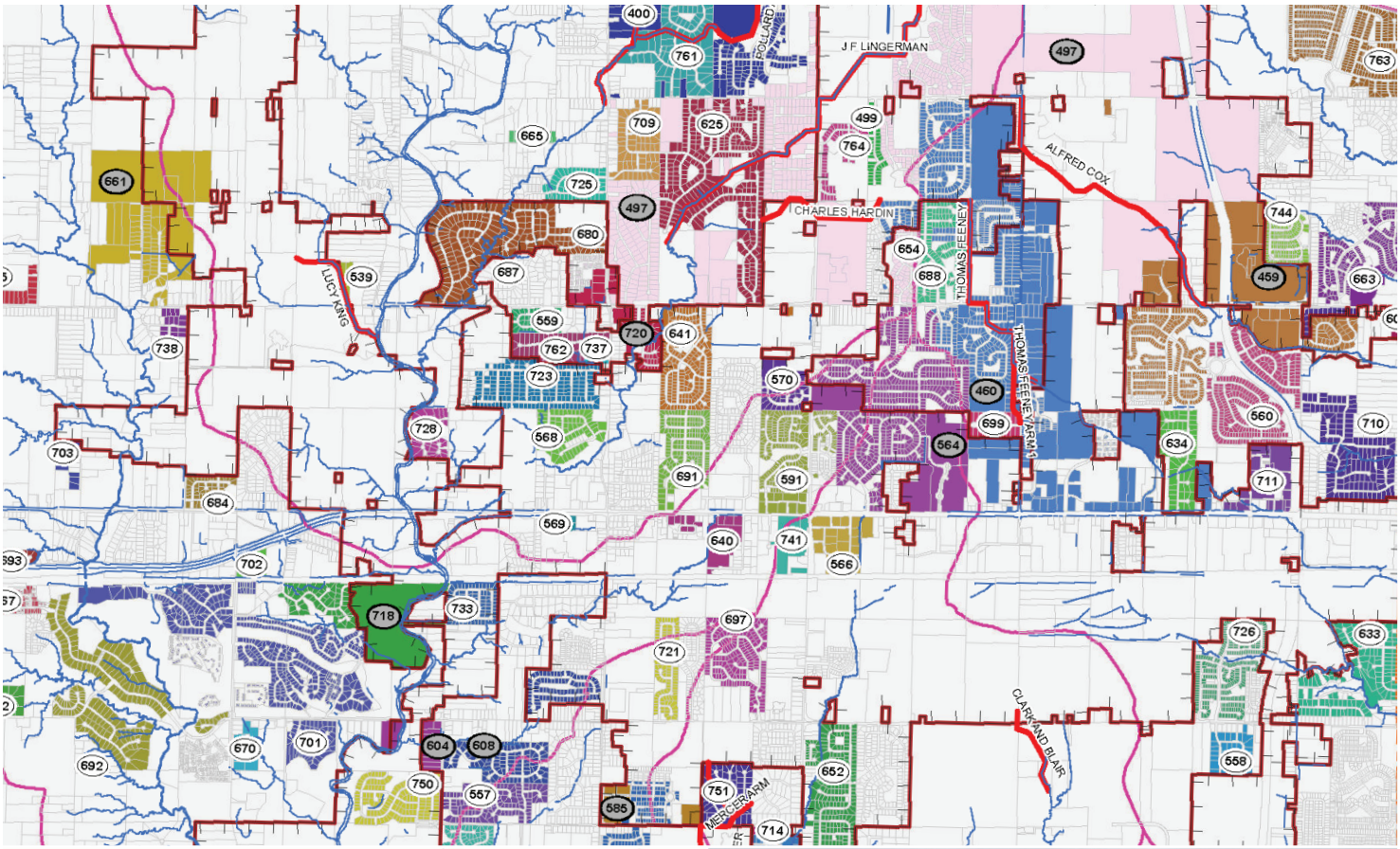

April 2016

Avon Department of Stormwater Management Feasibility Study

engineering | architecture | geospatial

TOWN OF AVON

AVON DEPARTMENT OF STORMWATER MANAGEMENT FEASIBILITY STUDY

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Chapter 1

CHAPTER 1 EXECUTIVE SUMMARY

Introduction

The focus of this report is to provide guidance for the Town of Avon to institute a revenue funded Department of Stormwater Management. The report:

- Identifies administrative issues and organizational structures available under Indiana law
- Outlines a preliminary budget and operational activities
- Documents County regulated drain administration and transfer of drains to Town
- Analyzes the residential, commercial and industrial customer base to establish the total number of Equivalent Residential Units (ERU) for billing within the jurisdiction
- Proposes a rate structure, user rate, and offers a sample enabling and rate ordinance
- Discusses justification points and stormwater utility formation in Indiana
- Estimates capital, operations and maintenance needs

The report attempts to identify the minimum revenue and the monthly service charges necessary to operate a sustainable utility in the Town. Up to this time, Avon has paid for stormwater expenses from the General Fund or Food and Beverage tax revenues.

The recommendations made throughout the report assume the Town moves forward with implementation.

Administrative Issues

A principal premise of this analysis is that if the Town chooses to start a Department of Stormwater Management, it would do so under a managed plan. The Town would rely on its existing resources where feasible and contract labor as necessary for specific functions requiring special training or resources. The initial activities will include: accounting, customer service, line locations, construction, and system maintenance. Over time, the Town will gain comfort administering the Department of Stormwater Management.

The Town may operate a Department of Stormwater Management under Indiana Code 8-1.5-5.

[Map 1 Avon Corporate Boundary and Study Area.]
[Appendix B Indiana Code 8-1.5-5 Department of Stormwater Management.]

The Town must address numerous administrative issues to successfully start up and operate a Department of Stormwater Management.

The obligations of the department may include the following:

- Cost sharing of administrative salaries
- Funding operation and maintenance activities
- Funding annual stormwater infrastructure improvements
- Debt service for stormwater capital projects

- MS4 responsibilities

The study recommends a public outreach campaign prior to sending out the first bills. This may include:

- Personal, individual meetings with the largest customers
- Contact with local Chamber of Commerce to reach commercial and industrial customers
- Presentations at local service clubs or other community organizations
- Notifications to tax-exempt entities including faith groups and government agencies
- Direct mailers to new customer base
- Radio ads
- Newspaper story, interview or guest column
- Town Council work session prior to ordinance hearings

Hiring and training a labor force to operate the Avon Department of Stormwater Management will be critical to success.

The rate structure needs to be fair and easy to understand. Customers must understand how their bill is calculated, and the rate structure must generate sufficient revenue to cover the projected budget for the stormwater program.

Based on Indiana case law, Avon's only option to move forward with a dedicated fund stormwater utility is by establishing a Department of Stormwater Management under Indiana Code 8-1.5-5. The Department will be responsible for the collection and conveyance of surface water runoff in an efficient and economical manner.

> [Appendix C Plainfield Court Ruling on Town's Options for Stormwater Management Organizational Structure.]

This option requires establishment of a new board, appointed by the municipal executive, the Town Council President. Internal accounting practices should be sufficient to allocate revenues and expenses for the Department of Stormwater Management. It allows the Town to bond for stormwater improvements through a special taxing district where the bonding limit is tied to the net assessed value in the corporate limits, or through revenue bonds without statutory debt limits. Transfer of funds from Hendricks County Regulated Drain fund balances will strengthen the new department's initial financial position. The stormwater department can only operate within the corporate limits of the Town.

Using a runoff calculation such as impervious area is a fair and equitable method to assess stormwater service charges. Numerous communities in Indiana have used impervious area to assess fees.

The hybrid method is recommended to be the most equitable way to establish stormwater rates. An Equivalent Residential Unit (ERU) is the basic unit of measurement established based on the amount of impervious surface of a typical residential parcel. Each non-residential property would be assessed based on how many ERUs it contains.

Credits reduce the projected revenue by the amount of credits awarded. They do not change the revenue requirements. Revenue losses to credits must be made up on the rate base.

The Avon Common Council has authority to assess fees based on impervious area under Indiana statutes. Other communities have taken similar action and court challenges have been unsuccessful in defeating the rate structure and the authority to assess the fees.

