3.4	1.27		30	6.40	5.13	4,934	20%	Future Interceptor Sewer	Future Planned Interceptor
	WWLS_196TH (Future LS)	0	0	0	4.5	0.00	4.10			4.10	2,939	0%	Future Lift Station	Future Planned Lift Station
	Washington Woods Sewer 2	583	1,226	381,333	3.4	1.28		36	9.66	8.38	8,067	13%	Future Interceptor Sewer	Future Planned Interceptor
	WWLS_MAIN_AN (Andover LS)	369	645	199,801	3.6	0.72	0.74			0.02	21	97%	Existing Lift Station	Includes allocated EDUs from the Andover PUD as well as current Andover EDUs. Lift Station can be expanded to handle flow as development occurs. Original Andover PUD shows only 640 EDUs.
	WWLS_MAIN	390	33	10,230	4.2	0.04		36	10.75	10.71	8,144	0%	Future Interceptor Sewer	GTE Lift Station currently handles flow from existing development (Morgan Woods). In the future, it is intended that flow be served by the WWLS Basin.
	WWLS_CCS	113	156	49,000	3.6	0.71		12	1.10	0.39	352	64%	Existing Gravity Sewer	
	WWLS_CCS_SAN (Sandpiper Lift Station)	107	478	148,180	3.7	0.55	0.59			0.04	39	93%	Existing Lift Station	Sandpiper Lift Station
	Washington Woods Lift Station	502	1,278	396,981	3.3	1.97	1.14			-0.83	-800	172%	Existing Lift Station	Lift Station is shown as over capacity due to the EDUs associated with the Andover PUD. There is a planned upgrade in 2015 of this LS.
WESTSIDE INTERCEPTOR BASIN	WEST_1 (FUTURE LS)	0	0	0	4.5	0.00	2.70			2.70	1,935	0%	Future Lift Station	
	WEST_2	0	0	0	4.5	0.00		15	1.62	1.62	1,161	0%	Future Interceptor	
	WEST_3	0	0	0	4.5	0.00		24	4.14	4.14	2,968	0%	Future Interceptor	
	WEST_4	143	365	114,000	3.8	0.43		15	1.62	1.19	1,021	26%	Future Interceptor	
	WEST_1+_2+_3+_4	143	365	114,000	3.8	0.43		30	6.40	5.97	5,119	7%	Future Interceptor	
	WEST_5	0	0	0	4.5	0.00		15	1.62	1.62	1,161	0%	Future Interceptor	
	WEST_1+_2+_3+_4+_5+_1	143	365	114,000	3.8	0.43		30	6.67	6.24	5,351	6%	Future Interceptor	
	WEST_1 -	143	365	114,000	3.8	0.43		36	9.26	8.83	7,571	5%	Future Interceptor	
	WEST_6	0	0	0	4.5	0.00		15	1.62	1.62	1,161	0%	Future Interceptor	
	WEST_1-6+1/_7+_10+_11	143	365	114,000	3.8	0.43		36	9.26	8.83	7,571	5%	Future Interceptor	
	WEST_7	143	365	114,000	3.8	0.43		36	9.26	8.83	7,571	5%	Future Interceptor	
	WEST_8	0	0	0	4.5	0.00		10	0.75	0.75	538	0%	Future Interceptor	

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0% < Cap. <25%

Basin	Sub Basin/Critical Infrastructure	Acres	EDUs	Average Flow (GPD)	Peak Factor	Peak Flow (MGD)	LS Cap (MGD)	Sewer Size (IN.)	Sewer Cap (MGD)	Avail. Cap. (MGD)	2014 Avail. EDUs	Allocated Capacity	Limiting Infrastructure	Key Notes
WESTSIDE INTERCEPTOR BASIN	WEST_1 - _8 + _10 & _11	143	365	114,000	3.8	0.43		36	9.26	8.83	7,571	5%	Future Interceptor	
	WEST_9	0	0	0	4.5	0.00		15	1.62	1.62	1,161	0%	Future Interceptor	
	WEST_10	143	365	114,000	3.8	0.43		30	6.40	5.97	5,119	7%	Future Interceptor	
	WEST_11	0	0	0	4.5	0.00		10	0.75	0.75	538	0%	Future Interceptor	
	WEST_12	81	126	40,000	4.0	0.16		42	12.50	12.34	9,896	1%	Future Interceptor	
	WEST_1-_8 + _10-	224	491	154,000	3.7	0.57		48	24.60	24.03	21,118	2%	Future Interceptor	
	WEST_1-_12 + WWLS	224	491	154,000	3.7	0.57		54	31.20	30.63	26,918	2%	Future Interceptor	
	WEST_13	880	2,817	876,000	3.0	2.64		54	31.20	28.56	30,594	8%	Future Interceptor	
NW BASIN	NW_1	0	0	0	4.5	0.00		15	1.62	1.62	1,161	0%	Future Interceptor	
	NW_2	0	0	0	4.5	0.00		10	0.75	0.75	538	0%	Future Interceptor	
	NW_2+NW_4	0	0	0	4.5	0.00		12	1.08	1.08	774	0%	Future Interceptor	
	NW_3	0	0	0	4.5	0.00		10	0.75	0.75	538	0%	Future Interceptor	
	NW_4	0	0	0	4.5	0.00		8	0.49	0.49	351	0%	Future Interceptor	
	NW_2-NW_4	0	0	0	4.5	0.00		15	1.62	1.62	1,161	0%	Future Interceptor	
	NW_5	0	0	0	4.5	0.00		10	0.75	0.75	538	0%	Future Interceptor	
	NW_2-NW_5	0	0	0	4.5	0.00		18	2.36	2.36	1,692	0%	Future Interceptor	
	NW_2-NW_5+1/2 NW_6	0	0	0	4.5	0.00		18	2.36	2.36	1,692	0%	Future Interceptor	
	NW_6	0	0	0	4.5	0.00		21	3.24	3.24	2,323	0%	Future Interceptor	
	NW_7	0	0	0	4.5	0.00		10	0.75	0.75	538	0%	Future Interceptor	
	NW LS (Future LS)	0	0	0	4.5	0.00	4.20			4.20	3,011	0%	Future Lift Station	
	NW_1-NW_7	0	0	0	4.5	0.00		24	4.14	4.14	2,968	0%	Future Interceptor	
	NW_8	0	0	0	4.5	0.00		10	0.75	0.75	538	0%	Future Interceptor	
	NW_1-NW_8	0	0	0	4.5	0.00		27	5.19	5.19	3,720	0%	Future Interceptor	
	NW_1-NW_8+1/2 NW_9	0	0	0	4.5	0.00		27	5.19	5.19	3,720	0%	Future Interceptor	
	NW_1-NW_9	0	0	0	4.5	0.00		30	6.40	6.40	4,588	0%	Future Interceptor	
	NW_10	0	0	0	4.5	0.00		15	1.62	1.62	1,161	0%	Future Interceptor	
	NW_1-NW_10	0	0	0	4.5	0.00		30	6.61	6.61	4,738	0%	Future Interceptor	
	NW_11	0	0	0	4.5	0.00		8	0.49	0.49	351	0%	Future Interceptor	
	NW_1-NW_11	0	0	0	4.5	0.00		36	9.26	9.26	6,638	0%	Future Interceptor	
	NW_1-NW_12	0	0	0	4.5	0.00		36	9.26	9.26	6,638	0%	Future Interceptor	
	NW+WEST	880	2,817	876,000	3.0	2.63		60	37.70	35.07	37,712	7%	Future Interceptor	
SW BASIN	SW_1	0	0	0	4.5	0.00		8	0.49	0.49	351	0%	Future Interceptor Sewer	
	SW_2	0	0	0	4.5	0.00		8	0.49	0.49	351	0%	Future Interceptor	
	SW_1 + SW_2	0	0	0	4.5	0.00		10	0.75	0.75	538	0%	Future Interceptor Sewer	
	SW_3	0	0	0	4.5	0.00		12	1.08	1.08	774	0%	Future Interceptor Sewer	
	SW_1-_3	0	0	0	4.5	0.00		15	1.62	1.62	1,161	0%	Future Interceptor Sewer	
	SW_4	0	0	0	4.5	0.00		8	0.49	0.49	351	0%	Future Interceptor Sewer	
	SW_5	0	0	0	4.5	0.00		10	0.75	0.75	538	0%	Future Interceptor Sewer	
	SW_6	0	0	0	4.5	0.00		8	0.49	0.49	351	0%	Future Interceptor Sewer	
	SW_7	0	0	0	4.5	0.00		8	0.49	0.49	351	0%	Future Interceptor Sewer	
	SW_8	0	0	0	4.5	0.00		10	0.75	0.75	538	0%	Future Interceptor Sewer	
	SW LS (Future LS)	0	0	0	4.5	0.00	2.20			2.20	1,577	0%	Future Lift Station	

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Attachment JTP-6

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Cause No. 44835

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TABLE 3
Column Descriptions for the Waste Load Allocation Spreadsheet

Column Name	*Description*
Basin	The basin in which sanitary infrastructure is located, as shown on **Figure 1**.
Sub Basin/Critical Infrastructure	The capacity of each sub-basin is based on the size of the infrastructure serving the area. Critical infrastructure components such as interceptors and lift stations that receive flow form an accumulation of sub basins have been included to show current allocated capacity.
Acres	The area of the sub-basin in acres.
EDUs	The total number of EDUs currently handled by the sub-basin sewer. One (1) EDU is equivalent to 310 GPD. This number includes all developments classified as 'D' (Developed), 'A' (Assumed Developed), and 'ES' (Existing Sewered).
Average Flow (GPD)	EDUs multiplied by 310 GPD/EDU.
Peak Flow (MGD)	Average flow multiplied by a peaking factor determined using the methods outlined in 10-States Standards.
LS Cap (MGD)	The design pumping capacity for existing lift stations or the calculated peak sub-basin capacities for future lift stations. Pump capacities were provided by Citizens Westfield in most cases.
Sewer Size (IN.)	The diameter of the existing or proposed sewer serving the sub-basin area in inches.
Sewer Cap. (MGD)	The peak hydraulic capacity of the sewer serving the sub-basin area based on the minimum sewer slope outlined in 10-States Standards.
Avail. Cap. (MGD)	The remaining capacity of the sewer serving the sub basin area (Avail. Cap. minus Peak Flow).
2014 Avail. EDUs	The available capacity of the sewer serving the sub-basin area divided by 310 GPD / EDU as of the last waste load allocation information (developments) provided by Citizens Westfield in July 2014.
Allocated Capacity	The percentage of the sewer serving the sub basin that is currently being used (Peak Flow divided by Avail. Cap). Values above 100 percent indicated a sewer that is above capacity, based on the assumptions outlined in this evaluation.
Limiting Infrastructure	Information about infrastructure that is currently limiting the capacity of the sub basin.
Key Notes	Important notes that capture key information regarding current state of infrastructure capacity or future use of infrastructure.

Waste Load Allocation Summary Spreadsheet Results

As shown in **Table 2**, sub-basins that near or over the theoretical allocated capacity have been color-coded as either red or pink. As stated in this evaluation, the allocated capacity is a theoretical flow based on a combination of actual and assumed build out of approved plans. **Table 4** identifies the specific sub-basins that are over-allocated and the corresponding limiting infrastructure component. Key notes have been provided to identify the rationale for the basin over-allocation, as well as planned measures to alleviate the infrastructure, if known.

TABLE 4
Infrastructure Capacity Allocation Evaluation

WWTP Service Area	*Sub-Basin Name*	*Allocated Capacity*	*Limiting Infrastructure*	*Key Notes*
Carmel WWTP	1-Grey-B	143%	Gravity Sewer	Existing 8-inch sanitary sewer at peak flow calculated to be 0.21 MGD over pipe capacity. The sewer was shown over capacity in 2006 Master Plan as well.
Carmel WWTP	Brookside Lift Station	151%	Lift Station	The calculated peak flow at the lift station is 1.43 MGD while the current pump capacity is only 0.95 MGD. The lift Station was shown over capacity in the 2006 Master Plan as well.
Carmel WWTP	4_Silver	139%	Gravity Sewer	Existing 8-inch sanitary sewer at peak flow calculated to be 0.19 MGD over pipe capacity. The sewer was shown over capacity in 2006 Master Plan as well.
Carmel WWTP	5_Cool (Cool Creek LS)	190%	Lift Station	The calculated peak flow at the lift station is 0.27 MGD while the current pump capacity is only 0.14 MGD. The Lift Station was shown over capacity in the 2006 Master Plan as well.
Carmel WWTP	18-Inch Cool Creek Interceptor	95%	Interceptor Sewer	Once the Downtown LS is constructed in 2015, up to 2.6 MGD will be removed from this interceptor and subsequently, the City of Carmel.
Westfield WWTP	VMLS-5 (Southpark LS)	106%	Lift Station	The calculated peak flow at the lift station is 0.53 MGD while the current pump capacity is only 0.50 MGD.
Westfield WWTP	JED_1	153%	Interceptor Sewer	Existing 12-inch interceptor sewer at peak flow calculated to be 0.57 MGD over pipe capacity. The sewer will no longer be considered over capacity when the WWLS is re-directed to the Westside Interceptor Sewer in 2015.
Westfield WWTP	JED_2	150%	Interceptor Sewer	Existing 15-inch interceptor sewer at peak flow calculated to be 0.81 MGD over pipe capacity. The sewer will no longer be considered over capacity when the WWLS is re-directed to the Westside Interceptor Sewer in 2015.
Westfield WWTP	JED_3	143%	Interceptor Sewer	Existing 18-inch interceptor sewer at peak flow calculated to be 1.02 MGD over pipe capacity. The sewer will no longer be considered over capacity when the WWLS is re-directed to the Westside Interceptor Sewer in 2015.
Westfield WWTP	JED_4	121%	Interceptor Sewer	Existing 24-inch interceptor sewer at peak flow calculated to be 0.87 MGD over pipe capacity. The sewer will no longer be considered over capacity when the WWLS is re-directed to the Westside Interceptor Sewer in 2015.

WWTP Service Area	*Sub-Basin Name*	*Allocated Capacity*	*Limiting Infrastructure*	*Key Notes*
Westfield WWTP	156th_MLS	106%	Lift Station	The calculated peak flow at the lift station is 1.92 MGD while the current pump capacity is only 1.80 MGD.
Westfield WWTP	Towne Road LS	119%	Lift Station	The calculated peak flow at the lift station is 3.08 MGD while the current pump capacity is only 2.59 MGD.
Westfield WWTP	WWLS_Main_ TOM (Tomlinson Road LS)	251%	Lift Station	The calculated peak flow at the lift station is 1.26 MGD while the current pump capacity is only 0.50 MGD. Over-allocated due to the permitted Grand Park Complex.
Westfield WWTP	Andover LS	97%	Lift Station	The calculated peak flow at the lift station is 0.72 MGD while the current pump capacity is only 0.74 MGD.
Westfield WWTP	Washington Woods LS	172%	Lift Station	The calculated peak flow at the lift station is 1.97 MGD while the current pump capacity is only 1.14 MGD. Andover LS was recently connected to WWLS. WWLS will be upgraded to full build out in 2015 and will be connected to the Westside Interceptor Sewer.

EVALUATION OF WWTP CAPACITY

Currently, the Westfield WWTP receives flow from the J. Edwards Drain and the Towne Road Lift Station. The Westside Interceptor is connected to the WWTP but currently only contributes a very minor flow. In 2015, the Downtown Lift Station is planned to be constructed, intercepting flow currently sent to Carmel and re-directing it to the Westfield WWTP by way of the Westside Interceptor. The Downtown Lift Station, when constructed in 2015, will have a discharge flow range of 0.8-2.6 MGD. Average flow from the lift station is calculated to be 0.65 MGD. The remaining flow (primarily south of 171st Street and east of U.S. 31) from the current sanitary sewer service area is served by the City of Carmel through a single connection. It should be noted that the Downtown Lift Station will include a bypass structure allowing flow to still drain to Carmel following station construction, if needed.

As shown on **Table 5**, the actual measured flow of the current infrastructure that flows to the WWTP is under the current design capacity of the WWTP. Currently, the average daily flow (ADF) allocated as of July 2014 to the WWTP is under the current WWTP capacity by 0.30 MGD. However, the allocated peak daily flow (PDF) is over the WWTP design capacity by 0.60 MGD.

It should be noted that once the Downtown Lift Station is constructed, it will contribute a calculated ADF of 0.65 MGD and an initial PDF of 0.80 MGD. The initial flow will put the WWTP over the allocated capacity for both ADF and PDF by 0.35 MGD and 1.40 MGD, respectively.

TABLE 5
WWTP Capacity Evaluation

Infrastructure Name	*Current Design Capacity (MGD)*	*Flow Currently Allocated (MGD)*[1]	*Actual Measured Flow (MGD)*
J. Edwards Drain	4.2 (24-inch Sewer Section only – Full Pipe)	1.63 ADF 5.02 PDF	3.1 PDF
Towne Road Lift Station	2.6 (Current Pump Design Capacity)	1.05 ADF 3.08 PDF	2.0 PDF
WWTP	**3.0 ADF 7.5 PDF**	**2.7 ADF 8.1 PDF**	**1.7 ADF 5.1 PDF**

[1] *WWTP flow allocation total shown above does not include the ADF of 0.65 MGD and the PDF of 0.80 MGD associated with construction of the 2015 Downtown Lift Station. The J. Edwards Drain allocated capacity includes flow from JED sub-basins and the Washington Woods LS.*

EVALUATION OF POTENTIAL FUTURE DEVELOPMENTS

Citizens Westfield provided HNTB with GIS shape files depicting the locations of developments that are planned but are not part of the current waste load allocation calculations. **Figure 4** depicts the location of the potential future developments and identifies the allocated capacity of the sub-basins resulting from the future development. The purpose of adding these developments is to ascertain which sub-basin the developments will impact and identify any future capacity issues based on the assumed EDUs that were provided with the files. The EDUs were incorporated into the waste load capacity allocation spreadsheet for each development as identified in **Table 6**.

TABLE 6
Summary of Potential Future Developments

Future Development Number	*Development Name*	*Sub-Basin Location*	*EDUs*	*Key Notes*
01	Lansesdown Development	SW_4	394	Located in undeveloped SW Basin. Future infrastructure would be needed to serve this area.
02	1500 Lot Development	156th_Main West_13	1,500	This development would be ultimately served by a new interceptor. Limited interim development could be served by the Towne Road LS. LS upgrades would likely be necessary.
03	1,000 Lot Development	West_7 West_10 West_11	1,000	This development would be served by the Westside Interceptor and capacity has been reserved as such. No impacts to the capacity allocation. Infrastructure would be needed to adequately serve the area and future areas to the north.

Future Development Number	*Development Name*	*Sub-Basin Location*	*EDUs*	*Key Notes*
04	Kereland Development	JED_4	200	Although the current JED Interceptor is shown as being over capacity, once the WWLS is re-routed to the Westside Interceptor in 2015, capacity will become available for this development as originally planned pending planned 3 EDUs/Acre.
05	Harmony	156th_Main 156th MLS	627	This development would be ultimately served by a new interceptor. Limited interim development could be served by the Merrimac LS. LS upgrades would likely be necessary.
06	Centennial North	156th_Main	300	This development would be ultimately served by a new interceptor. Depending on buildout, limited interim development could be served by the Merrimac LS or Towne Road LS. LS upgrades would likely be necessary in either case.
07	Viking Meadows – The Enclave and Springs	VMLS_1	128	This development, assuming 3 EDUs/Acre, is planned to go to the Viking Meadows Lift Station with existing sanitary sewers situated near the development outline. The lift station currently has the capacity for this 0.16 MGD addition of flow.
08	140 Lot Development	WWLS_ Main	140	This development, assuming 3 EDUs/Acre, is planned to go to the Washington Woods Lift Station with existing sanitary sewers situated near the development outline. The lift station will have the capacity for this 0.17 MGD addition of flow following the 2015 upgrade.
09	Grand Park Village	WWLS_ Main	685	This development, assuming 3 EDUs/Acre, would ultimately be served by the downtown interceptor and future Downtown Lift Station. Currently, the interceptor and Downtown Lift Station have not been analyzed to know whether or not flow from this area can adequately be served. Currently, SSOs occur in the existing Interceptor. A detailed analysis outside the scope of this evaluation should be conducted.
10	Chatham Hills	WWLS_203rd West_4	1,500	This development would be served by the Westside Interceptor and capacity has been reserved as such. No impacts to the capacity allocation are anticipated. A new interceptor would be needed to adequately serve the area. Interim flow, although restricted, could be served via the Tomlinson Road LS. LS upgrades would be necessary. The Tomlinson Road LS will also receive flow from the Sports Complex buildout and a greater understanding of buildout between these, both Chatham Hills and the Sports Complex is needed to fully define both overall capacity and required infrastructure upgrades.

Attachment JTP-6

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Cause No. 44835

CONFIDENTIAL

There are approximately 6,475 EDUs associated with the future developments identified in **Table 6**. The potential future developments result in a calculated increase of 2.0 MGD ADF and 5.3 MGD PDF (using a 2.7 calculated peaking factor). A comparison of current design capacity and the total future allocated flow is identified in **Table 7**.

TABLE 7
WWTP Capacity Evaluation with Future Developments

Infrastructure Name	*Current Design Capacity (MGD)*	*Total Future Allocated Flow (MGD)*[1, 2]
WWTP	**3.0 ADF** **7.5 PDF**	**4.7 ADF** **13.4 PDF**

[1] *Total future allocated flow includes: Flow currently allocated (Table 5) plus flow associated with the future developments identified in* ***Table 6****.*

[2] *WWTP total future allocated flow shown above does not include the ADF of 0.65 MGD and the PDF of 0.80 MGD associated with construction of the 2015 Downtown Lift Station.*

RECOMMENDATIONS FOR MANAGEMENT OF FUTURE WASTE LOAD EVALUATIONS

The current system used for calculating the waste load allocation is a combination of GIS data management and spreadsheet calculation. While the spreadsheet system appears simplistic when in summarized form, the process of updating the spreadsheet is cumbersome and time-consuming. Effective management of the spreadsheet is heavily dependent on the familiarity of the user with the existing update process.

Based on these considerations, HNTB recommends Citizens Westfield evaluate options for future management of the waste load allocation utilizing user-friendly GIS tools currently available. These could greatly reduce the man-hours required to update the current spreadsheet system and would allow for multiple users to update waste loads with less training.

TECHNICAL BRIEFING MEMORANDUM
WASTEWATER GROWTH PLAN – WESTFIELD WASTEWATER
February 2015

BACKGROUND

In March 2014, the City of Westfield, Indiana (City) and Citizens Energy Group (Citizens) completed the acquisition of the community's wastewater utility. The utility, Citizens Wastewater of Westfield, LLC (Citizens Westfield), is one of the fastest growing communities in the State of Indiana.

For more than 14 months prior to the transfer, Citizens met regularly with the Westfield Department of Public Works' staff to review capital planning and wastewater systems operations for overall preparation of a smooth transition. During this process it became evident rapid growth in the service area would require a comprehensive plan to appropriately address the near- and long-term capital improvement needs of the wastewater system.

Subsequent to the transition, Citizens Westfield began meeting with private developers to gain an enhanced understanding of the current and anticipated future wastewater infrastructure needs required to meet the service area's growth. In addition, Citizens Westfield conducted a thorough evaluation to gain a full understanding of the capabilities of the existing wastewater collection and treatment systems. Included was a review and updating of the waste load allocation database used by the City for private development approval to assess the current allocated capacity of the collection system and Wastewater Treatment Plant (WWTP). The updated waste load allocation database is intended to be a tool used with current and future private development growth projections to evaluate, plan and schedule wastewater system improvements needed to support development demand.

To adequately meet the growth needs and plan for future development, Citizens Westfield has started planning of near- and long-term infrastructure improvements needed within the Westfield service territory. The intent is to identify wastewater improvements related to future growth and development within the service area so that informed decisions regarding capital improvements can be implemented to meet system demands.

CURRENT SITUATION

Citizens Wastewater of Westfield has the capability to send flow to either the City of Carmel Utilities (Carmel) wastewater collection system for treatment or to the Westfield WWTP located in the southwest portion of the service area. The Carmel connection has been in place since at least 1984 and predominately serves downtown Westfield and the area to the east of US 31. The remainder of the service area is served by the Westfield Wastewater Treatment Plant.

ACTUAL FLOWS

The Westfield WWTP has ample capacity for near-term growth in the service area. The average daily flow (ADF) and peak daily flow (PDF) are 3.0 million gallons per day (MGD) and 7.5 MGD, respectively. Currently, the actual average daily flow is 1.7 MGD with a peak flow of 5.1 MGD. Citizens Westfield has a

service agreement with Carmel to provide an average daily treatment capacity of 2.14 MGD with varying daily and hourly peaking conditions. The average daily flow to the Carmel connection is 1.8 MGD with a peak flow of 4.0 MGD. Design and actual flows for the WWTP and Carmel Connection are summarized in **Tables 1** and **2** below.

The actual metered flows and treatment capacity (ADF and PDF) flows for the Westfield WWTP and the Carmel Connection are shown on **Figure 1**.

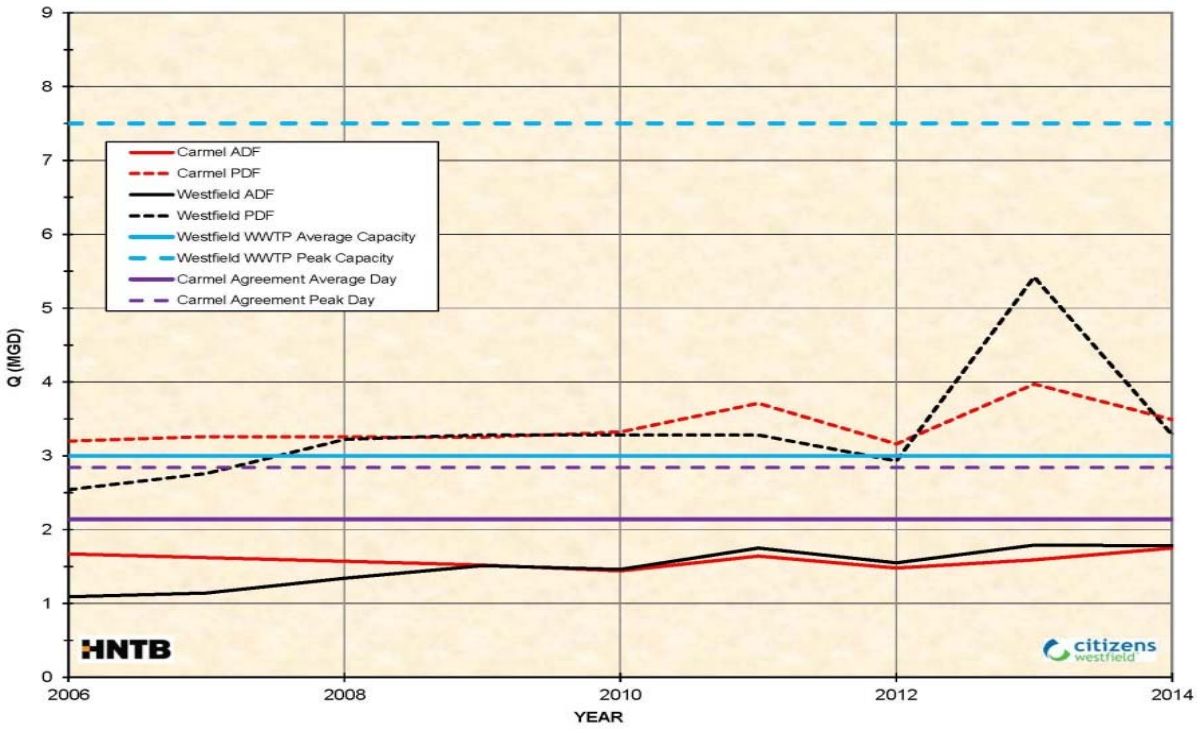

FIGURE 1
Westfield WWTP/Carmel WWTP Metered Flows vs. Design/Agreement Capacities

ALLOCATED FLOWS

As part of master planning efforts in 2006, the City prepared a theoretical evaluation of the then current capacity of the collection system, as well as ultimate future build-out of the system assuming 100-percent development of available land within Washington Township. The plan included the waste load allocation for each drainage basin within the sanitary service area. The 2006 Master Plan assessed the ability of the collection system to handle the rapid development of the City and was used to plan capital projects for improvements and expansion of the existing wastewater system.

Citizens Westfield updated the waste load allocation evaluation based on actual developments and infrastructure capacities as of July 2014. This update replaced assumptions about development made in the Master Plan with actual waste loads allocated since 2006. Although waste load allocations do not equate to actual flows, they are a planning tool to assess future flows and needs. The waste load allocation takes into account existing and planned flow by summarizing assumed and known Equivalent

Dwelling Units (EDUs) (One (1) EDU is equivalent to an average of 310 gallons per day.), peaking factors, and lift station and sewer capacities to come up with a "theoretical" capacity of the existing and planned infrastructure used for planning purposes.

Table 1 shows the results of the waste load allocation review performed by Citizens Westfield, indicating an allocated average daily flow (ADF) and peak daily flow (PDF) of 1.9 MGD and 5.7 MGD, respectively. As indicated in Table 1, there is a significant difference between actual/measured and allocated flows. The discrepancy is evidence of the theoretical nature of flow allocation and the result of developments that may currently be under or awaiting construction.

TABLE 1
Westfield WWTP Capacity Evaluation

Infrastructure Name	*Current Design Capacity (MGD)*	*Flow Currently Allocated[1] (MGD)*	*Actual Measured Flow (MGD) Max YTD*
WWTP	3.0 ADF 7.5 PDF	1.9 ADF 5.7 PDF	1.7 ADF 5.1 PDF

Table 2 shows the results of the waste load allocation evaluation of the Carmel Connection capacity and indicates that both ADF and PDF are above the currently contracted amount. However, actual measured flow is below the contracted values for both ADF and PDF. The contract with Carmel allows Citizens Westfield to exceed the PDF; however, a surcharge can be assessed.

TABLE 2
Carmel Connection Capacity Evaluation

Infrastructure Name	*Carmel Connection (MGD, Service Agreement)*	*Carmel Connection Flow Currently Allocated (MGD)*	*Actual Measured Flow (MGD) Max YTD*
Carmel Connection Flow Meter	2.14 ADF 2.84 PDF (w/surcharge capability)	2.4 ADF 6.4 PDF	1.8 ADF 4.0 PDF

[1] Allocated flows do not include the three Service Availability Agreements.

To better utilize the treatment and conveyance capabilities within the system, Citizens Westfield is constructing the Downtown Lift Station. The lift station will have the capability to divert flow from the Carmel System to the Westfield WWTP at an average and peak flow rate of 0.65 MGD and 2.6MGD respectively. The lift station can also be bypassed to allow flow to continue to the Carmel Connection. This flexibility will allow Citizens Westfield to manage the available plant capacities as growth continues in the system.

FUTURE FLOWS

Figure 1 displays the metered Westfield WWTP and Carmel Connection flow rates between 2006 and September 2014. For the 10-year forecast between 2014 and 2024, a growth rate of 700 EDUs per year is estimated. Although there could be corrective years in economic growth over the 10-year period, 700 EDUs, or 0.22 MGD, is the approximate current growth rate and maximum rate experienced prior to the economic down-turn in 2008. Therefore, this growth rate was chosen to provide a conservative or maximum demand look at expected future flows.

Growth is predominantly occurring in the areas or basins served by the Westfield WWTP. Future flow estimates are based on adding 600 EDUs in the basins served by the WWTP and 100 EDUs for those served by Carmel. Under these assumptions, the estimated average daily flow to the Westfield WWTP in 2024 would be approximately 3.6 MGD with a peak flow of 8.1 MGD, as shown in Figure 2. The flow to the Carmel Connection point in 2024 would be approximately 2.1 MGD ADF and 4.5 MGD PDF.

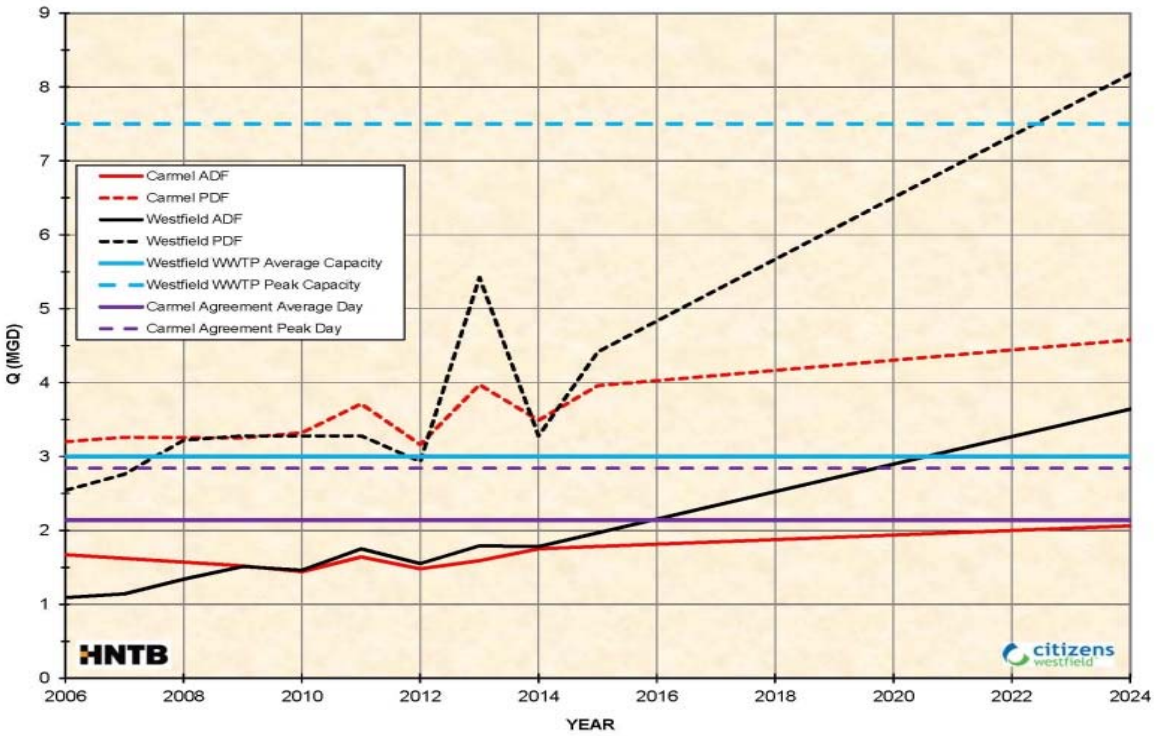

FIGURE 2
Westfield WWTP/Carmel WWTP Average and Peak Capacity Comparison
Assumed 700 EDU Growth Per Year

As shown in **Figure 2**, with the assumed growth of 700 EDUs per year, treatment capacities will not be exceeded for several years. The Westfield WWTP average day and peak capacities would not be exceeded until 2019 and 2022, respectively. The available peak capacity at the Carmel Connection can be negotiated with the City of Carmel; however, the contractual average day capacity is not anticipated to be exceeded until 2024.

STAYING AHEAD OF GROWTH

Although actual flows are currently below the treatment capacity available, Citizens Westfield understands the need to stay ahead of the anticipated growth. Along with the waste load allocation analysis, Citizens Westfield is meeting regularly with developers to continually assess the outlook of development in the service area.

After reviewing several options, Citizens Westfield has developed a list of options to address needs associated with the anticipated growth in the Westfield service area. Although comprehensive, the options have to be flexible to allow for growth fluctuations and financial capability. Improvements and options may include the following:

- Expand the Westfield WWTP – Plant is expandable to 18 MGD average daily flow, in 3 MGD increments. Current plans are to complete construction of 3 to 6 MGD of additional capacity at the plant no earlier than 2019. The current NPDES permit expires on May 31, 2017. Citizens Westfield will attempt to coordinate the expansion plans with IDEM during the renewal of the permit. See **Figure 3**.
- Renegotiation of the service agreement with the City of Carmel to provide for more treatment capacity. This can be completed as development occurs and the need arises.
- Utilize existing infrastructure to transfer flow from basins being served by the Westfield WWTP to the Carmel Connection and vice versa. Currently, each basin has two lift stations that can be redirected to flow to the other basin. This would be utilized depending on where growth actually occurs to manage capacity. Flow is redirected with a turn of a valve, so modifications can be made immediately, as needed.
- Utilization of existing 48- to 60-inch (Westside Interceptor) gravity sanitary interceptor sewer as in-system storage. The interceptor was installed for future development, but currently conveys a very limited flow. Additional flow, such as the Downtown/Lagoon lift station, can be directed to the interceptor with limited modifications with flow control at the WWTP.
- Purchase and install portable flow monitoring equipment to identify actual flow throughout points in the system and identify areas of inflow and infiltration (I&I) for corrective action, in order to reduce actual/measured flow to the WWTP.

PERMITTING

Expanding the plant provides the best long term option for Citizens Westfield to meet the anticipated growth in the service area. To have the expanded facilities operational Citizens Westfield will undertake the necessary planning, permitting and design.

Expanding the plant will increase the discharge volume to Little Eagle Creek, which requires new preliminary effluent limits (PELs) to be established and an anti-degradation assessment completed. Rule 327 IAC 2-1-2 states that for all waters of the State, existing beneficial uses shall be maintained and protected, and that no degradation of water quality shall be permitted which would interfere with or become injurious to existing and potential uses. The rule also identifies water of high quality (outstanding state resources) that must be maintained in their present high quality without degradation.

IDEM reviews anti-degradation assessments as part of the project permit application process in order to protect beneficial water uses and to authorize new discharges that protect those beneficial uses. Part of that process is looking at whether the project supports necessary social or economic development. The receiving stream (Little Eagle Creek) must be maintained at current (or better) water quality, and existing in-stream water uses will be maintained and protected. The stream is designated for full body contact recreation and aquatic warm water habitat uses.

To optimize the efforts associated with the NPDES permit renewal in 2017, preliminary engineering should begin in late 2015. Preliminary efforts will be focused on determining the appropriate size of expansion as well as defining the treatment parameters to best address NPDES permit requirements, the PELs and anti-degradation analysis. The schedule shown in Figure 3 is representative of the time necessary to complete the different phases of permitting and develop the project to a point construction can be completed in 2019. This schedule provides a baseline and can be modified to coincide with changing development rates as necessary.

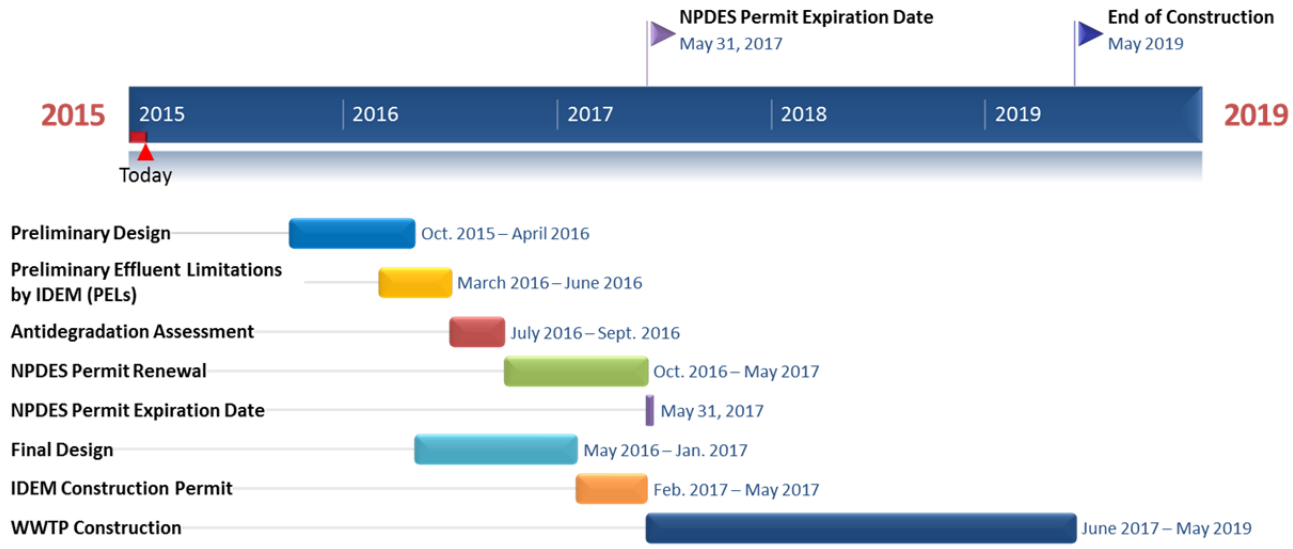

FIGURE 3
Westfield WWTP Expansion Schedule

SUMMARY

With the Citizens Westfield service area anticipated to continue experiencing considerable growth over the next 10 years it is important that planning be done and steps be taken to ensure safety, reliability and environmental protection of the system. Although current flow rates are within the treatment capacities, the allocated flow rates will be growing closer to design capacities in the coming years. The above steps have been identified to stay ahead of growth through plant expansion and optimizing the use of the existing infrastructure. Commitments should be made to making the infrastructure investments necessary for the system to handle the growth and to meet regulatory requirements.