[Appendix E Draft Avon Stormwater Department Enabling and Rate Ordinance.

Budget, Billing and Financial Analysis

The study evaluated the budget, billing and financial needs to establish the Department. Startup, staffing, billing, customer service, operations, maintenance and capital requirements are addressed.

The department budget includes expenses necessary to operate a stormwater utility. Cost centers include:

- Startup costs
- Administrative salaries
- Consulting
- Field operations
- System maintenance
- Public outreach
- Printing and advertising
- Customer service
- Billing
- MS4 expenses
- Staff training
- Capital planning and construction

One of the most significant activities to establish a new utility for Avon is setting up the billing system. The department must send out bills, collect money, and respond to customer inquiries. Avon has no existing billing system. The study examined three billing system alternatives.

1. Bill through the County Treasurer on the tax statements.
2. Piggyback bill through an existing local utility that covers most of the Avon residents.
3. Bill directly from the Town setting up a new customer information system.

The study recommends setting up a new third party billing system and budgeting $35,000 per year plus one billing clerk on staff at $35,000 salary and benefits for a total of $70,000 annual budget.

The study prepared an operations, maintenance and capital plan for the Department. Plans should be reviewed and updated periodically so they are flexible to the needs of customer demands. A combination of user fees, capital contributions, taxes, and bonds may be used to pay for capital projects. Department management and Council policies determine the mixture of funds.

The regulated drain fund balance transfer negotiated from the Drainage Board will be a capital contribution that stabilizes the initial financial position of the Department. For this reason, no bond funding is assumed in the study. Further, the transfer of regulated drain funds will affect the budget allocations.

Utility management staff training and financial consulting will be crucial in the first few years to establish proper accounting and work flows to make the department financially stable, sustainable and successful.

The study assumed annual operations, maintenance and capital project values through staff interviews, research and from the capital plan summarized in Chapter 7 and detailed in a separate report.

Preliminary Department Budget Year 1

Estimated Budget Year 1	
Category	**Budget**
Reimbursement to Food and Beverage	$20,000
Street Sweeping	$30,000
Office Supplies	$1,000
Personal Services	$190,000
Infrastructure Maintenance and Repairs	$50,000
Storm Sewer Cleaning	$5,000
Drainage Engineering	$5,000
Storm Sewer Inventory	$10,000
MS4 Permitting	$5,000
Public Education	$10,000
Printing and Advertising	$1,000
Billing Services (~2,000 bills/mo@~$1.50)	$35,000
Staff Training and Development	$10,000
Consulting for startup, legal, financial, capital, rates, customer data analysis	$50,000
Line Location Services	$15,000
Capital - Vehicles (Two 4 x 4 Trucks)	$60,000
Capital - Computers and Software	$5,000
Capital Projects - Annual Pay as You Go	$350,000
Estimated Preliminary Budget	**$852,000**

Projected Department Budget Years 2 - 5

Estimated Budget Years 2 - 5	
Category	**Budget**
Reimbursement to Food and Beverage	$20,000
Street Sweeping	$30,000
Office Supplies	$1,000
Personal Services	$200,000
Infrastructure Maintenance and Repairs	$100,000
Storm Sewer Cleaning	$20,000
Drainage Engineering	$20,000
Storm Sewer Inventory	$10,000
MS4 Permitting	$5,000
Public Education	$10,000
Printing and Advertising	$1,000
Billing Services (~2,000 bills/mo @ ~$1.50)	$35,000
Staff Training and Development	$5,000
Consulting - legal, financial, capital, rates, customer data analysis	$30,000
Line Location Services	$15,000
Capital projects - Annual Pay as You Go	$400,000
Estimated Preliminary Budget	**$902,000**

County Regulated Drain Analysis

The Hendricks County Drainage Board operates, maintains and assesses 94 regulated drains in Washington Township through semi-annual taxation under Indiana Code 36-9-27. The Indiana regulated drain assessment authority--dating to the 1800s--created a mechanism to construct and maintain public drains that benefit multiple properties, principally for agricultural production. Over the years, counties have used the statute to operate and maintain agricultural drain tiles, open ditches and, more recently, storm sewer systems.

[Map 2 Regulated Drains in Washington Township.]

In 2015, the County assessed $245,585 from 4,978 parcels in the Town of Avon and $327,472 from 9,569 parcels in Washington Township outside Avon for a total assessment of $573,057 from 14,547 parcels. Numerous other parcels—inside and outside the Town--subject to assessment were not get assessed in 2015 due to the existing drain balance exceeding statutory limits.

[Map 3 Regulated Drain 2015 Assessment Fee by Parcel.]
[Appendix G Washington Township Regulated Drain 2015 Assessment Analysis.]

The study approximated the fund balance and annual expenditures inside and outside the Town by proportioning the area of the drain assessment parcels inside and outside the corporate boundary.

The study obtained 5 years of county drain maintenance expenditures and existing drain balances for the 94 regulated drains in Washington Township. The County spent an annual average of $105,773 inside Avon and $151,229 outside Avon over the five-year study period.

> [Map 4 Regulated Drain 5 Year Annual Average Expenditure by Drain.]
> [Appendix H Washington Township Regulated Drain Expenditures Inside and Outside Avon.]

Appendix H shows existing regulated drain fund balances for the 94 Washington Township drains total $4,157,098, with approximately $1,643,775 from inside Avon and $2,508,590 from outside Avon.

> [Map 5 – 2015 Regulated Drain Account Balance.]
> [Map 6 – 2015 Partial Drain Assessments Inside Avon.]
> [Map 7 – 2015 Partial Drain Assessments Outside Avon.]

Further cooperation with the County will be necessary to agree on how the regulated drains within the corporate boundary are addressed. Upon transfer, utility policy will determine how the funds are incorporated into the budget and financial plan.

The study recommends the Town and County Drainage Board enter into a joint resolution where:

1. Hendricks County transfers the regulated drains within the Town to the Town's jurisdiction under IC 36-9-27-20;
2. Hendricks County transfers the fund balances for the transferred drains based on the proportional area approximation of this study, or other negotiated method, under IC 36-9-27-20.5;
3. The Town Council and Drainage Board abandon the regulated drain assessments under IC 36-9-27.

Customer Base and Rate Analysis

The study analyzed the customer base in detail to determine the following:

- Equivalent Residential Unit (ERU) for billing
- Impervious area for non-residential customers to convert to ERU billing units
- The total number of billing units
- Bundled billing units by customer class
- Summary of billing units
- Projected annual revenue for selected monthly rates
- Projected annual revenues using alternative rates
- Residential annual ERU payment compared to tax rates

The study extracted 521 residential parcels (approximately 10% of the total residential parcels of less than or equal to three units per building based on the State Property Class Codes) from the GIS database and calculated the impervious surface area for each parcel. The average impervious surface area for these sampled parcels was 3,942 square feet. This value becomes the Equivalent Residential Unit (ERU) for non-residential parcels.

[Map 8 Avon Residential Parcels for ERU Value.]
[Appendix J Avon Residential Impervious Surface Report.]

The study then tabulated the impervious area for each non-residential parcel. The study deleted right-of-way and vacant parcels from the final tabulations. The study applied 3,942 square feet per ERU to the database and tabulated the results.

[Map 9 Avon Non-Residential Impervious Areas for ERU Rate.]
[Appendix K Non-residential Impervious Surface Report – Sorted Largest to Smallest.]
[Appendix L Non-residential Impervious Surface Report – Sorted by Owner Name.]
[Appendix M Non-residential Impervious Surface Report – Sorted by Land Use Code.]

The CSX rail yard was isolated for special analysis.

Additional database cleanup necessary prior to sending out the first stormwater bill involves resolving the disputes between the one-to-many and many-to-one relationships within the database. A one-to-many condition means there is one parcel that has many individual billing customers, such as condominiums or commercial centers. Billing the property owner eliminates this issue. A many-to-one relationship exists where many adjacent parcels are owned by a single owner and it is desirable to send a single bill, such as schools and large commercial developments.

The study bundled the many-to-one relationship adjacent parcels with the same or similar owner into a single billing customer for customer base analysis. If Avon decides to move forward, additional effort will be necessary to clean up the database.

Further database cleanup if the Town chooses to move forward with implementation entails updating impervious area calculations for properties with improvements dating after the aerial photography from building permits or other sources.

A series of tables summarize the customer base calculations.

The Bundled Billing Units by Customer Class table tabulates the total number of billing units in Avon by customer class. The residential class all pay a flat base rate based on the average impervious area of 3,942 square feet, the Equivalent Residential Unit (ERU). The non-residential class pays a rate where the impervious area on the parcel is divided by 3,942 square feet ERU, then multiplied by the base rate.

Bundled Billing Units by Customer Class

State Property Class Code	Parcels or Bundled Customers	Total Square Feet Impervious Area	Equivalent Residential Unit Count at 3,942 sf/unit
Residential Base Rate Customers = Residential and Agricultural Parcels Improved (101, 199, 510-599)	5,185		
Bundled Non-residential Customers = Commercial Industrial Institutional Parcels Improved (309-399, 401-499, 600-699 801-840, 850-899)	342	37,306,263	9,464
CSX Railyard (841)	2	3,627,328	920
Totals w/ CSX Railyard	5,529	40,933,591	10,384
Bundled Non-residential Customers = Commercial Industrial Institutional Parcels Improved (309-399, 401-499, 600-699 801-840, 850-899)	342	37,306,263	9,464
Total Billable Parcels w/o CSX Railyard	5,527	37,306,263	9,464
Base Residential Rate Customers			
Non-residential ERU Rate Customers			

The next step is to quantify the total number of billing units. The table below shows the breakdown of the customer base between residential and non-residential customers. There is a total of 15,569 ERU billing units in the customer base.

Summary of Billing Units

Customer Classification	ERU	% of Total
Residential Customer Count	5,185	33%
Non-residential Customer Equivalent Units w/o CSX	9,464	61%
CSX	920	6%
Total Billable Equivalent Residential Units (ERU)	15,569	100%

The next step is to project revenues for several base-billing rates. The table below projects revenues for base billing rates from $2 to $9 per ERU. The projected revenues multiply the billing unit count multiplied by the base billing unit dollar times 12 months for a projected annual revenue estimate.

Projected Annual Revenue for Selected Monthly Rates

Customer Class	ERU Count	$2/mo/ERU	$3/mo/ERU	$4/mo/ERU	$5/mo/ERU
Residential Customer Count	5,185	$124,440	$186,660	$248,880	$311,100
Non-residential ERU Count	9,464	$227,131	$340,696	$454,262	$567,827
CSX	920	$22,084	$33,126	$44,168	$55,210
Total Billable Unit Count w/ CSX	15,569	$373,655	$560,483	$747,310	$934,138

Customer Class	ERU Count	$6/mo/ERU	$7/mo/ERU	$8/mo/ERU	$9/mo/ERU
Residential Customer Count	5,185	$373,320	$435,540	$497,760	$559,980
Non-residential ERU Count w/o CSX	9,464	$681,393	$794,958	$908,524	$1,022,089
CSX	920	$66,253	$77,295	$88,337	$99,379
Total Billable Unit Count	15,569	$1,120,965	$1,307,793	$1,494,621	$1,681,448

The projected $850,000 budget requires Avon to charge between $4.00 and $5.00 per month per ERU. Actual revenues depend on collections and disbursements. Some variations from these projections are to be expected.

Alternative Rate Considerations

Due to the large discrepancy in the number of residential to non-residential customers, it is appropriate to consider different rates for residential and non-residential customers. It is justified because the large number of residential customers requires additional administrative and maintenance services per billing unit. Further, most non-residential customers maintain the private stormwater infrastructure on their property; the local government— in this case, the Town of Avon, maintains the infrastructure in subdivisions where the residential customers reside.

The CSX rail yard presents a unique circumstance for the Town and has been isolated to consider a separate rail yard rate. The projections attempted to show alternatives to achieve the desired $850,000 budget.

Projected Annual Revenues Using Alternative Rates

Projected Annual Revenue from Selected Base Rates - Various Residential v Non-residential Rates - All Parcels

Customer Class	ERU Count	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split
Residential Customer Count	5,185	$5.00	$311,100	38%	$5.00	$311,100	36%	$6.00	$373,320	43%	$7.00	$435,540	50%
Non-residential ERU Count	10,384	$4.00	$498,430	62%	$4.50	$560,734	64%	$4.00	$498,430	57%	$3.50	$436,127	50%
Total Billable Unit Count	15,569		$809,530	100%		$871,834	100%		$871,750	100%		$871,667	100%

Projected Annual Revenue from Selected Base Rates - Various Residential v Non-residential Rates - All Parcels w/ Railyard Rate

Customer Class	ERU Count	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split
Residential Customer Count	5,185	$5.00	$311,100	40%	$5.00	$311,100	39%	$6.00	$373,320	44%	$6.00	$373,320	43%
Non-residential ERU Count	9,464	$4.00	$454,262	58%	$4.00	$454,262	57%	$4.00	$454,262	53%	$4.00	$454,262	53%
CSX	920	$2.00	$22,084	3%	$3.00	$33,126	4%	$2.00	$22,084	3%	$3.00	$33,126	4%
Total Billable Unit Count	15,569		$787,446	100%		$798,488	100%		$849,666	100%		$860,708	100%

Equivalent Tax Rate Comparison

The Department of Stormwater Management statute permits assessment of a special benefits tax on property within the district. For comparison, the study considered the equivalent tax rate for several selected budgets. The net assessed value was taken from the Town of Avon Sustainability Analysis performed by Financial Solutions in 2015. The following table compares the budget from user fees to a comparable tax rate necessary to raise similar revenue.

The Residential Annual ERU Payment Compared to Tax Rates table shows that the Town would need to assess a tax rate between $0.08 to $0.09 per $100 assessed value to generate the targeted $850,000 budget. The equivalent revenue generating ERU would be between $4.28 and $4.82. Only taxable parcels would pay a tax rate. Actual revenues depend on collections and disbursements. Some variations from these projections are to be expected.

Under a tax rate, residential customers would pay from $84 to $285 per year, based on home value. Under the proposed ERU rate, residential customers would pay from $51 to $58 per year.

Residential Annual ERU Payment Compared to Tax Rates

Annual Budget ERU Rate Compared to Tax Rate - All Taxable Parcels				
Monthly ERU Rate = Budget / (Total ERU / 12)				
Annual Budget	$700,000	$800,000	$900,000	$1,000,000
Total Billable Unit Count	15,569	15,569	15,569	15,569
Required Monthly Rate / ERU	$3.75	$4.28	$4.82	$5.35
Annual Payment for Each ERU	$44.96	$51.38	$57.81	$64.23
Tax Rate = Budget / (Assessed Value/$100)				
Annual Budget	$700,000	$800,000	$900,000	$1,000,000
Total Net Assessed Value in Town [1]	$948,895,808	$948,895,808	$948,895,808	$948,895,808
Tax Rate ($ / $100 AV)	$0.07	$0.08	$0.09	$0.11
Annual Assessment for $100,000 house	$74	$84	$95	$105
Annual Assessment for $150,000 house	$111	$126	$142	$158
Annual Assessment for $200,000 house	$148	$169	$190	$211
Annual Assessment for $250,000 house	$184	$211	$237	$263
Annual Assessment for $300,000 house	$221	$253	$285	$316
[1] Avon Sustainability Study 2015				

Justification for Establishing the Department

Several drivers prompt cities, towns and counties in Indiana to start up stormwater utilities. The study documents factors for Avon to consider prior to establishing a revenue funded Department of Stormwater Management.

The principal justifications for establishing a dedicated fund Department of Stormwater Management in Avon include:

1. Capital and maintenance activities for stormwater are currently funded from the general fund or food and beverage on an as-requested basis with no long-term asset management mechanism in place.
2. Indiana General Assembly legislation capped property taxes based on the land use and assessed value.
3. Indiana General Assembly legislation encourages local governments to pursue alternative revenue sources.
4. Avon could reduce homeowner costs for stormwater services as Hendricks County Drainage Board currently assesses 4,978 parcels in the Town a regulated drain maintenance fee, typically $100 per year.