November 1, 2016 Site Visit Photos

Photo 1 – View looking north of the Downtown Lift Station with control panel in the background. Photo taken on November 1, 2016.

Photo 2 – View looking southwest of the Downtown Lift Station.

Photo 3 – View of the Washington Woods Lift Station constructed in 2007 and upgraded in 2016. The standby generator is in the background (tan structure).

Photo 4 – View of the Washington Woods Lift Station looking south.

Photo 5 – View of the 146th Street Flow Metering Structures on the Cool Creek Interceptor that connects to Carmel's North-South Interceptor. View is looking west along 146th Street.

Photo 6 – View looking southeast from on top the earth bermed structure showing 146th Street and Cool Creek. Westfield wastewater flows south underneath 146th Street.

Photo 7 – View of the 156th Street Interceptor temporary Lift Station installed in 2016.

Photo 8 – View looking east from the 156th Street Interceptor temporary Lift Station of the route of the 156th Street Interceptor.

Photo 9 – View looking west of the Westside wastewater treatment plant showing the influent channels to the UV disinfection system.

Photo 10 – View looking northwest of the Sequencing Batch Reactors (left side) and the preliminary treatment areas (grit removal and screening) in the structure on the 2nd floor.

Photo 11 – View looking southwest of the aerobic sludge digestion facility.

Photo 12 – Aeration and mixing sequence in the Sequencing Batch Reactors showing the floating mixer, aeration drop headers.

LAGOON INFRASTRUCTURE - ALTERNATIVES ANALYSIS
Westfield Water and Sewer Utility

INTRODUCTION

At the request of Citizens Energy Group (CEG), HNTB has evaluated and compiled information on the existing City of Westfield wastewater treatment lagoons with regard to required facility upgrades associated with the new draft NPDES permit as well as long term infrastructure planning related to dry and wet weather flow.

Infrastructure planning related to the lagoons begins with an understanding of the process operation of the existing lagoon junction structure. The junction structure is located near the existing lagoon pump station as shown on Figure No. 1. Two (2) influent sewers drain to the junction structure consisting mostly of downtown Westfield flow. The structure houses a lower elevation 10-inch effluent orifice with a throttling valve, and a higher elevation 18-inch effluent fully open orifice. Both the 10-inch and 18-inch pipes exit the structure and combine into a common 18-inch interceptor that drains to the Oak Road Lift Station and eventually to the City of Carmel. In addition the effluent orifices, there is an overflow weir inside the structure, that diverts flow to the lagoon pump station. During normal dry weather operation, flow enters the junction structure and discharges through the lower elevation 10-inch orifice throttling valve directly to the 18-inch interceptor. During wet weather, the throttled 10-inch orifice will be overwhelmed; flow will then rise up over the weir and drain to the lagoon pump station. The pump station currently has the capacity to pump approximately 700 gpm to the lagoons. If the water level continues to rise in the junction structure, effluent will overflow into the 18-inch orifice and drain to the Oak Road Lift Station and on to the City of Carmel. Recorded peak wet weather flow monitoring upstream of the junction structure indicates a maximum influent f low of 2.2 MGD. Following a wet weather event, flow from the lagoons can be bled back to the junction structure by way of drain valves on each lagoon cell and then to the 18-inch interceptor.

Operationally, it is important to reserve the top 18 inches of the lagoons for equalization storage which equates to 7.5 MG of storage that can be utilized during wet weather.

Various options were evaluated and are presented with the understanding of CEG's desire to ultimately reduce or eliminate flow to the City of Carmel. For this to occur, infrastructure upgrades as well as new facilities outlined it the City's master plan, or of a similar nature, would be needed. Some of these improvements are included in the analyzed options; however, some require much more long range planning and involved review than intended for this analysis. To balance immediate NPDES permitting needs and long term planning for dry weather flow, six (6) options have been analyzed. The options include descriptions of facility needs, proposed facility improvements, and associated construction cost estimates. A summary of options which include advantages and disadvantages of each option is included at the end of this evaluation.

Option No. 1 - NPDES Permit Compliance Improvements;
Option No. 2a - Maximize Equalization Basin Capabilities - Pump Northward;
Option No. 2b - Maximize Equalization Basin Capabilities - Gravity to Oak Road Lift Station;
Option No. 3 - New Regional Lift Station and Lagoon Abandonment;
Option No. 4 - Oak Road Lift Station - Optimize Existing Infrastructure; and;
Option No. 5 - Oak Road Lift Station - Preparation for Future Build-Out;

OPTION NO. 1: NPDES PERMIT COMPLIANCE IMPROVEMENTS

Description of Facility Need

To handle wet weather flows from the downtown area with the current infrastructure, the lagoons are necessary. The lagoons have been in operation for many years with a discharge to Cool Creek. In October of 2012, the City of Westfield received a new NPDES permit for the lagoon discharge that includes E. coli limits. Currently, there are no disinfection facilities at the lagoon treatment facility to handle the new E. coli limits.

Proposed Facility Improvements

The existing lagoon overflow structure would be demolished and new disinfection and dechlorination facilities would be added to comply with the new NPDES permit requirements. Improvements would include a new overflow structure that would house a new weir structure, flow meter, and new low maintenance gravity chlorine tablet feeder system. The system would be designed to accommodate required chlorine contact time. Following the tablet disinfection system, a similar manhole weir structure would be constructed to house a gravity dechlorination tablet feeder system prior to discharge to Cool Creek. The lagoon process operations would remain unchanged. Refer to Figure No. 1 for the location of existing facilities and proposed improvements.

Cost Estimate

$100,000.

OPTION NO. 2a: MAXIMIZE EQUALIZATION BASIN CAPABILITIES – PUMP NORTHWARD

Description of Facility Need

The calculated peak flow from existing and proposed development upstream of the lagoon junction structure is 3.2 MGD. The peak flow measured upstream of the lagoon junction structure is 2.2 MGD. The existing lagoon pump station is rated for 700 gpm (1.0 MGD). Maximizing the use of the lagoons as equalization basins and increasing the existing pump station capacity would allow flow that currently discharges to Carmel to be re-directed to the Westfield Westside Wastewater Treatment Plant (WWTP) by utilizing existing infrastructure such as the Washington Woods Lift Station (WWLS).

Proposed Facility Improvements

The lagoon pump station would be upgraded from 1.0 MGD to 2.2 MGD to handle the measured peak flow. Expansion of the existing lagoon pump station to pump much more than 2.2 MGD or the calculated peak flow of 3.2 MGD is not possible without major structural and process modifications. The ability to store and/or divert 2.2 MGD during wet weather will help minimize capacity problems at Oak Road Lift Station when the calculated peak flow of 3.2 MGD is realized in the future. A new force main would be installed as shown on Figure 2 from the lagoon pump station to an existing 12-inch sewer that drains to the WWLS. Flow from the lagoon pump station to WWLS would be restricted to 1.0 MGD due to capacity limitations on the 12-inch sewer. Variable frequency drives would be installed on the pumps to utilize the full 2.2 MGD capacity when discharging to the lagoons as equalization basins during wet weather. Once wet weather subsides, and in anticipation of storage for the next event, the pumps would be able to "ramp down" in order to bleed back the lagoon flow to the WWLS at a rate that won't overwhelm the 12-inch sewer.

The WWLS is currently undersized. However, it was designed to handle future expansion. Upgrades will be required to handle the additional flow. The station is currently constructed as a triplex lift station with space for a third pump. The WWLS currently discharges to the J. Edwards Interceptor but would need to be diverted to the Westside Interceptor Sewer as the J. Edwards Interceptor is at capacity. Both interceptors currently drain to the Westfield Westside WWTP. A majority of the infrastructure is in place for the station and sewers to be able to handle additional flow. The required infrastructure needed to upgrade WWLS includes installation of a third pump and removal of existing pump restrictor plates, control panel upgrades for the third pump, and activating an existing larger force main, currently connected to the Westside interceptor Sewer.

The lagoon would still require an NPDES permit in the event the lagoons are full and taking on flow above their capacity, so the upgrades associated with Option No. 1 would still be required. Refer to Figure No. 2 for the location of existing facilities and proposed improvements.

Cost Estimate

$1,000,000 (Includes Option No. 1 costs).

OPTION No. 2b: MAXIMIZE EQUALIZATION BASIN CAPABILITIES – GRAVITY TO OAK ROAD LS

Description of Facility Need

As discussed Option No. 2a, expansion of the existing lagoon pump station to pump the calculated peak flow of 3.2 MGD is not possible without major structural and process modifications. The lagoon pump station would be upgraded from 1.0 MGD to 2.2 MGD to handle the measured peak flow. To maximize the use of the lagoons as equalization basins and take flow off of Oak Road Lift Station during wet weather, the existing pump station would need to be upgraded to 2.2 MGD.

Proposed Facility Improvements

The lagoon pump station would be upgraded from 1.0 MGD to 2.2 MGD to handle the measured peak flow. Expansion of the existing lagoon pump station to pump much more than 2.2 MGD or the calculated peak flow of 3.2 MGD is not possible without major structural and process modifications. The ability to store and/or divert 2.2 MGD during wet weather will help minimize capacity problems at Oak Road Lift Station when the calculated peak flow of 3.2 MGD is realized in the future. Variable frequency drives would be installed on the pumps to utilize the full 2.2 MGD capacity when utilizing the lagoons as equalization basins during wet weather. Once wet weather has subsided, and in anticipation of storage for the next event, the pumps would be able to "ramp down" in order to bleed back to the junction structure where flow would be combined with existing influent flow and drain to Oak Road Lift Station. The lagoon would still require an NPDES permit in the event the lagoons are full and taking on flow above their capacity, so the upgrades associated with Option No. 1 would still be required.

Cost Estimate

$400,000 (Includes Option No. 1 costs).

OPTION NO. 3: NEW REGIONAL LIFT STATION AND LAGOON ABANDONMENT

Description of Facility Need

The lagoon pump station presently lacks the pumping capacity to convey all flow which now arrives at the existing junction structure. In order to effectively manage present and anticipated future flows, reduce flow to Carmel and end use of the lagoons, a new regional lift station would be needed.

Proposed Facility Improvements

The existing lagoon pump station and the lagoon would be abandoned and a new regional lift station would be constructed near the existing facility. The new lift station would have approximately 3.2 MGD capacity based on master plan (existing and projected development) flow analysis. All flow would be pumped via a new force main to the WWLS, for subsequent pumping and gradually flow to the Westfield WWTP.

The existing lagoon junction structure would need to be modified to direct all flow to the new regional lift station. The existing lagoon pump station would be abandoned. Flow would be pumped directly to the existing WWLS because the existing 12-inch sewer upstream of the WWLS would not have sufficient capacity. It should be noted that the WWLS does not have the pumping capacity to handle the 3.2 MGD additional flow and upgrades would be required. As discussed in Option No. 2a, the WWLS is currently undersized. However, it was designed to handle future expansion. Upgrades will be required to handle the additional flow. The station is currently constructed as a triplex lift station with space for a third pump. The WWLS currently discharges to the J. Edwards Interceptor but would need to be diverted to the Westside Interceptor Sewer as the J. Edwards Interceptor is at capacity. Both interceptors currently drain to the Westfield Westside WWTP. A majority of the infrastructure is in place for the station and

sewers to be able to handle additional flow. The required infrastructure needed to upgrade WWLS include impeller upgrades on the existing pumps as well as installation of a new third pump, control panel upgrades, and activation of the existing larger force main, currently connected to the Westside Interceptor Sewer. Refer to Figure No. 3 for the location of existing facilities and proposed improvements.

Cost Estimate

$1,500,000.

OPTION NO. 4: OAK ROAD LIFT STATION – OPTIMIZE EXISTING INFRASTRUCTURE

Description of Facility Need

The Oak Road Lift Station is a triplex wet-well/dry-pit type lift station that was built in 1985. The existing pumps were re-built in 2000 however; electrical equipment and other station components have not had a significant upgrade since that time. Each pump is rated at 600 gpm; however, the existing pumping capacity of the Oak Road Lift Station with all three pumps running is 1.6 MGD. Although analysis of the system shows adequate pumping capacity at Oak Road, discussions with City staff indicate that interior dry pit piping limitations is likely restricting pump design capacity. In addition, the existing pumps have to be back flushed every day due to impeller clogging. Improved station flow monitoring and wet well control, pump replacement, I/C and SCADA upgrades, and related improvements are needed. It should be noted however, that even though there is some existing additional capacity in the downstream 18-inch and 21-inch interceptors, master planning shows this capacity is reserved for future development.

Proposed Facility Improvements

System improvements at the Oak Road Lift Station would include electrical, I/C, and SCADA upgrades, flow monitoring and wet well upgrades, replacement of pumps in kind but upgrade from existing vertical shaft style non-clog pumps to dry-pit submersibles, installation of inline grinder or selection of different impeller style to handle system debris, and improvements to the lagoon pump station and chlorine and declorination facilities as described in Option No. 2b. Refer to Figure No. 4 for the location of existing facilities and proposed improvements.

Cost Estimate

$1,400,000 (Includes Option Nos. 1 and 2b costs).

OPTION NO. 5: OAK ROAD LIFT STATION – PREPARATION FOR FUTURE BUILD-OUT

Description of Facility Need

With the understanding of CEG's desire to ultimately reduce or eliminate flow to the City of Carmel, this option addresses short term needs but also plans for the future abandonment of the lagoons and directing all upstream flow to an upsized Oak Road Lift Station capable of handling wet weather peak flow of 3.8 MGD. Ultimately, flow from Oak Road Lift Station could then be re-directed from Carmel to the Westfield WWTP. In order for this to happen, existing infrastructure would need to be upsized at the Oak Road Lift Station as well as the 18-inch influent interceptor sewer to handle the flow not being stored in the lagoons during wet weather. In addition, a new, larger force main would need to be installed along with new infrastructure in place (such as the planned 156th Street Interceptor in conjunction with the existing Viking Meadows Lift Station) to convey the flow to the WWTP. Similarly to WWLS, the Viking Meadows Lift Station (VMLS) would need capacity upgrades to be able to handle the additional 3.8 MGD from Oak Road Lift Station. The VMLS has been designed and constructed as a large regional lift station but its current pumping capacity is limited. The construction of VMLS is somewhat modular in that it can be built out to accept flow from Oak Road Lift Station.

Proposed Facility Improvements

Because the above infrastructure improvements would not be cost effective at this time, this option includes upgrades to existing Oak Road Lift Station and 18-inch influent interceptor that would serve short-term needs but would be sized to be able to direct flow to the WWTP. In addition, immediate needs at Oak Road Lift Station such as pump impellor clogging and pump dry pit piping restrictions would be addressed. It should be noted that until ultimate build-out is realized, the infrastructure discussed in Option No. 1 would still be needed. However, lagoon pump station upgrades as discussed in Option Nos. 2a and 2b are not included.

System improvements at the Oak Road Lift Station would include electrical, I/C, and SCADA upgrades, flow monitoring and wetwell upgrades, pump upgrade from existing vertical shaft style non-clog pumps to dry-pit submersibles, modified pump layout and reserved space for future pump, new upsized piping and piping provisions in place for future pump connection in the pump dry-pit, interceptor sewer upsizing from 18-inch to 24-inch between the lagoon and Oak Road Lift Station. The chlorination and dechlorination facility described in Option No. 1 would also be installed. This would stay in service until the VMLS and 156th Street Interceptor were in place to take additional flow. Refer to Figure No. 5 for the location of existing facilities and proposed improvements.

Cost Estimate

$1,200,000 (Includes Option No. 1 costs).

SUMMARY OF OPTIONS

To balance immediate NPDES permitting needs and long term planning for wet and dry weather flow at the Westfield wastewater treatment lagoons, six (6) options were analyzed. There are many factors impacting the best course of action at the lagoons. However, given the desire to move flow away from the City of Carmel connection and ultimately abandon the lagoons, Option No. 5 is the recommended option. This option addresses immediate needs but will also put CEG in a better position to remove flow from the Carmel system and abandon the lagoons as future wastewater infrastructure is ultimately put in place. With this option, long term future capacity reserves dedicated to existing infrastructure will be not be compromised as would be the case other options were utilized. Long-term discharge of the Oak Road Lift Station will be to facilities that are still in the planning stages, which will allow modifications to be made by CEG to account for the additional future flows.

The below table summarizes the advantages, disadvantages, and cost for the six (6) options.

OPTIONS	*ADVANTAGES*	*DISADVANTAGES*	*COST*
1 - NPDES Permit Compliance Improvements	• Inexpensive • Meets minimum NPDES permit requirements	• Maximizing lagoon equalization capacity is not addressed • Flow will remain on the Carmel system • Requires NPDES permit	$100,000
2a - Maximize Equalization Basin Capabilities - Pump Northward	• Maximizes in-system storage at the lagoons • Removes 1.0 MGD of flow off of Carmel • Meets minimum NPDES permit requirements	• Requires NPDES permit • Will require WWLS upgrades and will use reserved capacity of the lift station and downstream infrastructure • Flow will remain on Carmel system.	$1,000,000
2b - Maximize Equalization Basin Capabilities - Gravity to Oak Road LS	• Maximizes in-system storage at the lagoons • Meets minimum NPDES permit requirements • Will alleviate wet weather demands on the Oak Road Lift Station	• Flow will remain on the Carmel system • Requires NPDES permit	$400,000
3 - New Regional Lift Station and Lagoon Abandonment	• Will take 3.2 MGD flow off Carmel • NPDES permit no longer required	• Will require WWLS upgrades • Will use reserved capacity of the lift station and downstream infrastructure • Expensive	$1,500,000
4 - Oak Road Lift Station - Optimizing Existing Infrastructure	• Addresses an overdue lift station rehabilitation • Maximizes existing assets • Meets minimum NPDES permit requirements	• Flow will remain on the Carmel system • Requires NPDES permit	$1,400,000
5 - Oak Road Lift Station - Preparation for Future Build-Out	• Prepares for the future removal of 3.8 MGD flow off Carmel system and abandonment of the existing lagoons • Addresses an overdue lift station rehabilitation • Maximizes existing assets • Meets minimum NPDES permit requirements	• Flow will remain on the Carmel system until new infrastructure is put in place to redirect flow to Westfield • NPDES permit required until future infrastructure is in place to redirect flow	$1,200,000

Attachment JTP-8
Page 8-12 of 12
Cause No. 44835
CONFIDENTIAL

Westside WWTP Flows and Loads and Flow to Carmel

	Westside Wastewater Treatment Plant							
Month / Year	Monthly Average Influent Flow (MGD)	Peak Daily Influent Flow (MGD)	cBOD5 (lbs/day)	TSS (lbs/day)	Phos. (mg/l)	NH3-N (mg/l)	Monthly Average Flow to Carmel (MGD)	Combined Monthly Average Flow (MGD)
Jan-14	1.84	3.10	2,623	2,432	3.659	19.95	1.70	3.55
Feb-14	1.87	2.74	2,136	2,577	4.835	19.26	1.84	3.71
Mar-14	1.80	2.73	2,022	2,502	3.636	20.38	1.66	3.47
Apr-14	2.09	3.69	1,986	2,787	3.840	16.29	1.94	4.03
May-14	2.02	3.22	1,981	3,016	3.755	18.85	2.09	4.10
Jun-14	2.00	2.69	2,229	2,649	3.526	20.52	1.74	3.73
Jul-14	1.68	2.08	1,857	2,260	3.960	22.45	1.32	3.00
Aug-14	1.52	1.79	2,018	2,113	4.643	25.47	1.51	3.03
Sep-14	1.62	2.08	1,773	2,681	4.167	24.14	1.41	3.03
Oct-14	1.63	2.08	1,971	2,275	3.905	24.49	1.53	3.15
Nov-14	1.66	3.53	1,843	2,343	3.631	23.94	1.37	3.03
Dec-14	1.89	2.45	1,987	2,693	4.170	19.79	1.52	3.40
Jan-15	1.92	2.50	1,989	3,444	3.644	21.28	1.52	3.44
Feb-15	1.72	2.01	1,894	2,608	3.702	22.66	2.14	3.86
Mar-15	2.06	3.08	1,769	2,776	3.150	19.01	1.31	3.37
Apr-15	2.37	3.89	1,642	2,671	3.195	14.35	1.77	4.15
May-15	1.82	2.49	1,546	2,633	3.655	21.36	2.34	4.15
Jun-15	2.34	4.04	1,644	2,696	3.018	17.04	1.44	3.78
Jul-15	2.19	3.65	1,564	2,763	3.562	20.35	1.88	4.07
Aug-15	1.63	1.76	1,583	2,596	4.495	26.24	2.21	3.84
Sep-15	1.54	1.83	1,381	2,427	4.173	28.10	1.26	2.80
Oct-15	1.44	1.63	1,575	2,517	4.794	35.37	1.17	2.61
Nov-15	1.54	2.43	1,693	2,620	5.171	34.81	1.44	2.98
Dec-15	1.95	4.50	1,906	3,015	4.117	27.54	1.20	3.15
Jan-16	2.09	2.67	1,649	2,988	3.268	22.19	1.95	4.03

Westside WWTP Flows and Loads and Flow to Carmel

	Westside Wastewater Treatment Plant							
Month / Year	Monthly Average Influent Flow (MGD)	Peak Daily Influent Flow (MGD)	cBOD5 (lbs/day)	TSS (lbs/day)	Phos. (mg/l)	NH3-N (mg/l)	Monthly Average Flow to Carmel (MGD)	Combined Monthly Average Flow (MGD)
Feb-16	2.40	4.14	2,478	3,651	3.945	23.70	0.96	3.37
Mar-16	2.94	4.02	1,690	3,700	3.584	18.42	1.27	4.20
Apr-16	2.87	4.51	2,224	2,551	3.115	19.49	1.05	3.92
May-16	2.71	3.91	2,369	2,646	3.565	19.82	1.02	3.73
Jun-16	2.63	4.80	5,280	6,043	3.789	21.84	1.08	3.71
Jul-16	2.24	2.66	2,509	3,869	3.811	24.50	1.14	3.38
Aug-16	2.30	2.74	2,215	3,850	4.363	25.86	1.04	3.34
Sep-16	2.46	4.40					1.09	3.55
Oct-16	2.28	3.54					0.99	3.27
Averages								
2014	1.80	3.69	2,035	2,527	3.98	21.29	1.63	3.44
2015	1.88	4.50	1,682	2,730	3.89	24.01	1.64	3.52
After 2/1/16	2.54	4.80	2,681	3,759	3.74	21.95	1.07	3.61
Design								
Flow & load	3.0	7.5	6,008	6,008	250	751	2.14	5.14
Conc. (mg/l)			240	240	10	30		
% of Design								
2014	60%	49%	34%	42%	24%	43%	76%	67%
2015	63%	60%	28%	45%	24%	50%	77%	68%
After 2/1/16	85%	64%	45%	63%	32%	62%	50%	70%

Notes:
1. Wastewater flows to the Westside WWTP increased following start-up of the Downtown Lift Station on February 1, 2016 which routed flow away from the Carmel wastewater system.

DATA REQUEST NO. 23:

Please provide copies of correspondence with the Indiana Department of Environmental Management since 2014 regarding expansion of the Westfield WWTP.

RESPONSE:

Petitioner objects to the foregoing Data Request on the grounds that it seeks information that is not relevant to the pending proceeding and not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, see the correspondence provided in response to Data Request No. 25. Petitioner has not identified any additional written correspondence that it believes is responsive to this request.

WITNESS:

Aaron D. Johnson

DATA REQUEST NO. 24:

Please provide a copy of the preliminary engineering study for expanding the Westfield WWTP.

RESPONSE:

Petitioner objects to the foregoing Data Request on the grounds that it seeks information that is not relevant to the pending proceeding and not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, Petitioner states that the requested preliminary engineering study has not been completed at this time.

WITNESS:

Aaron D. Johnson

DATA REQUEST NO. 25:

Please provide the preliminary effluent limits for the expanded Westfield WWTP.

RESPONSE:

Petitioner objects to the foregoing Data Request on the grounds that it seeks information that is not relevant to the pending proceeding and not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving said objection, see the document identified as OUCC DR 20.25.

WITNESS:

Aaron D. Johnson

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

May 19, 2016

VIA ELECTRONIC MAIL

Mr. Stephen Summerlot, Project Manager
Citizens Energy Group
2150 Dr. Martin Luther King Jr. St.
Indianapolis, Indiana 46202

Dear Mr. Summerlot:

Re: Preliminary Effluent Limitations
Proposed Upgrade of the Citizens Wastewater of Westfield, LLC (Westfield Westside)
Wastewater Treatment Plant
NPDES Permit No. IN0059544
Hamilton County

This letter is in response to your request for preliminary effluent limitations for a proposed upgrade of the Citizens Wastewater of Westfield, LLC Wastewater Treatment Plant. As indicated in your request, the average design flow of the WWTP will be increased from 3.0 MGD to an initial expansion of 6.0 MGD with a final expansion to 12.0 MGD. The treatment type would continue to be bio-mechanical. The facility would continue to discharge via the existing outfall location to Little Eagle Creek. The $Q_{7,10}$ low-flow of the receiving stream at the point of discharge is considered to be zero cfs.

A Wasteload Allocation Analysis (WLA002198) was performed by this Office's staff on May 16, 2016 for a proposed facility upgrades. The following effluent limits are appropriate for the aforementioned bio-mechanical wastewater treatment plant with an average design flow of 6.0 MGD with continuous discharge to Little Eagle Creek:

TABLE 1

	Summer		Winter		
Parameter	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Units
$CBOD_5$	10	15	15	23	mg/l
TSS	12	18	18	27	mg/l
Ammonia-nitrogen [1]	1.3	2.0	1.9	2.9	mg/l
Phosphorus	1.0	----	1.0	----	mg/l

Mr. Stephen Summerlot, Project Manager
Page 2

TABLE 2

Parameter	Daily Minimum	Monthly Average	Daily Maximum	Units
pH	6.0	-----	9.0	s.u.
Dissolved Oxygen				
Summer	6.0	-----	-----	mg/l
Winter	5.0	-----	-----	mg/l
E. coli	-----	125	235	count/100 mls

The following effluent limits are appropriate for the bio-mechanical wastewater treatment plant with an average design flow of 12.0 MGD with continuous discharge to Little Eagle Creek:

TABLE 3

	Summer		Winter		
Parameter	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Units
$CBOD_5$	7	11	15	23	mg/l
TSS	8	12	18	27	mg/l
Ammonia-nitrogen [1]	1.3	2.0	1.9	2.9	mg/l
Phosphorus	1.0	----	1.0	----	mg/l

TABLE 4

Parameter	Daily Minimum	Monthly Average	Daily Maximum	Units
pH	6.0	-----	9.0	s.u.
Dissolved Oxygen				
Summer	6.0	-----	-----	mg/l
Winter	5.0	-----	-----	mg/l
E. coli	-----	125	235	count/100 mls

[1] The wasteload allocation analysis calculated a summer ammonia-nitrogen limit of 1.5 mg/l as a monthly average (2.3 mg/l as a weekly average) and a winter ammonia-nitrogen limit of 3.0 mg/l as a monthly average (4.5 mg/l as a weekly average) for both 6.0 and 12.0 MGD average design ratings. If the permittee is willing to accept the ammonia-nitrogen limitations in Tables 1 and 3 (which are the permittee's existing NPDES permit limitations), then the design of the upgrades may proceed without having to submit an antibacksliding exception request. If the permittee chooses to pursue the less stringent ammonia-nitrogen limits mentioned above, then the permittee would need to submit an antibacksliding exception request that satisfies the antibacksliding provisions contained in 327 IAC 5-2-10(11). This would be a prerequisite to application for a construction permit.

Mr. Stephen Summerlot, Project Manager
Page 3

327 IAC 2-1.3 outlines the state's Antidegradation Standards and Implementation Procedures. According to 327 IAC 2-1.3-1(b), the procedures apply to a proposed new or increased loading of a regulated pollutant to surface waters of the state from a deliberate activity subject to the Clean Water Act, including a change in process or operation, that will result in a significant lowering of water quality. **As the proposed activities would not result in a significant lowering of water quality at either the 6.0 or 12.0 MGD average design ratings, the Antidegradation Standards and Implementation Procedures do not apply.**

For the above-referenced discharge scenarios, the following requirements will apply: Flow must be measured. The mass limits for $CBOD_5$, NH_3-N, and TSS are calculated by multiplying the average design flow (in MGD) by the corresponding concentration value and by 8.345. Summer effluent limits apply from May 1 through November 30 of each year. Winter effluent limits apply December 1 through April 30 of each year.

The effluent limitations for *E. coli* are 125 count/100 mls as a monthly average calculated as a geometric mean and 235 count/100 mls as a daily maximum.

If you have any questions regarding design requirements of the construction permit, please contact Mr. Don Worley at 317/232-5579. The NPDES permit modification will not be issued to reflect the upgrade until the construction permit is finalized. At a minimum, the modification request should be submitted at least 180 days prior to completion of the upgrade activities. Please be advised that the modification request must be accompanied by a $50.00 fee in accordance with IC 13-18-20-12.

If there are any questions regarding the NPDES permit requirements, please feel free to contact Leigh Voss at 317/232-8698.

Sincerely,

Paul Novak

Paul Novak, Chief
Permits Branch
Office of Water Quality

Westfield Wastewater Treatment Plant

DATA REQUEST NO. 19:

Please provide a copy of the Design Summary for the current Westfield Wastewater Treatment Plant.

RESPONSE:

Petitioner has not identified any documents in its possession responsive to this request.

WITNESS:

Aaron D. Johnson

DATA REQUEST NO. 20:

Please provide a copy of the Design Summary for the proposed Westfield Wastewater Treatment Plant expansion currently being planned by Wessler Engineering.

RESPONSE:

Such a study has not been completed and no decisions have been made regarding expansion of the existing plant.

WITNESS:

Aaron D. Johnson

DATA REQUEST NO. 27:

Has Petitioner engaged Wessler Engineering for services associated with the Westfield Wastewater Treatment Plant Facility Expansion Project? If so, please provide the contract or any other document establishing the scope of services.

RESPONSE:

Petitioner objects to the foregoing Data Request on the grounds that it seeks information that is not relevant to the pending proceeding and not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, Petitioner states as follows: yes, Wessler Engineering was contracted for a WWTP facility expansion plan. A copy of the scope of services has been provided as OUCC DR 24.27

WITNESS:

Aaron D. Johnson

EXHIBIT A

ENGINEER STATEMENT OF WORK AND LIST OF DELIVERABLES

This Statement of Work is executed as of the 23rd day of March, 2016 by and between Citizens Wastewater of Westfield, LLC ("Owner") and Wessler Engineering, Inc. ("Engineer"). Owner and Engineer agree that all of the Services authorized by this Statement of Work shall be subject to the terms and conditions set forth within the Master Professional Services Agreement between Owner and Engineer dated June 11, 2014 (the "Master Agreement"). Upon execution of this Statement of Work, the Master Agreement shall be incorporated into and be considered a part of this Statement of Work as if set forth herein in its entirety. Any capitalized terms which are not defined herein shall have the meanings defined in the Master Agreement.

1. Contract Documents. The following Contract Documents are incorporated into and shall be a part of this Statement of Work as if fully stated herein:

A. This Statement of Work and its Attachments;
B. The Professional Engineering Master Services Agreement;
C. The Rate/Fee Schedule (if any) attached hereto as Attachment A;
D. All parts of standards, reference manuals, regulations, and similar documents cited in this Statement of Work; and,
E. The following documents (if any): Exhibit X-Diversity Worksheet.

2. Project Name, Description, and Number (the "Project"). The Project which is covered by this Statement of Work is named, described, and numbered as follows:

Westfield Wastewater Treatment Plant (WWTP) Facility Expansion Plan-Project #49MY01350

3. Engineer's Services. The Services to be performed by Engineer under this Statement of Work include all of the following:

Implement the tasks necessary to create a Facility Expansion Plan for the Citizens Westfield Wastewater Treatment Plant (WWTP). This expansion plan will evaluate the required expansion of the wastewater treatment process and the solids handing process to determine the equipment and plant infrastructure to meet the expected demands of the Westfield System. The Facility Expansion Plan should also include the estimated cost and timeline of improving other plant infrastructure to meet the needs of the plant operation.

This study will provide the estimated costs and site layout for three expansion options of the treatment process. A baseline option of continuing to expand the existing activated sludge Sequencing Batch Reactor (SBR) system and a conversion to an activated sludge flow through treatment process up to the initial 6 MGD and final 12 MGD ADF capacities. The remaining expansion options are to be proposed by the consultant utilizing any combination of existing and newly constructed infrastructure to meet the initial 6 MGD and final 12 MGD ADF capacities. Citizens Westfield and the consultant will agree to the additional options to be fully developed. These options need to identify impacts to solids production, handling, and disposal to help weigh any ancillary benefits.

Each potential process should be reviewed based on anticipated NPDES permit limits which will be provided by Citizens Westfield. Process modeling should be utilized to evaluate the treatment system capabilities and determine the required system demands to maintain compliance with the NPDES permit. Citizens Westfield will provide the waste load allocation evaluation and past NPDES reports.

Estimates of the cost for each of the expansion options should include the initial construction costs (AACE Class IV estimate), annual operations and maintenance costs, staffing requirements, and constructability of the expansion while the plant continues to operate up to its current capacity.

The phasing must be included as part of the evaluation criteria. It is currently expected the plant will be expanded by a minimum of 3 MGD in the initial phase. The subsequent expansion intervals will depend on actual development; after the initial expansion the plant may be expanded to an intermediate capacity around 9 MGD or up to the ultimate plant capacity of 12 MGD. This is to be considered in the evaluation process.

The current WWTP solids handling utilizes aerobic digesters and storage of sludge until land application of the liquid sludge can occur. This currently provides adequate capacity with current flow rates but leaves the plant subject to the availability of land and the sludge haulers. The plant will begin receiving an additional 33% ADF in the winter of 2016 due to system changes which will increase the demand on the solids handling. Sludge disposal options which provide more flexibility to plant operations and potential cost savings are desired. Solids processing options need to consider the main process alternatives for any potential operational benefits.

The Facility Expansion Plan should evaluate the solids handling process to support the process improvement options. The solids handling is expected to be evaluated on the following points and others the consultant finds relevant.

1. Evaluate and document existing sludge production rates, capacities, and costs.

2. Identify future sludge production rates based on the processes being evaluated.

3. Compare expansion of existing aerobic digesters with conversion to anaerobic digesters.

4. Identify and review resource recovery options as relates to power generation, composting, and nutrient extraction.

5. Compare dewatering options including, but not limited to, belt filter presses, centrifuges, and screen presses. Comparison should include construction costs, operating costs (i.e. power, polymer, manpower), disposal options and costs.

6. The solids handling equipment shall be sized with appropriate redundancy which will be defined as part of this evaluation with operations. This shall allow the plant to meet solids handling demands of the in service date with the largest piece of solids handling equipment out of service.

Improvements and expansion of the supporting unit processes should be included in the Facility Expansion Plan to document the needs and associated capital costs.

1. Headworks (Screening, Pumping, Grit Removal)

2. Backup Power

3. Post aeration

4. UV Disinfection

5. SCADA & Controls

6. Yard piping

The Engineer will review recorded operating data showing lower waste loading than what was assumed in the current plant capacity and prepare calculations and written assessment of the Westfield WWTP's ability to handle higher flows at the recorded lower waste loadings. This analysis will serve as the basis for discussion with IDEM regarding any possibility of re-rating of the existing Westfield WWTP.

4. Engineer's Deliverables. As part of Engineer's Services, Engineer shall provide the following Deliverables in addition to the Deliverables described in Section 3.1 of the Master Agreement:

1. Scope document listing the proposed process expansion options and solids handling options to be developed and included in the draft Expansion Plan.

2. Draft Expansion Plan including all requested analysis and cost estimates for value engineering and Peer review.

3. Final Expansion Plan including updated analysis and cost estimates for items modified as a result of the value engineering process and inclusion of all value engineering items and responses as an appendix to the Final Expansion Plan.

5. Project Milestone Schedule & Liquidated Damages. The Project Milestone Schedule and Liquidated Damages are as follows:

Milestone: Draft Expansion Plan Liquidated Damages: $100 per Day.

Milestone: Final Expansion Plan Liquidated Damages: $100 per Day.

6. Engineer's Key Employees and Project Staffing Team. The following are Engineer's Key Employees and subconsultants and vendors who will perform Engineer's Services, and, with respect to Key Employees, the corresponding percentage of that Key Employee's time that will be devoted to performance of Engineer's Services, and, with respect to subconsultants and vendors, the Services and Deliverables to be provided by the subconsultant or vendor. Engineer shall not substitute or substantially

DATA REQUEST NO. 28:

Please provide the projected annual average, peak daily, and peak hourly wastewater flows being used by Wessler Engineering for purposes of the work described in the immediately preceding question.

RESPONSE:

Petitioner objects to the foregoing Data Request on the grounds that it seeks information that is not relevant to the pending proceeding and not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, Petitioner states as follows: The planning study is being done by evaluating an initial 6 MGD through 12 MGD average daily flow (ADF) for capacities at the plant and can be more particularly described in OUCC DR 24.27. The annual average, peak daily and peak hourly flows will more likely be utilized during the preliminary design of the plant expansion.

WITNESS:

Aaron D. Johnson

DATA REQUEST NO. 29:

Please provide the estimated future connected population being used by Wessler Engineering for purposes of the work described above.

RESPONSE:

Petitioner objects to the foregoing Data Request on the grounds that it seeks information that is not relevant to the pending proceeding and not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, Petitioner states as follows: As noted in OUCC DR28.29 the initial estimate used by Wessler was predicated on an initial 6 MGD through 12 MGD average daily flow (ADF). Please refer to OUCC DR 24.22 for future population projections.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Twenty-fourth Set of Data Requests

DATA REQUEST NO. 22:

In response to OUCC Data Request No. 12.01, Petitioner provided the Wastewater Infrastructure Planning Report. Page 6 (of 54) references (1) a 2006 Master Plan and (2) an October 2014 Technical Memo assessing the current allocated waste load for the Westfield collection system and wastewater plant. Please provide copies of both the (1) 2006 Master Plan and (2) the 2014 Technical Memo.

RESPONSE:

Please refer to the documents attached as OUCC DR 24.22.1 CONFIDENTIAL and OUCC DR 24.22.2 CONFIDENTIAL. The documents in OUCC DR 24.22.2 are the latest Technical Memos assessing the current and allocated waste load for the Westfield collection system and wastewater plant. No October 2014 Technical Memo exists.

WITNESS:

Aaron D. Johnson

Indiana Department of Environmental Management
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Michael R. Pence
Governor

Carol S. Comer
Commissioner

May 19, 2016

VIA ELECTRONIC MAIL

Mr. Stephen Summerlot, Project Manager
Citizens Energy Group
2150 Dr. Martin Luther King Jr. St.
Indianapolis, Indiana 46202

Dear Mr. Summerlot:

Re: Preliminary Effluent Limitations
Proposed Upgrade of the Citizens Wastewater of Westfield, LLC (Westfield Westside)
Wastewater Treatment Plant
NPDES Permit No. IN0059544
Hamilton County

This letter is in response to your request for preliminary effluent limitations for a proposed upgrade of the Citizens Wastewater of Westfield, LLC Wastewater Treatment Plant. As indicated in your request, the average design flow of the WWTP will be increased from 3.0 MGD to an initial expansion of 6.0 MGD with a final expansion to 12.0 MGD. The treatment type would continue to be bio-mechanical. The facility would continue to discharge via the existing outfall location to Little Eagle Creek. The $Q_{7,10}$ low-flow of the receiving stream at the point of discharge is considered to be zero cfs.