5. Transfer of regulated drains to the Town and elimination of regulated drain maintenance fees from the county simplifies and improves stormwater operations for the citizens of the town.
6. Creates a stronger position for grant applications by providing local match funds for stormwater projects.
7. Fund Federal Clean Water Act regulations for Municipal Separate Storm Sewer Systems (MS4).

Residential rates of $4 to $7 per month for Avon are appropriate relative to other Indiana communities. Brownsburg, Danville and Plainfield all have existing stormwater utilities with rates ranging from $4 to $7 per month per ERU.

The study compared Avon to other Hendricks County towns for taxes and growth. The facts support the Town's financial position for pursuing dedicated stormwater funding. The analysis considered similar Hendricks County towns for impact of tax caps and tax levy per person.

Relative to similar Hendricks County towns, Avon has:

- The highest population growth rate;
- Experienced the greatest impact from tax levy circuit breakers;
- The lowest tax levy per person.

Levy and Circuit Breaker Comparison by Civil Tax Unit

Town	2010 Population [1]	2010 Levy [2]	Circuit Breaker as % of Levy [2]	2010 $ Levy / 2010 Population	2014 Population [3]	2015 Levy [4]	Circuit Breaker as % of Levy [4]	2015 $ Levy / 2014 Population
Brownsburg Civil Town	21,285	$10,731,533	9.2%	$504	23,322	$13,543,429	13.0%	$581
Plainfield Civil Town	27,631	$13,458,210	3.6%	$487	30,409	$14,812,220	3.8%	$487
Danville Civil Town	9,001	$2,254,537	8.4%	$250	9,593	$2,800,207	14.2%	$292
Avon Civil Town	12,446	$2,908,813	8.3%	$234	15,971	$3,582,081	17.5%	$224

[1] http://www.stats.indiana.edu/population/PopTotals/historic_counts_cities.asp
[2] 2010 Prpoerty Tax Report Hendricks County by Legislative Services Agency
[3] http://www.stats.indiana.edu/population/sub_cnty_estimates/2014/e2014_places.asp
[4] 2015 Property Tax Report Hendricks County by Legislative Services Agency

Capital Project Summary

Stormwater project funding is a primary driver motivating local governments to startup dedicated fund stormwater utilities. Avon has wrestled with stormwater project development for years. Funding has always been the biggest influence in getting projects constructed to address known problems. The study evaluated a series of projects to determine appropriate maintenance and capital project budgets.

Project costs have escalated for the jobs over time. Dedicated funds provide the opportunity to pursue projects on a regular basis. Implementation of the Department of Stormwater Management will resolve stormwater program management for the Town.

The study developed a list of projects from staff input. Proposed solutions and cost estimates came from field investigations, preliminary evaluation or previous studies.

Years Problem Known for Stormwater Project Areas

Project Area	Years Since Problem Identified
Avon Heights	15
Cobblestone	10 – 15
Dan Jones Road	10
Avon Woods	8
Pines of Avon and CR 100 S	10
Timber Bend	3 – 5
Oak Bend	5 – 10
Stratford of Avon	10 – 15
Austin Lakes	10
Raceway Road CSX Underpass	5
CR 625 Culvert South of CR 91 N	10 - 15

Stormwater Capital Projects

TOWN OF AVON Engineer's Opinion of Probable Cost Overall Project Costs		engineering | architecture | geospatial
Item	**Description**	**Estimated Cost**
1.1	Table SW #1.1 - Avon Heights Middle	$465,000
1.2	Table SW #1.2 - Avon Heights South	$450,000
2	Table SW #2 - Cobblestone	$485,000
3	Table SW #3 - Dan Jones	$185,000
4	Table SW #4 - Avon Woods	$8,000
5	Table SW #5 - Pines of Avon and CR 100 South	$350,000
6	Table SW #6 - Timber Bend	$78,000
7	Table SW #7 - Oak Bend	$87,000
8	Table SW #8 - Stratford of Avon	$100,000
9	Table SW #9 - Austin Lakes	$162,000
10	Austin Lakes Capital	$750,000
11	Raceway Rd. CSX Underpass	$60,000
12	CR 625 Culvert South of CR91N	$125,000
	Estimate of Capital Needs	**$3,305,000**

Chapter 2

CHAPTER 2 ADMINISTRATIVE ISSUES

Introduction, Summary of Findings and Recommendations

The focus of this report is to provide guidance for the Town of Avon to institute a revenue funded Department of Stormwater Management. The report:

- Identifies administrative issues and organizational structures available under Indiana law
- Outlines a preliminary budget and operational activities
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The Town may operate a Department of Stormwater Management under Indiana Code 8-1.5-5.

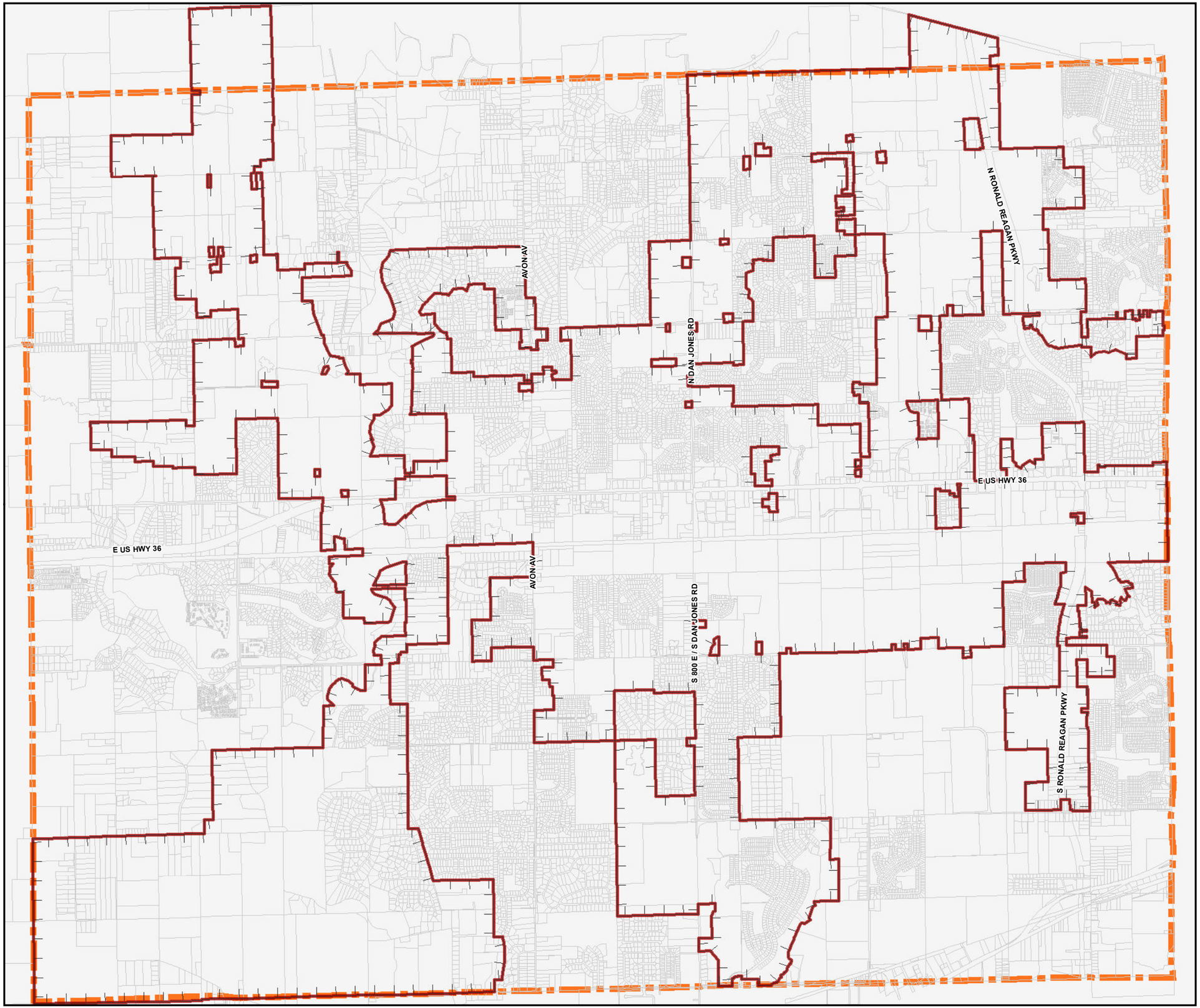
[Map 1 Avon Corporate Boundary and Study Area.] [Insert]
[Appendix B Indiana Code 8-1.5-5 Department of Stormwater Management.]