A Wasteload Allocation Analysis (WLA002198) was performed by this Office's staff on May 16, 2016 for a proposed facility upgrades. The following effluent limits are appropriate for the aforementioned bio-mechanical wastewater treatment plant with an average design flow of 6.0 MGD with continuous discharge to Little Eagle Creek:

TABLE 1

	Summer		Winter		
Parameter	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Units
$CBOD_5$	10	15	15	23	mg/l
TSS	12	18	18	27	mg/l
Ammonia-nitrogen [1]	1.3	2.0	1.9	2.9	mg/l
Phosphorus	1.0	----	1.0	----	mg/l

TABLE 2

Parameter	Daily Minimum	Monthly Average	Daily Maximum	Units
pH	6.0	-----	9.0	s.u.
Dissolved Oxygen				
Summer	6.0	-----	-----	mg/l
Winter	5.0	-----	-----	mg/l
E. coli	-----	125	235	count/100 mls

The following effluent limits are appropriate for the bio-mechanical wastewater treatment plant with an average design flow of 12.0 MGD with continuous discharge to Little Eagle Creek:

TABLE 3

	Summer		Winter		
Parameter	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Units
$CBOD_5$	7	11	15	23	mg/l
TSS	8	12	18	27	mg/l
Ammonia-nitrogen [1]	1.3	2.0	1.9	2.9	mg/l
Phosphorus	1.0	----	1.0	----	mg/l

TABLE 4

Parameter	Daily Minimum	Monthly Average	Daily Maximum	Units
pH	6.0	-----	9.0	s.u.
Dissolved Oxygen				
Summer	6.0	-----	-----	mg/l
Winter	5.0	-----	-----	mg/l
E. coli	-----	125	235	count/100 mls

[1] The wasteload allocation analysis calculated a summer ammonia-nitrogen limit of 1.5 mg/l as a monthly average (2.3 mg/l as a weekly average) and a winter ammonia-nitrogen limit of 3.0 mg/l as a monthly average (4.5 mg/l as a weekly average) for both 6.0 and 12.0 MGD average design ratings. If the permittee is willing to accept the ammonia-nitrogen limitations in Tables 1 and 3 (which are the permittee's existing NPDES permit limitations), then the design of the upgrades may proceed without having to submit an antibacksliding exception request. If the permittee chooses to pursue the less stringent ammonia-nitrogen limits mentioned above, then the permittee would need to submit an antibacksliding exception request that satisfies the antibacksliding provisions contained in 327 IAC 5-2-10(11). This would be a prerequisite to application for a construction permit.

327 IAC 2-1.3 outlines the state's Antidegradation Standards and Implementation Procedures. According to 327 IAC 2-1.3-1(b), the procedures apply to a proposed new or increased loading of a regulated pollutant to surface waters of the state from a deliberate activity subject to the Clean Water Act, including a change in process or operation, that will result in a significant lowering of water quality. **As the proposed activities would not result in a significant lowering of water quality at either the 6.0 or 12.0 MGD average design ratings, the Antidegradation Standards and Implementation Procedures do not apply.**

For the above-referenced discharge scenarios, the following requirements will apply: Flow must be measured. The mass limits for $CBOD_5$, NH_3-N, and TSS are calculated by multiplying the average design flow (in MGD) by the corresponding concentration value and by 8.345. Summer effluent limits apply from May 1 through November 30 of each year. Winter effluent limits apply December 1 through April 30 of each year.

The effluent limitations for *E. coli* are 125 count/100 mls as a monthly average calculated as a geometric mean and 235 count/100 mls as a daily maximum.

If you have any questions regarding design requirements of the construction permit, please contact Mr. Don Worley at 317/232-5579. The NPDES permit modification will not be issued to reflect the upgrade until the construction permit is finalized. At a minimum, the modification request should be submitted at least 180 days prior to completion of the upgrade activities. Please be advised that the modification request must be accompanied by a $50.00 fee in accordance with IC 13-18-20-12.

If there are any questions regarding the NPDES permit requirements, please feel free to contact Leigh Voss at 317/232-8698.

Sincerely,

Paul Novak

Paul Novak, Chief
Permits Branch
Office of Water Quality

PRELIMINARY EFFLUENT LIMITATION APPLICATION

State Form 53912 (R / 7-15)
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER QUALITY – MAIL CODE 65-42
MUNICIPAL NPDES PERMIT SECTION
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

INSTRUCTIONS:
1. *Mail this completed application to the above address.*
2. *For questions or forms related to preliminary effluent limitations or NPDES permits please call 317-232-8698.*
3. *For questions or forms related to Construction Permits, please contact staff of the Facility Construction and Engineering Support Section at 317-232-5579.*

PERSON COMPLETING APPLICATION

Name	Title *(Consultant, Compliance Manager, etc.)*
Stephen Summerlot	Project Manager

Mailing address *(number and street, city, state, and ZIP code)*		
2150 Dr. Martin Luther King Jr. St., Indianapolis, IN 46202		
Telephone number(s)	**Fax number**	**E-mail address**
(317) 263-6407	(317) 263-6407	ssummerlot@citizensenergygroup.com

FACILITY RESPONSIBLE PARTY

Name	Title of responsible party *(Owner, C.E.O., etc.)*
Randal Edgemon	General Manager

Mailing address *(number and street, city, state, and ZIP code)*		
2020 North Meridian, Indianapolis, IN 46202		
Telephone number(s)	**Fax number**	**E-mail address**
(317) 267-4469	(317) 267-4469	redgemon@citizensenergygroup.com

FACILITY CERTIFIED OPERATOR *(optional)*

Name	Certification number
Randall Higginbotham	16818

Mailing address of facility *(number and street, city, state, and ZIP code)*		
3303 West 166th Street, Westfield IN 46074		
Telephone number(s)	**Fax number**	**E-mail address**
(317) 896-9189	( )	rhigginbotham@citizensenergygroup.com

FACILITY INFORMATION

Name of facility	*Please check one:*
Citizens Wastewater of Westfield, LLC.	☐ New ☒ Existing Facility

Mailing address *(number and street, city, state, and ZIP code)*		
3303 West 166th Street, Westfield IN 46074		
Telephone number of facility	**Fax number of facility**	**Is the collection system connected to another entity for wastewater treatment?**
(317) 896-9189	( )	☐ Yes ☒ No

If yes, identify the entity.	NPDES number of entity

County facility is/will be in	Nearest city or town
Hamilton	Westfield

If new facility, list the identity and distance to the nearest publicly-owned wastewater treatment plant's collection system *(sewer lines)*	If existing facility, NPDES permit number
	IN0059544

NOTE: Provide street address as well as latitude and longitude information; also include a copy of a portion of a topographic map as an attachment to this application form which indicates the exact location and/or proposed location(s) of the facility.

Facility location *(Existing and/or proposed location(s))*
3303 West 166th Street, Westfield IN

NOTE: Use latitude and longitude to describe existing and/or proposed outfall location(s); also include a copy of a portion of a topographic map as an attachment to this application form which indicates the exact location and/or proposed location(s).

Outfall location *(Existing and/or proposed location(s))*
Lat. 40d 01'33"N, Long 86d 13'02"

OVERVIEW AND PRELIMINARY EFFLUENT LIMITATIONS APPLICATION

Part of State Form 53912 (R / 7-15)

PURPOSE

This application form is utilized by the Indiana Department of Environmental Management, Office of Water Quality, and Municipal NPDES Permit Section's staff to gather information necessary to provide the applicant with accurate and timely preliminary effluent limitations for sanitary-type National Pollutant Discharge Elimination System (NPDES) permits. Preliminary effluent limitations are the anticipated effluent limitations for pollutants that will be included in a subsequently issued or modified NPDES permit. These limitations are a pre-requisite to the submittal of an NPDES permit application or a construction permit application. Factors affecting the preliminary effluent limitations include the type of treatment selected, the volume of water discharged, the location of the discharge, the characteristics of the receiving water body, et al.

Once preliminary effluent limitations are developed for the proposed activity, a letter including these limitations will be sent to the applicant by this Office. The letter will also include a determination of whether an antidegradation demonstration will be required. Once the applicant has received the preliminary effluent limits letter (and completed an antidegradation demonstration, if required), the applicant may then proceed with the design phase of the project and submit a construction permit application (if required) and then an NPDES permit application or modification request. Applications for both the NPDES permit and the construction permit should include a copy of the preliminary effluent limitations letter sent by this Office.

APPLICATION FEES

No fees are required for preliminary effluent limitation applications at this time. Fees are required for NPDES and Construction Permit applications.

REASONABLE SCOPE

More than one average design flow, treatment method, or receiving stream scenario may be submitted for preliminary effluent limitation development at one time. However, this Office reserves the right to request refinement of any request which includes multiple scenarios to provide the best use of Office resources to serve all applicants.

APPLICATION DEFICIENCIES

If the applicant fails to provide all necessary information, or if unique information is required for the proposed activity, this Office will attempt to obtain the information from the applicant via phone or via mailing in a reasonable time frame. Failure to submit the necessary information requested in a timely manner will result in delays in generating preliminary effluent limitations.

QUESTIONS?

For questions or forms related to preliminary effluent limitations, or NPDES permits please call 317-232-8698. For questions or forms related to Construction Permits, please contact staff of the Facility Construction and Engineering Support Section at 317-232-5579.

RECEIVING STREAM

If an existing facility, provide the name of the stream, lake, drain, etc. that the plant outfall discharges into currently *(i.e. "An unnamed ditch to the Wabash River").*

Little Eagle Creek

If a new facility, or if proposing to relocate the outfall of an existing facility, provide the name of the stream, lake, drain, etc. that the plant outfall is proposed to discharge into.

Type of wastewater to be treated *(i.e. sanitary only, commercial and sanitary, sanitary and industrial, landfill leachate, etc.)*

Sanitary Only

If an existing facility, list the current average design flow in Millions of Gallons per Day (MGD)	New or Existing Facility, list the proposed average design flow(s) in MGD
3.0 MGD	6.0 MGD initial expansion final expansion 12.0 MGD

TREATMENT FACILITY DESCRIPTION

Note: For each type of treatment selected, please provide specific information regarding the type of treatment proposed such as bio-mechanical (i.e. extended aeration, oxidation ditch, sequential batch reactor), or a waste stabilization lagoon, an aerated lagoon, etc. Please specify the type of disinfection equipment to be utilized.

For each type of treatment selected, please provide specific information regarding the type of treatment proposed.

The existing plant utilizes a bio-mechnical process more specifically described as an activated sludge sequencing batch reactor process for treatment. The plant expansion will continue to be a bio-mechnical activated sludge facility.

Type of disinfection equipment to be utilized

UV disinfection will be utilized.

ADDITIONAL INFORMATION

Please provide any additional information which might be helpful in describing the proposed activity or special concerns. Feel free to attach additional pages as necessary.

It is expected the existing Westfield Wastewater treatment plant will be expanded twice over the next 20 years. The initial expansion will increase the Average Daily flow capactity to 6 MGD from the present 3 MGD. The final expansion capacity is expected to be 12 MGD.

VOSS, LEIGH

From: Dittmer, Jerry
Sent: Tuesday, April 26, 2016 12:19 PM
To: VOSS, LEIGH
Subject: FW: Citizens Wastewater of Westfield (IN0059544) Preliminary Effluent Limitations Application
Attachments: Westfield IN059544 Preliminary Effluent Limits Application 04.26.16.pdf

Leigh, please initiate a WLA request for the attached PEL application. Thanks! JD

From: Carlson, Cheryl [mailto:CCarlson@citizensenergygroup.com]
Sent: Tuesday, April 26, 2016 12:08 PM
To: Dittmer, Jerry; WORLEY, DON
Cc: Summerlot, Steve
Subject: Citizens Wastewater of Westfield (IN0059544) Preliminary Effluent Limitations Application

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Jerry and Don,

Thank you for meeting with us on March 18, 2016, to discuss the expansion of the Citizens Wastewater of Westfield LLC wastewater treatment plant. Per our discussion, please find attached a preliminary effluent limits application for the expansion of the plant from 3 MGD to 6 MGD with the expected maximum to be 12 MGD by 2035.

If you need an original copy of the application delivered to your office, have any questions or need any additional information, please let Steve Summerlot or me know.

Thank you for your assistance.

Cheryl Carlson

Cheryl Carlson
Manager, Environmental Compliance
citizens energy group
2150 Dr. Martin Luther King Jr. Street
Indianapolis, IN 46202
V:(317)429-3569|C:(317)213-2044
ccarlson@citizensenergygroup.com

State Form 4336

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

OFFICE MEMORANDUM

Date: May 16, 2016

To: Leigh Voss
NPDES Permits Branch

Thru: Jerry Dittmer
Municipal NPDES Permits Section

From: John Donnellan
Municipal NPDES Permits Section

Subject: Wasteload Allocation Report for the City of Westfield Westside WWTP in Hamilton County (IN0059544, WLA002198)

At the request of the consultant for the City of Westfield, a wasteload allocation (WLA) was performed for the proposed upgrade of the Westfield Westside WWTP in Hamilton County. The consultant requested a WLA for average design flows of 6 and 12 mgd to the existing receiving stream. The NPDES Permit IN0059544 will expire on May 31, 2017.

At present the City of Westfield operates the Westfield Westside WWTP, a Class III, 3.0 mgd sequential batch reactor type treatment facility. The receiving stream of this plant is Little Eagle Creek in Assessment Unit INW01B4_01 and HUC-12 051202011104. The receiving stream in this assessment unit is on the 2012 303(d) list for *E. coli* and is located in the non-Great Lakes basin with a $Q_{7,10}$ low flow of 0 cfs. The previous WLA for this facility is dated October 29, 2003.

Little Eagle Creek in Hamilton County is designated for full body contact recreational use and shall be capable of supporting a well-balanced, warm water aquatic community in accordance with 327 IAC 2-1. A TMDL study for Little Eagle Creek in the above Assessment Unit has not been completed. The nearest public water supply intake downstream of the plant is at Eagle Creek Reservoir.

The Water Quality Based Effluent limitations (WQBELs) for the pollutants of concern for discharge to Outfall 001 are included in Table 1 (6 mgd) and Table 2 (12 mgd). The documentation of the wasteload allocation analysis is included as an attachment.

TABLE 1
Water Quality-based Effluent Limitations
For Westfield Westside WWTP in Hamilton County
Outfall 001 to Little Eagle Creek
(IN0059544, WLA002198)

Parameter	Quality or Concentration*				Quantity or Loading*			Monthly Sampling Frequency
	Monthly Average	Daily Maximum	Daily Average	Units	Monthly Average	Daily Maximum	Units	
CBOD5								
Summer	10			mg/l	500		lbs/day	
Winter	15			mg/l	750		lbs/day	
Dissolved Oxygen								
Summer			6.0	mg/l				
Winter			5.0	mg/l				
Total Ammonia (as N)								
Summer	1.5			mg/l	75		lbs/day	30
Winter	3.0			mg/l	150		lbs/day	30

* Based on an effluent flow of 6 mgd.

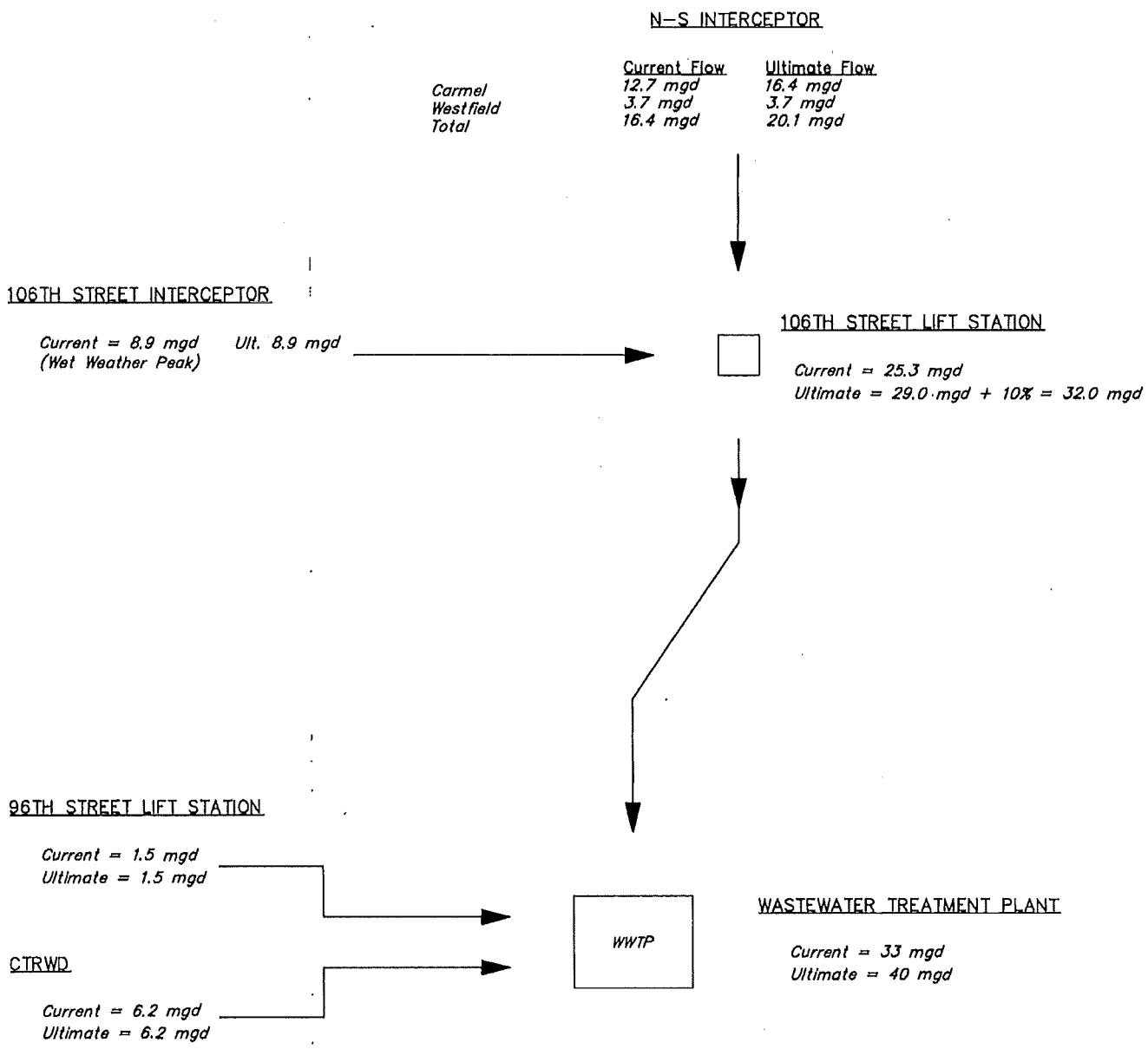
5/16/16

TABLE 2
Water Quality-based Effluent Limitations
For Westfield Westside WWTP in Hamilton County
Outfall 001 to Little Eagle Creek
(IN0059544, WLA002198)

Parameter	Quality or Concentration*				Quantity or Loading*			Monthly Sampling Frequency
	Monthly Average	Daily Maximum	Daily Average	Units	Monthly Average	Daily Maximum	Units	
CBOD5								
Summer	7			mg/l	700		lbs/day	
Winter	15			mg/l	1500		lbs/day	
Dissolved Oxygen								
Summer			6.0	mg/l				
Winter			5.0	mg/l				
Total Ammonia (as N)								
Summer	1.5			mg/l	150		lbs/day	30
Winter	3.0			mg/l	300		lbs/day	30

* Based on an effluent flow of 12 mgd.

5/16/16



CITY OF CARMEL, INDIANA

WASTERWATER TREATMENT PEAK
HOURLY FLOW SCHEMATIC

Jones & Henry Engineers, Ltd.
2490 N. COLISEUM BLVD. SUITE 210, FORT WAYNE INDIANA 46805
(260) 482-1930 FAX (260) 481-7210
E-MAIL jhengineers@jheng-ftw.com

JANUARY 2007

FTW-37350019FLOW-000
01/23/07 C

APPROVED AS TO FORM BY

MUNICIPAL WASTEWATER SERVICE AGREEMENT BETWEEN THE CITY OF CARMEL AND THE TOWN OF WESTFIELD

THIS AGREEMENT, made and entered into this 20th day of August, 2007, by and between the City of Carmel, a municipal corporation in Hamilton County, Indiana, by and through its Board of Public Works and Common Council (hereinafter referred to as "CARMEL") and the Town of Westfield, a municipal corporation in Hamilton County, Indiana, by and through its Town Council (hereinafter referred to as "WESTFIELD").

WITNESSETH THAT:

WHEREAS, WESTFIELD and CARMEL entered into a wastewater service agreement dated July 23, 1984 (the Carmel/Westfield Agreement"); and

WHEREAS, CARMEL and Hamilton Western Utilities, Inc. ("HWU") entered into a Wastewater Service Agreement dated September 24, 1996 (the "Carmel/HWU Agreement"); and

WHEREAS, both the Carmel/Westfield Agreement and the Carmel/HWU Agreement have been amended several times; and

WHEREAS, the entirety of HWU's utility assets have been sold, with a portion being acquired by Carmel and the remainder by Westfield; and

WHEREAS, to the extent acquired by WESTFIELD, HWU's interests in the Carmel/HWU Agreement were assigned to WESTFIELD; and

WHEREAS, Carmel and Westfield desire to memorialize the terms of the various agreements into one document.

NOW, THEREFORE, it is hereby agreed by and between the parties hereto that CARMEL will accept from WESTFIELD wastewater, liquid wastes, and sewage. The capacity of CARMEL'S sewage treatment facility reserved for WESTFIELD is 2.14 MGD as herein provided, and CARMEL will treat and dispose of the same in a proper manner at its sewage treatment plant subject to the following covenants and conditions.

1. The Carmel/Westfield Agreement and the Carmel/HWU Agreement, together with all prior amendments to either, are hereby superceded in their entireties and replaced with this Agreement

2. CARMEL agrees to accept, treat, and process in a proper manner all wastewater, liquid wastes, and sewage transported from WESTFIELD to CARMEL by means of a sewer interconnection with Carmel's North-South Interceptor at 146th Street, subject to the conditions and limits hereinafter set forth in this Agreement.

3. WESTFIELD has installed and agrees to furnish at its own expense to be operated by CARMEL the necessary metering and sampling equipment and all appurtenant devices for properly measuring and sampling the quantity and quality of wastewater delivered to CARMEL. Calibration of such metering equipment shall be performed not less than once every twelve (12) months or by request of either party. A meter registering not more than five percent (5%) above or below the test result at full scale shall be deemed to be accurate. The previous readings of any meter disclosed by test to be inaccurate shall be corrected for the two (2) months previous to such test in accordance with the percentage of inaccuracy found by such tests. If any meter fails

to register for any period, the amount of wastewater treated during such period shall be deemed to be the amount of wastewater treated in the corresponding period immediately prior to the failure.

4. The duly authorized representatives of both WESTFIELD and CARMEL shall have the rights of access at all times to inspect and observe the operation of the meters provided for in the preceding paragraph hereof. The expense of normal, daily operating and maintaining such meters shall be paid by WESTFIELD as part of shared operation and maintenance costs, and any records or charts from such meter or meters shall be kept by CARMEL with copies of maintenance logs and charts delivered to WESTFIELD monthly and original copies shall be subject to examination by WESTFIELD. The expense of annual calibration of such meter shall be paid by WESTFIELD.

5. WESTFIELD agrees to construct and maintain a sewage collection system, including sewers and regulating stations and other structures, as may be required to deliver the flow, covered by this agreement, of wastewater, liquid wastes, and sewage from WESTFIELD to CARMEL. WESTFIELD agrees to use all necessary precautions and diligence to exclude from wastewater, liquid wastes, and sewage transported to CARMEL excessive concentrations of sand, gravel, street waste, grit, leaves, rags, paper, pickling liquor, cyanide, coal tar, oil, grease, acids, dry cleaning fluids, and any other foreign material and industrial wastes which are objectionable, dangerous, and inhibitive to bacterial growth or which for other reasons cannot readily be treated in the sewage treatment plant of CARMEL or may be injurious thereto or are prohibited by the Sewer Use Ordinances of CARMEL, which may be amended from time to time. CARMEL shall not amend such ordinance without first seeking Westfield's review and consent. Upon discovery that unacceptable substances or materials as defined by the Sewer Use

Ordinance of the City of Carmel, Indiana, of 1981, as amended from time to time, or waste or materials deemed unacceptable pursuant to rules and regulations duly promulgated by the U.S. Environmental Protection Agency or the Indiana Stream Pollution Control Board are being discharged by WESTFIELD to CARMEL, WESTFIELD shall be notified and WESTFIELD shall forthwith take appropriate steps to ensure that such unacceptable materials are excluded from future discharges to CARMEL. WESTFIELD shall be liable for any additional costs or damages in the sewerage system and at the wastewater treatment plant in connection with such unacceptable materials delivered from WESTFIELD, including any fines or civil penalties as may be levied by the State of Indiana or Environmental Protection Agency (EPA), for non-compliance with CARMEL's National Pollutant Discharge Elimination System (NPDES) Permit. Upon discovery that any unacceptable substances are being discharged as set forth above:

A. Either party shall immediately notify the other party of such unacceptable sewage or materials, including the location, time or times, the nature of such unacceptable sewage or waste, and such other information as may be available.

B. Upon verbal notification and confirmation thereof in writing, WESTFIELD shall immediately notify that user to cease delivery of such materials and/or waste and continue all necessary monitoring to assure compliance with this agreement.

C. CARMEL shall, in the event WESTFIELD is unable to identify the location, time, and source of such unacceptable sewage, cooperate with WESTFIELD in locating such source. WESTFIELD will use its best efforts to correct or cut off the user

delivering unacceptable wastewater, liquid wastes, and sewage to the parties' sewer system.

D. In the event that the user delivering such unacceptable sewage or materials through WESTFIELD's connection point to CARMEL's sewer system cannot be ascertained within forty eight (48) hours of first notice, then WESTFIELD and CARMEL shall authorize an independent emergency investigation to be instigated forthwith in regard to the matter. WESTFIELD and CARMEL shall fully cooperate with said emergency investigation to ascertain the user delivering such unacceptable sewage or material, severity of damages, and necessary corrective actions.

E. The parties shall determine and agree as to the severity of the physical damage caused to CARMEL's collection and treatment facilities resulting from the discharge of such unacceptable sewage or materials. If the parties are unable to reach such agreement, then either party may within thirty (30) days after said negotiations fail submit the dispute to arbitration pursuant to Paragraph 16 herein.

F. In the event that the parties are unable to ascertain the user delivering such unacceptable sewage or materials through WESTFIELD's interconnection points to the CARMEL sewers, then and in that event, if an emergency exists as to the continuing damage to CARMEL's collection and treatment facilities resulting from the discharge of such unacceptable sewage or materials, CARMEL may seek such equitable or injunctive relief as is necessary or appropriate in a Court of competent jurisdiction.

G. In the event of a finding by a Court or arbitrator that a party has acted arbitrarily, capriciously, or in bad faith regarding the inability of the parties to resolve issues arising out of this paragraph, then the party who has acted in bad faith, arbitrarily

or capriciously, shall pay the litigation expenses of the party who has not acted arbitrarily, capriciously, or in bad faith.

H. In the event it is determined by the appropriate investigative group that the source of physical damage to the CARMEL interceptor and plant does not originate in the WESTFIELD service area, then WESTFIELD shall not be assessed for the damage. However, if the source of such damage cannot be determined to originate from a definite sewer service area, and the sewer service area of WESTFIELD cannot be excluded as a source of the damage, then WESTFIELD shall be assessed a sum equivalent to its proportionate flow as to the whole, as its proportionate cost of repair.

6. WESTFIELD has adopted a Sewer Use and Rate Ordinance as required by PL 92-500, as amended, and said ordinance is compatible with the CARMEL Sewage Use Ordinance as required by PL 92-500, as amended. WESTFIELD shall not amend such ordinance without first seeking Carmel's review and consent.

7. WESTFIELD has enacted an ordinance which prohibits the introduction of surface water and groundwater inflow into its sewage system and will otherwise enforce such prohibition.

8. CARMEL agrees to report to WESTFIELD once each month, before the 15th day of each month, the volume into the CARMEL system during the preceding calendar month. CARMEL agrees to report to WESTFIELD once each quarter, before the 30th day of the new quarter, the results of wastewater strength testing that Carmel performs on WESTFIELD's flow to CARMEL. The characteristics measured or otherwise identified and reported shall include but not be limited to volume and any waste constituents identified in CARMEL's Rate Ordinance and any other tests as may be conducted. Sampling and analysis of WESTFIELD's wastewater,

liquid wastes, and sewage shall be conducted in a comprehensive way at least once each month or as provided elsewhere herein and in accordance with acceptable engineering practice so as to reflect an accurate profile of the sewage to form the basis for fair and equitable variable charges.

9. WESTFIELD reserves the right to verify all records, reports, and status of the wastewater collection system and treatment facilities and may conduct such verifications in accordance with acceptable engineering standards and shall have rights of ingress and egress onto the premises of CARMEL's wastewater collection and treatment facilities as necessary and required to examine and verify documents, records, and facilities as set forth above. WESTFIELD shall give reasonable notice to CARMEL prior to entering the premises of CARMEL. WESTFIELD's activities shall not interfere with the CARMEL wastewater collection and treatment system operation.

10. In the event the equipment (meter or sampler) should for any reason fail to provide CARMEL with required reports and data as provided hereinabove, CARMEL shall make an estimate of the charges due from WESTFIELD based upon prior flows and loadings and bill WESTFIELD therefore as provided in this Agreement. If the correct actual charges due should be later determined, CARMEL shall make appropriate adjustments in the next billing to WESTFIELD.

11. WESTFIELD agrees to pay to CARMEL for the treatment of wastewater, liquid wastes, and sewage from WESTFIELD an amount or amounts to be determined as follows:

A. Volumetric Rates

Effective for service rendered on or after 11/15/2005, WESTFIELD shall pay to CARMEL for the treatment of wastewater, liquid wastes, and sewage from WESTFIELD an amount of $867.31 per million gallons. This rate, "Calculation of Wholesale Rate for

Operation and Maintenance Cost and for Replacement Cost on Equipment" as shown in Exhibit "A", shall be reviewed at the election of either party hereto upon written notice and request to the other, not more than annually nor less than every two (2) years and shall be adjusted according to conditions and circumstances existing at the time of any such adjustment. At the time of such adjustment or review, CARMEL shall provide to WESTFIELD a verified statement detailing the calculation of the rate based upon the previous calendar year's operation and maintenance expense recorded by CARMEL. That rate so determined shall be accepted by WESTFIELD and shall be paid by WESTFIELD to CARMEL until modified again, as herein provided; provided, however, at each said time WESTFIELD shall have the opportunity to examine the books and records of CARMEL pertaining to the costs which determine said figure. That, if WESTFIELD at such time and after such inspection does not agree with the figures of CARMEL, it may submit any difference to a court of competent jurisdiction or arbitration as set out in paragraph 16 of this Agreement.

The monthly charge for operation, maintenance, and replacement shall be determined by multiplying the number of gallons of sewage accepted from WESTFIELD as shown by the meter described in Paragraph 3 herein times the rate calculated.

CARMEL shall, once each month, following the submission of the reports and data as heretofore provided in this Agreement, invoice WESTFIELD at the rate provided herein, and such amount shall be due from WESTFIELD to CARMEL on the 30th day following the receipt of such invoice by WESTFIELD. In the event that WESTFIELD should fail to make payment to CARMEL of the amount of such invoice within the time

so limited, WESTFIELD shall be liable for and shall pay to CARMEL, as a penalty for delinquency in such payment, the same percentage of such invoice, that the sewage rate ordinance and schedule of CARMEL imposes upon all other users of CARMEL's sewage disposal facilities for similar delinquencies in payment.

B. Capital Costs

WESTFIELD has previously paid CARMEL for a portion of the past cost incurred by CARMEL in the construction of its wastewater treatment facility and for a portion of the capacity of the Carmel North-South Interceptor, based upon WESTFIELD's reserved capacity.

C. Maximum Flows.

It is agreed that at the commencement of this Agreement, 2.14 MGD of capacity in CARMEL's sewage treatment facility is reserved for WESTFIELD. To utilize this 17.83% of such treatment capacity, WESTFIELD is entitled to transport via CARMEL'S North South Interceptor up to 781 million gallons of wastewater, liquid wastes, and sewage to CARMEL each year at a peak rate of flow not to exceed the following rates:

2600 GPM for any 3 hours
2.84 MG in any day

In the event WESTFIELD shall transport wastewater, liquid wastes, and sewage to CARMEL in excess of these flows, and in the event the CARMEL has capacity sufficient to accept such increased amount of sewage, then WESTFIELD agrees to pay to CARMEL a surcharge (Exhibit "B") appropriate to the additional capacity used by

WESTFIELD on account of this increased amount of sewage. This surcharge shall not be imposed on the two (2) wettest months provided that the flow delivered by WESTFIELD does not exceed one hundred twenty percent (120%) of the allowable flow as set forth in the above table. Similarly, this surcharge shall not be imposed on the daily, or hourly limitations unless such flows exceed the allowable flows more than twice each calendar month. All daily, weekly, and monthly flows shall be on a common time period based on the regular meter reading schedule as performed by the CARMEL wastewater treatment plant personnel. Alternatively, WESTFIELD may negotiate the purchase of additional plant or interceptor capacity, temporarily or permanently, from the Clay Regional Waste District or any other party who may hereafter possess available capacity in CARMEL's wastewater treatment plant or interceptors. Any such sale or purchase may be consummated after CARMEL is given ninety (90) days written notice of such sale or purchase; provided, however, in the event WESTFIELD desires to purchase additional plant capacity under the terms of this Agreement, then such purchase must have the prior approval of CARMEL if WESTFIELD's flows in the CARMEL North-South Interceptor will exceed 3.74 MGD reserved capacity. Additional plant capacity surcharge shall be as shown on Exhibit "B" for said increased capacity if used continuously for more than six (6) months. In the event WESTFIELD requires additional capacity and cannot acquire such capacity from another party, WESTFIELD shall at its sole discretion and at its own expense fund the expansion of the CARMEL interceptor sewer and treatment facility as designed and constructed by CARMEL, for modular expansion of the interceptor and treatment facilities. Prior to the commencement of a year in which it would appear that WESTFIELD might transport to CARMEL for

treatment wastewater, liquid wastes, and sewage in excess of 2.14 MGD, and in any event prior to WESTFIELD transporting a maximum annual flow in excess of 781 million gallons per 365 day year, WESTFIELD and CARMEL shall reach an agreement as to the amount of such surcharge and the terms and conditions of its payment.

D. Ownership of Carmel System

Both parties understand and agree that the payments called for by this paragraph are intended to compensate and reimburse CARMEL for services rendered in the treatment and disposal of wastewater, liquid wastes, and sewage from WESTFIELD. Except for a reservation of capacity, which capacity shall not be used by any other entity, of the sewage treatment facility for the benefit of WESTFIELD as heretofore set forth herein, such payments shall in no way entitle WESTFIELD to any possessory nor proprietary rights in the sewage treatment and disposal facility of CARMEL. CARMEL reserves the right to operate and maintain such facility and shall have sole discretion as to the methods of operation and the necessity for and nature and extent of improvements thereto, subject to the terms of this Agreement.

12. In the event wastewater, liquid wastes, and sewage is received by CARMEL from WESTFIELD in excess of domestic loadings, BOD, and suspended solids now established, then WESTFIELD shall pay to CARMEL the rate per pound therefore as established in the CARMEL Rate Ordinance. In the event of future changes in the cost of treatment of suspended solids and BOD based upon the studies in conformity with EPA requirements, then WESTFIELD shall be subject to any increased or decreased charges for such excessive pollutants. In the event that future charges are made for other pollutants received by CARMEL and such charges are

uniformly applied throughout the region served by CARMEL, then WESTFIELD shall be subject to such charges.

13. WESTFIELD acknowledges that CARMEL has obtained certain federal grants and that the provisions of PL 92-500 apply to the users within the jurisdiction of WESTFIELD. WESTFIELD agrees to cooperate with CARMEL to the fullest extent so that the provisions of PL 92-500, as amended, will be adhered to and complied with.

14. WESTFIELD agrees to comply with all applicable provisions of the Federal Water Pollution Control Act, as amended by PL 95-217 and PL 97-117 and regulations promulgated thereunder, including 40 CFR Parts 35 and 403, and Indiana statutes relating to pollution abatement. Further, WESTFIELD will implement any requirements of the U.S. Environmental Protection Agency with respect to conditions and limitations of grants sought by CARMEL that are applicable to WESTFIELD and being within the jurisdiction of CARMEL.

15. The parties agree that in the event any provision of this Agreement is declared unacceptable or unenforceable by any agency exercising its appropriate authority, the remainder of the Agreement shall remain in full force and effect and the failing provision(s) shall be amended by good faith negotiations between the parties to cure any such defect.

16. Resolution of Disagreements.

A. The parties hereby agree that if either party believes the effect of this Agreement in any way is inequitable or unfair to its citizens, such party may by thirty (30) days written notice request re-negotiation of any part of this Agreement and the other party will in good faith participate in such negotiations.

B. In the event of a dispute arising under this Agreement which if the parties are unable to solve their problems by negotiations, either party may, within thirty (30)

days after said negotiations fail, submit the dispute to arbitration pursuant to the Commercial Rules of Arbitration of the American Arbitration Association. The parties agree that the arbitrator(s) selected shall have knowledge in the disputed areas. The expense of such arbitration shall be borne jointly and equally by the disputing parties.

C. During any period of re-negotiation and/or arbitration, WESTFIELD shall continue to meet its financial obligations to CARMEL in accordance with the provisions of this Agreement, and CARMEL shall continue to accept and treat WESTFIELD's sewage.

D. CARMEL shall give WESTFIELD ninety (90) days advance written notice of any proposed increase in the costs described in paragraph 11A hereof to afford WESTFIELD an opportunity to review and either accept or dispute such proposed increase. It is expressly understood and agreed that CARMEL shall have the right to proceed with such rate increase even if disputed by WESTFIELD and that WESTFIELD shall be required to continue its payment obligations to CARMEL, including the charges arising out of the disputed rate increase, until such dispute is resolved in accordance with the terms of this paragraph. In the event that such dispute is ultimately resolved in WESTFIELD's favor, then the disputed payments previously made to CARMEL shall be refunded within thirty (30) days to WESTFIELD by CARMEL, together with interest at a rate equal to the maximum FmHA rate in effect at the time of resolution of such dispute.

17. This Agreement shall become effective on the date executed by the parties and shall continue for a period of twenty (20) years.

18. This Agreement shall continue in full force and effect for an indeterminate number of ten (10) year terms after the initial term subject to the same terms and conditions,

unless either of the parties thereto shall notify the other in writing of intention to terminate the same at least twelve (12) months prior to the expiration of the original term or any additional ten (10) year term. The parties may then desire to re-negotiate the terms hereof by reasons of governmental changes or requirements, changes in physical conditions, rates, costs, or expenses of any kind applicable within the twelve (12) month period prior to the expiration of the original term or additional term. Any such renegotiation shall reflect, in good faith, changes in terms and conditions based on the reasons hereinabove set forth.

19. The parties agree that the planning and service areas for each party are reflected upon the map attached hereto as Exhibit "C" and may be changed by agreement of the parties. Unless a planning and service area is changed by agreement of the parties, neither party shall infringe on the other party's planning and service area.

20. This Agreement is expressly made binding upon the successors and assigns of the parties hereto.

CITY OF CARMEL, INDIANA
BY ITS BOARD OF PUBLIC WORKS
AND SAFETY

James Brainard, Presiding Officer

Date: 8/30/07

Mary Ann Burke, Member

Date: 8-30-07

Lori Watson, Member

Date: _____

ATTEST:

Diana L. Cordray, IAMC Clerk-Treasurer

STATE OF INDIANA)
) SS:
COUNTY OF Hamilton)

Before me, a Notary Public in and for said County and State, personally appeared James Brainard, Mary Ann Burke, ~~and Lori Watson~~, by me known to be the Members of the City of Carmel Board of Public Works and Safety, and Diana L. Cordray, Clerk-Treasure of the City of Carmel, who acknowledged the execution of the foregoing "Service Agreement" on behalf of the City of Carmel, Indiana.

Witness my hand and Notarial Seal this 30 day of August, 2007.

C. Ann Davis
NOTARY PUBLIC

C. Ann Davis
Printed Name

My Commission Expires:

4/18/09

My County of Residence: Hamilton

Date: 8/30/07

Approved by the Town of Westfield, Indiana by its Town Council this 10, day of Sept, 2007 by a vote of _____ Ayes _____ Nays

Andy Cook, President

John Dippel

Jack Hart

Robert Horkay

Joe Plankis

Bob Smith

Ron Thomas

ATTEST:

Cindy Gossard, Clerk Treasurer

"I affirm, under the penalties of perjury, that I have taken reasonable care to redact each Social Security Number in this document, unless required by law"

C. Gossard

Signed

STATE OF INDIANA)
) SS:
COUNTY OF HAMILTON)

Before me, a Notary Public in and for said County and State, personally appeared the Members of the Westfield Town Council and the Clerk-Treasure of the Town of Westfield, who acknowledged the execution of the foregoing "Service Agreement" on behalf of the Town of Westfield, Indiana.

Witness my hand and Notarial Seal this 12 day of SEPTEMBER, 2006.

NOTARY PUBLIC

BRUCE A. HAUK
Printed Name

My Commission Expires:

MARCH 10, 2011

My County of Residence: HAMILTON

Date: 9/12/07

(EXHIBITS A THROUGH B ARE ATTACHED)

INDS01 NKK 613936v2
INDS01 NKK 613936v2

CARMEL - WESTFIELD
TREATMENT AGREEMENT
EXHIBIT "A"

CALCULATION OF WHOLESALE RATE FOR OPERATION AND MAINTENANCE COSTS AND FOR REPLACEMENT COST ON EQUIPMENT

Line Item Number		Total Costs	Allocation Percentage	Shared Costs
	Annual operation & maintenance (O & M) expense:			
1	Treatment plant expense	$	100%	$
2	Sludge handling disposal exp.		100%	
	Collection system expense			
3	- interceptor sewers		*%	
4	- collection sewers		0%	
5	- lift stations		*%	
6	Billing and collection expense		0%	
7	Industrial monitoring expense		0%	
8	Sub-total			
9	General and administrative expense		**%	
	Total O & M expense			
	Plus: Annual replacement costs on equipment for items of plant benefiting wholesale			
10	customers	***		
	Total annual O & M expense and replacement cost on			
11	equipment	$		
	Less: Carmel surcharge revenue			
12	for excess BOD and SS			
13	Net of surcharge revenue			$
	Divided by total annual flow received at Carmel treatment			
14	plants			÷
15	Rate per million gallons of flow to wholesale customers (including domestic loadings)			$

* Allocation percentages to be determined by an engineering analysis.
** Allocation percentage = line item # , shared cost ÷ line item # , total cost.
*** Amount to be determined by the consulting engineers.

Exhibit B

CARMEL – WESTFIELD
Treatment Agreement

EXHIBIT B

Additional Plant Capacity Surcharge
Calculation

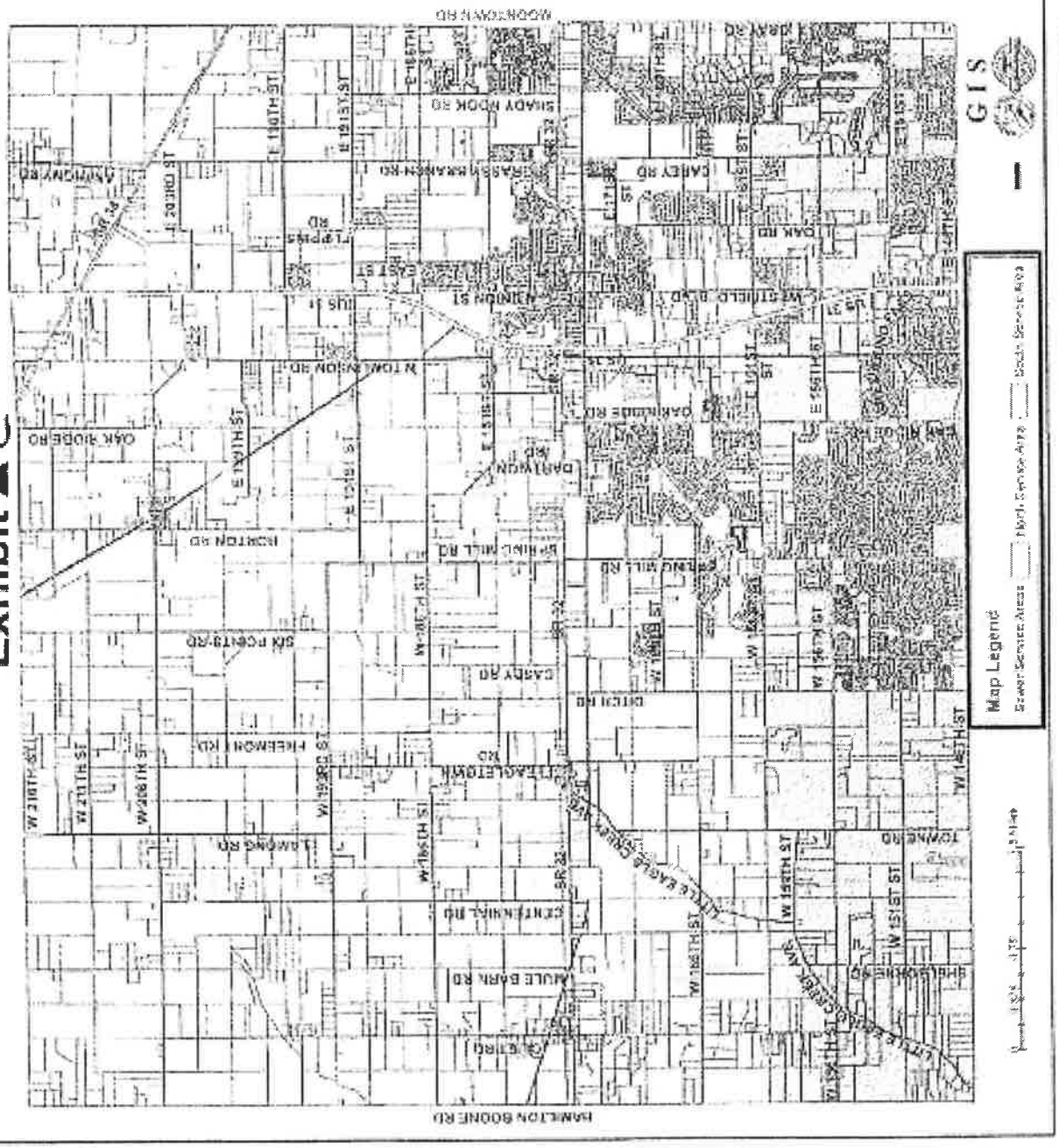
The determination of the Additional Plant Capacity Surcharge shall be calculated by the following:

1.) A violation surcharge of one hundred dollars ($100) per day will be assessed for each day that is determined as a surcharge per the Wastewater Service Agreement between the City of Carmel and the Town of Westfield.

2.) All wastewater treated will be assessed a per million gallon treatment rate as determined by the Wastewater Service Agreement between the City of Carmel and the Town of Westfield.

Town of Westfield, IN Sewer Service and Planning Areas

Exhibit C



BEFORE THE
INDIANA UTIILTY REGULATORY COMMISSION

JOINT PETITION OF CITIZENS WATER OF WESTFIELD, LLC, CITIZENS WASTEWATER OF WESTFIELD, LLC AND THE CITY OF WESTFIELD, INDIANA FOR APPROVALS IN CONNECTION WITH THE PROPOSED TRANSFER OF CERTAIN WATER UTILITY ACSSETS TO CITIZENS WATER OF WESTFIELD, LLC AND THE PROPOSED TRANSFER OF CERTAIN WASTEWATER UTILITY ASSETS TO CITIZENS WASTEWATER OF WESTFIELD, LLC, INCLUDING: (1) APPROVAL OF THE ACQUISITION BY CITIZENS WATER OF WESTFIELD, LLC AND CITIZENS WASTEWATER OFWESTFIELD, LLC OF CERTAIN WATER AND WASTEWATER UTILITY ASSETS; (2) APPROVAL OF ACCOUNTNIG AND RATE BASE TREATMENT OF THE WATER AND WASTEWATER ASSETS; (3) APPROVAL OF THE ISSUANCE OF DEBT AND EQUITY BY CITIZENS WATER OF WESTFIELD, LLC AND CITIZENS WASTEWATER OF WESTFIELD, LLC; (4) APPROVAL OF INITIAL RATES AND RULES FOR WATER AND WASTEWATER SERVICE; (5) TO THE EXTENT NECESSARY, APPROVAL OF CERTAIN OPERATING AND AFFILIATE AGREEMENTS; (6) APPROVAL OF DEPRECIATION RATES; (7) APPROVAL OF A CERTIFICATE OF TERRITORIAL AUTHORITY FOR THE PROVISION OF WASTEWATER UTILITY SERVICE BY CITIZENS WASTEWATER OF WESTFIELD, LLC TO CUSTOMERS LOCATED IN RURAL AREAS; AND (8) ANY OTHER APPROVALS NEEDED IN CONNECTION THEREWITH	**)** **)**	**CAUSE NO. 44273**

FILED
October 28, 2015
INDIANA UTILITY
REGULATORY COMMISSION

CITIZENS WATER OF WESTFIELD, LLC'S AND
CITIZENS WASTEWATER OF WESTFIELD, LLC'S
REVISED SUBMISSION OF REPORTS LISTING UTILITY PLANT
CONVEYED BY THE CITY OF WESTFIELD, INDIANA

In accordance with Paragraph 3 of the Indiana Utility Regulatory Commission's Order in this Cause dated November 25, 2013, Citizens Water of Westfield, LLC ("Citizens Water of

Westfield") and Citizens Wastewater of Westfield, LLC ("Citizens Wasewater of Westfield") (collectively, "Joint Petitioners"), by counsel, hereby submit the attached revised reports listing Utility Plant conveyed by the City of Westfield to Citizens Water of Westfield and Citizens Wastewater of Westfield that existed as of December 31, 2011. Utility Plant conveyed to Citizens Water of Westfield is listed in the report marked as Revised Attachment "A". Utility Plant conveyed to Citizens Wastewater of Westfield is listed in the report marked as Revised Attachment "B".

Respectfully submitted,

By: /s/ Michael E. Allen_____
Michael E. Allen
Counsel for Petitioner

Michael E. Allen, Attorney No. 20768-49
Lauren R. Toppen, Attorney No. 23778-49
2020 N. Meridian Street
Indianapolis, IN 46202
Telephone/Fax: (317) 927-4318
Telephone/Fax: (317) 927-4482
Email: mallen@citizensenergygroup.com
ltoppen@citizensenergygroup.com

WESTFIELD WASTEWATER UTILITY
UTILITY PLANT IN SERVICE
As of December 31, 2011

Asset Number	Description	NARUC	Subtype	Original Cost	Purchase Date	Disposal Date	Accumulated Depreciation at 12-31-2011
	COLLECTION PLANT						
	LAND						
FNS1	LAND (MORGAN WOOD EASEMENT)	WC-353-20	NONE	6,500.00	1991		0.00
FNS10	EASEMENT - DARTOWN & 181ST	WC-353-20	NONE	24,475.00	1998		0.00
FNS11	EASEMENT AGREEMENT	WC-353-20	NONE	400.00	1999		0.00
FNS12	EASEMENT - WHEELER/DAY	WC-353-20	NONE	1,500.00	1999		0.00
FNS13	EASEMENT - INTERCEPTOR	WC-353-20	NONE	18,907.00	1999		0.00
FNS14	GRAYSTONE DEVELOPMENT	WC-353-20	NONE	24,480.00	2000		0.00
FNS15	EASEMENT - 161ST & UNION	WC-353-20	NONE	11,400.00	2000		0.00
FNS17	EASEMENT	WC-353-20	NONE	3,200.00	2002		0.00
FNS18	EASEMENT - PARCEL #15	WC-353-20	NONE	350.00	2003		0.00
FNS19	EASEMENT - TOMLINSON RD	WC-353-20	NONE	300.00	2003		0.00
FNS2	LAND (MORGAN WOOD EASEMENT)	WC-353-20	NONE	900.00	1992		0.00
FNS20	EASEMENT - PARCEL #2	WC-353-20	NONE	9,170.00	2003		0.00
FNS21	EASEMENT - PARCEL #1	WC-353-20	NONE	3,055.00	2003		0.00
FNS22	EASEMENT - GRASSY BRANCH	WC-353-20	NONE	3,268.09	2003		0.00
FNS23	EASEMENT - APOLLO PKWY	WC-353-20	NONE	2,661.84	2003		0.00
FNS24	EASEMENT	WC-353-20	NONE	4,370.00	2004		0.00
FNS25	EASEMENT	WC-353-20	NONE	325.00	2004		0.00
FNS26	EASEMENT	WC-353-20	NONE	351.54	2005		0.00
FNS27	EASEMENT	WC-353-20	NONE	7,600.00	2005		0.00
FNS28	EASEMENT	WC-353-20	NONE	7,950.00	2005		0.00
FNS29	EASEMENT	WC-353-20	NONE	2,917.50	2005		0.00
FNS30	EASEMENT	WC-353-20	NONE	472.50	2005		0.00
FNS31	EASEMENT	WC-353-20	NONE	1,039.50	2005		0.00
FNS32	EASEMENT	WC-353-20	NONE	2,268.00	2005		0.00
FNS33	EASEMENT	WC-353-20	NONE	1,890.00	2005		0.00
FNS34	EASEMENT - WESTSIDE INTERCEPTOR	WC-353-20	NONE	41,871.00	2005		0.00
FNS35	EASEMENT - LITTLE EAGLE CREEK CHRISTIAN	WC-353-20	NONE	4,715.00	2005		0.00
FNS36	EASEMENT	WC-353-20	NONE	8,480.00	2005		0.00
FNS37	EASEMENT	WC-353-20	NONE	3,220.00	2005		0.00
FNS38	EASEMENT	WC-353-20	NONE	1,380.00	2005		0.00
FNS39	EASEMENT	WC-353-20	NONE	8,515.00	2006		0.00
FNS40	EASEMENT	WC-353-20	NONE	3,605.00	2006		0.00
FNS41	EASEMENT	WC-353-20	NONE	11,180.00	2006		0.00
FNS42	EASEMENT	WC-353-20	NONE	46,990.00	2006		0.00
FNS43	EASEMENT	WC-353-20	NONE	1,170.00	2006		0.00
FNS44	EASEMENT	WC-353-20	NONE	10,670.00	2006		0.00
FNS45	EASEMENT	WC-353-20	NONE	85,000.00	2006		0.00
FNS46	EASEMENT	WC-353-20	NONE	200.00	2006		0.00
FNS47	EASEMENT	WC-353-20	NONE	40,630.00	2006		0.00
FNS48	EASEMENT	WC-353-20	NONE	5,430.00	2006		0.00
FNS49	EASEMENT	WC-353-20	NONE	7,000.00	2006		0.00
FNS5	EASEMENT APPRAISAL - INTERCEPTOR	WC-353-20	NONE	4,900.00	1996		0.00
FNS50	EASEMENT	WC-353-20	NONE	4,475.00	2006		0.00
FNS51	EASEMENT	WC-353-20	NONE	525.00	2006		0.00
FNS52	EASEMENT	WC-353-20	NONE	1,685.00	2006		0.00
FNS53	EASEMENT	WC-353-20	NONE	189.00	2006		0.00
FNS54	EASEMENT	WC-353-20	NONE	4,786.44	2006		0.00
FNS55	EASEMENT	WC-353-20	NONE	756.00	2006		0.00
FNS56	EASEMENT - WESTSIDE INTERCEPTOR	WC-353-20	NONE	2,965.00	2007		0.00
FNS57	EASEMENT	WC-353-20	NONE	30,000.00	2007		0.00
FNS58	LAND PURCHASE - HENRY JOE WALKER PROPERTY	WC-353-20	NONE	59,500.00	2007		0.00
FNS59	EASEMENT - WESTSIDE INTERCEPTOR	WC-353-20	NONE	25,000.00	2007		0.00
FNS6	EASEMENTS - INTERCEPTOR	WC-353-20	NONE	113,253.35	1997		0.00
FNS60	EASEMENT	WC-353-20	NONE	3,450.00	2007		0.00
FNS61	EASEMENT	WC-353-20	NONE	2,830.84	2007		0.00
FNS62	EASEMENT - WESTSIDE INTERCEPTOR	WC-353-20	NONE	4,268.46	2007		0.00
FNS63	EASEMENT	WC-353-20	NONE	1,572.91	2007		0.00
FNS64	EASEMENT - WESTSIDE INTERCEPTOR PARCEL #7	WC-353-20	NONE	728.00	2007		0.00
FNS65	EASEMENT - OAK MANOR N	WC-353-20	NONE	2,500.00	2007		0.00
FNS66	EASEMENT	WC-353-20	NONE	159.53	2007		0.00
FNS67	EASEMENT	WC-353-20	NONE	2,042.47	2007		0.00
FNS68	EASEMENT	WC-353-20	NONE	40.09	2007		0.00
FNS69	EASEMENTS	WC-353-20	NONE	420.88	2008		0.00
FNS7	EASEMENT - HOOVER STREET	WC-353-20	NONE	2,927.50	1997		0.00
FNS70	APPRAISALS FOR EASEMENTS	WC-353-20	NONE	93,778.00	2008		0.00
FNS8	EASEMENT - WOODSIDE DR.	WC-353-20	NONE	13,000.00	1998		0.00
FNS9	EASEMENT - CAREY RD.	WC-353-20	NONE	21,120.00	1998		0.00
	Total Land - Collection			816,680.44			0.00
	STRUCTURES AND IMPROVEMENTS						
FNS76	RETAINING WALL - SIMON MOON PARK	WC-354-20	NONE	647.14	2004		452.97
	Total Structures - Collection			647.14			452.97
	COLLECTING SEWERS FORCE						
FNS527	SEWERS-1964-UNKNOWN	WC-360-20	UNKNOWN	618,000.00	1964		543,840.00
FNS528	SEWERS-1980-UNKNOWN	WC-360-20	UNKNOWN	224,000.00	1980		143,360.00

WESTFIELD WASTEWATER UTILITY
UTILITY PLANT IN SERVICE
As of December 31, 2011

Asset Number	Description	NARUC	Subtype	Original Cost	Purchase Date	Disposal Date	Accumulated Depreciation at 12-31-2011
FNS529	SEWERS-1981-UNKNOWN	WC-360-20	UNKNOWN	80,700.42	1981		51,648.00
FNS530	SEWERS-1982-UNKNOWN	WC-360-20	UNKNOWN	2,483.72	1982		2,483.72
FNS531	SEWERS-1984-UNKNOWN	WC-360-20	UNKNOWN	1,075.00	1984		580.50
FNS532	SEWERS-1985-UNKNOWN	WC-360-20	UNKNOWN	99,535.03	1985		51,758.20
FNS533	SEWERS-1987-UNKNOWN	WC-360-20	UNKNOWN	2,980.00	1987		1,430.40
FNS534	SEWERS-1988-UNKNOWN	WC-360-20	UNKNOWN	1,505.00	1988		692.30
FNS535	SEWERS-1991-UNKNOWN	WC-360-20	UNKNOWN	17,922.00	1991		7,168.80
FNS536	SEWERS-1992-UNKNOWN	WC-360-20	UNKNOWN	80,465.00	1992		30,576.70
FNS537	SEWERS-1994-UNKNOWN	WC-360-20	UNKNOWN	2,000.00	1994		680.00
FNS538	SEWERS-1995-UNKNOWN	WC-360-20	UNKNOWN	746,286.03	1995		238,811.52
FNS539	SEWERS-1995-PVC12	WC-360-20	PVC12	24,660.00	1995		7,891.20
FNS540	SEWERS-1995-PVC10	WC-360-20	PVC10	157,740.00	1995		50,476.80
FNS541	SEWERS-1995-PVC8	WC-360-20	PVC8	254,490.00	1995		81,436.80
FNS542	SEWERS-1995-PVC15	WC-360-20	PVC15	72,630.00	1995		23,241.60
FNS543	SEWERS-1996-UNKNOWN	WC-360-20	UNKNOWN	112,869.93	1996		33,855.00
FNS544	SEWERS-1997-UNKNOWN	WC-360-20	UNKNOWN	185,983.00	1997		52,080.00
FNS545	SEWERS-1998-UNKNOWN	WC-360-20	UNKNOWN	91,637.06	1998		23,825.63
FNS546	SEWERS-1998-PVC4	WC-360-20	PVC4	37,309.00	1998		9,700.34
FNS547	SEWERS-1999-UNKNOWN	WC-360-20	UNKNOWN	287,701.21	1999		69,048.35
FNS548	SEWERS-2000-UNKNOWN	WC-360-20	UNKNOWN	784,095.52	2000		172,501.10
FNS549	SEWERS-2001-UNKNOWN	WC-360-20	UNKNOWN	47,630.76	2001		9,526.10
FNS550	SEWERS-2002-UNKNOWN	WC-360-20	UNKNOWN	77,274.89	2002		18,284.94
FNS551	SEWERS-2003-PVC6	WC-360-20	PVC6	2,500.00	2003		800.00
FNS552	SEWERS-2003-UNKNOWN	WC-360-20	UNKNOWN	10,786.00	2003		3,671.20
FNS553	SEWERS-2005-PVC12	WC-360-20	PVC12	1,635.72	2005		196.26
FNS554	SEWERS-2007-PVC12	WC-360-20	PVC12	397,541.86	2007		31,803.36
FNS555	SEWERS-2007-MANHOLE	WC-360-20	MANHOLE	92,224.08	2007		7,377.92
FNS556	SEWERS-2007-UNKNOWN	WC-360-20	UNKNOWN	617,137.22	2007		49,370.96
FNS557	SEWERS-2008-PVC10	WC-360-20	PVC10	24,674.00	2008		1,480.44
FNS558	SEWERS-2010-MANHOLE	WC-360-20	MANHOLE	24,000.00	2010		2,400.00
	Total Collecting Sewers Force - Collection			5,181,472.45			1,721,998.14
	COLLECTING SEWERS GRAVITY						
FNS467	SEWERS-1974-UNKNOWN	WC-361-20	UNKNOWN	14,555.61	1974		12,445.05
FNS468	SEWERS-1975-UNKNOWN	WC-361-20	UNKNOWN	700.00	1975		581.00
FNS469	SEWERS-1979-UNKNOWN	WC-361-20	UNKNOWN	248,774.06	1979		166,402.21
FNS470	SEWERS-1980-UNKNOWN	WC-361-20	UNKNOWN	64,217.68	1980		39,907.67
FNS471	SEWERS-1981-UNKNOWN	WC-361-20	UNKNOWN	646.90	1981		403.95
FNS472	SEWERS-1982-UNKNOWN	WC-361-20	UNKNOWN	83,255.00	1982		50,138.01
FNS473	SEWERS-1984-UNKNOWN	WC-361-20	UNKNOWN	49,299.00	1984		27,497.89
FNS474	SEWERS-1985-UNKNOWN	WC-361-20	UNKNOWN	136,373.00	1985		73,035.32
FNS475	SEWERS-1986-MANHOLE	WC-361-20	MANHOLE	2,475.00	1986		1,228.50
FNS476	SEWERS-1986-UNKNOWN	WC-361-20	UNKNOWN	2,352,069.72	1986		1,171,272.56
FNS477	SEWERS-1987-UNKNOWN	WC-361-20	UNKNOWN	26,791.00	1987		12,323.86
FNS478	SEWERS-1988-UNKNOWN	WC-361-20	UNKNOWN	64,206.26	1988		29,177.91
FNS479	SEWERS-1989-UNKNOWN	WC-361-20	UNKNOWN	31,295.00	1989		13,143.90
FNS480	SEWERS-1990-UNKNOWN	WC-361-20	UNKNOWN	112,820.00	1990		47,553.89
FNS481	SEWERS-1991-UNKNOWN	WC-361-20	UNKNOWN	8,808.00	1991		3,359.27
FNS482	SEWERS-1992-UNKNOWN	WC-361-20	UNKNOWN	16,698.50	1992		6,011.46
FNS483	SEWERS-1993-PVC15	WC-361-20	PVC15	214,637.77	1993		76,792.62
FNS484	SEWERS-1993-UNKNOWN	WC-361-20	UNKNOWN	8,441.00	1993		2,869.94
FNS485	SEWERS-1994-UNKNOWN	WC-361-20	UNKNOWN	185,860.49	1994		62,366.52
FNS486	SEWERS-1994-PVC15	WC-361-20	PVC15	4,388.00	1994		1,404.16
FNS487	SEWERS-1996-UNKNOWN	WC-361-20	UNKNOWN	12,266.00	1996		3,570.77
FNS488	SEWERS-1997-UNKNOWN	WC-361-20	UNKNOWN	98,496.50	1997		25,908.28
FNS489	SEWERS-1997-PVC6	WC-361-20	PVC6	10,500.00	1997		2,940.00
FNS490	SEWERS-1998-PVC10	WC-361-20	PVC10	43,004.50	1998		11,181.17
FNS491	SEWERS-1998-UNKNOWN	WC-361-20	UNKNOWN	2,822,985.04	1998		1,084,870.67
FNS492	SEWERS-1999-UNKNOWN	WC-361-20	UNKNOWN	700,094.94	1999		161,239.75
FNS493	SEWERS-2000-UNKNOWN	WC-361-20	UNKNOWN	4,960.00	2000		1,003.02
FNS494	SEWERS-2001-UNKNOWN	WC-361-20	UNKNOWN	7,608.71	2001		1,369.57
FNS495	SEWERS-2002-UNKNOWN	WC-361-20	UNKNOWN	14,622.58	2002		5,264.10
FNS496	SEWERS-2003-PVC12	WC-361-20	PVC12	967,371.60	2003		154,779.44
FNS497	SEWERS-2004-PVC12	WC-361-20	PVC12	231,721.39	2004		32,441.01
FNS498	SEWERS-2004-UNKNOWN	WC-361-20	UNKNOWN	66,200.00	2004		9,268.00
FNS499	SEWERS-2004-MANHOLE	WC-361-20	MANHOLE	54,759.15	2004		7,666.26
FNS500	SEWERS-2004-PVC24	WC-361-20	PVC24	66,649.68	2004		9,330.93
FNS501	SEWERS-2005-UNKNOWN	WC-361-20	UNKNOWN	30,690.82	2005		4,900.50
FNS502	SEWERS-2005-MANHOLE	WC-361-20	MANHOLE	3,000.00	2005		360.00
FNS503	SEWERS-2006-MANHOLE	WC-361-20	MANHOLE	45,625.00	2006		4,562.50
FNS504	CUSTOM FIT SAFETY GRATES	WC-361-20	MISC NONMASS	42,287.00	2006		4,228.70
FNS505	SEWERS-2006-UNKNOWN	WC-361-20	UNKNOWN	32,160.96	2006		3,216.10
FNS506	SEWERS-2007-MANHOLE	WC-361-20	MANHOLE	8,692.11	2007		695.36
FNS507	SEWERS-2007-UNKNOWN	WC-361-20	UNKNOWN	1,108,989.25	2007		88,719.12
FNS509	SEWERS-1996-UNKNOWN	WC-361-20	UNKNOWN	42,176.00	1996		12,660.00
FNS510	SEWERS-1999-UNKNOWN	WC-361-20	UNKNOWN	3,760.81	1999		902.63
	Total Collecting Sewers Gravity - Collection			10,044,934.03			3,428,993.57

WESTFIELD WASTEWATER UTILITY
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Asset Number	Description	NARUC	Subtype	Original Cost	Purchase Date	Disposal Date	Accumulated Depreciation at 12-31-2011
	COLLECTING SEWERS GRAVITY - FOR RATEMAKING ONLY						
	SEWERS-2014-UNKNOWN - WESTSIDE INTERCEPTOR	WC-361-20	UNKNOWN	15,763,107.77	2011		0.00
	Total Collecting Sewers Gravity FOR RATEMAKING ONLY - Collection			15,763,107.77			0.00
	CIAC GRAVITY SEWERS						
FNS323	SEWER LINES CONTRIBUTED BY DEVELOP	WC-361-25	MISC NONMASS	117,600.00	1994		39,984.00
FNS324	SILVERTHORNE I	WC-361-25	MISC NONMASS	89,970.00	1996		26,985.00
FNS325	PAKOTA SUNRISE	WC-361-25	MISC NONMASS	75,870.00	1996		22,755.00
FNS326	WILLOW CREEK	WC-361-25	MISC NONMASS	41,490.00	1996		12,450.00
FNS327	ABCO SEWER LINE EXTENSION	WC-361-25	MISC NONMASS	5,755.00	1996		1,725.00
FNS328	SANDPIPER I & II	WC-361-25	MISC NONMASS	73,650.00	1997		20,622.00
FNS329	ALPHA TAU IND	WC-361-25	MISC NONMASS	53,100.00	1997		14,868.00
FNS330	MERIDIAN IND	WC-361-25	MISC NONMASS	13,200.00	1997		3,696.00
FNS331	QUAIL RDG. III	WC-361-25	MISC NONMASS	24,300.00	1997		6,804.00
FNS332	PINE RIDGE	WC-361-25	MISC NONMASS	18,600.00	1997		5,208.00
FNS333	OAK RDG. IND	WC-361-25	MISC NONMASS	94,650.00	1997		26,502.00
FNS334	COUNTYSIDE SEC 8	WC-361-25	PVC8	506,450.76	2004		70,903.14
FNS335	COUNTYSIDE SEC 4	WC-361-25	PVC8	257,588.16	2004		36,062.32
FNS336	COUNTYSIDE SEC 3A	WC-361-25	PVC8	386.05	2004		54.04
FNS337	COUNTYSIDE SEC 6	WC-361-25	PVC8	166,091.67	2004		23,252.81
FNS338	SOUTH PARK A&B	WC-361-25	PVC8	556.43	2004		77.91
FNS339	169TH ST REALIGNMENT	WC-361-25	MISC NONMASS	26,940.20	2004		3,771.60
FNS340	CENTENNIAL 1	WC-361-25	MISC NONMASS	786,921.71	2006		78,692.15
FNS341	CENTENNIAL 2A	WC-361-25	MISC NONMASS	154,128.02	2006		15,412.80
FNS342	CENTENNIAL 2B	WC-361-25	MISC NONMASS	292,938.50	2006		29,293.85
FNS343	CENTENNIAL 3	WC-361-25	MISC NONMASS	506,610.25	2006		50,661.05
FNS344	CENTENNIAL 4	WC-361-25	MISC NONMASS	210,768.42	2006		21,076.85
FNS345	CENTENNIAL 5	WC-361-25	MISC NONMASS	62,260.62	2006		6,226.05
FNS346	CENTENNIAL 6	WC-361-25	MISC NONMASS	202,243.48	2006		20,224.35
FNS347	COUNTRYSIDE 2 (COMBINED WITH 4 & 6)	WC-361-25	MISC NONMASS	107,795.80	2006		10,779.60
FNS348	COUNTRYSIDE 2B	WC-361-25	MISC NONMASS	80,813.91	2006		8,081.40
FNS349	COUNTRYSIDE 3B	WC-361-25	MISC NONMASS	91,413.96	2006		9,141.40
FNS350	COUNTRYSIDE 5A	WC-361-25	MISC NONMASS	149,748.62	2006		14,974.85
FNS351	COUNTRYSIDE 7	WC-361-25	MISC NONMASS	105,008.90	2006		10,500.90
FNS352	COUNTRYSIDE 11A	WC-361-25	MISC NONMASS	377,925.32	2006		37,792.55
FNS353	COUNTRYSIDE 14	WC-361-25	MISC NONMASS	139,659.79	2006		13,966.00
FNS354	COUNTRYSIDE 15	WC-361-25	MISC NONMASS	110,421.32	2006		11,042.15
FNS355	CRESTVIEW 1	WC-361-25	MISC NONMASS	217,176.44	2006		21,717.65
FNS356	CRESTVIEW 2	WC-361-25	MISC NONMASS	104,331.86	2006		10,433.20
FNS357	CRESTVIEW 3	WC-361-25	MISC NONMASS	193,228.65	2006		19,322.85
FNS358	CRESTVIEW 4	WC-361-25	MISC NONMASS	190,088.81	2006		19,008.90
FNS359	CROSSWIND COMMONS	WC-361-25	MISC NONMASS	160,936.08	2006		16,093.60
FNS360	EMERALD PLACE	WC-361-25	MISC NONMASS	188,211.52	2006		18,821.15
FNS361	MERRIMAC 1	WC-361-25	MISC NONMASS	137,133.38	2006		13,713.35
FNS362	MERRIMAC 2	WC-361-25	MISC NONMASS	147,128.44	2006		14,712.85
FNS363	MERRIMAC 3	WC-361-25	MISC NONMASS	45,195.79	2006		4,519.60
FNS364	MERRIMAC 4	WC-361-25	MISC NONMASS	210,062.38	2006		21,006.25
FNS365	MERRIMAC 5	WC-361-25	MISC NONMASS	170,991.73	2006		17,099.15
FNS366	MERRIMAC 6	WC-361-25	MISC NONMASS	99,855.43	2006		9,985.55
FNS367	METHODIST CHURCH SEWE	WC-361-25	MISC NONMASS	22,406.26	2006		2,240.65
FNS368	MORGAN WOODS	WC-361-25	MISC NONMASS	306,533.72	2006		30,653.35
FNS369	MULBERRY FARMS 1	WC-361-25	MISC NONMASS	376,405.94	2006		37,640.60
FNS370	MULBERRY FARMS 2	WC-361-25	MISC NONMASS	39,991.27	2006		3,999.15
FNS371	PINE RIDGE	WC-361-25	MISC NONMASS	600,860.97	2006		60,086.10
FNS372	PINES OF WESTFIELD	WC-361-25	MISC NONMASS	135,916.72	2006		13,591.65
FNS373	SETTERS PLACE	WC-361-25	MISC NONMASS	63,986.45	2006		6,398.65
FNS374	SOUTH OAK	WC-361-25	MISC NONMASS	159,879.89	2006		15,988.00
FNS375	SOUTH UNION TRAIL	WC-361-25	MISC NONMASS	126,514.88	2006		12,651.50
FNS376	SPRINGMILL VILLAGES CROSSING	WC-361-25	MISC NONMASS	172,034.83	2006		17,203.50
FNS377	SPRINGMILL VILLAGES MEADOWS	WC-361-25	MISC NONMASS	121,709.51	2006		12,170.95
FNS378	VILLAGE FARMS 12	WC-361-25	MISC NONMASS	158,324.81	2006		15,832.50
FNS379	VILLAGE FARMS 14	WC-361-25	MISC NONMASS	81,485.78	2006		8,148.60
FNS380	VILLAGE FARMS 15	WC-361-25	MISC NONMASS	263,285.50	2006		26,328.55
FNS381	VILLAGE FARMS 16	WC-361-25	MISC NONMASS	140,146.32	2006		14,014.65
FNS382	VILLAGE FARMS 17	WC-361-25	MISC NONMASS	286,711.04	2006		28,671.10
FNS383	VILLAGE FARMS 18	WC-361-25	MISC NONMASS	189,449.59	2006		18,944.95
FNS384	BROOKSIDE 1	WC-361-25	PVC8	53,588.12	2007		4,287.04
FNS385	BROOKSIDE 1	WC-361-25	PVC15	48,576.33	2007		3,886.12
FNS386	BROOKSIDE 1	WC-361-25	MISC NONMASS	45,632.31	2007		3,650.60
FNS387	COVERDALE	WC-361-25	PVC8	94,701.40	2007		7,576.12
FNS388	COVERDALE	WC-361-25	PVC10	4,962.50	2007		397.00
FNS389	CRESTVIEW 5	WC-361-25	MISC NONMASS	83,774.96	2007		6,702.00
FNS390	CENTENNIAL 7	WC-361-25	PVC8	29,549.31	2007		2,363.96
FNS391	BROOKSIDE 2	WC-361-25	PVC8	68,256.45	2007		5,460.52
FNS392	BROOKSIDE 2	WC-361-25	PVC15	20,644.34	2007		1,651.56
FNS393	BROOKSIDE 2	WC-361-25	MISC NONMASS	2,692.74	2007		215.40
FNS394	OAKRIDGE CROSSING 1	WC-361-25	PVC8	163,666.68	2007		13,093.32
FNS395	OAKRIDGE CROSSING 2	WC-361-25	PVC8	54,054.00	2007		4,324.32
FNS396	CAREY GLEN	WC-361-25	PVC8	22,695.58	2007		1,815.64

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Asset Number	Description	NARUC	Subtype	Original Cost	Purchase Date	Disposal Date	Accumulated Depreciation at 12-31-2011
FNS397	BRIDGEWATER B	WC-361-25	MISC NONMASS	10,340.19	2007		827.20
FNS398	BRIDGEWATER E - LABOR ONLY	WC-361-25	MISC NONMASS	1,051.49	2007		84.12
FNS399	BRIDGEWATER G2	WC-361-25	PVC8	8,261.76	2007		660.96
FNS400	BRIDGEWATER G3-5	WC-361-25	PVC10	28,384.59	2007		2,270.76
FNS401	COUNTRYSIDE 5B	WC-361-25	PVC8	125,292.36	2007		10,023.40
FNS402	COUNTRYSIDE 5B	WC-361-25	MISC NONMASS	1,646.71	2007		131.72
FNS403	COUNTRYSIDE 10	WC-361-25	MISC NONMASS	89,822.33	2007		7,185.80
FNS404	COUNTRYSIDE 9	WC-361-25	MISC NONMASS	248,421.51	2007		19,873.72
FNS405	HERITAGE ASHFIELD	WC-361-25	PVC4	8,900.00	2007		712.00
FNS406	HERITAGE ASHFIELD	WC-361-25	PVC8	171,442.78	2007		13,715.44
FNS407	BRIDGEWATER A	WC-361-25	MISC NONMASS	246,746.12	2007		19,739.68
FNS408	BRIDGEWATER D1	WC-361-25	PVC8	34.91	2007		2.80
FNS409	BRIDGEWATER D2	WC-361-25	PVC8	4.87	2007		0.40
FNS410	BRIDGEWATER G1	WC-361-25	PVC8	56,856.63	2007		4,548.52
FNS411	BRIDGEWATER G1	WC-361-25	PVC10	34,845.62	2007		2,787.64
FNS412	COUNTRYSIDE 11B	WC-361-25	MISC NONMASS	145,530.00	2007		11,642.40
FNS413	JERRY BROWN - LABOR ONLY	WC-361-25	MISC NONMASS	359.36	2007		28.76
FNS414	VILLAS OF OAKRIDGE	WC-361-25	PVC8	43,038.60	2007		3,443.08
FNS415	BRIDGEWATER CLUB I	WC-361-25	PVC8	354,662.00	2008		21,279.72
FNS416	BROOKSIDE 4B	WC-361-25	PVC8	175,161.30	2008		10,509.69
FNS417	COOL CREEK VILLAGE PHASE 1	WC-361-25	PVC8	49,125.00	2008		2,947.50
FNS418	MAPLE KNOLL OFFSITE	WC-361-25	PVC10	36,613.00	2008		2,196.78
FNS419	MAPLE KNOLL OFFSITE	WC-361-25	PVC8	41,287.00	2008		2,477.22
FNS420	MAPLE VILLAGE SECTION 2	WC-361-25	PVC8	155,000.00	2008		9,300.00
FNS421	MAPLES AT SPRINGMILL SECTION 2	WC-361-25	PVC10	31,224.75	2008		1,873.50
FNS422	MAPLES AT SPRINGMILL SECTION 2	WC-361-25	PVC8	65,630.76	2008		3,937.86
FNS423	TWO GAITS AT VIKING MEADOWS	WC-361-25	PVC8	184,729.00	2008		11,083.74
FNS424	VILLAGES OF OAK MANOR 2	WC-361-25	PVC8	109,375.00	2008		6,562.50
FNS425	MAPLE KNOLL - LABOR ONLY	WC-361-25	MISC NONMASS	89.12	2008		5.34
FNS426	BRIDGEWATER C - LABOR ONLY	WC-361-25	MISC NONMASS	87.79	2008		5.28
FNS427	WASHINGTON WOODS LS	WC-361-25	MISC NONMASS	622,936.60	2008		37,376.19
FNS428	BAINBRIDGE	WC-361-25	PVC8	121,805.00	2009		4,872.20
FNS429	SPRING MILL COMMON	WC-361-25	PVC8	137,332.00	2009		5,493.28
FNS430	AUTOZONE - CLEAN OUTS AND LATERALS	WC-361-25	MISC NONMASS	10,000.00	2009		400.00
FNS431	COOL CREEK VILLAGE 2	WC-361-25	PVC12	70,000.00	2009		2,800.00
FNS432	MAPLE KNOLL SEC 4	WC-361-25	PVC8	88,017.00	2010		1,760.34
FNS433	MAPLES AT SPRINGMILL SEC 1	WC-361-25	PVC8	126,926.40	2010		2,538.53
FNS434	MAPLES AT SPRINGMILL SEC 1	WC-361-25	PVC10	269,718.60	2010		5,394.37
FNS435	BRIDGEWATER I & J - LABOR	WC-361-25	MISC NONMASS	201.56	2010		4.03
FNS436	ANDOVER SEC 4	WC-361-25	PVC6	22,848.00	2011		0.00
FNS437	ANDOVER SEC 4	WC-361-25	PVC8	8,828.00	2011		0.00
FNS438	ANDOVER SEC 4	WC-361-25	PVC12	143,724.70	2011		0.00
FNS439	ANDOVER SEC 4	WC-361-25	DIP36	6,300.00	2011		0.00
FNS440	MAPLE KNOLL SEC 4B	WC-361-25	PVC8	19,340.00	2011		0.00
FNS441	MAPLE VILLAGE SECTION 4	WC-361-25	PVC8	15,687.00	2011		0.00
FNS442	BLUE GRASS AT VIKING MEADOWS SEC 1	WC-361-25	PVC8	23,049.00	2011		0.00
FSS100	MULBERRY FARMS 2	WC-361-25	MISC NONMASS	71,843.00	1999		15,805.46
FSS101	VILLAGE FARMS 17	WC-361-25	MISC NONMASS	40,611.00	1999		8,934.42
FSS102	CROSINGS 5B & 5C	WC-361-25	MISC NONMASS	44,233.00	1999		9,731.26
FSS103	MEADOWS 4B	WC-361-25	MISC NONMASS	24,312.00	1999		5,348.64
FSS104	VILLAGE FARMS 18	WC-361-25	MISC NONMASS	31,370.00	2000		6,274.00
FSS105	CENTENNIAL 2	WC-361-25	MISC NONMASS	323,411.00	2000		64,682.20
FSS106	CENTENNIAL 3	WC-361-25	MISC NONMASS	342,842.00	2000		68,568.40
FSS107	CENTENNIAL 4	WC-361-25	MISC NONMASS	79,148.00	2000		15,829.60
FSS108	CENTENNIAL T/H	WC-361-25	MISC NONMASS	34,216.00	2000		6,843.20
FSS109	CENTENNIAL 5	WC-361-25	MISC NONMASS	21,542.00	2001		3,877.56
FSS110	SETTERS PLACE	WC-361-25	MISC NONMASS	80,785.00	2001		14,541.30
FSS111	VILLAGE FARMS ESTATES	WC-361-25	MISC NONMASS	38,594.00	2001		6,946.92
FSS112	CENTENNIAL 6	WC-361-25	MISC NONMASS	127,411.00	2001		22,933.98
FSS69	SANITARY SEWER LINES, WASHINGTON TWP, CIAC	WC-361-25	MISC NONMASS	3,675.14	1974		2,866.61
FSS70	SANITARY SEWER LINES, WASHINGTON TWP, CIAC	WC-361-25	MISC NONMASS	214,958.93	1976		158,114.24
FSS71	SANITARY SEWER LINES, WASHINGTON TWP, CIAC	WC-361-25	MISC NONMASS	99,529.00	1977		70,997.35
FSS72	SANITARY SEWER LINES, WASHINGTON TWP, CIAC	WC-361-25	MISC NONMASS	51,362.11	1978		35,496.92
FSS73	SANITARY SEWER LINES, WASHINGTON TWP, CIAC	WC-361-25	MISC NONMASS	10,723.43	1979		7,172.78
FSS74	VILLAGE FARMS SEC 4, CIAC	WC-361-25	MISC NONMASS	53,405.27	1980		34,535.41
FSS75	MEADOWS	WC-361-25	MISC NONMASS	71,056.68	1994		23,843.46
FSS76	MERRIMAC	WC-361-25	MISC NONMASS	138,125.94	1994		46,348.93
FSS77	VILLAGE FARMS	WC-361-25	MISC NONMASS	29,764.40	1994		9,987.61
FSS78	SPRINGMILL	WC-361-25	MISC NONMASS	30,431.24	1994		10,211.37
FSS79	BRENTWOOD VILLAGE	WC-361-25	MISC NONMASS	98,868.00	1995		29,660.40
FSS80	SPRINGDALE FARMS 1	WC-361-25	MISC NONMASS	96,744.00	1995		29,023.20
FSS81	SPRINGDALE LIFT STATION	WC-361-25	MISC NONMASS	1,821.00	1995		570.58
FSS82	SILVERTHORNE I	WC-361-25	MISC NONMASS	91,394.00	1996		25,590.32
FSS83	CROSSINGS 3	WC-361-25	MISC NONMASS	74,426.00	1996		20,839.28
FSS84	CROSSINGS 4	WC-361-25	MISC NONMASS	34,355.00	1996		9,619.40
FSS85	MEADOWS 3	WC-361-25	MISC NONMASS	198,532.00	1996		55,588.96
FSS86	MERRIMAC 2	WC-361-25	MISC NONMASS	181,136.00	1996		50,718.08
FSS87	SETTER'S RUN 1	WC-361-25	MISC NONMASS	187,985.00	1996		52,635.80
FSS88	SPRINGDALE FARMS 2	WC-361-25	MISC NONMASS	67,389.00	1996		18,868.92
FSS89	MULBERRY	WC-361-25	MISC NONMASS	98,012.00	1997		25,483.12