The Town must address numerous administrative issues to successfully start up and operate a Department of Stormwater Management.

The obligations of the department may include the following:

- Cost sharing of Avon administrative salaries
- Funding operation and maintenance
- Funding annual stormwater infrastructure improvements
- Debt service for stormwater capital projects

Map 1
Avon Corporate Boundary and Study Area
Town of Avon, Indiana



Legend

- Avon Town Boundary
- Washington Township
- Parcel Boundary

N
W E
S

0 1,500 3,000
Scale in Feet

April 2016
Overview Map

engineering | architecture | geospatial

- MS4 responsibilities

The study recommends a public outreach campaign prior to sending out the first bills. This may include:

- Personal, individual meetings with the largest customers
- Contact with local Chamber of Commerce to reach commercial and industrial customers
- Presentations at local service clubs or other community organizations
- Notifications to tax-exempt entities including faith groups and government agencies
- Direct mailers to new customer base
- Radio ads
- Newspaper story, interview or guest column
- Town Council work session prior to ordinance hearings

Hiring and training a labor force to operate the Avon Department of Stormwater Management will be critical to success.

The rate structure needs to be fair and easy to understand. Customers must understand how their bill is calculated, and the rate structure must generate sufficient revenue to cover the projected budget for the stormwater program.

Based on Indiana case law, Avon's only option to move forward with a dedicated fund stormwater utility is by establishing a Department of Stormwater Management under Indiana Code 8-1.5-5. The Department will be responsible for the collection and conveyance of surface water runoff in an efficient and economical manner.

The Town of Plainfield formed a Department of Stormwater Management under IC 36-9-23 as a sub department of its existing wastewater utility. A utility customer sued the Town. The Indiana Court of Appeals ruled that towns could not form stormwater utilities under existing wastewater utilities IC 36-9-23.

> [Appendix C Plainfield Court Ruling on Town's Options for Stormwater Management Organizational Structure.]

This option requires establishment of a new board, appointed by the municipal executive, the Town Council President. Internal accounting practices should be sufficient to allocate revenues and expenses for the Department of Stormwater Management. It allows the Town to bond for stormwater improvements through a special taxing district where the bonding limit is tied to the net assessed value in the corporate limits, or through revenue bonds without statutory debt limits. Transfer of funds from Hendricks County Regulated Drain fund balances will strengthen the new department's initial financial position. The stormwater department can only operate within the corporate limits of the Town.

Using a runoff calculation such as impervious area is a fair and equitable method to assess stormwater service charges. Numerous communities in Indiana have used impervious area to assess fees.

The hybrid method is recommended to be the most equitable way to establish stormwater rates. An Equivalent Residential Unit (ERU) is the basic unit of measurement established based on the amount of impervious surface of a typical residential parcel. Each non-residential property would be assessed based on how many ERUs it contains.

Credits reduce the projected revenue by the amount of credits awarded. They do not change the revenue requirements. Revenue losses to credits must be made up on the rate base.

[Appendix D Indianapolis Stormwater Credit Program.]

The Avon Common Council has authority to assess fees based on impervious area under Indiana statutes. Other communities have taken similar action and court challenges have been unsuccessful in defeating the rate structure and the authority to assess the fees.

[Appendix E Draft Avon Stormwater Department Enabling and Rate Ordinance.

Department of Stormwater Management IC 8-1.5-5

The Town may operate a Department of Stormwater Management under Indiana Code 8-1.5-5.

The following table outlines significant issues of the statute.

Department of Stormwater Management Statute Outline

Item	Code Citation	Comments
Special Taxing District	8-1.5-5-5	Special benefit tax on property within the district is permissible.
Board	8-1.5-5-4	3 bipartisan appointed by municipal executive.
Boundaries	8-1.5-5-5	Cannot operate outside corporate limits.
User Fees	8-1.5-5-7	Board permissible with approval of fiscal body. Periodic billing or through tax bill. Fee guidelines provided, includes impervious. Different schedules and customer classifications permissible based on: (1) Variations in cost of services. (2) Variations in number of users in locations. (3) Whether property is residential, commercial or agricultural.
Bonds tax exempt	8-1.5-5-13	Yes.
Municipality subject to fees	8-1.5-5-16	Municipality must pay fees to department.
Written remonstrance permitted	8-1.5-5-18	Yes, property owners or those injuriously affected.
Bonds	8-1.5-5-21	Revenue, tax, or combination of the two. Statutory debt limit of 8% of adjusted value of taxable property in district if tax funded bonds issued. No statutory limit on revenue bonds.
Collection of unpaid fees; recording of liens; fees, charges, and penalties	8-1.5-5-30	Board may file liens for unpaid balances.

Preliminary List of Identified Issues

The Town must address numerous administrative issues to successfully start up and operate a Department of Stormwater Management. A detailed analysis of the issues is beyond the scope of this initial study. This report identifies issues; however, it is not intended to be an exhaustive discussion nor is it a complete list of topics. Items discussed are potentially significant in cost, policy implications, or time to implement. They are in no particular order.

Town Council

The Common Council serves as the legislative body for the Town of Avon. The Town Council President serves as the municipal executive under Indiana statute. The Council would establish the Department of Stormwater Management and approve rates and charges by enacting local ordinances. They would approve financial plans including bonding and utility rates. They could be

expected to hear appeals to administrative decisions and rate calculation disputes. The Council's enabling ordinance should cover such issues as:

- Establish legal authority to operate a Department of Stormwater Management
- Set the initial rates
- Set the initial terms of the Department of Stormwater Management Board appointments
- Define the obligations and responsibilities of the Department
- Establish the vision, mission and goals of the new utility.

The Council appoints a Town Manager to administer daily operations. The Town Manager would serve as the chief administrator of the Department of Stormwater Management, similar to the role served relative to other Town departments.

Existing Operations and Proposed Department Responsibilities

Avon public works staff currently directs the operation and maintenance of the stormwater infrastructure within the town through private contracts with local vendors. Current stormwater related expenses might come from general fund revenues, Motor Vehicle Highway funds, Food and Beverage funds and Tax Increment Finance funds. The addition of dedicated funding for the stormwater system will assist the department in performing duties. Reimbursements to other funds may be transferred upon establishment of the Department of Stormwater Management.

The proposed stormwater budget will partially fund positions on the Town's staff. Internal accounting procedures must be established to account for proposed stormwater operations.

The obligations of the department may include the following:

- Cost sharing of Avon administrative salaries.
- Funding operation and maintenance.
- Funding annual stormwater infrastructure improvements.
- Debt service reserve for stormwater capital projects.
- MS4 responsibilities.

Public Outreach

The study recommends a public outreach campaign prior to sending out the first bills. Communicating stormwater needs is an important element of setting up the new line of business for Avon. Newspaper articles, radio ads, bill stuffers, presentations at local service clubs and public service announcements are some of the methods others have used. Individual meetings with the Chamber of Commerce, the School Corporation and other large customers reduces opposition and provides the Town an opportunity to make the case face to face with those most impacted. The message should emphasize the needs and address the current lack of dedicated funding for stormwater infrastructure management.

The study recommends a public outreach campaign prior to sending out the first bills. This may include:

- Personal, individual meetings with the largest customers
- Contact with local Chamber of Commerce to reach commercial and industrial customers
- Presentations at local service clubs or other community organizations
- Notifications to tax-exempt entities including faith groups and government agencies
- Direct mailers to new customer base
- Radio ads
- Newspaper story, interview or guest column
- Town Council work session prior to ordinance hearings

Establishing Rate, Revenue and Finance Policies

A utility's rate structure is a combination of revenue from available sources. The chosen organizational structure establishes the legal mechanisms available for collecting revenue. This study assumed all revenue would come from rates and charges. There are alternative potential finance sources.

Potential Revenue Sources

- Rates
- Charges for service
- Connection fees may be considered for system-wide capital investments
- Service extension fees may be considered for neighborhood capital investments

The study considered other potential funding sources to manage a municipal stormwater program. The following table summarizes some of the limitations of each alternative funding source.