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Asset Number	Description	NARUC	Subtype	Original Cost	Purchase Date	Disposal Date	Accumulated Depreciation at 12-31-2011
FSS90	SILVERTHORNE	WC-361-25	MISC NONMASS	74,727.00	1997		19,429.02
FSS91	SETTER'S RUN	WC-361-25	MISC NONMASS	98,903.00	1997		25,714.78
FSS92	MERRIMAC 3	WC-361-25	MISC NONMASS	24,112.00	1997		6,269.12
FSS93	CROSSWINDS	WC-361-25	MISC NONMASS	125,829.00	1997		32,715.54
FSS94	CROSSINGS 5A	WC-361-25	MISC NONMASS	76,988.00	1998		18,477.12
FSS95	SETTER'S RUN 3	WC-361-25	MISC NONMASS	89,607.00	1998		21,505.68
FSS96	CENTENNIAL 1	WC-361-25	MISC NONMASS	375,406.00	1998		90,097.44
FSS97	VILLAGE FARMS 16	WC-361-25	MISC NONMASS	120,258.00	1998		28,861.92
FSS98	MERRIMAC 4	WC-361-25	MISC NONMASS	128,722.00	1998		30,893.28
FSS99	MEADOWS 4B OFFSITE	WC-361-25	MISC NONMASS	16,762.00	1999		3,687.64
	Total CIAC Gravity Sewers - Collection			19,083,640.15			2,696,646.62
	SERVICES						
FSS113	SEWER SERVICE INSTALLED	WC-363-20	NONE	24,214.55	1988		11,056.26
FSS114	HERB BARN LIFT STATION	WC-363-20	NONE	3,808.33	1999		871.27
	Total Services - Collection			28,022.88			11,927.53
	FLOW MEASURING DEVICES						
FNS512	METERS-1994	WC-364-20	NONE	11,049.78	1994		3,757.00
FNS513	METERS-1995	WC-364-20	NONE	19,089.02	1995		12,216.96
FNS514	METERS-1996	WC-364-20	NONE	102,940.86	1996		61,770.00
FNS515	METERS-1999	WC-364-20	NONE	10,888.40	1999		5,226.47
FNS516	METERS-2001	WC-364-20	NONE	20,500.00	2001		8,200.00
FNS517	METERS-2002	WC-364-20	NONE	498.50	2002		498.50
FNS518	METERS-2003	WC-364-20	NONE	120,590.81	2003		38,589.04
FNS519	METERS-2004	WC-364-20	NONE	272,499.19	2004		76,299.79
FNS520	METERS-2005	WC-364-20	NONE	243,647.11	2005		58,475.34
FNS521	METERS-2006	WC-364-20	NONE	239,646.19	2006		47,929.25
FNS522	METERS-2007	WC-364-20	NONE	173,965.23	2007		27,834.44
FNS523	METERS-2008	WC-364-20	NONE	31,040.25	2008		3,724.83
FNS524	METERS-2009	WC-364-20	NONE	7,119.27	2009		569.54
FSS115	METERS-1974	WC-364-20	NONE	1,920.00	1974		1,425.60
FSS116	METERS-1986	WC-364-20	NONE	1,200.00	1986		583.35
	Total Flow Measuring Devices - Collection			1,256,594.61			347,100.10
	TOTAL COLLECTION PLANT			**52,175,099.47**			**8,207,118.93**
	SYSTEM PUMPING PLANT						
	LAND						
FNS16	EASEMENT - LIFT STATION	WS-353-30	NONE	9,179.00	2001		0.00
	Total Land - System Pumping			9,179.00			0.00
	STRUCTURES AND IMPROVEMENTS						
FNS181	LIFT STATION (PLANT)	WS-354-30	NONE	35,000.00	1964		33,600.00
FNS182	LIFT STATION (APARTMENTS)	WS-354-30	NONE	20,000.00	1980		12,800.00
FNS183	LIFT STATION (G.T.E.)	WS-354-30	NONE	25,000.00	1981		15,000.00
FNS184	161ST ST LIFT STATION-LANDSCAPING, TREES	WS-354-30	NONE	419.86	2000		92.39
FNS185	NEW DOORS & LOCKS - LIFT STATION	WS-354-30	NONE	4,970.22	2002		1,789.29
FNS186	REHAB MERRIMAC LIFT STATION	WS-354-30	NONE	7,503.35	2002		2,701.17
FNS187	ACCESS DRIVE TO LIFT STATION (STONE)	WS-354-30	NONE	1,786.59	2004		1,250.62
FNS188	SETTER'S RUN LS UPGRADES	WS-354-30	NONE	91,843.44	2004		12,858.09
FNS189	UNION ST LS UPGRADES	WS-354-30	NONE	10,653.05	2004		1,491.42
FNS190	REHAB SOUTH UNION LIFT STATION	WS-354-30	NONE	5,493.81	2004		1,538.25
FNS191	REHAB LAGOON LIFT STATION	WS-354-30	NONE	5,878.98	2004		1,646.12
FNS192	NEW 6" IRON PIPING IN LS WETWELL	WS-354-30	NONE	5,000.00	2005		1,200.00
FNS193	ADIOS PASS LS CONVERSION	WS-354-30	NONE	9,899.36	2005		1,187.94
FNS194	SETTER'S RUN LS UPGRADES	WS-354-30	NONE	5,316.58	2005		637.98
FNS195	UNION ST LS UPGRADES	WS-354-30	NONE	472.36	2005		56.70
FNS196	ADIOS PASS LS UPGRADES	WS-354-30	NONE	52,221.00	2006		5,222.10
FNS197	SETTER'S RUN LS UPGRADES	WS-354-30	NONE	128.58	2006		12.85
FNS198	SANDPIPER LS IMPROVEMENTS - ENGINEERING (DEV FUNDED CONSTRUCT	WS-354-30	NONE	77,952.30	2006		7,795.25
FNS199	WASHINGTON WOODS/ SANDPIPER LS	WS-354-30	NONE	409,222.21	2007		32,737.80
FNS200	WASHINGTON WOODS/ SANDPIPER LS	WS-354-30	NONE	365,480.28	2008		21,928.83
FNS201	FENCING AT VIKING MEADOWS LS	WS-354-30	NONE	5,195.00	2010		207.80
FNS202	FENCING AT WASHINGTON WOODS LS	WS-354-30	NONE	5,895.00	2010		235.80
FNS205	UPGRADE/INSTALL L.S. TELEMETRY & CONTROL PANELS	WS-354-30	NONE	121,828.10	2002		43,858.08
FNS206	LIFT STATION PANEL COMMUNICATIONS	WS-354-30	NONE	9,461.37	2003		7,569.12
	Total Structures - System Pumping			1,276,621.44			207,417.60
	PUMPING EQUIPMENT						
FNS207	PUMP	WS-371-30	NONE	15,439.00	1990		15,439.00
FNS208	LIFT STATION AUTO SWITCH	WS-371-30	NONE	18,260.00	1996		5,475.00
FNS209	KIRKENDALL DRAIN LIFT STATION	WS-371-30	NONE	73,200.00	1998		19,032.00
FNS210	DARTOWN ROAD LIFT STATION	WS-371-30	NONE	40,000.00	1999		9,600.00

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Asset Number	Description	NARUC	Subtype	Original Cost	Purchase Date	Disposal Date	Accumulated Depreciation at 12-31-2011
FNS211	LIFT STATION-POWER PARTS	WS-371-30	NONE	6,891.48	1999		1,653.96
FNS212	LIFT STATION-ELECTRICAL PANEL	WS-371-30	NONE	3,396.00	1999		815.04
FNS213	PUMP / OAK RD LIFT STATION	WS-371-30	NONE	13,731.70	2001		13,731.70
FNS214	OAK RIDGE LIFT STATION	WS-371-30	NONE	227,264.10	2001		45,452.80
FNS215	NEW PUMPS / 2 LIFT STATIONS	WS-371-30	NONE	30,249.55	2001		30,249.55
FNS216	LIFT STATION PUMP	WS-371-30	NONE	3,240.00	2001		3,240.00
FNS217	BROOKSIDE LIFT STATION IMPROVEMENTS	WS-371-30	NONE	6,000.00	2002		2,160.00
FNS218	GENERATOR PLUGS WUS LIFT STATIONS	WS-371-30	NONE	12,088.61	2002		10,879.74
FNS219	LIFT STATION LIDS & PUMP PARTS	WS-371-30	NONE	4,907.00	2002		4,416.30
FNS220	BREAKERS FOR MERRIMAC LIFT STATION	WS-371-30	NONE	1,116.85	2002		1,116.85
FNS221	SPARE PUMP FOR MERRIMAC LIFT STATION	WS-371-30	NONE	13,772.46	2002		12,395.25
FNS222	PUMP FOR WESTFIELD PARK LIFT STATION	WS-371-30	NONE	2,526.50	2002		2,273.85
FNS223	ALTERNATOR FOR PUMP AT OAK RD LIFT STATION	WS-371-30	NONE	938.75	2002		938.75
FNS224	BROOKSIDE LIFT STATION & FORCE MAIN	WS-371-30	NONE	357,362.71	2003		57,178.00
FNS225	NEW PUMP - WESTFIELD PARK RD	WS-371-30	NONE	2,602.00	2003		2,081.60
FNS226	GENERATOR PLUG - OAK RD LIFT STATION	WS-371-30	NONE	2,455.00	2003		2,455.00
FNS227	STARTER/CONTROL CIRCUITRY - PUMPS #1 & #2	WS-371-30	NONE	5,000.00	2003		5,000.00
FNS228	BROOKSIDE LIFT STATION & FORCE MAIN	WS-371-30	NONE	100,376.17	2004		14,052.64
FNS229	NEW PUMP @ LAGOON LIFT STATION	WS-371-30	NONE	11,936.80	2004		8,355.76
FNS230	PUMP FOR LS + INSTALLATION	WS-371-30	NONE	4,753.06	2005		2,851.86
FNS231	NEW LS CONTROL PANEL - ADIOS PASS	WS-371-30	NONE	17,130.00	2005		17,130.00
FNS232	BY-PASS LINE - PUMPING STATIONS	WS-371-30	NONE	4,000.00	2006		800.00
FNS233	CONTROL PANELS - ADIOS PASS LS	WS-371-30	NONE	4,680.00	2006		4,680.00
FNS234	VALVES - MERRIMAC LS	WS-371-30	NONE	5,822.32	2006		5,822.32
FNS235	VALVE TURNER (1)	WS-371-30	NONE	17,862.47	2006		3,572.50
FNS236	NEW PUMP - MERRIMAC LS	WS-371-30	NONE	11,650.00	2007		9,320.00
FNS237	NEW PUMP - WPW LAGOON	WS-371-30	NONE	4,000.00	2007		3,200.00
FNS238	NEW PUMP - 156TH & TOWNE RD	WS-371-30	NONE	13,004.15	2010		2,600.83
FSS44	LIFT STATION, WASHINGTON TWP	WS-371-30	NONE	6,593.71	1974		5,057.09
FSS45	COOL CREEK PLANT	WS-371-30	NONE	5,600.00	1977		3,929.74
FSS46	LIFT STATION, WASHINGTON TWP	WS-371-30	NONE	445.42	1979		293.20
FSS47	LIFT STATION VILLAGE FARMS SEC 4	WS-371-30	NONE	12,697.40	1980		7,958.84
FSS48	LIFT STATION VILLAGE FARMS SEC 4	WS-371-30	NONE	5,111.31	1981		3,095.06
FSS49	MT CARMEL UPGRADE	WS-371-30	NONE	16,134.96	1982		9,426.94
FSS50	COOL CREEK PLANT	WS-371-30	NONE	23,835.18	1986		11,897.30
FSS51	COOL CREEK EXPANSION	WS-371-30	NONE	135,456.40	1989		58,966.76
FSS52	ADDITIONS	WS-371-30	NONE	59,074.91	1995		18,174.96
FSS53	ADDITIONS	WS-371-30	NONE	125,058.19	1996		35,814.54
FSS54	DELTA BANK - VINING LIFT STATION	WS-371-30	NONE	1,978.00	1997		524.38
FSS55	GRAY ROAD LIFT STATION	WS-371-30	NONE	11,381.48	1997		3,038.36
FSS56	AUTO DIALER	WS-371-30	NONE	1,779.35	1999		396.00
FSS57	ADDITIONS	WS-371-30	NONE	7,700.00	2000		1,553.39
FSS58	LIFT STATION	WS-371-30	NONE	141,911.07	1995		43,660.30
FSS59	EXPAND LIFT STATION	WS-371-30	NONE	32,420.87	1998		7,950.16
FSS60	ADDITIONS	WS-371-30	NONE	10,942.11	2001		1,969.58
	Total Pumping Equipment - System Pumping			1,633,777.04			531,676.90
	TOTAL SYSTEM PUMPING			**2,919,577.48**			**739,094.51**
	TREATMENT PLANT						
	LAND						
FNS3	LAND - WWTP DOWN PAYMENT	WT-353-40	NONE	10,000.00	1995		0.00
FNS4	LAND - WASTEWATER TREATMENT PLANT	WT-353-40	NONE	200,269.00	1996		0.00
	Total Land - Treatment Plant			210,269.00			0.00
	STRUCTURES AND IMPROVEMENTS						
FNS246	CHEMICAL BUILDING	WT-354-40	NONE	7,000.00	1980		4,480.00
FNS247	SEWER OVERSIZING	WT-354-40	NONE	41,003.00	1995		13,120.96
FNS248	SLUDGE GATE	WT-354-40	NONE	2,025.00	1998		1,316.25
FNS249	WWTP-STRUCTURE & EXCAVATION	WT-354-40	NONE	472,450.00	1998		122,837.00
FNS250	WWTP-BLDG.,SBR'S, DIGESTOR	WT-354-40	NONE	1,699,500.00	1998		441,870.00
FNS251	PARKING/DRIVE MAINT. BUILDING	WT-354-40	NONE	2,602.00	1998		1,353.04
FNS252	WWTP - DUMPSTER PADS	WT-354-40	NONE	3,925.06	1998		1,020.50
FNS253	WASTEWATER TREATMENT PLANT	WT-354-40	NONE	1,233,279.35	1998		320,652.66
FNS254	WWTP-YARD PIPING & VALVES	WT-354-40	NONE	371,400.00	1998		96,564.00
FNS255	WWTP-3 PHASE POWER	WT-354-40	NONE	57,357.00	1998		14,912.82
FNS256	WWTP-STRUCTURE & EXCAVATION-CAP INT (SBA)	WT-354-40	NONE	21,208.40	1999		5,090.03
FNS257	WWTP-BUILDINGS-CAP INT (SBA)	WT-354-40	NONE	76,291.00	1999		18,309.84
FNS258	WWTP-LANDSCAPING, SIGN	WT-354-40	NONE	18,550.00	1999		4,452.00
FNS259	WWTP-SITE WORK&GENERAL CON-CAP INT (SBA)	WT-354-40	NONE	22,856.10	1999		5,485.45
FNS260	WWTP-YARD PIPING&VALVES-CAP INT (SBA)	WT-354-40	NONE	16,672.24	1999		4,001.29
FNS261	WWTP-DESIGN&CON ENG-CAP INT (SBA)	WT-354-40	NONE	32,106.16	1999		7,705.45
FNS262	WWTP - LANDSCAPING, TREES	WT-354-40	NONE	1,260.00	2000		277.20
FNS263	FENCE AROUND PONDS	WT-354-40	NONE	17,850.00	2000		7,854.00
FNS264	CONCRETE PAD AT UTILITY SHOP	WT-354-40	NONE	2,702.00	2000		594.44
FNS265	INFLUENT STRUCTURE WWTP	WT-354-40	NONE	22,500.00	2001		4,500.00
FNS266	INSULATION @ SHOP	WT-354-40	NONE	1,395.34	2001		1,395.34

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FNS267	CONCRETE FRONT BAYS/SHOP/BARNS	WT-354-40	NONE	2,799.95	2001		560.00
FNS268	CONCRETE PAD FOR DUMPSTER & FUEL TANKS	WT-354-40	NONE	791.50	2002		142.47
FNS269	CONCRETE SLAB AT WWTP	WT-354-40	NONE	616.79	2002		111.06
FNS270	AIR-CONDITIONER AT WWTP	WT-354-40	NONE	1,689.31	2002		1,520.37
FNS271	TANK BARN REHAB	WT-354-40	NONE	25,655.60	2003		8,209.76
FNS272	SECURITY - LIFT STATIONS/WWTP	WT-354-40	NONE	21,488.20	2003		21,488.20
FNS273	SECURITY FENCE & GATES (CSC, SHOP, WWTP)	WT-354-40	NONE	14,282.50	2004		3,999.10
FNS274	PROGRAMMABLE GATES @ WWTP	WT-354-40	NONE	6,418.00	2004		4,492.60
FNS275	WASTEWATER TREATMENT PLANT	WT-354-40	NONE	322,613.97	2005		38,713.68
FNS276	WWTP BUILDINGS, SBR'S DIGESTER	WT-354-40	NONE	4,454,042.48	2005		503,951.79
FNS277	WWTP SITE WORK & GENERAL CONDITIONS	WT-354-40	NONE	1,008,092.00	2005		120,971.04
FNS278	WWTP YARD PIPING & VALVES	WT-354-40	NONE	1,658,591.47	2005		181,807.04
FNS279	WWTP BUILDINGS, SBR'S DIGESTER	WT-354-40	NONE	365,615.45	2006		36,561.55
FNS280	IFIX GRAPHICS CONVERSION	WT-354-40	NONE	7,188.00	2006		7,188.00
FNS281	SECURITY GATE & FENCE	WT-354-40	NONE	1,500.00	2006		300.00
FNS282	WWTP SITE WORK & GENERAL CONDITIONS	WT-354-40	NONE	34,846.97	2006		3,484.70
FNS283	WWTP YARD PIPING & VALVES	WT-354-40	NONE	55,301.02	2006		5,530.10
FNS284	WWTP OFFICE ADDITION	WT-354-40	NONE	111,606.08	2007		8,928.48
FNS285	SONALERT SECURITY SYSTEM	WT-354-40	NONE	1,748.22	2007		1,398.56
FNS286	WASTEWATER PLANT OFFICES REMODEL	WT-354-40	NONE	79,420.00	2008		4,765.20
FNS287	WWTP LIFT STATION	WT-354-40	NONE	1,323,617.92	2007		105,889.44
FNS288	WWTP LIFT STATION	WT-354-40	NONE	165,000.00	2007		26,400.00
FSS61	TREATMENT PLANT	WT-354-40	NONE	169,093.13	1977		112,985.93
FSS62	IMPROVEMENTS	WT-354-40	NONE	6,097.41	1979		3,780.39
FSS63	TREES	WT-354-40	NONE	800.00	1986		384.00
FSS64	TREES	WT-354-40	NONE	952.50	1989		400.05
FSS65	TREES	WT-354-40	NONE	586.55	1990		234.62
FSS66	WASTEWATER AGREEMENT (CARMEL INTERCEPTOR CAPACITY)	WT-354-40	NONE	748,765.00	1991		544,934.53
FSS67	PUMP	WT-354-40	NONE	2,954.32	1998		2,954.32
FSS68	WESTFIELD SEWER CAPACITY	WT-354-40	NONE	2,095,655.69	1998		502,957.37
	Total Structures - Treatment Plant			16,811,762.68			3,332,836.63
	TREATMENT AND DISPOSAL EQUIPMENT						
FNS289	UV BULB RACKS	WT-380-40	NONE	2,720.00	1998		1,414.40
FNS290	WWTP - PROCESS EQUIPMENT	WT-380-40	NONE	1,325,100.00	1998		689,052.00
FNS291	WWTP - ELECTRICAL COMPONENTS	WT-380-40	NONE	361,100.00	1998		187,772.00
FNS292	WWTP - INSTRUMENTATION & CONTROLS	WT-380-40	NONE	146,350.00	1998		76,102.00
FNS293	WWTP-PROCESS EQUIPMENT-CAP INT (SBA)	WT-380-40	NONE	59,484.08	1999		28,552.34
FNS294	WWTP-ELEC COMPONENTS-CAP INT (SBA)	WT-380-40	NONE	16,209.87	1999		7,780.69
FNS295	WWTP-INSTRUMENTATION-CAP INT (SBA)	WT-380-40	NONE	6,569.69	1999		3,153.47
FNS296	WWTP - PUMP AT UV CHANNEL	WT-380-40	NONE	2,871.00	2000		2,871.00
FNS297	ODOR CONTROL FOR GRATING/WWTP	WT-380-40	NONE	2,800.00	2001		1,120.00
FNS298	MONITORING	WT-380-40	NONE	16,786.00	2001		6,714.40
FNS299	FLYGT PUMP	WT-380-40	NONE	3,714.00	2001		3,714.00
FNS300	OXIDIZER/WWTP	WT-380-40	NONE	19,359.10	2001		7,743.60
FNS301	UV TREATMENT SYSTEM	WT-380-40	NONE	11,564.00	2002		11,564.00
FNS302	UV LAMPS (WWTP)	WT-380-40	NONE	18,600.00	2004		18,600.00
FNS303	NEW PUMP - WWTP	WT-380-40	NONE	21,000.00	2004		14,700.00
FNS304	STORAGE CART FOR UV BULBS	WT-380-40	NONE	1,150.00	2005		1,150.00
FNS305	WWTP PROCESS EQUIPMENT	WT-380-40	NONE	2,927,063.41	2005		702,495.24
FNS306	WWTP ELECTRICAL COMPONENTS	WT-380-40	NONE	538,330.64	2005		129,199.38
FNS307	WWTP INSTRUMENTATION & CONTROL	WT-380-40	NONE	1,255,034.45	2005		274,838.61
FNS308	WWTP PROCESS EQUIPMENT	WT-380-40	NONE	27,246.31	2006		5,449.25
FNS309	WWTP ELECTRICAL COMPONENTS	WT-380-40	NONE	19,025.50	2006		3,805.10
FNS310	WWTP INSTRUMENTATION & CONTROL	WT-380-40	NONE	27,776.81	2006		5,555.35
FNS311	AERATORS - RIVER RD PLANT	WT-380-40	NONE	29,508.05	2006		29,508.05
FNS312	STORAGE TANK - WWTP	WT-380-40	NONE	1,433.20	2006		1,433.20
FNS313	UN LAMPS	WT-380-40	NONE	10,035.00	2006		10,035.00
FNS314	WPW LAGOON IMPROVEMENTS - ENG	WT-380-40	NONE	158,440.72	2011		0.00
	Total Treatment and Disposal Equipment - Treatment Plant			7,009,271.83			2,224,323.09
	TOTAL TREATMENT PLANT			**24,031,303.51**			**5,557,159.72**
	GENERAL PLANT						
	OFFICE FURNITURE						
FNS77	WWTP - OFFICE/LAB FURNITURE & EQUIP.	WG-390-71	NONE	12,000.00	1998		12,000.00
FNS78	FURNISH / INSTALL LAB FURNITURE	WG-390-71	NONE	9,349.00	2006		9,349.00
FNS79	SEWAGE PLANT FURNITURE	WG-390-71	NONE	3,346.00	2008		2,007.60
FNS80	OFFICE FURNITURE	WG-390-71	NONE	1,970.96	2008		1,182.57
	Total Office Furniture - General Plant			26,665.96			24,539.17
	OFFICE MACHINERY						
FNS81	COPIER FOR WUS OFFICE	WG-390-72	NONE	1,037.50	2002		1,037.50
FNS82	PROJECTOR & DOCKING STATION	WG-390-72	NONE	647.32	2004		647.32
FNS83	OFFICE EQUIPMENT - WWTP	WG-390-72	NONE	3,516.68	2005		3,516.68
FNS84	BILL PREP & STUFFING MACHINE - CSC	WG-390-72	NONE	19,120.73	2006		19,120.73

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Asset Number	Description	NARUC	Subtype	Original Cost	Purchase Date	Disposal Date	Accumulated Depreciation at 12-31-2011
	Total Office Machinery - General Plant			24,322.23			24,322.23
	COMPUTER EQUIPMENT						
FNS100	NEW COMPUTER	WG-390-73	NONE	1,620.00	2008		972.00
FNS101	COMPUTERS	WG-390-73	NONE	1,631.00	2009		652.40
FNS85	BILLING EQUIPMENT - BURSTER	WG-390-73	NONE	5,078.24	2000		5,078.24
FNS86	MICRON COMPUTER	WG-390-73	NONE	635.50	2001		635.50
FNS87	COMPUTERS & EQUIP. FOR CSC	WG-390-73	NONE	11,488.37	2002		11,488.37
FNS88	COMPUTER EQUIPMENT (WWTP)	WG-390-73	NONE	2,302.00	2003		2,302.00
FNS89	FLOW METER LAPTOP	WG-390-73	NONE	3,473.45	2005		3,473.45
FNS90	50 TOUCH PADS	WG-390-73	NONE	592.03	2005		355.20
FNS91	LAPTOP NOTEBOOKS - WWTP	WG-390-73	NONE	32,719.02	2006		32,719.02
FNS92	COMPUTER HARDWARE	WG-390-73	NONE	5,038.50	2007		4,030.80
FNS93	COMPUTER HARDWARE FOR RIVER RD	WG-390-73	NONE	1,003.00	2007		802.40
FNS94	COMPUTER + SOFTWARE	WG-390-73	NONE	3,185.00	2007		2,548.00
FNS95	WIDE LCD MONITOR	WG-390-73	NONE	789.00	2008		473.40
FNS96	NEW COMPUTER - SALT BARN	WG-390-73	NONE	727.00	2008		436.20
FNS97	COMPUTER CABLE FOR BUILDING EXPANSION	WG-390-73	NONE	2,316.00	2008		1,389.60
FNS98	LAPTOP	WG-390-73	NONE	798.00	2008		478.80
FNS99	COMPUTER EQUIP.	WG-390-73	NONE	745.50	2008		447.30
FSS1	DIALOG REAMASTER	WG-390-73	NONE	289.91	1998		277.97
FSS2	METER READING	WG-390-73	NONE	3,630.92	2000		3,339.02
FSS3	READERS	WG-390-73	NONE	1,604.40	2000		1,475.42
	Total Computer Equipment - General Plant			79,666.84			73,375.09
	SOFTWARE						
FNS103	EVIDENCE & INVENTORY SOFTWARE & EQUIP.	WG-390-74	NONE	1,292.85	2002		1,292.85
FNS104	SOFTWARE SYSTEM UPGRADE	WG-390-74	NONE	946.79	2002		946.79
FNS105	BILLING SYSTEM UPGRADE	WG-390-74	NONE	8,375.00	2003		8,375.00
FNS106	SCADA SOFTWARE	WG-390-74	NONE	5,936.57	2006		5,936.57
FNS107	SCADA SOFTWARE	WG-390-74	NONE	1,562.49	2007		1,250.00
FSS4	UTILITY DATE SOFTWARE	WG-390-74	NONE	5,765.00	1996		5,765.00
FSS5	ROUTE MAPS	WG-390-74	NONE	2,100.00	2000		2,100.00
FSS6	POCKET READER	WG-390-74	NONE	463.59	2000		426.32
	Total Software - General Plant			26,442.29			26,092.52
	TRANSPORTATION EQUIPMENT						
FNS110	2003 FORD 4X2 TRUCK #129 & RADIO	WG-391-70	NONE	7,927.24	2002		7,927.24
FNS111	2003 FORD 4X4 TRUCK #126 & RADIO	WG-391-70	NONE	8,741.73	2002		8,741.73
FNS112	NEW TRACTOR WITH SPREADER (J DEERE GATOR)	WG-391-70	NONE	14,055.00	2003		11,244.00
FNS113	2003 FORD PICK-UP TRUCK $136, RADIO & STROBES	WG-391-70	NONE	11,838.80	2003		11,838.80
FNS114	2004 FORD 4X4 TRUCK #139	WG-391-70	NONE	24,778.00	2003		24,778.00
FNS115	STROBE LIGHTS FOR #139	WG-391-70	NONE	594.80	2004		594.80
FNS116	STROBE LIGHTS FOR #143	WG-391-70	NONE	307.65	2004		307.65
FNS117	2006 FORD 3-50 SUPER DUTY TRUCK #146	WG-391-70	HEAVY TRUCKS	17,104.61	2005		17,104.61
FNS118	2006 FORD E250 CARGO VAN #104	WG-391-70	NONE	6,913.00	2006		6,913.00
FNS119	2006 FORD EXPEDITION #121	WG-391-70	NONE	15,629.50	2006		15,629.50
FNS120	2008 FORD F-350 4X4 + RADIO #106	WG-391-70	HEAVY TRUCKS	10,684.86	2007		8,547.88
FSS7	TRAILER	WG-391-70	TRAILERS	699.18	1988		699.18
FSS8	TRAILER	WG-391-70	TRAILERS	565.62	2000		520.15
	Total Transportation Equipment - General Plant			119,839.99			114,846.54
	TOOLS, SHOP AND GARAGE EQUIPMENT						
FNS122	GENERATOR	WG-393-70	NONE	19,000.00	1999		15,200.03
FNS123	WATER LINE TRACER	WG-393-70	NONE	2,264.28	2000		996.27
FNS124	CRANE TRUCK	WG-393-70	NONE	3,624.00	2000		3,624.00
FNS125	LIFT FOR SHOP (1/3 PMT)	WG-393-70	NONE	2,824.79	2001		2,824.79
FNS126	ISOLATOR (2 FLOATS & FLOW METER)	WG-393-70	NONE	2,450.35	2002		2,450.35
FNS127	CRANE WITH PEDESTAL	WG-393-70	NONE	6,000.00	2002		5,400.00
FNS128	LINE TRACER	WG-393-70	NONE	3,685.32	2005		3,685.32
FNS129	GAS DETECTOR FOR SEWER SYSTEM	WG-393-70	NONE	2,191.83	2005		2,191.83
FNS130	LOCATE EQUIPMENT	WG-393-70	NONE	1,453.91	2006		726.95
FNS131	GANTRY CRANE & ACCESSORIES	WG-393-70	NONE	1,656.69	2006		1,656.69
FNS132	VERTICAL HYDRAULIC SHORES	WG-393-70	NONE	3,936.50	2006		3,936.50
FNS133	LOCATING SYSTEM	WG-393-70	NONE	3,200.00	2006		3,200.00
FNS134	GATOR MOUNTED UTILITY SPRAYER	WG-393-70	NONE	3,198.00	2007		2,558.40
FSS10	SAFETY BELT	WG-393-70	NONE	150.00	1988		150.00
FSS11	TOOL BOX	WG-393-70	NONE	140.36	1988		140.36
FSS12	ELECTRIC WRENCH	WG-393-70	NONE	268.06	1988		268.06
FSS13	BREAKER	WG-393-70	NONE	1,264.80	2000		1,163.12
FSS14	LOCATOR	WG-393-70	NONE	630.00	2000		579.35
FSS9	GRINDER	WG-393-70	NONE	246.25	1990		246.25
	Total Tools, Shop and Garage Equipment - General Plant			58,185.14			50,998.27
	LABORATORY EQUIPMENT						

WESTFIELD WASTEWATER UTILITY
UTILITY PLANT IN SERVICE
As of December 31, 2011

Asset Number	Description	NARUC	Subtype	Original Cost	Purchase Date	Disposal Date	Accumulated Depreciation at 12-31-2011
FNS142	WWTP - LAB EQUIPMENT	WG-394-70	NONE	8,147.56	2000		8,147.56
FNS143	PROBE FOR WWTP	WG-394-70	NONE	4,914.00	2003		3,931.20
FNS144	PORTABLE SAMPLER/WWTP	WG-394-70	NONE	2,935.00	2003		2,348.00
FNS145	LAB EQUIPMENT FOR WWTP EXPANSION	WG-394-70	NONE	7,516.44	2005		7,516.44
FNS146	LAB EQUIPMENT FOR WWTP EXPANSION (1)	WG-394-70	NONE	3,211.45	2006		642.30
FNS147	REFRIGERATED SAMPLER EQUIP - WWTP	WG-394-70	NONE	4,127.17	2007		3,301.72
FNS148	REFRIGERATED SAMPLER EQUIP - WWTP	WG-394-70	NONE	4,947.55	2008		2,968.53
	Total Laboratory Equipment - General Plant			35,799.17			28,855.75
	POWER OPERATED EQUIPMENT						
FNS136	FLUID SMOKE BLOWER W/ HONDA ENGINE	WG-395-70	NONE	1,865.87	2004		1,306.13
FNS137	GENERATOR & PAD	WG-395-70	NONE	4,845.80	2006		4,845.80
FNS138	MOWER	WG-395-70	NONE	15,425.00	2006		15,425.00
FNS139	DIESEL GENERATOR + TRANSFER SWITCH - MERRIMAN LS	WG-395-70	NONE	47,796.00	2007		38,236.80
FNS140	GENERATOR - WASHINGTON WOODS	WG-395-70	NONE	68,000.00	2007		54,400.00
FNS141	MASSEY FERGUSON 3625 TRACTOR 4WD W/ SNOW BLOWER	WG-395-70	NONE	21,056.10	2007		16,844.88
FSS15	GENERATOR	WG-395-70	NONE	500.00	1987		500.00
FSS16	GENERATOR	WG-395-70	NONE	967.93	1988		967.93
FSS17	GENERATOR	WG-395-70	NONE	2,362.50	1998		2,265.22
FSS18	MOWER	WG-395-70	NONE	3,107.58	2000		3,107.58
	Total Power Operated Equipment - General Plant			165,926.78			137,899.34
	COMMUNICATION EQUIPMENT						
FNS150	NEW SINGLE PORT	WG-396-70	NONE	3,105.00	2007		2,484.00
FNS151	RADIO EQUIPMENT + SOFTWARE FOR UTILITY OFFICE + INSTALLATI	WG-396-70	NONE	13,698.50	2007		10,958.80
FNS152	RADIO	WG-396-70	NONE	1,537.50	2008		922.50
FSS19	MOBILE RADIOS	WG-396-70	NONE	797.50	1989		797.50
FSS20	KMP RADIO	WG-396-70	NONE	387.65	1989		387.65
FSS21	RADIO & MICROPHONE	WG-396-70	NONE	354.67	1994		354.67
FSS22	RADIO	WG-396-70	NONE	469.00	1996		469.00
FSS23	RADIOS	WG-396-70	NONE	571.82	2000		571.82
FSS24	RADIO	WG-396-70	NONE	229.32	2001		229.32
	Total Communication Equipment - General Plant			21,150.96			17,175.25
	MISCELLANEOUS EQUIPMENT						
FNS153	2 SUBMERSIBLE LEVEL TRANSMITTERS	WG-397-70	NONE	1,526.00	2002		1,526.00
FNS154	FIRE PROOF SAFE	WG-397-70	NONE	699.50	2004		699.50
FNS155	TRANSMITTER PROBES	WG-397-70	NONE	4,425.00	2006		4,425.00
FNS156	WEATHER STATION - WWTP	WG-397-70	NONE	1,041.91	2006		1,041.91
FNS157	SEWER CAMERA	WG-397-70	NONE	3,500.00	2006		3,500.00
FNS158	PALLET SCALE	WG-397-70	NONE	1,149.00	2007		919.20
FNS159	AMETAK SUBMERSIBLE TRANSMITTERS	WG-397-70	NONE	2,447.00	2007		1,957.60
FNS160	SEWER CAMERA	WG-397-70	NONE	17,758.18	2008		10,654.92
FNS161	RADIODETECTION GATOR CAM 332 CAMERA SYSTEM	WG-397-70	NONE	3,703.15	2010		740.63
FNS162	SARTORIUS (SCALE)	WG-397-70	NONE	1,500.00	2010		300.00
FSS25	CABINETS	WG-397-70	NONE	666.66	1981		666.66
FSS26	SCALES	WG-397-70	NONE	117.00	1981		117.00
FSS27	GAS DETECTOR	WG-397-70	NONE	1,075.00	1987		1,075.00
FSS28	PIPE & DETECTOR	WG-397-70	NONE	1,750.00	1987		1,750.00
FSS29	TRANS. TRAIL	WG-397-70	NONE	1,464.10	1988		1,464.10
FSS30	SEWER PLUG	WG-397-70	NONE	266.03	1988		266.03
FSS31	MLSU	WG-397-70	NONE	499.77	1989		499.77
FSS32	REPEATER	WG-397-70	NONE	2,257.52	1989		2,257.52
FSS33	RESPIRATOR	WG-397-70	NONE	451.21	1990		451.21
FSS34	GENERAL EQUIPMENT	WG-397-70	NONE	555.90	1990		555.90
FSS35	VALVE LOCATOR	WG-397-70	NONE	167.00	1990		167.00
FSS36	SENSION 1	WG-397-70	NONE	930.40	1999		873.85
FSS37	GENERAL EQUIPMENT	WG-397-70	NONE	899.66	1999		844.97
FSS38	GENERAL EQUIPMENT	WG-397-70	NONE	3,966.87	2000		3,647.96
FSS39	GAS DETECTOR	WG-397-70	NONE	1,409.55	2001		1,268.60
FSS40	WASHINGTON TWP	WG-397-70	NONE	1,918.33	1982		1,918.33
FSS41	FLOWMETER	WG-397-70	NONE	5,260.98	1995		5,260.98
FSS42	EXTENSION WAND	WG-397-70	NONE	1,958.25	1996		1,958.25
FSS43	CURB VALVE	WG-397-70	NONE	254.75	2001		229.28
	Total Miscellaneous Equipment - General Plant			63,618.72			51,037.16
	OTHER EQUIPMENT						
FNS163	DEPOSITORY DROP BOX	WG-398-70	NONE	242.50	1996		242.50
FNS164	PAYMASTER BURSTER MACHINE	WG-398-70	NONE	797.50	1998		797.50
FNS165	RADIO READ LIFT STATIONS - 6 RTU SYSTEMS	WG-398-70	NONE	41,427.00	2000		18,227.88
FNS166	NEW SIGN & DROP BOX AT CSC BUILDING	WG-398-70	NONE	1,542.50	2003		1,542.50
FNS167	NEW DROP BOX AT TOWN HALL	WG-398-70	NONE	561.50	2003		561.50
FNS168	NEW DROP BOX AT TRUSTEE'S OFFICE	WG-398-70	NONE	647.00	2005		647.00
FNS169	INSTALLATION OF RADIO REMOTE METERS	WG-398-70	NONE	2,774.25	2005		665.82
FNS170	EXTENSION CONNECTORS	WG-398-70	NONE	2,052.25	2006		410.45
FNS171	LEVEL REDUCER ALARM	WG-398-70	NONE	5,024.00	2006		5,024.00

WESTFIELD WASTEWATER UTILITY
UTILITY PLANT IN SERVICE
As of December 31, 2011

Asset Number	Description	NARUC	Subtype	Original Cost	Purchase Date	Disposal Date	Accumulated Depreciation at 12-31-2011
FNS172	MONUMENT SIGNAGE AT WPW	WG-398-70	NONE	24,780.50	2008		7,434.15
	Total Other Equipment - General Plant			79,849.00			35,553.30
	TOTAL GENERAL PLANT			**701,467.08**			**584,694.62**
	Total Utility Plant in Service - Westfield Wastewater			**79,827,447.54**			**15,088,067.78**
	Total CIAC Lines			19,083,640.15			2,696,646.62
	Total "For Ratemaking Only" Lines			15,763,107.77			0.00
			Grand Total Excluding Ratemaking Only Lines	64,064,339.77			15,088,067.78

Cause No. 44273
Responses of Citizens Water of Westfield/Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Twentieth Set of Data Requests

DATA REQUEST NO. 2: On page 8, lines 9-10 of his testimony, Mr. Lukes states projected needs for capital expenditures are $1,030,000 in 2013 and $2,100,000 in 2014. Please provide a detailed breakdown of the specific projects that Citizens Wastewater of Westfield expects to complete with these capital expenditures in 2013 and 2014.

RESPONSE: The projected needs described in Mr. Lukes's testimony were based on the following projects and are subject to revision based on a variety of factors, including capital work completed by the City of Westfield prior to the closing of an acquisition.

Year 1 - WWTP Storage expansion	$ 100,000
WWTP Improvements	$ 200,000
Engineering plant improvements	$ 400,000
WW Hydraulic model	$ 150,000
Miscellaneous IT, SCADA, Security	$ 180,000
Year 2 – Onsite Generators	$ 200,000
Lift station upgrades	$ 200,000
Adios Pass main replacement	$ 40,000
Sewer extensions	$ 150,000
Portable bypass pump	$ 60,000
I/I reduction program	$ 100,000
WWTP Storage expansion	$1,000,000
WWTP Improvements	$ 100,000
Engineering plant improvements	$ 100,000
Miscellaneous IT, SCADA, Security	$ 150,000

WITNESS: Lindsay C. Lindgren

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Twenty-First Set of Data Requests

2013 and 2014 Capital projects

DATA REQUEST NO. 21:

In response to OUCC DR 20.2 under Cause No. 44273, Citizens Wastewater of Westfield listed the following projects for 2013 and 2014

Year 1	
WWTP Storage expansion	$ 100,000
WWTP Improvements	$ 200,000
Engineering plant improvements	$ 400,000
WW Hydraulic model	$ 150,000
Miscellaneous IT, SCADA, Security	$ 180,000
Year 2	
Onsite Generators	$ 200,000
Lift station upgrades	$ 200,000
Adios Pass main replacement	$ 40,000
Sewer extensions	$ 150,000
Portable bypass pump	$ 60,000
I/I reduction program	$ 100,000
WWTP Storage expansion	$1,000,000
WWTP Improvements	$ 100,000
Engineering plant improvements	$ 100,000
Miscellaneous IT, SCADA, Security	$ 150,000

Please provide a project status update for the proposed projects listed above.

RESPONSE:

Please see the table below for project status update:

Year 1	**Status**
WWTP Storage expansion	Canceled
WWTP Improvements	Completed
Engineering plant improvements	In-Progress
WW Hydraulic model	Canceled
Miscellaneous IT, SCADA, Security	Completed
Year 2	
Onsite Generators	Canceled
Lift station upgrades	Completed
Adios Pass main replacement	Canceled
Sewer extensions	Completed
Portable bypass pump	Deferred

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Twenty-First Set of Data Requests

I/I reduction program	Completed
WWTP Storage expansion	Canceled
WWTP Improvements	Completed
Engineering plant improvements	In-Progress
Miscellaneous IT, SCADA, Security	Completed

WITNESS:

Aaron D. Johnson

CITIZENS WASTEWATER OF WESTFIELD, LLC
WESTFIELD, INDIANA

WASTEWATER INFRASTRUCTURE PLANNING

FEBRUARY 2015

citizens westfield™

WASTEWATER INFRASTRUCTURE PLANNING

FEBRUARY 2015

Prepared by:

The HNTB Companies
Infrastructure Solutions

HNTB

HNTB CORPORATION
111 MONUMENT CIRCLE
INDIANAPOLIS, INDIANA 46204
(317) 636-4682

HNTB Job No. 62600-PL-308

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- 156th Street Interceptor
- Little Eagle Creek Interceptor
- North Cool Creek Interceptor
- Southwest Interceptor and LS
- Viking Meadows LS and Force Main

1.0 INTRODUCTION

In March 2014, the City of Westfield, Indiana and Citizens Energy Group (Citizens) completed the transfer of the community's water and wastewater utilities to Citizens. The utilities are located in the City of Westfield, Hamilton County, Indiana. To appropriately meet the growth needs and plan for future development, Citizens Wastewater of Westfield, LLC (Citizens Westfield) contracted HNTB to evaluate current and future wastewater infrastructure needs within the City of Westfield service territory. The intent of the evaluation is to identify wastewater needs related to future growth and development within the City and to provide Citizens Westfield with a tool for making informed decisions regarding capital projects for improvement and expansion of the existing wastewater system.

In 2006, HNTB developed a wastewater Master Plan for the City of Westfield. The Master Plan was based on a theoretical evaluation of infrastructure needs based on 100-percent development of available land within Washington Township. The Township was divided into multiple wastewater collection basins, based on existing services and topography. Assumptions on theoretical waste flows were used to plan capital projects intended to serve each basin as growth and development produced the need for sanitary service. Since issuing the Master Plan in 2006, the City of Westfield has developed rapidly and several capital projects have been constructed. This evaluation serves as an overall update to the 2006 Master Plan and provides new recommendations based on the evolving needs of the City.

In October of 2014, HNTB issued a technical memo assessing the current allocated waste load for the City of Westfield collection system and wastewater treatment plant (WWTP). Citizens Westfield is currently using the assessment to evaluate capacity availability for planned and future developments. The first task of this planning effort is to recommend priority infrastructure projects to relieve areas in the system identified in the waste load allocation as insufficient to serve current or planned developments. In addition to addressing immediate needs, information from the waste load allocation was used in conjunction with growth projections over the next 20 years to identify future infrastructure projects needed to serve rapidly developing areas. Project descriptions, Class 5 cost estimates, tier classifications, and priority rankings are provided for all recommended projects. It should be noted that project placement between tiers is heavily influenced by factors such as development timing and location.

2.0 EXISTING INFRASTRUCTURE EVALUATION

Since issuing the 2006 Master Plan, the City of Westfield and the surrounding service area has experienced significant growth and continues to receive interest in both commercial and residential development. As a result, an updated evaluation of the existing wastewater infrastructure, including sanitary sewers, lift stations, and the Westfield WWTP, was warranted to determine the need for capital investments by Citizens Westfield to accommodate development. In addition to considerations internal to Citizens Westfield and the City of Westfield, the Indiana Department of Environmental Management (IDEM) requires monitoring of wastewater collection and treatment infrastructure in the form of long-term flow monitoring or waste load

allocation tracking to ensure that these systems are not overburdened by unchecked development. If systems are determined to be inadequate, IDEM may order development ceased until expansion of the collection and/or treatment system occurs.

Utilizing development information supplied by Citizens Westfield, the 2014 waste load assessment replaced many theoretical assumptions from the 2006 Master Plan with actual waste allocations issued to developments by the City of Westfield. It is important to note that allocated waste loads do not necessarily represent real flows within the system. Allocated flows are based on the number of residential dwellings and size and type of commercial development. In some cases allocations were issued to developments that are not yet constructed and therefore not contributing to the actual current waste load. Regardless of construction status, these allocated developments are accounted for under the assumption that construction will occur in the foreseeable future. The results of the evaluation revealed inadequacies at the WWTP and within the collection system, as detailed below.

2.1 WWTP Capacity Evaluation

Treatment of wastewater from the Westfield service area is currently split between the Westfield WWTP and the City of Carmel. The current service area is comprised of eight (8) wastewater basins. The service area that currently flows to Carmel is generally identified as those located east of US 31 and south of SR 32. Flow to the City of Carmel is currently metered at an existing 21-inch gravity interceptor near the intersection of 146th Street between Oak Road and Cool Creek. Wastewater basins (including the Carmel Service Area) and the Carmel metering connection are depicted on **Figure 2.2**.

Figure 2.1 depicts the actual metered flows and treatment capacity (ADF and PDF) flows for the Westfield WWTP and the Carmel Connection. A capacity evaluation for both the WWTP and the Carmel Connection are discussed below.

Table 2-1 shows the results of an evaluation of WWTP capacity from the Waste Load Allocation Report. Allocated average daily flow (ADF) is currently 1.9 MGD or 1.1 million gallons per day (MGD) less than design capacity. The allocated peak daily flow (PDF) is 5.7 MGD or 1.8 MGD less than the design capacity. Once the Downtown Lift Station is constructed in 2015, it will contribute an additional calculated ADF of 0.65 MGD and an initial PDF of 0.80 MGD to the Westfield WWTP. The discrepancy between actual measured flows and currently allocated flow is evidence of the theoretical nature of flow allocation and the result of developments that may currently be under or awaiting construction.

TABLE 2-1
Westfield WWTP Capacity Evaluation

Infrastructure Name	*Current Design Capacity (MGD)*	*Flow Currently Allocated (MGD)*[1]	*Actual Measured Flow (MGD) Max YTD*
WWTP	3.0 ADF 7.5 PDF	1.9 ADF 5.7 PDF	1.7 ADF 5.1 PDF

FIGURE 2.1
Westfield WWTP/Carmel WWTP Metered Flows

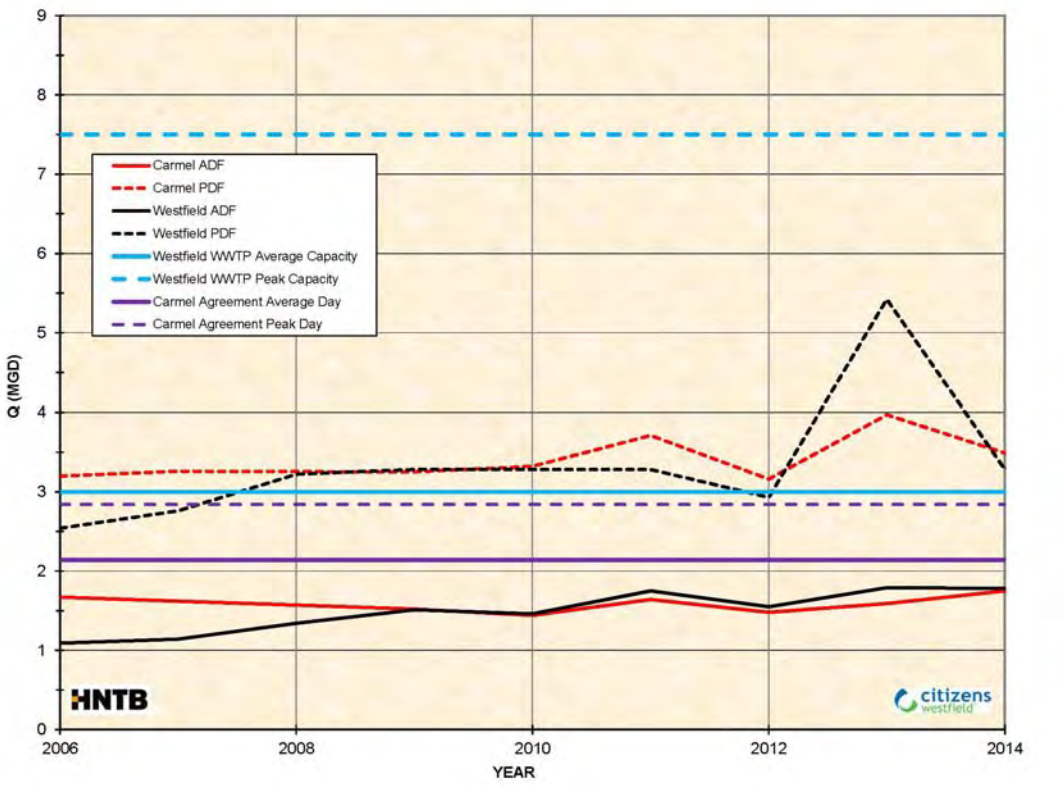

Table 2-2 shows the results of the waste load allocation evaluation of the Carmel Connection capacity and indicates that both ADF and PDF are above the currently contracted amount. However, actual measured flow is below the contracted values for both ADF and PDF. The contract with Carmel allows Citizens Westfield to exceed the PDF; however, a surcharge can be assessed.

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CONFIDENTIAL

TABLE 2-2
Carmel Connection Capacity Evaluation

Infrastructure Name	*Carmel Connection (MGD, Service Agreement)*	*Carmel Connection Flow Currently Allocated (MGD)*	*Actual Measured Flow (MGD) Max YTD*
Carmel Connection Flow Meter	2.14 ADF 2.84 PDF*	2.4 ADF 6.4 PDF	1.8 ADF 4.0 PDF

*w/surcharge capability

2.2 Collection System Evaluation

In addition to the WWTP evaluation, sanitary sewers and lift stations within the collection system when/where evaluated based on design capacity. **Figure 2.2** highlights infrastructure that is currently allocated beyond 90 percent of design capacity. **Table 2-3** provides a listing and description of sewers and lift stations allocated beyond 90 percent, as referenced in the previous Waste Load Allocation Report.

TABLE 2-3
Existing Collection System Infrastructure Allocated Beyond 90-Percent Capacity

WWTP Location	*Sanitary Basin Location*	*Limiting Infrastructure*	*Allocated Capacity*	*Key Notes*
Carmel WWTP	Cool Creek/ Oak Road	Gravity Sewer in Carmel Service Area	143%	Existing 8-inch sanitary sewer at peak flow calculated to be 0.21 MGD over pipe capacity. The sewer was shown over capacity in the 2006 Master Plan as well.
Carmel WWTP	Cool Creek/ Oak Road	Brookside Lift Station	151%	The calculated peak flow at the lift station is 1.43 MGD while the current pump capacity is only 0.95 MGD. The Lift Station was shown over capacity in the 2006 Master Plan as well.
Carmel WWTP	Cool Creek/ Oak Road	Gravity Sewer in Carmel Service Are	139%	Existing 8-inch sanitary sewer at peak flow calculated to be 0.19 MGD over pipe capacity. The sewer was shown over capacity in the 2006 Master Plan as well.
Carmel WWTP	Cool Creek/ Oak Road	Cool Creek Lift Station	190%	The calculated peak flow at the lift station is 0.27 MGD while the current pump capacity is only 0.14 MGD. The lift station was shown over capacity in the 2006 Master Plan as well.
Carmel WWTP	Cool Creek/ Oak Road	18-in Cool Creek Interceptor	95%	Once the Downtown Lift Station (LS) is constructed in 2015, up to 2.6 MGD ultimately will be removed from this interceptor and subsequently, the City of Carmel.

WWTP Location	*Sanitary Basin Location*	*Limiting Infrastructure*	*Allocated Capacity*	*Key Notes*
Westfield WWTP	J. Edwards Drain (JED)	South Park Lift Station	106%	The calculated peak flow at the lift station is 0.53 MGD while the current pump capacity is only 0.50 MGD.
Westfield WWTP	JED	12-in J. Edwards Drain Interceptor	153%	Existing 12-inch interceptor sewer at peak flow calculated to be 0.57 MGD over pipe capacity. The sewer will no longer be considered over capacity when flow from Tomlinson Road and Washington Woods LS (WWLS) are re-directed to the Westside Interceptor Sewer in 2015.
Westfield WWTP	JED	15-in J. Edwards Drain Interceptor	150%	Existing 15-inch interceptor sewer at peak flow calculated to be 0.81 MGD over pipe capacity. The sewer will no longer be considered over capacity when flow from Tomlinson Road and WWLS are re-directed to the Westside Interceptor Sewer in 2015.
Westfield WWTP	JED	18-in J. Edwards Drain Interceptor	143%	Existing 18-inch interceptor sewer at peak flow calculated to be 1.02 MGD over pipe capacity. The sewer will no longer be considered over capacity when flow from Tomlinson Road and WWLS are re-directed to the Westside Interceptor Sewer in 2015.
Westfield WWTP	JED	24-in J. Edwards Drain Interceptor	121%	Existing 24-inch interceptor sewer at peak flow calculated to be 0.87 MGD over pipe capacity. The sewer will no longer be considered over capacity when flow from Tomlinson Road and WWLS are re-directed to the Westside Interceptor Sewer in 2015.
Westfield WWTP	156th	Merrimac Lift Station	106%	The calculated peak flow at the lift station is 1.92 MGD while the current pump capacity is only 1.80 MGD.
Westfield WWTP	156th	Towne Road Lift Station	119%	The calculated peak flow at the lift station is 3.08 MGD while the current pump capacity is only 2.59 MGD.
Westfield WWTP	WWLS	Tomlinson Road Lift Station	251%	The calculated peak flow at the lift station is 1.26 MGD while the current pump capacity is only 0.50 MGD. Over-allocated due to the permitted Grand Park Complex.
Westfield WWTP	WWLS	Andover Lift Station	97%	The calculated peak flow at the lift station is 0.72 MGD while the current pump capacity is only 0.74 MGD.
Westfield WWTP	WWLS	Washington Woods Lift Station	172%	The calculated peak flow at the lift station is 1.97 MGD while the current pump capacity is only 1.14 MGD. Andover LS was recently connected to the WWLS. WWLS will be upgraded to full buildout in 2015 and will be connected to the Westside Interceptor Sewer.

3.0 PREDICTION OF GROWTH RATES AND FUTURE FLOW

There are currently many developments that are either approved for construction, are in construction, or have been allocated in the overall flow totals within Washington Township. Most of the development interest has been concentrated within the WWTP service area, as opposed to the Carmel Service Area.

Additionally, there are future developments (or areas of growth) that have been identified. In order to predict future growth rates, the 2006 Wastewater Master Plan and the Washington Township Comprehensive Plan were analyzed. These documents include projected development densities based on land use used to predict future flows. The proposed areas of growth with associated equivalent dwelling unit (EDU) densities are depicted on **Figure 3.1**. The growth areas were provided by Citizens Westfield.

3.1 2006 Master Plan Background and Assumptions for EDU Growth Development

To re-establish assumptions outlined in the October 2014 Waste Load Report and to establish a foundation for planned EDU analysis, the assumptions for basin delineations created in the 2006 Master Plan are discussed.

The current wastewater basins within the Citizens Westfield collection system are shown on **Figure 3.2**, as delineated in the 2006 Master Plan. This Section provides a brief summary of the assumptions made in delineating the basins and sub-basins in 2006. Sub-basin divisions are depicted on **Figure 3.3**. Sub-sub-basin delineations were completed in 2006 but are not included in this evaluation. Detailed basin descriptions are included in the 2006 Master Plan.

Basins

- Delineated based on existing parcel lines, even though the parcels may be subdivided in the future.
- Delineated by utilizing the two-foot contours available from the Hamilton County GIS website.
- Determined based upon the major interceptors or regional lift stations that flow to Carmel or to the Westfield WWTP (currently or in the future). Names were assigned as listed in **Table 3-1**.

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TABLE 3-1
Basin Names and Abbreviations

Basin Name	*Abbreviation*
Cool Creek Interceptor/Oak Road LS Basins (Carmel Service Area)	N/A
J. Edwards Drain Interceptor Basin	JED
Westside Interceptor Basin	WEST
Washington Woods Lift Station Basin	WWLS
Viking Meadows Lift Station Basin	VMLS
156th Street Interceptor Basin	156TH
Northwest Interceptor Basin	NW
Southwest Interceptor Basin	SW

Sub-Basins

- Delineated based upon major branches of the interceptor sewers.
- Delineated by utilizing the two-foot contours available from the Hamilton County GIS website.

Sub-Sub-Basins

- Delineated based upon the land use within the sub-basin. For example, a subdivision or a commercial development is one sub-sub-basin.

As referenced, the 2006 Master Plan was a theoretical evaluation of the collection system assuming 100-percent development of all available land within Washington Township. Each parcel within the basin area, developed or undeveloped, was assigned a waste load in the form of equivalent development units (EDUs). One (1) EDU represents 310 gallons per day (gpd) of wastewater flow. The number of EDUs per parcel was determined by land use. In general, for developed areas, the following EDU values were assigned:

- Existing single family residences = 1 EDU;
- Existing multifamily residences and apartments = 7.0 EDUs per acre;
- Existing commercial areas = 3.0 EDUs per acre;
- Existing employment areas = 1.5 EDUs per acre; and
- Existing schools or churches = based on 70 percent of water usage (provided by Westfield Public Works Department).

For undeveloped areas, assumptions were made regarding future land use. In general, the following EDU values were assigned to undeveloped parcels:

- Undeveloped residential areas = 2.6 EDUs per acre (3.0 multiplied by 85 percent to account for roads and green spaces not contributing to the waste load);
- Undeveloped multifamily residences and apartments = 7.0 EDUs per acre;
- Undeveloped commercial areas = 3.0 EDUs per acre; and
- Undeveloped employment areas = 1.5 EDUs per acre.

3.2 Westfield Comprehensive Plan and Land Use

To evaluate the need or ability to update the 2006 Master Plan assumption on EDUs, the Westfield Comprehensive and Land Use Plan was reviewed. The Comprehensive Plan was last updated in 2007 with amendments to add the Grand Junction Area in 2013. These documents provide information on the assumed 20-year development of Westfield Washington Township, but only provide limited estimated residential EDU per acre guidance. The Comprehensive Plan did not provide information for residential multi-family, employment or commercial EDU density. **Figure 3.4** depicts the projected land use as identified in the 2007 Comprehensive Plan.

3.3 EDU Density for Future Infrastructure Planning

The 2006 Master Plan, the 2007 Comprehensive Plan, and the 2013 Grand Junction Implementation Plan were evaluated for estimating EDUs for future infrastructure planning. The comprehensive planning documents provided limited information to assist in EDU density projections. Therefore, undeveloped land EDU density assignments were assumed to be as identified in the 2006 Master Plan and are listed in **Table 3-2** and depicted on **Figure 3.5**.

TABLE 3-2
Gross EDUs Per Basin – Undeveloped Areas

Basin Name	*Gross EDUs per Development Type*			
	Residential Single Family	*Residential Multi-Family*	*Employment*	*Commercial*
Cool Creek Interceptor/Oak Road LS Basins (Carmel Service Area)	3.0	7.0	1.5	3.0
J. Edwards Drain Interceptor Basin	3.0	7.0	1.5	3.0
Westside Interceptor Basin	3.0	7.0	1.5	3.0
Washington Woods Lift Station Basin	3.0	7.0	1.5	3.0
Viking Meadows Lift Station Basin	3.0	7.0	1.5	3.0
156th Street Interceptor Basin	3.0	7.0	1.5	3.0
Northwest Interceptor Basin (North of 186th)	1.5	7.0	1.5	3.0
Northwest Interceptor Basin (South of 186th)	2.5	7.0	1.5	3.0
Southwest Interceptor Basin	2.5	7.0	1.5	3.0

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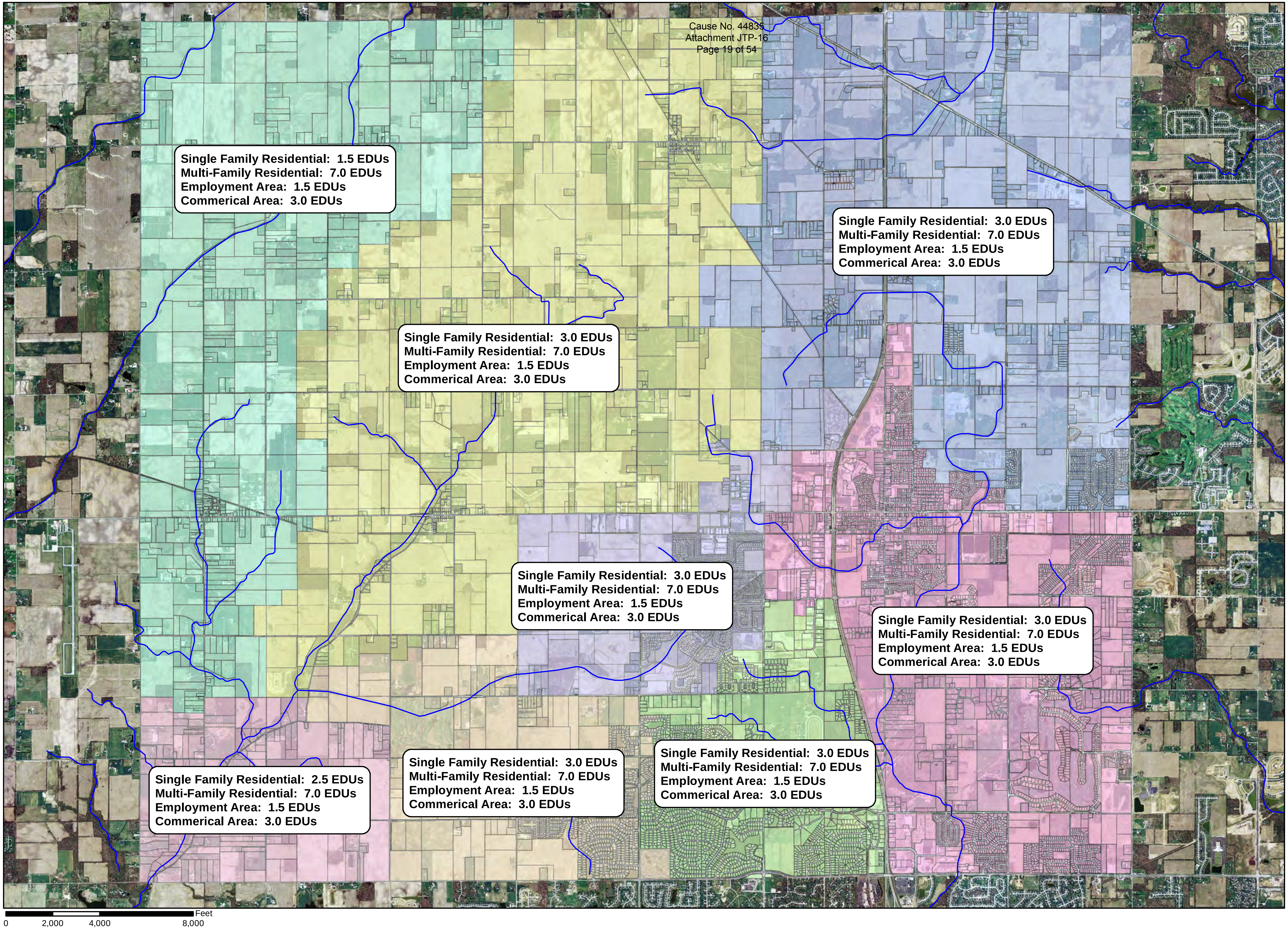
- Suburban Residential
- New Suburban
- Existing Rural SW
- Rural NW and NE
- Business Park
- Local Commercial
- Employment Corridor
- Regional Commercial
- Villages
- Downtown

*Based on figure from 2007 Westfield Comprehensive Plan. Chapter 2, Page 24.

0 2,000 4,000 8,000 Feet

Figure 3.4 - 2007 Westfield Comprehensive Plan Projected Land Use



HNTB

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N
W
E
S

February 2015

Legend

Basin

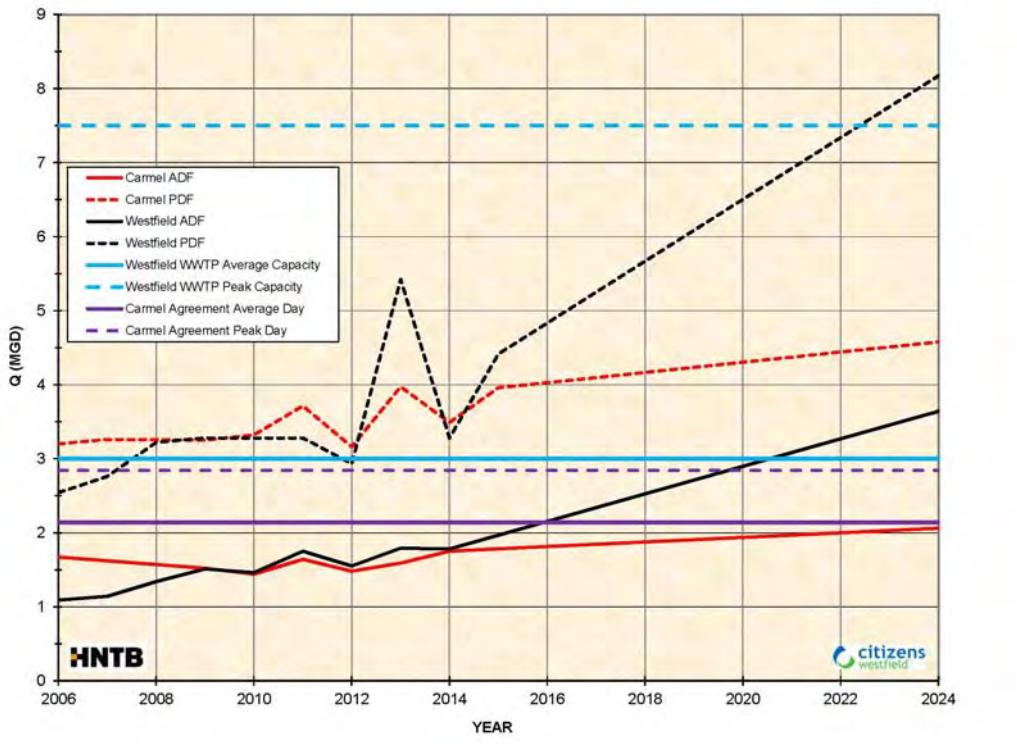
- 156TH
- Cool Creek/ Oak Rd LS
- JED
- NW
- SW
- VMLS
- WEST
- WWLS

Figure 3.5 - Gross EDU Density by Basin at Buildout

3.4 Future Flows

Figure 3.6 displays the metered Westfield WWTP and Carmel Connection flow rates between 2006 to 2014 (includes flow up to October 2014). For the 10-year forecast between 2014 and 2024, a growth rate of 700 EDUs per year was used. Growth is predominantly occurring in the areas served by the Westfield WWTP. Future flow estimates are based on 600 EDUs, in the basins served by the WWTP and 100 EDUs served by Carmel. The estimated average daily flow from the Westfield WWTP in 2024 is approximately 3.6 MGD with a peak flow of 8.1 MGD. The flow to the Carmel Connection point in 2024 is estimated to be 2.1 MGD ADF and 4.5 MGD PDF.

FIGURE 3.6
Westfield WWTP/Carmel WWTP Average and Peak Capacity Comparison
Assumed EDU Growth Per Year



4.0 FLOW MONITORING, RAINFALL MONITORING, AND INFILTRATION / INFLOW REDUCTION

Although the City of Westfield has separate sanitary and storm sewer collections systems, overburdening of certain portions of the sanitary collection system during heavy rainfall, especially in the old downtown area, support the idea of infiltration/inflow (I/I) problems, which is common in older sanitary systems. Infiltration is the result of aging or damaged pipes and manholes, misaligned pipes, or disconnected, faulty, or broken sanitary laterals or cleanouts that allow groundwater or storm water to enter the sanitary system. Inflow results from storm water or groundwater sources flowing via a direct path (pipe, manhole cover, etc.) into the sanitary

system. Sources of inflow can range from unintentional storm connections to illegal downspouts, yard drains, or sump pump connections that drain to the sanitary system. Regardless of the source, I/I can contribute a significant volume of flow not accounted for in sanitary sewer design. The result is backups of raw sewage into homes and businesses and sanitary sewer overflows (SSOs) to nearby waterways, such as those observed along Cool Creek in the downtown area of Westfield. Flow monitoring and SSO analysis in the downtown sanitary area will be further defined and analyzed as part of a separate study – Grand Junction Planning report.

Based on these considerations, it is recommended that sanitary sewer flow and rainfall monitoring be conducted. The goal of sanitary flow monitoring is to establish accurate average and peak flow data to identify portions of the collection system that are most affected by I/I. As part of this report, areas to place flow meters have been identified and are depicted on **Figure 4.1** and listed in **Table 4-1.** The first phase will be to install three (3) flow meters that will be purchased by Citizens Westfield. These locations are identified on **Figure 4.1** as "Phase I" with future meter installation locations identified as "Phase II". General areas in which to install flow meters were identified by Citizens' staff. HNTB has proposed additional flow meters on either known problem areas or where infrastructure is believed to have been installed with inadequate pressure testing at the time of installation**.** Along with flow monitoring, rainfall monitoring should be conducted to correlate rainfall events to the dates and times in which the flow data was collected.

Once peak flows and capacity issues are identified through the monitoring program, an I/I reduction program should be established. The I/I reduction program will use information from the monitoring program to identify priority areas for further investigation. Investigation methods may include visual inspection, CCTV, smoke testing, or sub- and sub-sub basin flow monitoring to identify structures with significant I/I problems. Once problem areas are identified, a rehabilitation options evaluation and associated cost/benefit analysis should be completed. Rehabilitation options include but are not limited to the following:

- Private side sewer and cleanout repair/replacement;
- Lateral repair/replacement;
- Sewer main and manhole rehabilitation or replacement, and ;
- Closing or re-routing illegal connections.

Construction methods may include pipe bursting and replacement, open-cut replacement, sewer lining, and manhole lining, repair, or complete replacement. A project priority ranking should be established based on the completed cost benefit analysis. The cost benefit analysis should weigh the cost of I/I reduction with future capital investments required for system expansion to accommodate I/I. Expansion of the WWTP to treat I/I should also be included. Environmental impacts of SSOs should be considered in the cost/benefit analysis.

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TABLE 4-1
Flow Metering Locations

Flow Meter No.	*Subdivision / Development*	*Description*
1	Maple Knoll	Located on 12-in tributary north of 24-in JED Interceptor
2	N/A	Located on 24-in JED Interceptor
3	Countryside Townhomes	Located on 8-in tributary north of 18-in JED Interceptor
4	Countryside Townhomes	Located on 8-in tributary west of 18-in JED Interceptor
5*	Countryside	Located on a downtown 8-in sewer tributary northwest of the 12-in E/W Cool Creek Interceptor
6	Downtown Area	Located on a downtown 10-in sewer tributary west of the 12-in E/W Cool Creek Interceptor
7	Downtown Area	Located on a downtown 8-in sewer tributary southwest of the 12-in E/W Cool Creek Interceptor
8*	Downtown Area	Located on the 12-in E/W Cool Creek Interceptor
9	Downtown Area	Located on a downtown 8-in sewer tributary north of the E/W 12-in Cool Creek Interceptor
10	Downtown Area	Located on a downtown 10-in sewer tributary north of the E/W 12-in Cool Creek Interceptor
11*	Downtown Area	Located on a 12-in Cool Creek Interceptor at the lagoon junction structure
12	Carmel Connection	Located on the 15-in Interceptor west of the Carmel Connection Metering Structure

**Phase I Flow Monitor Location*

5.0 PROJECTS RECOMMENDED TO SERVE FUTURE GROWTH

Based on growth projections and assumptions identified in earlier sections, capital projects were developed to meet the anticipated needs of the Citizens Westfield System. The projects are depicted on **Figure 5.1** and are further defined in this Section. Selected projects that include interceptors have been enlarged in order to show future tributary sewers and proposed pipe sizing and are located in **Appendix A.**

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5.1 Capital Projects List

Project No. 1: Tomlinson Road Lift Station Upgrade

The existing infrastructure associated with the Tomlinson Road Lift Station (LS) includes an 8-foot diameter circular wet well and 8-foot valve vault and is piped for triplex arrangement. Currently, only two (2) 700 gpm pumps are installed for duplex operation [recently upgraded from two (2) 400 gpm pumps]. Tomlinson Road LS was originally constructed as a temporary lift station and shares a section of force main with the Washington Woods Lift Station (WWLS). Flow is pumped through the shared force main along 181st Street before discharging to the 12-inch segment of the J. Edwards Drain Interceptor.

Although the Tomlinson Road LS was originally designed to be temporary, the recent planning and construction of Grand Park will necessitate the upgrade of this station. When the initial phases of the complex were constructed, an 18-inch interceptor with 12-inch sewers extending both north and south of the first phase buildout were connected to the Tomlinson Road LS. The 18-inch sanitary sewer is sized for over 1,750 EDUs of the ultimate buildout of the planned service area in and around Grand Park. Due to the already constructed sanitary sewers within Grand Park, flow from the buildout of Grand Park will flow to the Tomlinson Road LS. The lift station will require additional upgrades as future buildout occurs until the North Cool Creek Interceptor is constructed.

Additionally, the first phase of the Chatham Hills development is currently being planned. Chatham Hills is further discussed in Project No. 2, and is generally located west of US 31 and north of 203rd Street. Due to the lack of existing infrastructure in the northern portion of the service area, the developer would like to send the first phase flow to the Tomlinson Road LS, further requiring a lift station upgrade. Sending flow to any other location in the system would require significant capital improvements.

Expansion of the Tomlinson Road LS beyond 700 gpm will require a force main size increase and installation of the triplex pumping setup. The existing station wet well is 8-foot in diameter and future pumping capacity will ultimately be limited by physical pump space. Because of space, Tomlinson Road LS will have an ultimate buildout of approximately 1,500 gpm (2.2 MGD). However, the upgrade should provide enough capacity for full buildout of the Grand Park Sports Complex, existing and undeveloped commercial areas within the modified service area. Additionally, 8,900 lineal feet of 16-inch force main would need to be installed between Tomlinson Road and the eastern terminus of the Westside Interceptor to handle the additional flow.

As a result of the installed sewers within Grand Park, the drainage basins outlined in the 2006 Master Plan associated with the Tomlinson Road LS have changed. **Table 5-1** identifies areas that will drain to the Tomlinson Road LS at ultimate buildout, along with associated peak flows used to size the lift station upgrade. The modified Tomlinson Road LS service area is depicted on **Figure 5.2**.