Alternative Potential Stormwater Funding Sources

Funding Source	Comments
General Fund	Available, but strong competition with other municipal functions that have no other funding source
Tax backed bonds	Available under 8-1.5-5 not 36-9-23
Revenue bonds	Available under both 8-1.5-5 and 36-9-23
Tax Increment Finance (TIF) District bonds	Available in income eligible target areas only
State Revolving Fund (SRF) loans	Available for projects meeting Clean Water Act requirements
Special assessments	Available for neighborhood extensions and under 36-9-39 Barrett Law
Local option taxes	Available under Economic Development Income Taxes (EDIT) or Food and Beverage taxes, not adequate for program funding
Fees, permits, penalties, and fines	Available for supplemental funding, not adequate for program funding
Developer incentives	Available for supplemental funding, not adequate for program funding
Grants	Available for supplemental funding, not adequate for program funding

Avon may consider bonding to fund capital needs. State Revolving Fund loans are available to meet federally mandated Clean Water Act requirements. Fees, permits, penalties, and fines may go toward the administration and enforcement of the associated programs.

The study assumes subdivision developers continue to pay the total infrastructure cost to serve new developments. This is a capital contribution, not a revenue stream. Some communities include a system connection charge. Developer capital contributions often include offsite extensions to access existing infrastructure. Over-sizing infrastructure in new developments for future extensions is generally paid for by the utility. A capital account should be set up for this purpose.

Limited grant funding may be available to Avon. Most federal grant money is dependent on low to moderate income levels. Projects targeting existing un-served neighborhood areas might qualify. Extensions to undeveloped properties would not.

Establishing Rules, Regulations, and Standards of Service

Effective operation of a Department of Stormwater Management requires setting out the business plan and establishing the rules by which customers will be treated. The vision, mission, and goals of the enterprise should be discussed and agreed upon to move forward successfully. Some areas to consider include:

- Vision, mission, and goals statements
- Request for service standards for new and existing developments
- Plan review process to allow connections and extensions to the stormwater system in conformance with capital, operation, and maintenance plans of the utility
- Work flow process to assign new customers and annual database updates with the County
- Billing and payment standards
- Application of partial payments
- System maintenance, customer base maintenance, and record keeping
- Maintenance of service connections from private property
- Cross connection control with the sanitary sewer system
- Additional charges for special services
- Mechanism to hear appeals

System Extension Policies for New Developments and Existing Neighborhoods

The Department of Stormwater Management needs to establish policy on how to serve new developments and existing developments where service is requested. The Department of Stormwater Management may consider a master plan for extensions to serve the property where drainage problems have been identified or are most severe.

Service to new developments will be the utility's principal source of revenue and growth. Strong policies on extensions, rules and regulations for service, and capital contributions are crucial. New developments should be required to install stormwater infrastructure in accordance with adopted local standards. These developer-funded improvements should be considered contributions to the Department of Stormwater Management's assets and accounted for annually to expand the Utility Plant in Service and allow the utility to depreciate the assets.

Existing developments with stormwater infrastructure where no easements exist must be considered private systems until the property owners have transferred property rights to the utility through executed and recorded easements.

Service to existing developments served by substandard stormwater infrastructure should be addressed as a potential customer service opportunity. The policy to extend service greatly affects the perception of the utility in the minds of the customers and community. Fair and equitable service extension policies require local leadership input and customer participation. Target marketing efforts to potential customers would be advisable. Assessment and prioritization of problem areas is advisable. For example, water getting into houses or standing on public streets should be a priority over back yard flooding.

Regulatory Agency Involvement

The Indiana Utility Regulatory Commission (IURC) does not regulate stormwater rates and will not be involved in rate setting. The Avon Common Council is the final authority. The Indiana Department of Environmental Management regulates water quality elements of the stormwater program.

Hiring and Training a Labor Force

Hiring and training a labor force to operate the Avon Department of Stormwater Management will be critical to success. The Town should anticipate training for its existing employees upon deciding to move forward. Existing employees assigned additional duties should be compensated at market rates based on job responsibilities. Contract labor for maintenance, billing system updates, construction, and line location is available in the central Indiana market.

Program Elements and Rate Structures

Basics of Rate Structures

A sound stormwater rate structure should be developed around two major principles. The first is the "user pay" concept. This means that a fair structure will recover the costs incurred from the properties that use the system. The more service that is provided the larger the bill. The service provided is the management of stormwater runoff that is generated by a given parcel. This runoff must be collected and transported by the Utility in a cost effective and environmentally responsible manner. The greater the amount of runoff, the more the burden and cost imposed on the system and the higher the bill to the property.

The second principle involves the balance between simplicity and equity. The fairest rate structure would be one that addressed every conceivable factor that might be found on a parcel that influences the rate, quality, or quantity of the runoff generated by that parcel. However, such a design would be expensive to administer due to the data management requirements. The key is to strike a balance so that enough factors are considered so that the rate is fair and equitable, but still simple enough to be explained and understood by the customers, and be administered in a cost effective manner.

Developing a rate structure is a two-step process. This involves determining the costs of the program, and then defining on what basis the costs will be allocated to each customer within the service area.

The rate structure needs to be both fair to all and easy to understand. Customers must understand how their bill is calculated. Further, the rate structure must generate sufficient revenue to cover the projected budget for the stormwater program.

Program Costs

A suitable fee structure should generate sufficient revenue to properly operate and maintain the stormwater system. A full range of stormwater management services could include:

- Capital projects for flood control and drainage improvements
- Operations and maintenance costs
- Capital projects for water quality treatment
- Water quality management

Starting Options

There are two primary approaches to rate structure design:

1. Adopting a simple, straightforward method that allows a utility to get up and running quickly but may result in questions and appeals upon implementation, or
2. Adopting a detailed rate structure, which takes longer to implement but ultimately results in fewer questions from the public.

Many communities start with simplified rate structures i.e. a flat rate approach – and then modify them later. The thinking behind this strategy is to gain acceptance of the Department of Stormwater Management and user fees by starting with a very simple fee structure that can be refined later. Other communities choose to spend the upfront time and effort creating a refined system that they can sell to the public as a final product.

Starting With a Simplified Fee Structure

Advantages	Disadvantages
Allows public an opportunity to get use to the concept of a stormwater user fee prior to building in refinements.	There may be a backlash if there is the perception the fees were rushed through without due consideration.
Avoids the need of collecting extensive data on impervious surfaces or other factors prior to adopting approach.	While the simplified structure is in place, it may be more likely to be legally and politically challenged.
May allow customers to concentrate on the reasons why a stormwater fee is needed instead of on the intricacies of fee structure.	Once the interim system is adopted, it may be difficult to change to a more refined system.
	Even a simplified approach may still require considerable data gathering to establish the fee.

Starting With a Refined Fee Structure

Advantages	Disadvantages
Can be presented as a thoroughly considered and well-conceived approach not an interim measure.	It may require 18-24 months to develop and pass a refined system – a lot of time and money for a fee structure that may not gain approval.
Avoids some legal and political defensibility issues.	May require extensive data gathering.
Avoids the difficulty of changing a system that is already in place.	May be difficult to educate customers about a complicated fee system.

Fees Based On Other Factors

Both Indiana Code funding authorizations allow the Town to assess stormwater service charges based on "other factors." The following table summarizes some of the other factors used to assess stormwater charges.

Consideration of Other Factors to Assess Service Charges

Option	Advantages	Disadvantages
Flat charge for each sewer connection	All customers pay the same	Little or no relationship to the service
Amount of water used on the premises	Usage and billing records are available from the water company, and the fee may be easy to calculate and send to the customer, larger customer will generally use more service so there is some relationship to runoff	Amount of usage may vary on a seasonal basis, little or no relationship to the service
Number and size of water outlets on the premises	Indicate amount of potential water usage and therefore the size of the customer	Information may be difficult to obtain or may not exist, little or no relationship to the service
Amount, strength, or character of sewage discharged into the sewer		Has little relationship to service provided
Size of sewer connection	Indicator of the size of the customer	Records may not be available, little or no relationship to the service
Water meter size with fire lines	Reasonable relationship with property size, records and billing information available	May not fit all customers, i.e. high rise buildings
Surface area	Good predictor of the service provided	Runoff will vary according to the amount of pervious and impervious service area, must have a relationship between property records and billing system
Runoff calculation	Best indicator of service provided	Detailed information must be maintained showing the pervious and impervious areas for each property, must have relationship between property and billing system

The Equivalent Residential Unit method is a runoff calculation-based option that was adopted by numerous other Indiana communities. It is explained under Hybrid or Combination Fees later in this Chapter.