TABLE 5-1
Tomlinson Road Lift Station Upgrade

Item	*Sub-Basin/Area*	*EDUs*	*Avg. Flow (MGD)*	*Peak Flow (MGD)*
1	Grand Park Sports Complex	1,750	53,300	1,745,000
2	Undeveloped Commercial	151	46,800	187,000
3	Existing Development	81	25,100	103,000
Proposed Lift Station Sizing				**2.2 MGD**

Project No. 2: Chatham Hills Lift Station Upgrade and Force Main Relocation

Chatham Hills is an approximate 1,500 EDU proposed development with Phase I currently in design. A majority of the development is proposed to be located in Sub-Basin WWLS_203rd with an additional portion located in Sub-Basin West_1. The first phase of Chatham Hills is currently in design and will include a lift station sized to handle Phase I flow only. The initial lift station will include an 8-inch force main that will discharge to the existing 10-inch sanitary sewer that extends north from and drains to the Tomlinson Road LS. As discussed in Project No. 1, the Grand Park Sports Complex was designed with infrastructure that can only go to the Tomlinson Road LS and the amount of flow that can be discharged to Tomlinson Road from Chatham Hills is dependent on the development of Grand Park, as well as the remaining capacity of the existing 10-inch interceptor in which the Chatham Hills Lift Station discharges. With regard to the 10-inch sewer serving Tomlinson Road LS, the capacity available for the first phase of Chatham Hills at the Tomlinson Road LS is 0.8 MGD. Once 0.8 MGD is reached, flow shall be re-directed to a new regional lift station and force main should be re-routed to the west where it will discharge to the future Little Eagle Creek Interceptor and ultimately the Westside Interceptor Sewer. The future Little Eagle Creek Interceptor is discussed in Project No. 5. The lift station wet well and associated components will be sized to accommodate an ultimate design capacity of 4.0 MGD.

The ultimate size of the Chatham Hills force main is proposed to be 18 inches in diameter (assuming 3.5 ft/s velocity). It is recommended that a parallel 18-inch force main be installed with the 8-inch during the initial lift station construction to mitigate future costs. Assuming a dual larger force main will be installed by the developer along the north/south length of Tomlinson Road, the remaining east/west length of force main to be connected to the future Little Eagle Creek Interceptor would be approximately 10,500 lineal feet.

Table 5-2 identifies the proposed contributing flows to drain to the Chatham Hills Lift Station at ultimate buildout. The proposed Chatham Hills LS service area is depicted on **Figure 5.3**.

TABLE 5-2
Chatham Hills Lift Station

Item	*Sub-Basin/Area*	*EDUs*	*Avg. Flow (MGD)*	*Peak Flow (MGD)*
1	Chatham Hills Development	1,500	465,000	1,522,500
2	Existing Residential (Sub-Basin West_1)	116	36,000	145,500
3	Undeveloped Sub-Basin WWLS_203rd	2,465	764,150	2,345,500
Proposed Lift Station Sizing				**4.0 MGD**

Project No. 3: North Cool Creek Interceptor

As development on the northeast side of US 31 within the Washington Woods Lift Station (WWLS) Basin increases, the North Cool Creek Interceptor will need to be constructed. The service area for the North Cool Creek Interceptor has remained unchanged since the 2006 Master Plan. The sewer will serve a majority of the WWLS Basin and would accept flow from the area currently served by the Tomlinson Road and GTE Lift Stations, allowing for the abandonment of both stations.

The interceptor is planned to begin as an 18-inch sewer to receive flow from the current Tomlinson Road LS service area. After the sewer intercepts Tomlinson Road and GTE lift stations, the sewer diameter would be increased to 36 inches to accommodate additional future flows from the WWLS basin. The sewer length would be approximately 17,000 feet and the alignment would generally follow the path of Cool Creek before discharging to the WWLS. The WWLS would then pump through existing force mains to the Westside Interceptor Sewer. The WWLS has been sized for the inclusion of this interceptor but will likely need its capacity upsized ultimately. The ultimate buildout of WWLS includes a future parallel wet well and new force main that would discharge to the Westside Interceptor. The North Cool Creek Interceptor contributing flows are outlined in **Table 5-3**. An enlarged figure showing pipe sizing associated with the North Cool Creek Interceptor is located in **Appendix A**.

TABLE 5-3
North Cool Creek Interceptor

Item	*Sub-Basin/Area*	*EDUs*	*Avg. Flow (GPD)*	*Peak Flow (MGD)*
1	Tomlinson Road Lift Station, GTE Lift Station, WWLS_196th, WWLS_Main, and WWLS_203rd undeveloped sub-basins	14,200	4,393,500	10 MGD
Proposed Interceptor Sizing				**18-36 inches**

Project No. 4: 203rd Street Lift Station

The 203rd Street LS would serve a portion of the WWLS_203rd Sub-Basin between US 31 and Grassy Branch and south of SR 38. The lift station would be generally sized for 1.3 MGD (which equates to about 1/3 of the flow outlined in the 2006 Sanitary Master Plan for the overall area of the 203rd Street Sub-Basin). The 203rd Street Lift Station is proposed to discharge to the North Cool Creek Interceptor (Project No. 3) with a 10-inch force main.

TABLE 5-4
203rd Street Lift Station

Item	*Sub-Basin/Area*	*EDUs*	*Avg. Flow (GPD)*	*Peak Flow (MGD)*
1	WWLS_203rd Sub-Basin (East of US 31)	1,200	370,000	1.3 MGD
Proposed Lift Station Sizing				**1.3 MGD**

Project No. 5: Little Eagle Creek Interceptor Sewer

The Little Eagle Creek Interceptor was originally identified in the 2006 Sanitary Master Plan and ultimately connects to the 54-inch section of the Westside Interceptor Sewer. The interceptor drains a majority of the Westside Interceptor Sewer Basin, specifically north of 181st Street. Additionally, the interceptor is slated to capture discharge form the ultimate buildout of the Chatham Hills Lift Station, as referenced in Project No. 2. The interceptor is planned to begin as a 24-inch sewer at its northern reaches and increases in pipe size sequentially to a 36-inch sewer at its connection to the Westside Interceptor Sewer. The sub basin drainage area with resulting sewer sizing is shown below in **Table 5-5.** The locations of future tributary sewers proposed to be connected to the Little Eagle Creek Interceptor are shown on **Figure 5.2**. An enlarged figure showing pipe sizing associated with the Little Eagle Creek Interceptor is located in **Appendix A**.

TABLE 5-5
Little Eagle Creek Interceptor Sizing

Item	*Sub-Basin/Area*	*EDUs*	*Avg. Flow (GPD)*	*Peak Flow (MGD)*
1	Chatham Hills Lift Station Sub-Basins Nos. West_1-5, West_7- 8, and West_10-11	11,900	3,700,000	8.8 MGD
Proposed Interceptor Sizing				**24-36 inches**

Project No. 6: Towne Road Lift Station Upgrade

The existing Towne Road LS is a 50 HP duplex station with a pumping capacity of 2.6 MGD discharging to an 18-inch force main. Based on the number of starts per hour, peak daily flow measured at the Towne Road LS is approximately 2.0 MGD. Towne Road LS has an existing 12-

foot circular wet well and 8-foot square valve vault that can be expanded to account for additional flow.

The lift station is currently set up with a duplex pump and piping arrangement. It is recommended that the station piping, valves, hatches, and pump arrangement be set up for triplex operation with VFD control. A separate document is being written (156th Street Interceptor Preliminary Engineering Report) that details the upgrades necessary at the Towne Road Lift Station in order to maximize the wet well volume and force main capacity. This equates to approximately 5.8 MGD and a force main velocity of 5 ft/s.

Additionally, the existing force main currently discharges at the WWTP headworks and creates problems due to turbulent flow discharge. It is recommended that the force main terminus be relocated to discharge at the WWTP Main LS to mitigate problems associated with the existing headworks turbulence.

Project No. 7: Merrimac Lift Station Upgrades

The Merrimac Lift Station discharges to the Towne Road Lift Station. The service area outlined in the 2006 Sanitary Master Plan remains unchanged. The station currently includes 10-foot diameter wet well, 6-foot diameter valve vault, duplex pump and piping arrangement, and approximately 8,750 feet of 14-inch diameter force main that discharges to a 24-inch sanitary sewer upstream of the Towne Road Lift Station. The current pumping capacity of the station is approximately 1,200 gpm (1.8 MGD). The station currently includes 1-phase power. Expansion of the station has been hindered by the unavailability of 3-phase power in the area. Although actual flows at the station have not been documented, theoretical allocated flows exceed the current capacity of the station. Duke Energy has extended 3-phase power to this area.

The lift station is currently set up as a duplex pump and piping arrangement. It is recommended that along with 3-phase power upgrades, new larger valve vault, new station piping arrangement, valves, hatches, and pump arrangement be set up for triplex operation and capacity upgraded to account for the flow identified in the Waste Load Allocation Report (2.2 MGD). Electrical equipment to accommodate 3-phase power and installation of larger pumps would likely be necessary. This station currently experiences issues associated with H2S. It is recommended to line the wet well with a corrosion prevention liner to prevent H2S exposure to the concrete.

Project No. 8: Andover Lift Station Upgrades

The Andover Lift Station pumps through an existing 12-inch force main that discharges to the Washington Woods Lift Station. The wet well and valve vault are constructed as a triplex arrangement; however, currently only two (2) pumps are installed. Piping is in place to accept a third pump. The current pumping capacity is approximately 0.74 MGD (525 gpm). The allocated capacity at the lift station is approximately 0.72 MGD. Once the assigned buildout that is currently allocated is complete and online, a lift station upgrade may be warranted for the buildout of the remainder of the sub-basin served by the Andover Lift Station. The Andover Lift

Station has the infrastructure to handle approximately 1.7 MGD (assuming 3.5 ft/s velocity). To build out the lift station, three (3) new pumps (or possibly impeller upgrades only) would be required with minor electrical upgrades.

Project No. 9: Oak Road Lift Station Modification and Upgrades

The Oak Road Lift Station is a triplex wet well/dry-pit type lift station originally built in 1985 and upgraded in 2000. The station pumps through approximately 800 feet of 12-inch diameter force before discharging to the Cool Creek Interceptor. It serves several sub-basins near the downtown Westfield area and is currently allocated at approximately 80 percent of actual pumping capacity. Analysis of the pumping system shows a maximum design capacity of 2.6 MGD (600 gpm per pump); however, actual maximum pumping capacity has been measured at 1.6 MGD. The station has multiple maintenance issues including problems with rag clogging that require the pumps to be flushed on a daily basis. Significant upgrades to electrical equipment, instrumentation, controls, and SCADA equipment have not been made at the station since original construction.

These upgrades would include rehabilitation of the existing wetwell, piping, and valve arrangements that are currently restricting flow and replacement of the existing pumps with new solids handling pumps capable of passing the material currently causing clogging issues. Additional upgrades would include new electrical, I&C, and SCADA along with flow monitoring and a new emergency generator and transfer switch.

Project No. 10: Southwest Interceptor Basin Infrastructure

There is currently development interest south of 166th Street, East of Shelborne Road, along Little Eagle Creek in the area identified in the 2006 Master Plan as the Southwest Interceptor Basin. The Southwest Interceptor basin will include the interceptor sewers that are necessary to convey flow from the southwestern portion of Washington Township bounded by Towne Road on the east, the Hamilton County-Boone County line on the west, roughly 156th Street on the north and 146th Street on the south. The land use for this area is assumed to be medium density residential, or 2.5 gross EDUs/acre.

This flow would be conveyed to the wastewater treatment plant via tributary sewers, as shown on **Figure 5.2** shown to flow into the Southwest Basin Lift Station. The lift station is planned to be sized for 2.2 MGD with 8-inch to 15-inch sewers capturing and directing basin flow to the lift station. The lift station would discharge directly to the WWTP Main Lift Station by way of a16-inch force main. The sub basin drainage area with resulting sewer sizes is shown below in **Table 5-6.** An enlarged figure showing pipe sizing associated with the Southwest Interceptor is located in **Appendix A**.

TABLE 5-6
Southwest Basin Lift Station/Interceptor Sizing

Item	*Sub-Basin/Area*	*EDUs*	*Avg. Flow (GPD)*	*Peak Flow (MGD)*
1	SW_1 through 8	2,250	700,000	2.2 MGD
	Proposed Interceptor Sizes			**8-15 inches**
	Proposed Lift Station Sizing			**2.2 MGD**

Project No. 11: 156th Street Interceptor

The 156th Street Interceptor will serve the portion of the township that is bounded by 161st Street to the north, US 31 to the east, 146th Street to the South, and Towne Road to the west. The interceptor is planned to serve mostly gravity sewer connections, as well as future connection of the existing (expandable) Viking Meadows LS. There are planned developments in this basin necessitating the need for the interceptor. In addition, the 156th Street Interceptor would intercept the Towne Road Lift Station, near the intersection of Towne Road and 156th Street which will allow for the decommissioning of the station.

The 156th Street Interceptor was identified in the 2006 Westfield Wastewater Master Plan. However, the interceptor was originally shown as a 30-inch diameter interceptor from Springmill Road and Ditch Road. Additionally shown in 2006, at Ditch Road, the interceptor would transition to a 36-inch interceptor until its termination at the WWTP Main Lift Station.

Not included in the 2006 planned capacity of the 30- and 36-inch 156th Street Interceptor was the long-term addition of the Westfield service area that currently flows to the City of Carmel. It should be noted that a majority of the flow currently handled at the Oak Road Lift Station (ORLS) will be redirected to the Westfield WWTP as part of a current Citizens Westfield project (Westfield Downtown Lift Station and Force Main) in order to comply with NPDES permitting needs associated with the removal of the Westfield Wastewater Lagoons. The purpose of the Westfield Downtown Lift Station project is to "temporarily" send flow north to the existing Washington Woods Lift Station until future long-term infrastructure is in place to re-direct flow currently sent to Carmel to the planned 156th Street Interceptor. The peak pumping capacity of the Westfield Downtown Lift Station will be 2.6 MGD when completed in 2015-2016. As referenced in the 2006 Master Plan, the total future ultimate peak flow associated with the Westfield Carmel Service Area is 4.6 MGD. A "reserve" capacity of 3.3 MGD should to be included in the 156th Street Interceptor Sewer capacity (1.3 MGD from the Carmel gravity sewer area west of US 31 is already included in the 156th Street Interceptor) allowance in order to re-direct flow from Carmel to the Westfield WWTP, once future infrastructure is in place.

A separate document is being written (156th Street Interceptor Preliminary Engineering Report) that details the preliminary design of the planned 156th Street Interceptor. The 156th Street Interceptor contributing flow and related sizing is shown in **Table 5-7**. An enlarged figure showing pipe sizing associated with the 156th Street Interceptor is located in **Appendix A**.

TABLE 5-7
156th Street Interceptor Basin Interceptor Sizing

Item	*Sub-Basin/Area*	*EDUs*	*Avg. Flow (MGD)*	*Peak Flow (MGD)*
1	Viking Meadows LS Basin, 156th_MLS, 156th_Main, Cool Creek Interceptor/Oak Road LS (Carmel Connection Service Area)	13,500	4.2	14.6
Proposed Interceptor Sizing				**36-48 inches**

Project No. 12: Carmel Connection Lift Station

Approximately half of the Citizens of Westfield flow is conveyed to the Carmel connection. To reduce operational costs, the long-term goal is to direct all flows to the Westfield WWTP. To accomplish this, a lift station is necessary at the Carmel connection point. The purpose of the lift station is to intercept flow from the existing 21-inch interceptor near the current Carmel metering connection and re-direct flow to the West. It will also capture the 15-inch interceptor that flows from the west side of US 31, along 146th Street. The new lift station and force main would discharge to the existing Viking Meadows LS and ultimately to the 156th Street Interceptor. The Viking Meadows LS has the infrastructure available for increased buildout and is further described in Project No. 12. The new lift station would eliminate the need for treatment by the City of Carmel. Currently there is no intermediate collection infrastructure in place to convey flow from the lift station to the Westfield WWTP.

A large portion of the flow that currently goes to Carmel is associated with the downtown area north of 171st Street. During wet weather, excess flow is stored in the lagoons. The lagoon system is anticipated to be obsolete by 2016 and the Downtown Lift Station will be installed with a peak pumping capacity of 2.6 MGD. The service area with resulting peak flows that the Carmel Connection Lift Station would serve is shown in **Table 5-8**. The station would be sized to handle the ultimate basin flow of 4.6 MGD with approximately 7,000 lineal feet of 18-inch force main. Flow from the lift station would ultimately be conveyed by the 156th Street Interceptor as described in Project No. 10.

TABLE 5-8
Carmel Connection Lift Station Sizing

Item	*Sub-Basin/Area*	*Peak Flow (MGD)*
1	Oak Road LS (not including Lagoon EQ Storage)	3.8
2	Downtown Lift Station (North of Lagoons)	(2.6)
3	Proposed Brookside/Bridgewater LS	1.4
4	Remaining Carmel Gravity Service Area (East of US 31)	0.73
5	Carmel Gravity Service Area (West of US 31)	1.3
Proposed Lift Station Sizing		**4.6 MGD**

Project No. 13: Viking Meadows Lift Station Upgrade and Force Main

The Viking Meadows Lift Station is an existing regional lift station that will pump to the 156th Street Interceptor. Currently the lift station is set up for duplex operation with a pumping capacity of 750 gpm. The station currently flows to the Towne Road LS by way of an existing 12-inch force main. Much like the Washington Woods Lift Station, the Viking Meadows Lift Station is currently constructed with a 10-foot diameter wet well with infrastructure in place to construct future dual wet wells and force mains to accommodate the smaller, initial lift station flow and the larger, ultimate lift station build flow. With this arrangement, the flow will be able to be split between two wet wells or diverted to a single wet well, depending on influent flow. With the addition of the proposed Carmel Connection Lift Station, the Viking Meadows LS would need to be larger than originally proposed in the 2006 Master Plan. The size of the new lift station is calculated to be 7.1 MGD, as compared to 3.8 MGD as originally proposed in 2006. It should be noted that the proposed Carmel Connection LS includes approximately 1.3 MGD of flow west of US 31, north of 146th Street that was originally included in the ultimate buildout of the Viking Meadows LS. The existing 12-inch force main can be utilized for up to 2.0 MGD (based on a pipeline velocity of 3.5 ft/s). To allow for full buildout of the basin and to accept flow from the Carmel Connection (ending flow to Carmel), an 18-inch force main and dual wet well setup will need to be constructed. Additionally, the pumps and controls at Viking Meadows will need to be upgraded, ultimately.

Figure 5.2 depicts the future tributary sewers needed to serve the ultimate buildout of the Viking Meadows Lift Station Basin and are designed to intercept the following lift stations: South Park (350 gpm), Springdale Farms (320 gpm), and Springmill Villages (190 gpm) Lift Stations. An enlarged figure showing pipe sizing associated with the Viking Meadows tributary sewers is located in **Appendix A**.

TABLE 5-9
Viking Meadows Lift Station Upgrade

Item	*Sub-Basin/Area*	*Peak Flow (MGD)*
1	Originally proposed Viking Meadows LS	3.8
2	Carmel Gravity Service Area West of US 31 (Originally included in Viking Meadows Sizing)	(1.3)
3	Carmel Connection Lift Station	4.6
Proposed Lift Station Sizing		7.1 MGD

Project No. 14: Flow Monitoring

As discussed in **Section 4.0** of this report, flow monitoring, rainfall data collection, and an I/I program is recommended. The downtown sanitary sewer currently experiences SSOs during high rain events. To adequately understand the magnitude of the SSOs problem, flow monitoring should be conducted in the drainage basin. This sanitary sewer will experience additional flow associated with the development of the Grand Junction Area. The duration for flow monitoring

and rainfall data collection is recommended to be four (4) months or more as necessary to capture two (2) or more wet weather events. Flow monitoring locations proposed are identified on **Figure 4.1**.

Project No. 15: Downtown Sanitary Sewer Overflows (SSOs)

The existing Cool Creek Interceptor upstream of the lagoon storage cells north of 171st Street currently experiences SSOs during high rainfall events. This issue will require flow monitoring data and will be further evaluated in a separate effort and subsequent report.

Project No. 16: Westfield WWTP Upgrade

The current 3.0 MGD ADF process generally consists of screening, grit removal, sequencing batch reactor (SBR) tankage, aerobic digestion (used as sludge thickener cells for eventual liquid sludge disposal), and ultraviolet (UV) disinfection before discharging to Little Eagle Creek. The next 3.0 MGD ADF upgrade would include capacity upgrades at the WWTP Main LS, SBR Tankage, and UV disinfection would be included in expansions. It should be noted that the next 3.0 MGD phase of buildout should include a larger capacity, centralized headworks facility (primary treatment). Once the WWTP reaches a capacity of 6.0 MGD ADF capacity (following the second phase for future 3.0 MGD ADF WWTP buildout), aerobic digester tankage currently staged as sludge thickeners would need to be used as 4-cell aerobic digestion followed by the construction of a dry bio solids facility. In addition, when future expansion needs are fully defined, a review of incremental expansion capacity should be conducted. Future regulatory requirements, such as phosphorous removal, may require additional processes or overall treatment approaches for compliance.

Project No. 17: GIS-Based Waste Load Allocation Database

The current system used for calculating the waste load allocation is a combination of GIS data management and spreadsheet calculation. While the spreadsheet system appears simplistic when in summarized form, the process of updating the spreadsheet is cumbersome and time-consuming. Effective management of the spreadsheet is heavily dependent on the familiarity of the user with the existing update process.

Based on these considerations, HNTB recommends Citizens Westfield evaluate options for future management of the waste load allocation utilizing user-friendly GIS tools currently available. These could greatly reduce the manhours required to update the current spreadsheet system and would allow for multiple users to update waste loads with less training.

5.2 Planning Level Cost Analysis

Table 5-10 includes a preliminary planning level Class 5 cost analysis (referenced from AACE International Practice No. 18R-97) of the future capital projects described in this Section. Class 5 estimate are generally described as an order of magnitude cost with the purpose of project

screening or feasibility. For this analysis, Class 5 costs include unit pricing of pipe (sanitary interceptors and force mains) and manholes, jack and bore pipeline installation, as well as lump-sum construction costs for items such as lift stations have been included for only infrastructure necessary to serve the proposed areas. A 25-percent planning level contingency has been added to the baseline construction cost scenarios. Engineering-related costs (for both design- and construction-related) have been assumed to be 20 percent of the baseline construction estimates and planning level contingency. Non-construction-related costs, such as legal and easement acquisition, are included in the cost analysis where appropriate and are assumed to be 20 percent of the baseline construction estimates and planning level contingency. Additionally, 10 percent has been added to the baseline construction estimate to cover general conditions, mobilization / demobilization, and site restoration.

TABLE 5-10
Summary of Capital Projects with Estimated Project Costs

Project No.	*Project Name*	*Project Description*	*Estimated Project Costs*
1	Tomlinson Road Lift Station Upgrade	Increase pumping capacity to 2.2 MGD with triplex pump buildout and approximately 8,900 LF of new 16-in force main. Upgrade will require electrical and site improvements.	$2,700,000
2	Chatham Hills Lift Station Upgrade and Force Main Relocation	Install a new 4.0 MGD Lift Station (to intercept proposed Chatham Hills Phase I lift station) with triplex pump buildout and approximately 10,500 LF of new 18-in force main. The cost does not include engineering, land acquisition or easements as these are assumed to be covered by the developer.	$4,200,000
3	North Cool Creek Interceptor	New interceptor sewer consisting of 17,000 LF of 18 to 36-in interceptor sewer. Interceptor sewer will decommission both Tomlinson Road and GTE Lift Stations.	$10,500,000
4	203rd Street Lift Station	New 1.3 MGD lift station and 7,500 LF of 10-in Force Main required for development of the northern portion of the WWLS Basin. Cost does not include tributary sewers.	$2,700,000
5	Little Eagle Creek Interceptor	New interceptor consisting of 14,000 LF of 24 to 36-in interceptor sewer. Interceptor will receive flow from Chatham Hills LS and undeveloped areas as part of the Westside Interceptor Sewer Basin. Interceptor will connect to the Westside Interceptor Sewer. Cost does not include tributary sewers.	$8,000,000

Project No.	*Project Name*	*Project Description*	*Estimated Project Costs*
6	Towne Road Lift Station Upgrade	Existing 18-in force main can be utilized for proposed improvements for a maximum of 5.8 MGD at 5 ft/s pipeline velocity. Upgrade would include installation of three (3) new VFD-controlled pumps and require new valve vault, piping, and valves. Upgrade will require electrical and site improvements. Additional improvements include relocating the WWTP discharge to the Main LS.	$800,000
7	Merrimac Lift Station Upgrade	Increase pumping capacity to 1.8 MGD with triplex pump buildout. Installation of three pumps will require new valve vault and new station piping and valves. Upgrade will require electrical and site improvements. Existing 14-in force main can be utilized for proposed improvements. Lift Station will require conversion to 3-phase power.	$500,000
8	Andover Lift Station Upgrades	Existing infrastructure is in place to pump approximately 1.7 MGD (assuming 3.5 ft/s velocity) using an existing 12-in force main. A future pump upgrade (possible impeller-only pump upgrade) would be required along with minor electrical modifications.	$150,000
9	Oak Road Lift Station Upgrades	Pump replacement and wet well rehabilitation to increase to eliminate maintenance issues. Replace aging electrical components, I&C equipment replacement along with installation of flow metering and emergency generator.	$700,000
10	Southwest Lift Station and Interceptor Sewers	New 2.2 MGD lift station and 6,500 LF of 16-in Force Main required for development of the Southwest Basin. Cost does not include tributary sewers.	$2,800,000
11	156th Street Interceptor	New interceptor consisting of approximately 16,500 LF of 36- to 48-in interceptor sewer. Interceptor will receive flow from the Carmel Connection LS as well as the Viking Meadows LS. The Towne Road LS will be decommissioned as a result of the interceptor. Cost based on Route No. 4 outlined in the156th Street Interceptor Preliminary Engineering Report.	$14,500,000
12	Carmel Connection Lift Station and Force Main	New 4.6 MGD lift station and approximately 7,000 LF of new 18-in force main. Lift station will intercept remaining flow currently sent to Carmel for treatment and discharge to the existing Viking Meadows Lift Station.	$3,700,000

Project No.	*Project Name*	*Project Description*	*Estimated Project Costs*
13	Viking Meadows Lift Station and Force Main	New 7.1 MGD lift station dual wet well upgrade and approximately 10,500 LF of new 18-in force main (future dual force main along existing 12-in). Lift station will include the re-directed flow from the Carmel Connection in addition to the ultimate buildout of Viking Meadows Basin. Lift station will discharge to the 156th Street Interceptor.	$5,000,000
14	Flow Monitoring	Temporary installation of rain gauges and 12 flow monitors in gravity sewer manholes for a period of 4 months.	$200,000
15	Downtown Sanitary Sewer Overflows (SSOs)	Corrective actions for Downtown SSOs are being further evaluated as part of the Grand Junction Planning Study.	
16	WWTP Upgrade	3.0 ADF/7.5 PDF increase in WWTP Capacity. Project includes improvements to the Main LS, headworks additions, SBR additions, UV upgrades	$12,000,000
17	GIS Based Waste Load Allocation Database	Construct a GIS-based development program used for updating the waste load allocations.	$200,000

6.0 CAPITAL PROJECTS DEPENDANCY AND TIER CLASSIFICATION

Table 6-1 summarizes the project list identified in **Section 5.0** but describes dependency projects have with one another in addition to project rationale or need. Each project is placed in one of three (3) tiers. Tier 1 describes projects that are stand alone and could be implemented immediately. Tier 2 Projects are those in which timing and need are heavily influenced by development but the need is deemed more immediate than Tier 3. Tier 3 Projects are additionally heavily dependent on development but are considered less immediate in need based on development information available at the time of the writing of this report.

It should be noted that project placement between tiers is heavily influenced by factors such as development timing and location.

TABLE 6-1
Capital Improvement Priority Listing

Project Tier	*Project Name (Project No.)*	*Project Dependency Rationale*
Tier I Projects	Flow Monitoring (13)	Project addresses system limitations and is standalone. Project required to better understand the sources of I/I in order to reduce or eliminate SSOs in the downtown sanitary system.
	Waste Load Allocation Project (16)	Project is standalone and needed to efficiently capture allocated flows resulting from development approvals.
	Towne Road Lift Station Upgrade (6)	The lift station is currently allocated over capacity. There is current development interest in the area currently served by the Towne Road Lift Station.
	Merrimac Lift Station Upgrade (7)	The lift station is currently allocated at its current pumping capacity. Project upgrades dependent on development interest.
	Andover Lift Station Upgrades (8)	The lift station is currently allocated near its current pumping capacity. Project upgrades dependent on development interest.
	156th Street Interceptor (10)	Project dependent on development interest. There is current development interest in the area in and around the 156th Basin.
Tier II Projects	Downtown Sanitary Sewer Overflows (SSOs) (14)	Development timing associated with Grand Junction Planning Report (February 2015) and selected projects will dictate dependency and eventual priority.
	WWTP Upgrade (15)	Project required in order to keep pace with projected development.
	Tomlinson Road Lift Station Upgrade (1)	Lift station will need to be expanded and new force main installed based on the buildout of the Grand Park development. Flow from Chatham Hills will need to be removed from Tomlinson Road in order for Grand Park to fully develop.
	Little Eagle Creek Interceptor (5)	Project will be required when Chatham Hills develops beyond Phase I or development exceeds allowable flow limitations at Tomlinson Road LS.
	Chatham Hills Lift Station Upgrade and Force Main Relocation (2)	Dependent on WWTP Upgrades and Little Eagle Creek Interceptor. Project will be required when Chatham Hills develops beyond Phase I or development exceeds allowable flow limitations at Tomlinson Road LS.
Tier III Projects	North Cool Creek Interceptor (3)	Project dependent on development interest. Additionally, ultimate utilization is dependent on WWLS ultimate buildout.
	203rd Street Lift Station (4)	Dependent on North Cool Creek Interceptor installation. Project dependent on development interest.
	Southwest Lift Station and Interceptor Sewers (9)	Project dependent on development interest.
	Viking Meadows Lift Station and Force Main (12)	Project dependent on WWTP upgrade and development interest. Development timing associated with Grand Junction Planning Report (February 2015) and selected projects will dictate dependency and eventual priority.
	Carmel Connection Lift Station and Force Main (11)	Project dependent on Viking Meadows Upgrade and the 156th Street Interceptor.
	Oak Road Lift Station Upgrades (8)	Standalone; however, Carmel Service Agreement should be considered. Project justification is based predominantly on O&M reduction.

APPENDIX A

FIGURES

156th Street Interceptor

Little Eagle Creek Interceptor

North Cool Creek Interceptor

Southwest Interceptor and LS

Viking Meadows LS and Force Main

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CITIZENS WASTEWATER OF WESTFIELD, LLC
WESTFIELD, INDIANA

APPENDIX B

SUPPLEMENT TO "WASTEWATER INFRASTRUCTURE PLANNING" ISSUED FEBRUARY 2015

Update Issued March 2016

1.0 INTRODUCTION

The City of Westfield is currently experiencing rapid residential and commercial development. A wastewater master plan was developed in 2006 that identified ultimate EDU buildout of the sanitary basins encompassing Washington Township. In February 2015, at the request of Citizens Westfield, HNTB completed an evaluation of short and long-term sanitary infrastructure improvement projects to meet growth demands. This document is meant to serve as a supplement to the February 2015 evaluation and as a planning tool to determine when and where capital investment is required to serve growth demands.

The February 2015 planning report identified fourteen (14) capital projects and three (3) studies recommended to meet demand and further understand system deficiencies. Projects included both new and upgraded infrastructure. Figure 1 displays the location of the capital projects.

2.0 DEFINITIONS

FM – Force Main
GPM – Gallons Per Minute
LS – Lift Station
EDU – Equivalent Dwelling Unit
VMLS – Viking Meadows Lift Station
WWTP – Wastewater Treatment Plant

3.0 IDENTIFICATION OF PRIORITY AREAS FOR IMPROVEMENT

In a developing community like Westfield, the ultimate sanitary infrastructure identified in a Master Plan is generally not in place during the initial phases of private development. Additionally, development typically does not fall exactly within the planned sanitary collection basin. In order to maximize sanitary service with limited resources, infrastructure is often built in phases. Sewers and lift stations ultimately intended to serve a single basin are initially shared between basins. As development continues and infrastructure reaches capacity, improvements must be made and sanitary flows must be re-allocated to the proper basin and associated infrastructure according to the Master Plan.

To establish the priority for capital investment, two (2) development focus areas (Northern and Southern) were identified within the Westfield collection territory, as shown in Figure 1. The Northern and Southern Development Focus Areas are shown in more detail in Figures 2 and 3, respectively. These areas include pockets of dense development where infrastructure upgrades will be needed to handle the growth. Four (4) capital projects are outside of these focus areas. These projects are shown in Figure 4. It should be noted that improvement projects will often have an impact on upstream or downstream infrastructure. The effect of these improvements on related infrastructure should be evaluated when considering future capital projects.

4.0 NEED-BASED APPROACH FOR PRIORITIZING CAPITAL PROJECTS

Since the timing and location of private development fluctuates, it can be difficult to identify which capital improvement projects will be needed first and when those investments will have to occur. To address this issue, a need-based project approach based on peak flow allocation rather than project timing was developed for capital planning and investment. The sections outlined in this evaluation identify current peak flow allocation related to each component of infrastructure identified in Figure 1 as well as the projected peak flow allocation that will trigger the need for improvements required to handle any additional flow. Peak allocated flows include sanitary flow from existing development or from developments that have been permitted for construction. Peak flows are determined by multiplying the average sanitary flow by a peaking factor governed by the size of the development.

In general, as the peak allocated flow approaches current infrastructure capacity, future improvements should be considered. For some projects, improvements are needed in order for development to occur, so the current peak flow allocation and capacity are shown as “zero”. For others, the current peak flow allocation has already surpassed the current infrastructure capacity so improvements are needed as soon as possible. Descriptions of improvements are also included.

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4.1 NORTHERN DEVELOPMENT FOCUS AREA

Project/Area Summary

There are five (5) infrastructure improvement projects, proposed in phases, to increase sanitary capacity in the northern development focus area. Project locations are shown on Figure 2. To determine whether infrastructure improvements are required to serve a development, the following steps should be followed:

- Locate the area of interest and the associated improvement project on Figure 2;
- Refer to Figure 5 to determine current peak flow allocated to the project area and associated infrastructure; and
- Refer to Table 1 for infrastructure improvements, if required.

Figure 5: Flow Allocation Thresholds Indicating the Need for Infrastructure Improvements

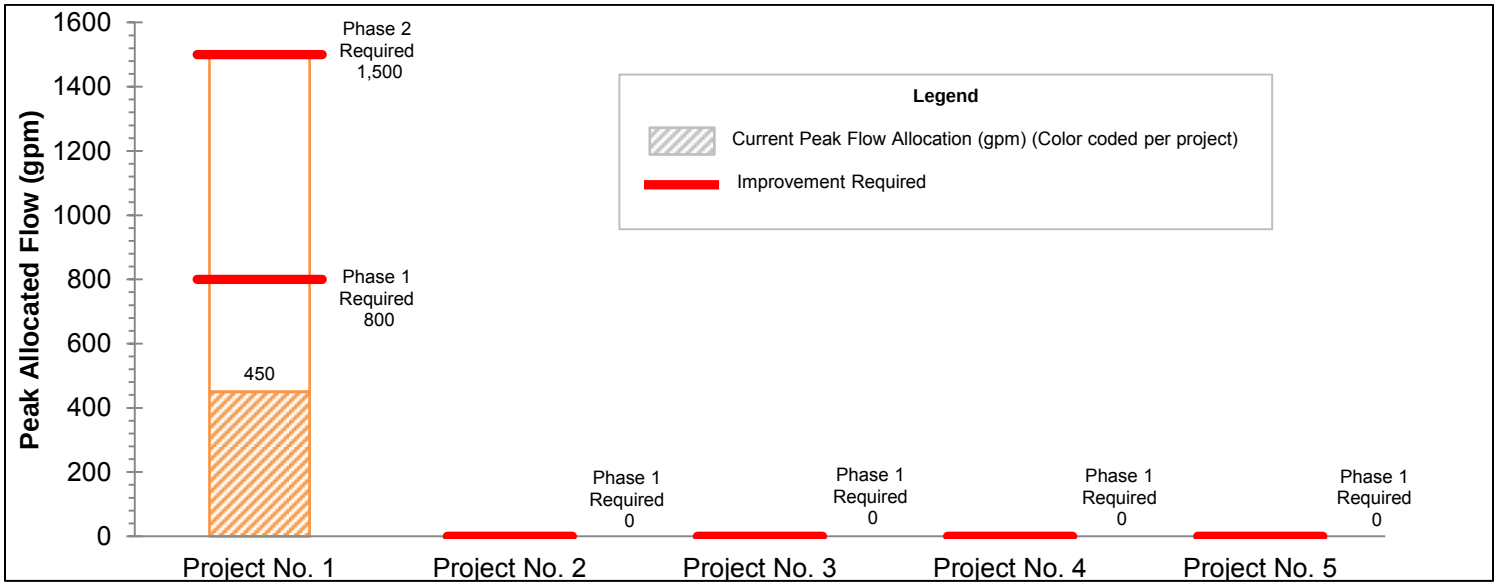


Table 1: Required Improvements Based on Peak Flow Allocation

	Project	Phase1	Phase 2	Phase 3	Next Action Required
	Project No. 1: Tomlinson Road LS Upgrades	• Upsize FM, upsize station piping, and install three (3) new pumps for up to 1,500 gpm capacity.	• Construct new LS or construct Project No. 3	N/A	Phase 2
	Project No. 2: 206th St. Regional LS (Required for Chatham Hills Development beyond Sec. 2)	• Construct new LS sized for ultimate flow estimated in Sanitary Master Plan (4.0 MGD).	• Upgrade LS to ultimate capacity	N/A	Phase 1
	Project No. 3: North Cool Creek Interceptor	• Incrementally install interceptor segments based on development.	N/A	N/A	Phase 1
	Project No. 4: 203rd St. Regional LS	• Construct new LS sized for ultimate flow estimated in Sanitary Master Plan (1.3 MGD).	• Upgrade LS to ultimate capacity	N/A	Phase 1
	Project No. 5: Little Eagle Creek Interceptor	• Incrementally install interceptor segments based on development.	N/A	N/A	Phase 1

4.2 SOUTHERN DEVELOPMENT FOCUS AREA

Project/Area Summary

There are five (5) infrastructure improvement projects, proposed in phases, to increase sanitary capacity in the southern development focus area and reduce and eliminate flow treated by the City of Carmel. Project locations are shown on Figure 3. To determine whether infrastructure improvements are required to serve a development, the following steps should be followed:

- Locate the area of interest and the associated improvement project on Figure 3;
- Refer to Figure 6 to determine current peak flow allocated to the project area and associated infrastructure; and
- Refer to Table 2 for infrastructure improvements, if required.