Flat Fees Based On User Categories

A uniform fee is charged for all the properties in a use category. Many communities use a flat rate for residential properties where all homeowners are charged the same amount.

Under a flat rate system, all property owners within a particular use category pay the same amount in fees. These categories could include:

- Residential single family
- Non residential
- Commercial
- Industrial
- Faith
- Multi-Family Residential

Flat Fee Summary

Advantages	Disadvantages
Easy to explain and for public to understand.	May be vulnerable to legal challenges, as nexus between fee and volume of stormwater generated is weak, particularly for non-residential users.
Might be adopted as an interim system, while a more refined approach is developed.	May be challenged politically by residential users who feel they are subsidizing large commercial uses.
Fairly easy to administer.	

Tiered fees

Fees increase in steps, depending on where the property falls within a particular size range. The ranges could be based on criteria such as the total or impervious area of a property. A typical tiered approach creates categories for properties, charging a different fee for each class such as small, medium and large.

Muncie Sanitary District charges non-residential customers on a tiered structure. The smaller customer base of Avon makes the tiered fee structure seem unnecessary.

The tiered approach of having a structure for both residential and non-residential properties is not widely used. Many communities avoid creating residential tiers because of the considerable data gathering that is involved. However, the approach is quite understandable and straightforward.

Tiered Fee Summary

Advantages	Disadvantages
Tiered residential structure provides more equity than flat rate.	Establishing tiered residential rate is more time intensive and expensive than flat rate – may not be worth it due to the relatively small differences in runoff impact for residential properties.
Use of ranges requires less precise area mapping and may save some time and money.	Since collecting specific data on non-residential properties is necessary to classify them into tiers, it may be just as easy to use a variable approach that provides more equity.
Tiered non-residential fees are easy to understand and administer.	

Variable Fees

Fees increase incrementally based on the amount of impervious surface or some other factor. The goal of this type of rate structure is to be as equitable as possible by accurately assessing properties according to their actual stormwater impact. This method can be simple or complex depending on the factors that are considered.

The simple method might consider one variable and apply this to all users. An example of such fee structure would be one in which a property is charged $3 per month for every 1,000 square feet of impervious area.

Variable Fees Summary

Advantages	Disadvantages
Easy to explain and to determine if accurate impervious surface info available.	Requires data collection and ongoing updating of information.
Closest to "you pave, you pay" approach, and may ultimately be deemed as most fair, once ratepayers are educated about the impact of impervious surfaces.	May incur a significant amount of administrative expense as rate payers reduce or increase impervious surfaces by relatively small amounts.
Creates a direct incentive for all users to reduce impervious areas.	Initial information gathering needs may be substantial.
Offers more equity than flat or tier fee system for non-residential properties.	
Less vulnerable to legal challenge, as this approach has been upheld in court cases.	

Hendricks County records contain the building and parking area on the property assessment cards. This can be done by getting an annual report from the County on building permits issued in Avon and comparing the additions and deletions of impervious area from the commercial, industrial and institutional customer database. This requires that the property cards be updated at least annually to

ensure the accuracy of the information and can result in a maintenance issue increasing the amount of time and effort to coordinate the records.

Complex Variable Fees

The amount of impervious surface on a property, while a good overall indicator, is not the only factor involved in how much a particular parcel contributes to the overall stormwater runoff. Some communities have developed fee structures that consider other factors. The City of Ann Arbor, Michigan, for example, looks at both impervious and pervious areas, multiplying each established hydraulic response factors to determine how many "hydraulic acres" are on a site. Some utilities provide different rate structures according to where the structure is in the watershed. Others add a water quality component in which the rate is multiplied by a factor, based on typical pollutant loading for a particular land use.

Complex Variable Fees Summary

Advantages	Disadvantages
Such systems are probably the most equitable since their aim is to determine accurately the amount of stormwater runoff for each site.	Generally require extensive information gathering.
These systems are probably the most legally defensible because of the close nexus between the fee and runoff.	Precise measurement of residential properties may not be worth the effort.
	May be too complex for citizens to understand.

Hybrid or Combination Fees

The majority of communities that have adopted stormwater fees use this general approach. The amount of stormwater runoff from a parcel is directly related to the amount of impervious area on the parcel. A basic unit of measurement is established. This can be based on a combination of the amount of impervious surface, pervious surface, or total area of a typical residential parcel. This unit is often referred to as the Equivalent Residential Unit (ERU). Non-residential properties are then charged according to how many ERUs they contain. This is found by dividing their runoff units by the ERU. This is generally considered to be the most fair and equitable method of calculating stormwater rates.

Comparison of Fee Alternatives

RATE STRUCTURE OPTION	EQUITY	SIMPLICITY For public and decision-makers to understand	DATA COLLECTION NEEDS	COST/EASE OF ADMIN.	LEGAL DEFENSIBILITY
Flat	Poor	Excellent	Excellent	Excellent	Poor
Tiered	Fair	Good	Good	Good	Fair
Variable Simple	Excellent	Fair	Poor	Poor	Excellent
Variable Complex	Excellent	Poor	Poor	Poor	Excellent
Hybrid	Excellent	Fair	Poor	Poor	Excellent

Credits and Appeals

Some communities allow credits for non-residential customers to reduce the monthly bill. Any fee structure must allow for appeals in the event of error in bill calculation. A credit system may allow a business to gain credits for water-quality control practices that improve runoff quality or reduce runoff quantity. Quality improvements could include providing education and outreach on stormwater management, implementing pollution prevention plans, sweeping private parking lots regularly, maintaining a retention pond, or using porous pavement to reduce runoff. There may also be credits for water-quantity reduction activities. These could be for things that keep peak runoff rates on a developed property at or below the predevelopment rates and/or greatly exceed code requirements or provide additional benefits to the Town or other customers. Public and private schools might gain credits if they teach an approved stormwater management curriculum for grades K-12.

Credits reduce the projected revenue by the amount of credits awarded. They do not change the revenue requirements. Revenue losses to credits must be made up on the rate base.

[Appendix D Indianapolis Stormwater Credit Program.]

The Selected Rate Structure

The rate structure needs to be fair and easy to understand. Customers must understand how their bill is calculated, and the rate structure must generate sufficient revenue to cover the projected budget for the stormwater program.

Recommended Organization and Rate Structure

Based on Indiana case law, Avon's only option to move forward with a dedicated fund stormwater utility is by establishing a Department of Stormwater Management under Indiana Code 8-1.5-5. The

Department will be responsible for the collection and conveyance of surface water runoff in an efficient and economical manner.

This option requires establishment of a new board, appointed by the municipal executive, the Town Council President. Internal accounting practices should be sufficient to allocate revenues and expenses for the Department of Stormwater Management. It allows the Town to bond for stormwater improvements through a special taxing district where the bonding limit is tied to the net assessed value in the corporate limits, or through revenue bonds without statutory debt limits. Transfer of funds from Hendricks County Regulated Drain fund balances will strengthen the new department's initial financial position. The stormwater department can only operate within the corporate limits of the Town.

Using a runoff calculation such as impervious area is a fair and equitable method to assess stormwater service charges. Numerous communities in Indiana have used impervious area to assess fees.

The hybrid method is recommended to be the most equitable way to establish stormwater rates. An Equivalent Residential Unit (ERU) is the basic unit of measurement established based on the amount of impervious surface of a typical residential parcel. Each non-residential property would be assessed based on how many ERUs it contains.

The Avon Common Council has authority to assess fees based on impervious area under Indiana statutes. Other communities have taken similar action and court challenges have been unsuccessful in defeating the rate structure and the authority to assess the fees.

[Appendix E Draft Department of Stormwater Management Enabling and Rate Ordinance.]