Figure 6: Flow Allocation Thresholds Indicating the Need for Infrastructure Improvements

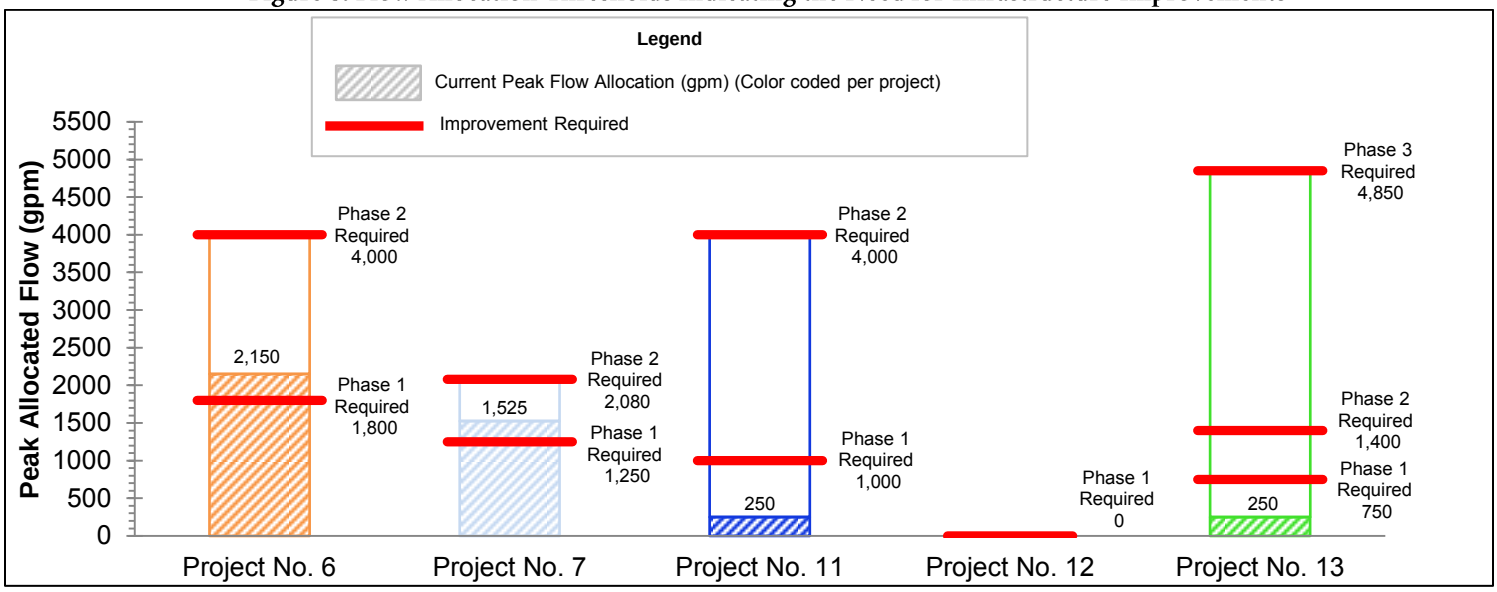


Table 2: Required Improvements Based on Peak Flow Allocation

	Project	Phase1	Phase 2	Phase 3	Next Phase
	Project No. 6: Towne Road LS Upgrades	• Upgrade pumps, piping, and electrical equipment for 4,000 gpm capacity.	• Decommission Towne Road LS and install remaining portion of the156th St. Interceptor.	N/A	Phase 1
	Project No. 7: Merrimac LS Upgrades	• Construct new lift station or install new valve vault and upgrade wetewll with three (3) pumps for 2,080 gpm capacity. • Install corrosion resistant wet well lining, if existing utilized.	N/A	N/A	Phase 1
	Project No. 11: 156th Street Interceptor and LS	• Abandon temporary LS, construct remaining portion of 156th St. Interceptor to WWTP	N/A	N/A	Phase 1
	Project No. 12: Carmel Connection LS	• Construct 4.6 MGD LS and FM.	N/A	N/A	Phase 1
	Project No. 13: Viking Meadows LS and FM Upgrade	• Install 3rd pump or upgrade impellers for 1,400 gpm capacity.	• Upsize FM in order to maximize existing lift station infrastructure to approx. 4,850 gpm.	N/A	Phase 1

4.3 ADDITIONAL CAPITAL IMPROVEMENTS

Project/Area Summary

There are four (4) additional phased infrastructure improvement projects not contained within the northern or southern development focus region. Project locations are shown on Figure 4. To determine whether infrastructure improvements are required to serve a development, the following steps should be followed:

- Locate the area of interest and the associated improvement project on Figure 4;
- Refer to Figure 7 to determine current peak flow allocated to the project area and associated infrastructure; and
- Refer to Table 3 for infrastructure improvements, if required.

Figure 7: Flow Allocation Thresholds Indicating the Need for Infrastructure Improvements

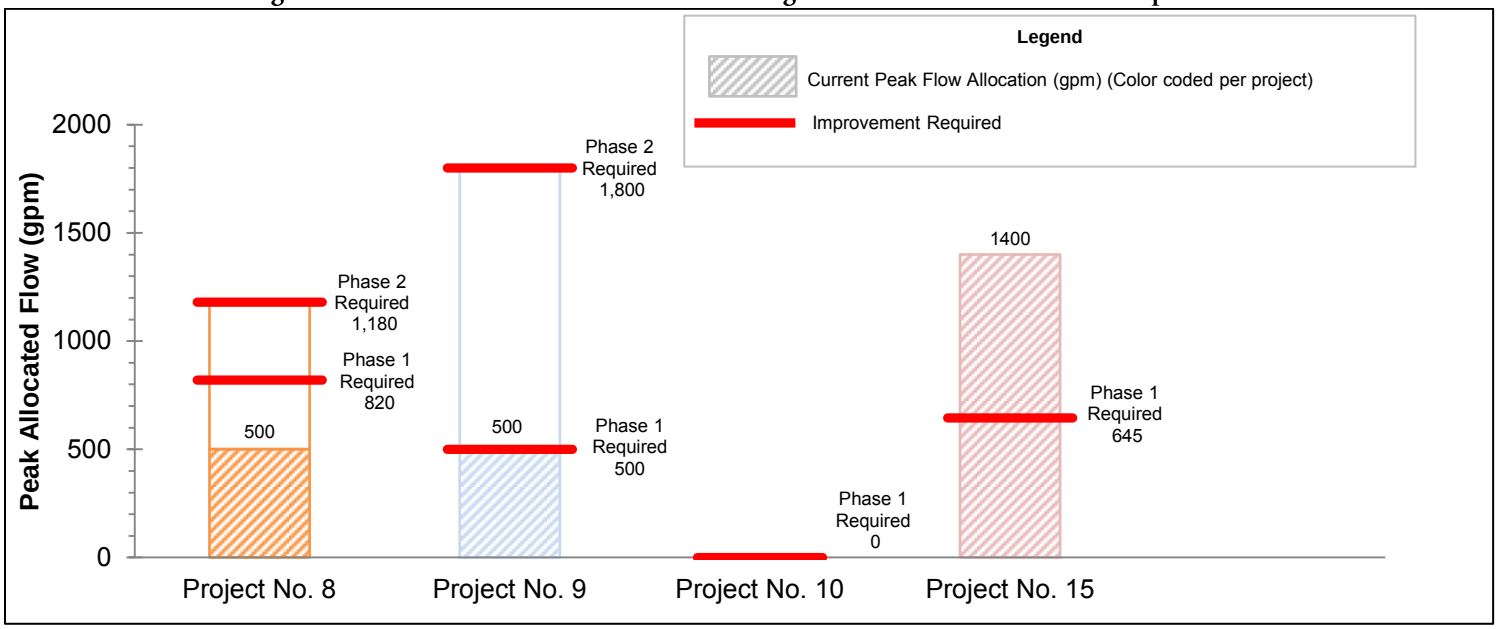


Table 3: Required Improvements Based on Peak Flow Allocation

	Project	Phase1	Phase 2	Phase 3	Next Action Required
	Project No. 8: Andover LS Upgrades	• Pump and electrical upgrades required to maximize existing 12-inchFM	N/A	N/A	Phase 1
	Project No. 9: Oak Road LS Improvements	• Rehabilitate wetwell and valve vault, replace pumps, upgrade controls and electrical equipment, install emergency generator and auto-transfer switch.	• Upgrade pumps and FM to increase capacity.	N/A	Phase 1 – Motivated by Operation and Maintenance, not LS capacity.
	Project No. 10: Southwest Basin Infrastructure	• Construct new gravity sewers and LS sized for ultimate flow estimated in Sanitary Master Plan (2.2 MGD).	• Upgrade LS to ultimate capacity.	N/A	Phase 1
	Project No. 15: Downtown SSOs	• Construct new Grand Junction LS with temporary FM.	• Upgrade LS and FM to ultimate capacity.	N/A	Phase 1

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUESTS

DATA REQUEST NO. 1:

Does Citizens Wastewater of Westfield conduct smoke testing of its sewers? If so, please indicate how many feet of sewer were smoke tested annually in 2014, 2015, and 2016 to date. If no smoke testing was done over the 2014 – 2016 time period, so state.

RESPONSE:

No smoke testing has been done during the requested time period.

WITNESS:

Aaron D. Johnson

DATA REQUEST NO. 2:

Please state the year smoke testing of the collection system was last conducted by or on behalf of the City of Westfield or Citizens Wastewater of Westfield, and indicate who conducted the smoke testing and where the smoke testing occurred.

RESPONSE:

It is Petitioner's understanding that the City performed smoke testing in the mid-2000's.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 3:

Does Citizens Wastewater of Westfield own and operate sewer-cleaning equipment such as Vac Trucks?

RESPONSE:

Yes, the utility owns a Vac Truck.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 4:

Does Citizens Wastewater of Westfield conduct annual sewer cleaning of existing sewer segments? If so, please state how many feet of existing sewers were cleaned by or on behalf of Citizens Wastewater of Westfield annually in 2014, 2015, and 2016. Please also state the name of the sewer cleaning company and the amount spent annually for sewer cleaning in 2014, 2015, and 2016 to date.

RESPONSE:

Yes, typically Fluid Waste Services does our cleaning and televising. In 2015 about 500 lineal feet of sewer was cleaned (no cost available). In 2016 approximately 700 lineal feet of sewer was cleaned the combined price for cleaning and televising was approximately $8,400. No sewer was cleaned by Petitioner in 2014.

WITNESS:

Aaron D. Johnson

DATA REQUEST NO. 5:

Does Citizens Wastewater of Westfield own and operate sewer-televising equipment?

RESPONSE:

No.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 6:

Does Citizens Wastewater of Westfield conduct annual sewer televising of existing sewer segments? If so, please state how many feet of existing sewers were televised by or on behalf of Citizens Wastewater of Westfield annually in 2014, 2015, and 2016. Please also state the name of the sewer televising company and the amount spent annually for sewer televising in 2014, 2015, and 2016 to date.

RESPONSE:

Yes, sewer televising historically has been typically performed on an as needed basis by Fluid Waste Services. In 2015, about 1,200 lineal feet of existing sewer was televised (no cost available). In 2016 approximately 700 lineal feet of sewer was televised. The combined price for cleaning and televising was approximately $8,400.No sewer was televised by Petitioner in 2014.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 7:

Please explain how Citizens Wastewater of Westfield determines which existing sewers to televise each year, and describe how Citizens Wastewater of Westfield tracks the progress of the sewer-televising program.

RESPONSE:

Generally, Petitioner has only televised existing sewers to date when a blockage was discovered. Petitioner is planning a more formal plan for proactively televising sewers.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 8:

Please state how long it takes (in years) for Citizens Wastewater of Westfield's sewer televising program to televise all of its collection system sewers.

RESPONSE:

Petitioner only has televised sewers to date on an as needed basis and has not determined how long it would take to televise all sewers in the collection system.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 9:

Please provide a map showing those existing sewer segments (not new development sewers) televised by or on behalf of Citizens Wastewater of Westfield in 2014, 2015, and 2016.

RESPONSE:

Petitioner objects to the foregoing Data Request to the extent it requests that Petitioner prepare a study or conduct an analysis that does not currently exist. Subject to and without waiving the foregoing objection, Petitioner states that no map exists showing existing sewer segments televised by or on behalf of Petitioner.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 10:

Please state how many feet of sewer are planned to be televised in 2017 and 2018.

RESPONSE:

At this time, Petitioner has not finalized its sewer televising targets for the years 2017 and 2018, and any such plans will be dependent on contractor schedules, staff availability and other potential unforeseen circumstances. Petitioner will move toward a sewer televising target of 10 percent of the existing system by 2018.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 11:

Please state whether Citizens Wastewater of Westfield has identified any existing sewer segments (not new development sewers) that require increased televising frequency and inspections due to the condition of the sewers, the type of sewer pipe, past problems, or increasing levels of infiltration and inflow. If so, please identify those existing sewer segments targeted for increased televising and inspections. Please also indicate the shortened time intervals between televising.

RESPONSE:

No areas have been identified.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 12:

Does Citizens Wastewater of Westfield conduct sewer televising of new sewers installed by developers before they are accepted by Citizens Wastewater of Westfield? If so, please state how many feet of new sewers were televised in 2014, 2015, and 2016.

RESPONSE:

Yes, Petitioner requires televising before acceptance. The footage of new sewers televised over these time periods is:

2014 (March 21 –Dec 31)	2015	2016 thru August
68,000 lineal feet (est)	72,000 lineal feet (est)	62,473 lineal feet

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 13:

Please describe the sewer and manhole inspection program used by Citizens Wastewater of Westfield to approve new sewers and manholes prior to acceptance by the utility.

RESPONSE:

Petitioner uses contractors and/or internal staff trained in the installation of sewers. These personnel are typically on-site at times during sewer installation and during all manhole installation. In addition, these personnel are on-site monitoring and recording results during the performance testing of this infrastructure.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 14:

Please describe the sewer televising procedures used by or on behalf of Citizens Wastewater of Westfield including whether the sewers are cleaned before televising, and the rating system, if any, Petitioner uses to characterize and rank defects.

RESPONSE:

Petitioner trains and has certified personnel in the National Association of Sewer Service Companies ("NASSCO") and follows their guidelines in reviewing and evaluating the collection system for Pipeline and Lateral Assessment and Certification Program ("PACP/LACP") as well as the Manhole Assessment and Certification Program ("MACP").

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 15:

For sewer defects identified during televising, please describe how Citizens Wastewater of Westfield prioritizes repairs and how the sewer segment is assessed during follow-up after repair completion.

RESPONSE:

Typically, the severity of the issues are classified into three different categories: 1) Must be replaced prior to the project is accepted 2) Must be closely monitored during the maintenance bond period and 3) Potential for concern in the future and to verify integrity prior to maintenance bond expiration. For sewers in new developments, once repairs are completed the sewer is typically televised again and/or required to be retested before it is accepted.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 16:

Please state whether Citizens Wastewater of Westfield retains and archives videotapes or digital recordings documenting sewer conditions found during televising.

RESPONSE:

Yes. Petitioner keeps records of all digital recordings for televising with the project file.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 17:

Please provide a list of projects that were undertaken in 2014, 2015, and 2016 to remove infiltration and inflow ("I&I"), the volume of I&I removed, if measured or estimated, the basis for the estimates, and the associated project costs.

a) 2014 I&I Projects list, I&I removed (gallons per day) and the cost of each project.

b) 2015 I&I Projects list, I&I removed (gallons per day) and the cost of each project.

c) 2016 I&I Projects list, I&I removed (gallons per day) and the cost of each project.

RESPONSE:

To date, no I&I projects have been completed within the requested timeframe.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 18:

Please state whether Citizens Wastewater of Westfield has plans to identify and reduce I&I in the next five years. If so, please provide the proposed or estimated annual budgets for I&I reduction.

RESPONSE:

Yes, The proposed five year capital budget for I&I reduction is as follows:

2017	2018	2019	2020	2021
$20,000	$70,000	$70,000	$70,000	$70,000

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 19:

Has an I&I study been conducted by or on behalf of the City of Westfield or Citizens Wastewater of Westfield in the last five years? If so, please state who conducted the I&I Studies and provide a copy of each study. If no studies were conducted, so state.

RESPONSE:

Yes, I&I studies have been completed by Arcadis. These studies disclose infrastructure locations and therefore are being provided pursuant to the Confidentiality Agreement entered into between the OUCC and Petitioner s Confidential OUCC DR 13.19.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 20:

Has a Sewer Flow Monitoring program been conducted by or on behalf of the City of Westfield or Citizens Wastewater of Westfield in the last five years? If so, please state who conducted the Sewer Flow Monitoring program and provide a copy of the reports. If no program was conducted, so state.

RESPONSE:

Yes. Petitioner owns its own flow monitors and has conducted flow monitoring on a consistent basis since 2015. See the material provided in response to Data Request No. 19.

WITNESS:

Aaron D. Johnson

DATA REQUEST NO. 22:

Has an influent flow study been conducted by or on behalf of the City of Westfield or Citizens Wastewater of Westfield in the last five years for individual lift stations? If so, please state who conducted the Lift Station Influent Flow Studies and provide a copy of the studies. If no studies were conducted, so state.

RESPONSE:

No formal study was done.

WITNESS:

Aaron D. Johnson

DATA REQUEST NO. 23:

Please state whether Citizens Wastewater of Westfield has identified defects in specific manholes and sewer locations where infiltration and inflow is entering Citizens Wastewater of Westfield's collection system.

RESPONSE:

Yes, Petitioner has identified some specific issues and is working on a plan to rectify issues.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Fourteenth Set of Data Requests

DATA REQUEST NO. 11:

For the Westfield WWTP, please state the current base sanitary flows from residential and commercial customers and Citizens Wastewater of Westfield's estimate of current Infiltration and Inflow ("I&I") for 2014 and 2015.

RESPONSE:

Petitioner objects to the foregoing Data Request to the extent that it requests that Petitioner conduct a study or perform an analysis that does not currently exist. Subject to and without waiving the foregoing objection, Petitioner states that information on base flows from residential and commercial customers that flow to just the Westfield WWTP is not available.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Fourteenth Set of Data Requests

DATA REQUEST NO. 12:

For Citizens Wastewater of Westfield's sewage flows sent to the Carmel WWTP, please state the current base sanitary flows from residential and commercial customers and Citizens Wastewater of Westfield's estimate of I&I for 2014 and 2015.

RESPONSE:

Petitioner objects to the foregoing Data Request to the extent that it requests that Petitioner conduct a study or perform an analysis that does not currently exist. Subject to and without waiving the foregoing objection, Petitioner states that information on base flows from residential and commercial customers that flow to just Carmel WWTP is not available.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Fourteenth Set of Data Requests

DATA REQUEST NO. 13:

Have I&I estimates from individual subdivisions or areas tributary to individual lift stations been made by or on behalf of Citizens Wastewater of Westfield? If so, please provide the names of the subdivisions or lift stations, a copy of the I&I estimates, and supporting data.

RESPONSE:

Information available for specific areas/neighborhoods pertaining to I&I was submitted in response to OUCC Data Request 13.19.

WITNESS:

Aaron D. Johnson

Cause No. 44835
Responses of Citizens Wastewater of Westfield
Office of Utility Consumer Counselor's
Thirteenth Set of Data Requests

DATA REQUEST NO. 21:

Has an influent flow study been conducted by or on behalf of the City of Westfield or Citizens Wastewater of Westfield in the last five years for the Westfield wastewater treatment plant? If so, please state who conducted the Influent Flow Study and provide a copy of the studies. If no studies were conducted, please explain.

RESPONSE:

Yes, HNTB and internal staff completed an allocation study and also looked at actual flows for influent flows to the WWTP. Please see Attachment OUCC DR13.21.

WITNESS:

Aaron D. Johnson

TECHNICAL BRIEFING MEMORANDUM
WASTEWATER GROWTH PLAN – WESTFIELD WASTEWATER
February 2015

BACKGROUND

In March 2014, the City of Westfield, Indiana (City) and Citizens Energy Group (Citizens) completed the acquisition of the community's wastewater utility. The utility, Citizens Wastewater of Westfield, LLC (Citizens Westfield), is one of the fastest growing communities in the State of Indiana.

For more than 14 months prior to the transfer, Citizens met regularly with the Westfield Department of Public Works' staff to review capital planning and wastewater systems operations for overall preparation of a smooth transition. During this process it became evident rapid growth in the service area would require a comprehensive plan to appropriately address the near- and long-term capital improvement needs of the wastewater system.

Subsequent to the transition, Citizens Westfield began meeting with private developers to gain an enhanced understanding of the current and anticipated future wastewater infrastructure needs required to meet the service area's growth. In addition, Citizens Westfield conducted a thorough evaluation to gain a full understanding of the capabilities of the existing wastewater collection and treatment systems. Included was a review and updating of the waste load allocation database used by the City for private development approval to assess the current allocated capacity of the collection system and Wastewater Treatment Plant (WWTP). The updated waste load allocation database is intended to be a tool used with current and future private development growth projections to evaluate, plan and schedule wastewater system improvements needed to support development demand.

To adequately meet the growth needs and plan for future development, Citizens Westfield has started planning of near- and long-term infrastructure improvements needed within the Westfield service territory. The intent is to identify wastewater improvements related to future growth and development within the service area so that informed decisions regarding capital improvements can be implemented to meet system demands.

CURRENT SITUATION

Citizens Wastewater of Westfield has the capability to send flow to either the City of Carmel Utilities (Carmel) wastewater collection system for treatment or to the Westfield WWTP located in the southwest portion of the service area. The Carmel connection has been in place since at least 1984 and predominately serves downtown Westfield and the area to the east of US 31. The remainder of the service area is served by the Westfield Wastewater Treatment Plant.

ACTUAL FLOWS

The Westfield WWTP has ample capacity for near-term growth in the service area. The average daily flow (ADF) and peak daily flow (PDF) are 3.0 million gallons per day (MGD) and 7.5 MGD, respectively. Currently, the actual average daily flow is 1.7 MGD with a peak flow of 5.1 MGD. Citizens Westfield has a

service agreement with Carmel to provide an average daily treatment capacity of 2.14 MGD with varying daily and hourly peaking conditions. The average daily flow to the Carmel connection is 1.8 MGD with a peak flow of 4.0 MGD. Design and actual flows for the WWTP and Carmel Connection are summarized in **Tables 1** and **2** below.

The actual metered flows and treatment capacity (ADF and PDF) flows for the Westfield WWTP and the Carmel Connection are shown on **Figure 1**.

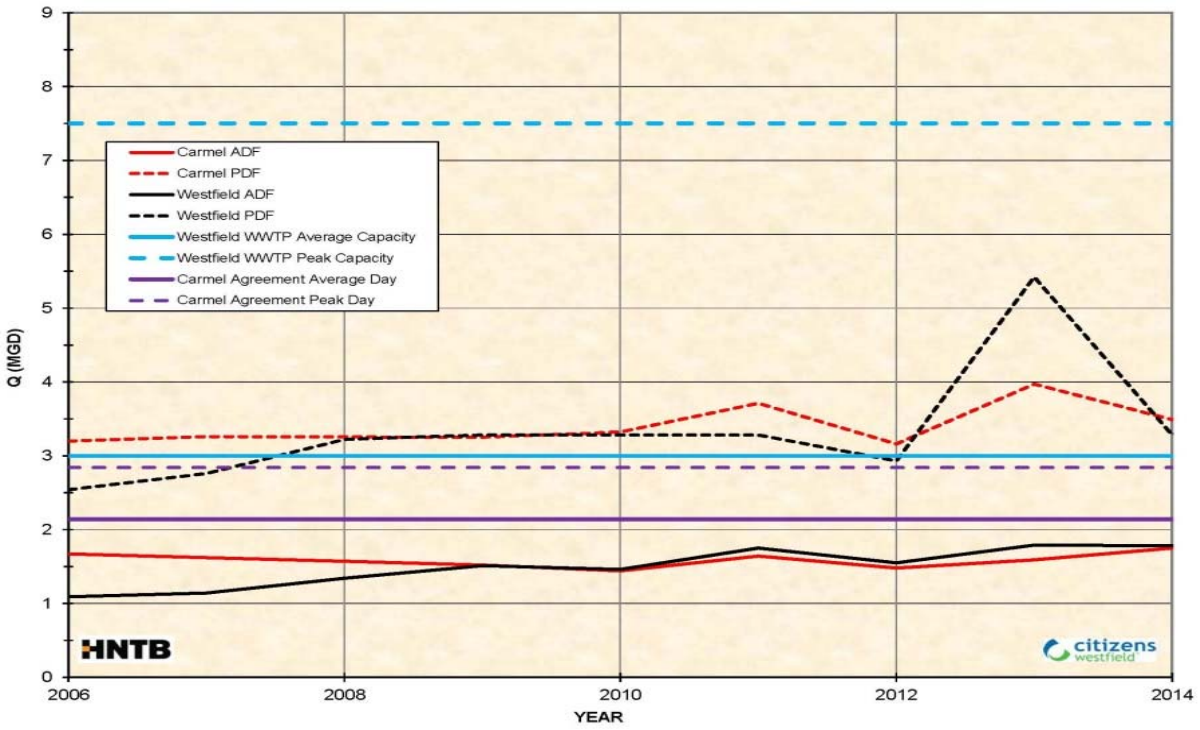


FIGURE 1
Westfield WWTP/Carmel WWTP Metered Flows vs. Design/Agreement Capacities

ALLOCATED FLOWS

As part of master planning efforts in 2006, the City prepared a theoretical evaluation of the then current capacity of the collection system, as well as ultimate future build-out of the system assuming 100-percent development of available land within Washington Township. The plan included the waste load allocation for each drainage basin within the sanitary service area. The 2006 Master Plan assessed the ability of the collection system to handle the rapid development of the City and was used to plan capital projects for improvements and expansion of the existing wastewater system.

Citizens Westfield updated the waste load allocation evaluation based on actual developments and infrastructure capacities as of July 2014. This update replaced assumptions about development made in the Master Plan with actual waste loads allocated since 2006. Although waste load allocations do not equate to actual flows, they are a planning tool to assess future flows and needs. The waste load allocation takes into account existing and planned flow by summarizing assumed and known Equivalent

Dwelling Units (EDUs) (One (1) EDU is equivalent to an average of 310 gallons per day.), peaking factors, and lift station and sewer capacities to come up with a "theoretical" capacity of the existing and planned infrastructure used for planning purposes.

Table 1 shows the results of the waste load allocation review performed by Citizens Westfield, indicating an allocated average daily flow (ADF) and peak daily flow (PDF) of 1.9 MGD and 5.7 MGD, respectively. As indicated in Table 1, there is a significant difference between actual/measured and allocated flows. The discrepancy is evidence of the theoretical nature of flow allocation and the result of developments that may currently be under or awaiting construction.

TABLE 1
Westfield WWTP Capacity Evaluation

Infrastructure Name	*Current Design Capacity (MGD)*	*Flow Currently Allocated[1] (MGD)*	*Actual Measured Flow (MGD) Max YTD*
WWTP	3.0 ADF 7.5 PDF	1.9 ADF 5.7 PDF	1.7 ADF 5.1 PDF

Table 2 shows the results of the waste load allocation evaluation of the Carmel Connection capacity and indicates that both ADF and PDF are above the currently contracted amount. However, actual measured flow is below the contracted values for both ADF and PDF. The contract with Carmel allows Citizens Westfield to exceed the PDF; however, a surcharge can be assessed.

TABLE 2
Carmel Connection Capacity Evaluation

Infrastructure Name	*Carmel Connection (MGD, Service Agreement)*	*Carmel Connection Flow Currently Allocated (MGD)*	*Actual Measured Flow (MGD) Max YTD*
Carmel Connection Flow Meter	2.14 ADF 2.84 PDF (w/surcharge capability)	2.4 ADF 6.4 PDF	1.8 ADF 4.0 PDF

[1] Allocated flows do not include the three Service Availability Agreements.

To better utilize the treatment and conveyance capabilities within the system, Citizens Westfield is constructing the Downtown Lift Station. The lift station will have the capability to divert flow from the Carmel System to the Westfield WWTP at an average and peak flow rate of 0.65 MGD and 2.6MGD respectively. The lift station can also be bypassed to allow flow to continue to the Carmel Connection. This flexibility will allow Citizens Westfield to manage the available plant capacities as growth continues in the system.

FUTURE FLOWS

Figure 1 displays the metered Westfield WWTP and Carmel Connection flow rates between 2006 and September 2014. For the 10-year forecast between 2014 and 2024, a growth rate of 700 EDUs per year is estimated. Although there could be corrective years in economic growth over the 10-year period, 700 EDUs, or 0.22 MGD, is the approximate current growth rate and maximum rate experienced prior to the economic down-turn in 2008. Therefore, this growth rate was chosen to provide a conservative or maximum demand look at expected future flows.

Growth is predominantly occurring in the areas or basins served by the Westfield WWTP. Future flow estimates are based on adding 600 EDUs in the basins served by the WWTP and 100 EDUs for those served by Carmel. Under these assumptions, the estimated average daily flow to the Westfield WWTP in 2024 would be approximately 3.6 MGD with a peak flow of 8.1 MGD, as shown in Figure 2. The flow to the Carmel Connection point in 2024 would be approximately 2.1 MGD ADF and 4.5 MGD PDF.

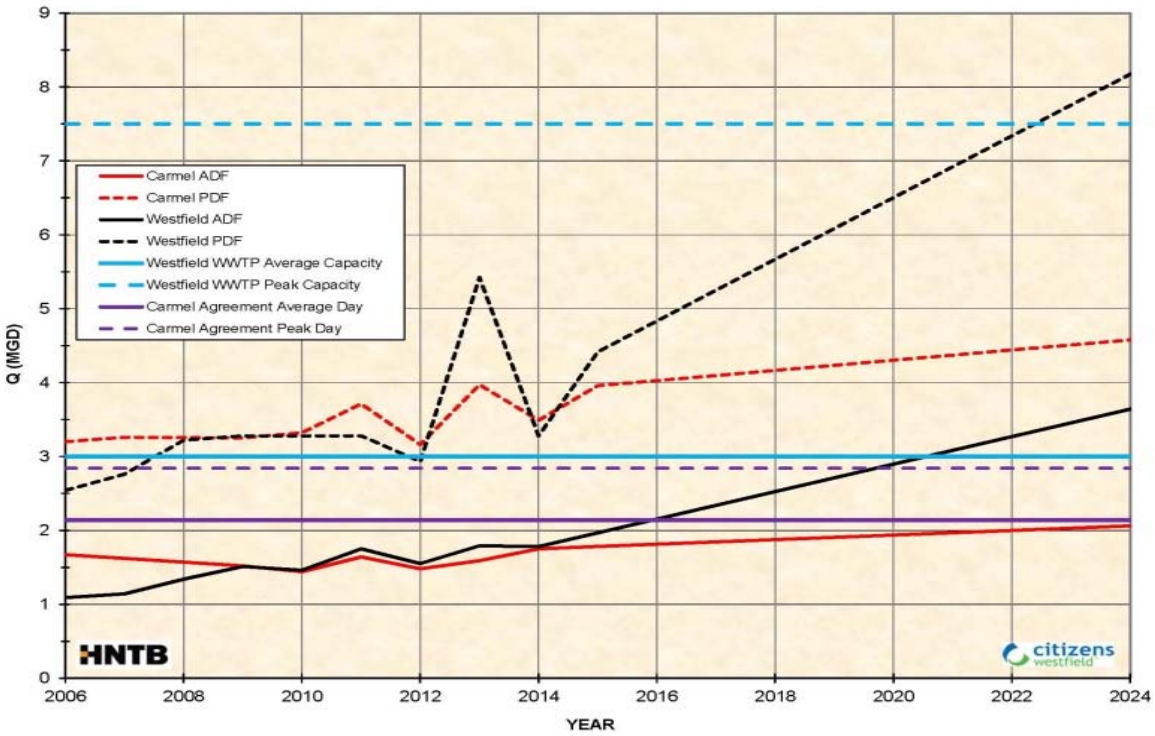


FIGURE 2
Westfield WWTP/Carmel WWTP Average and Peak Capacity Comparison
Assumed 700 EDU Growth Per Year

As shown in **Figure 2**, with the assumed growth of 700 EDUs per year, treatment capacities will not be exceeded for several years. The Westfield WWTP average day and peak capacities would not be exceeded until 2019 and 2022, respectively. The available peak capacity at the Carmel Connection can be negotiated with the City of Carmel; however, the contractual average day capacity is not anticipated to be exceeded until 2024.

STAYING AHEAD OF GROWTH

Although actual flows are currently below the treatment capacity available, Citizens Westfield understands the need to stay ahead of the anticipated growth. Along with the waste load allocation analysis, Citizens Westfield is meeting regularly with developers to continually assess the outlook of development in the service area.

After reviewing several options, Citizens Westfield has developed a list of options to address needs associated with the anticipated growth in the Westfield service area. Although comprehensive, the options have to be flexible to allow for growth fluctuations and financial capability. Improvements and options may include the following:

- Expand the Westfield WWTP – Plant is expandable to 18 MGD average daily flow, in 3 MGD increments. Current plans are to complete construction of 3 to 6 MGD of additional capacity at the plant no earlier than 2019. The current NPDES permit expires on May 31, 2017. Citizens Westfield will attempt to coordinate the expansion plans with IDEM during the renewal of the permit. See **Figure 3**.
- Renegotiation of the service agreement with the City of Carmel to provide for more treatment capacity. This can be completed as development occurs and the need arises.
- Utilize existing infrastructure to transfer flow from basins being served by the Westfield WWTP to the Carmel Connection and vice versa. Currently, each basin has two lift stations that can be redirected to flow to the other basin. This would be utilized depending on where growth actually occurs to manage capacity. Flow is redirected with a turn of a valve, so modifications can be made immediately, as needed.
- Utilization of existing 48- to 60-inch (Westside Interceptor) gravity sanitary interceptor sewer as in-system storage. The interceptor was installed for future development, but currently conveys a very limited flow. Additional flow, such as the Downtown/Lagoon lift station, can be directed to the interceptor with limited modifications with flow control at the WWTP.
- Purchase and install portable flow monitoring equipment to identify actual flow throughout points in the system and identify areas of inflow and infiltration (I&I) for corrective action, in order to reduce actual/measured flow to the WWTP.

PERMITTING

Expanding the plant provides the best long term option for Citizens Westfield to meet the anticipated growth in the service area. To have the expanded facilities operational Citizens Westfield will undertake the necessary planning, permitting and design.

Expanding the plant will increase the discharge volume to Little Eagle Creek, which requires new preliminary effluent limits (PELs) to be established and an anti-degradation assessment completed. Rule 327 IAC 2-1-2 states that for all waters of the State, existing beneficial uses shall be maintained and protected, and that no degradation of water quality shall be permitted which would interfere with or become injurious to existing and potential uses. The rule also identifies water of high quality (outstanding state resources) that must be maintained in their present high quality without degradation.

IDEM reviews anti-degradation assessments as part of the project permit application process in order to protect beneficial water uses and to authorize new discharges that protect those beneficial uses. Part of that process is looking at whether the project supports necessary social or economic development. The receiving stream (Little Eagle Creek) must be maintained at current (or better) water quality, and existing in-stream water uses will be maintained and protected. The stream is designated for full body contact recreation and aquatic warm water habitat uses.

To optimize the efforts associated with the NPDES permit renewal in 2017, preliminary engineering should begin in late 2015. Preliminary efforts will be focused on determining the appropriate size of expansion as well as defining the treatment parameters to best address NPDES permit requirements, the PELs and anti-degradation analysis. The schedule shown in Figure 3 is representative of the time necessary to complete the different phases of permitting and develop the project to a point construction can be completed in 2019. This schedule provides a baseline and can be modified to coincide with changing development rates as necessary.

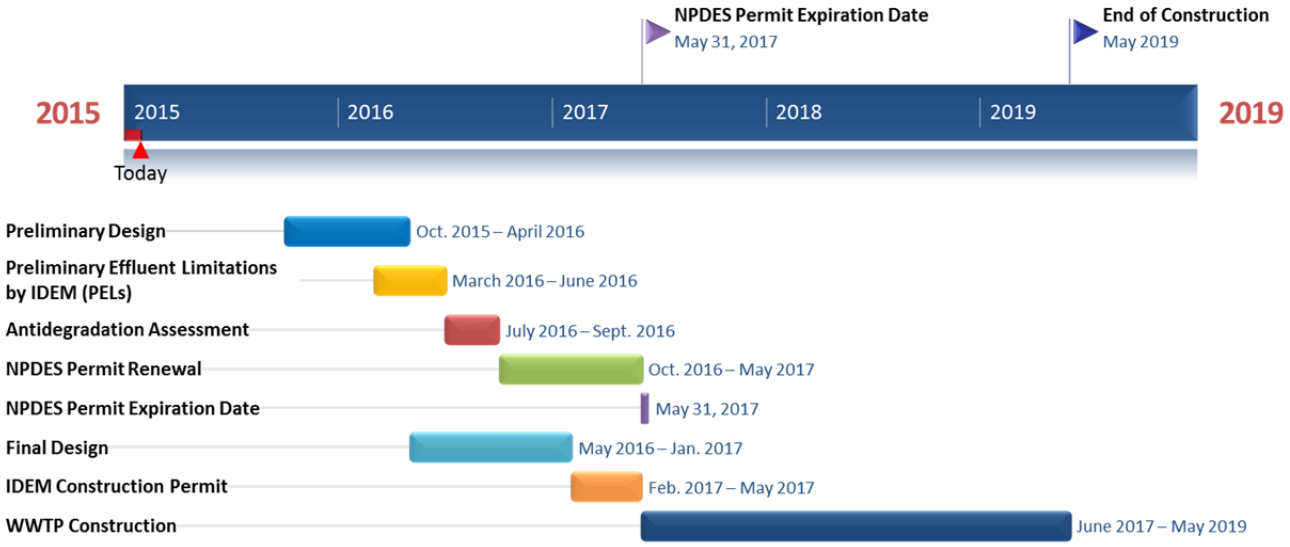


FIGURE 3
Westfield WWTP Expansion Schedule

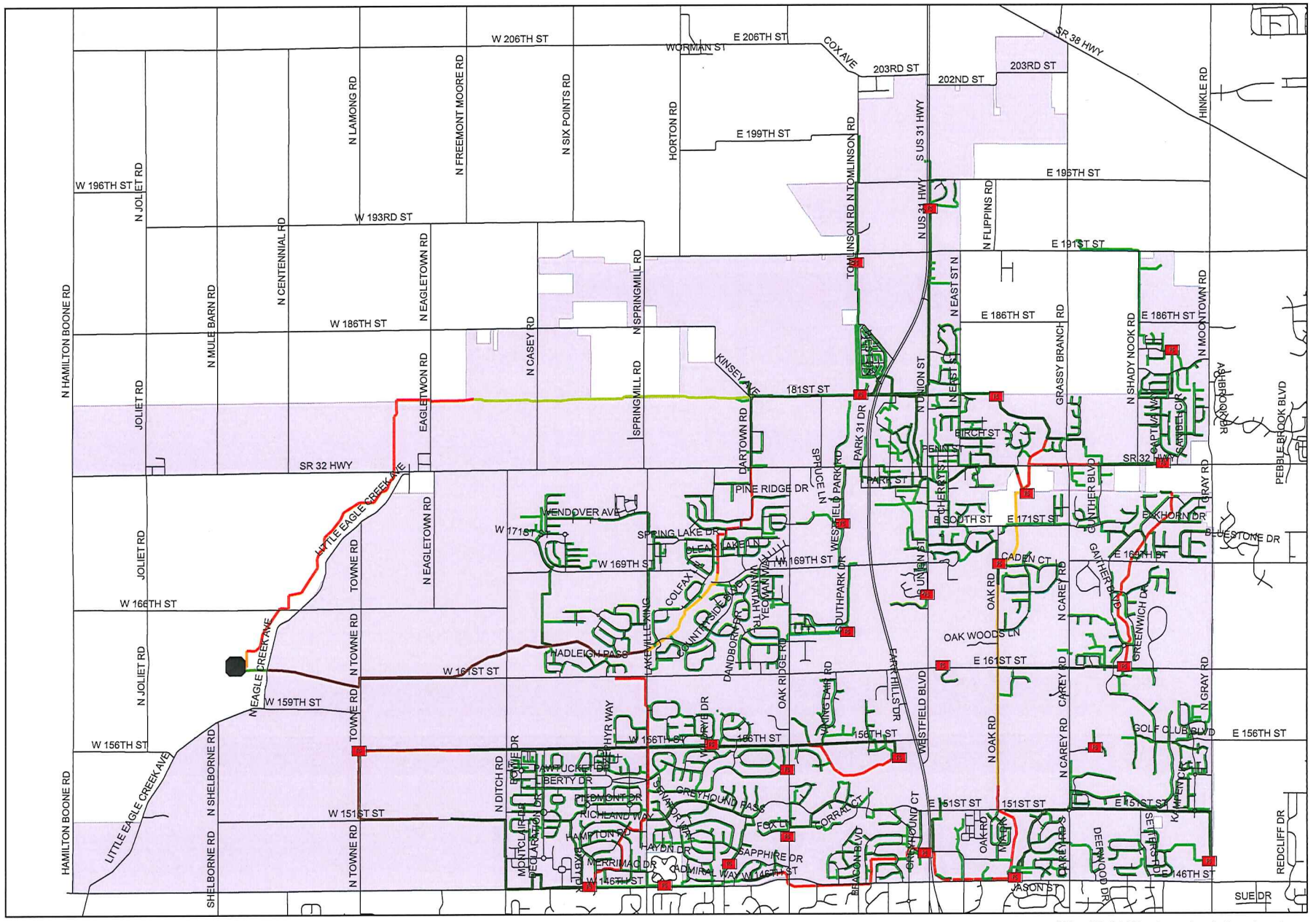
SUMMARY

With the Citizens Westfield service area anticipated to continue experiencing considerable growth over the next 10 years it is important that planning be done and steps be taken to ensure safety, reliability and environmental protection of the system. Although current flow rates are within the treatment capacities, the allocated flow rates will be growing closer to design capacities in the coming years. The above steps have been identified to stay ahead of growth through plant expansion and optimizing the use of the existing infrastructure. Commitments should be made to making the infrastructure investments necessary for the system to handle the growth and to meet regulatory requirements.

Attachment JTP-18
Pages 1 - 30 of 30
Cause No. 44835
CONFIDENTIAL

Joint Petitioners' Exhibit LCL-7
Cause No.: 44273

citizens energy group



Legend

- WWTP
- Westfield City Limits
- Pump Stations
- Roadway

WastewaterLines
DIAM

- 8
- 10
- 12
- 15
- 18
- 21
- 24
- 30
- 36
- 48
- 54
- 60

0 3,150 6,300 Feet

Westfield Wastewater Infrastructure

HNTB