Chapter 3

CHAPTER 3 BUDGET, BILLING AND FINANCIAL ANALYSIS

Introduction, Summary of Findings and Recommendations

The study evaluated the budget, billing and financial needs to establish the Department. Startup, staffing, billing, customer service, operations, maintenance and capital requirements are addressed.

The department budget includes expenses necessary to operate a stormwater utility. Cost centers include:

- Startup costs
- Administrative salaries
- Consulting
- Field operations
- System maintenance
- Public outreach
- Printing and advertising
- Customer service
- Billing
- MS4 expenses
- Staff training
- Capital planning and construction

One of the most significant activities to establish a new utility for Avon is setting up the billing system. The department must send out bills, collect money, and respond to customer inquiries. Avon has no existing billing system. The study examined three billing system alternatives.

1. Bill through the County Treasurer on the tax statements.
2. Piggyback bill through an existing local utility that covers most of the Avon residents.
3. Bill directly from the Town setting up a new customer information system.

The study recommends setting up a new third party billing system and budgeting $35,000 per year plus one billing clerk on staff at $35,000 salary and benefits for a total of $70,000 annual budget.

The study prepared an operations, maintenance and capital plan for the Department. Plans should be reviewed and updated periodically so they are flexible to the needs of customer demands. A combination of user fees, capital contributions, taxes, and bonds may be used to pay for capital projects. Department management and Council policies determine the mixture of funds.

The regulated drain fund balance transfer negotiated from the Drainage Board will be a capital contribution that stabilizes the initial financial position of the Department. For this reason, no bond funding is assumed in the study. Further, the transfer of regulated drain funds will affect the budget allocations.

Utility management staff training and financial consulting will be crucial in the first few years to establish proper accounting and work flows to make the department financially stable, sustainable and successful.

The study assumed annual operations, maintenance and capital project values through staff interviews, research and from the capital plan summarized in Chapter 7 and detailed in a separate report.

Utility Implementation and Startup Costs

The Town may desire to recoup startup costs incurred for past expenses and reimburse the food and beverage fund. The following table itemizes startup costs to consider for reimbursement. The payback may be done over time through internal accounting. A reimbursement estimate is budgeted at $20,000 per year for five years.

Food and Beverage Fund Reimbursement Estimate

Food and Beverage Fund Reimbursements	
Category	**Reimbursement**
Start Up Consulting	$50,000
Maintenance and Drainage Repairs	$10,000
Avon Heights - Maple Drive	$10,000
Storm Sewer Inventory	$10,000
MS4 Permitting	$10,000
Public Education	$10,000
Assumed Reimbursement	$100,000

Administrative Staffing

The projected staffing costs are shown in the following table.

Department of Stormwater Management Annual Personal Services

Position	Full Time Equivalents (FTE)	Annual Cost
Town Manager	0.1	$9,080
Public Works Director	0.2	$18,159
Assistant Public Works Director	0.5	$35,362
Infrastructure Inspector	1	$41,600
Administrative Assistant / Billing Clerk	1	$35,360
FICA		$10,676
Insurance		$30,532
Retirement		$11,165
Clothing Allowance / Safety Equipment		$800
Travel & Training		$1,000
Estimated Personal Services		$193,734

Capital, Operations and Maintenance Budgeting

The study prepared an operations, maintenance and capital plan for the Department. Plans should be reviewed and updated periodically so they are flexible to the needs of customer demands. A combination of user fees, capital contributions, taxes, and bonds may be used to pay for capital projects. Department management and Council policies determine the mixture of funds.

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Utility management staff training and financial consulting will be crucial in the first few years to establish proper accounting and work flows to make the department financially stable, sustainable and successful.

The study assumed annual operations, maintenance and capital project values through staff interviews, research and the from the capital plan summarized in Chapter 7.

Outside sources make capital contributions to the stormwater system. Road improvement projects pay the cost of stormwater conveyance necessary to handle the associated drainage. New developments install infrastructure to serve the project. Town projects could use stormwater funds to help pay for components of other projects where stormwater infrastructure improvements are necessary. When outside sources contribute infrastructure to the Department, annual accounting procedures need to book the values properly in the asset management system of the utility.

The Department will likely use a combination of pay-as-you-go capital project funding and bond project financing. The following table represents a budgeting tool to estimate capital project financing through bonding. Assuming a 5% interest rate, 20-year payments and a 25% debt coverage yields an annual payment of approximately 10% of the financed amount. This is adequate for budgeting at the planning stage.

Budgeting Capital Finance Payments v. Bond Amount

Principal	$1,750,000	$1,000,000	$500,000
Interest	5.00%	5.00%	5.00%
Debt Coverage	25.00%	25.00%	25.00%
Years	20	20	20
Payment	$175,531	$100,303	$50,152

Estimated Budget

The study estimated the budget in two tables: Year 1 and Years 2 – 5 shown in the following tables. There is no allowance for office space, though it would be a legitimate expense to reimburse the general fund. Transfer of regulated drain fund balances may affect budget allocations assumptions.

Preliminary Department Budget Year 1

Estimated Budget Year 1	
Category	**Budget**
Reimbursement to Food and Beverage	$20,000
Street Sweeping	$30,000
Office Supplies	$1,000
Personal Services	$190,000
Infrastructure Maintenance and Repairs	$50,000
Storm Sewer Cleaning	$5,000
Drainage Engineering	$5,000
Storm Sewer Inventory	$10,000
MS4 Permitting	$5,000
Public Education	$10,000
Printing and Advertising	$1,000
Billing Services (~2,000 bills/mo@~$1.50)	$35,000
Staff Training and Development	$10,000
Consulting for startup, legal, financial, capital, rates, customer data analysis	$50,000
Line Location Services	$15,000
Capital - Vehicles (Two 4 x 4 Trucks)	$60,000
Capital - Computers and Software	$5,000
Capital Projects - Annual Pay as You Go	$350,000
Estimated Preliminary Budget	**$852,000**

Projected Department Budget Years 2 - 5

Estimated Budget Years 2 - 5	
Category	**Budget**
Reimbursement to Food and Beverage	$20,000
Street Sweeping	$30,000
Office Supplies	$1,000
Personal Services	$200,000
Infrastructure Maintenance and Repairs	$100,000
Storm Sewer Cleaning	$20,000
Drainage Engineering	$20,000
Storm Sewer Inventory	$10,000
MS4 Permitting	$5,000
Public Education	$10,000
Printing and Advertising	$1,000
Billing Services (~2,000 bills/mo @ ~$1.50)	$35,000
Staff Training and Development	$5,000
Consulting - legal, financial, capital, rates, customer data analysis	$30,000
Line Location Services	$15,000
Capital projects - Annual Pay as You Go	$400,000
Estimated Preliminary Budget	**$902,000**

Billing System Analysis

One of the most significant activities to establish a new utility for Avon is setting up the billing system. The department must send out bills, collect money, and respond to customer inquiries. Avon has no existing billing system. The study examined three billing system alternatives.

1. Bill through the County Treasurer on the tax statements.
2. Piggyback bill through an existing local utility that covers most of the Avon residents.
3. Bill directly from the Town setting up a new customer information system.

Some of the issues associated with the billing cycles from the three alternatives are summarized below. All options require annual maintenance on the database and at least one billing clerk at $35,000 salary.

Considerations for Billing Alternates

Billing Option	Cycle Frequency	Bills per Cycle	Pros	Cons
County Tax Statements	Twice per year	5,529	-Easy to set up -Low cost	-Revenue 2x per year -Difficult to audit Non-tax entities do not see bill
Piggyback Bill	Monthly	5,529	-System already set up	-Possible software upgrade or incompatibility -Not 100% match to storm customer -Small monthly bill to residential customers
Direct Bill	Quarterly Residential Monthly Non-residential	1,733 + 350 = 2,083	-100% customer match & control	-New system. -Administrative costs

Billing Through County Tax Statements

The Department of Stormwater Management statute (IC 8-1.5-5) allows the town to bill through county real estate tax statements. Many Avon residents receive bills for regulated drain assessments from the County Drainage Board administered by the Hendricks County Surveyor's office. Regulated drain assessments are discussed in Chapter 4.

Billing through the county would be relatively easy to set up. The county could request some payment for the service. Fees for this service could be negotiated during the discussion of the transfer of regulated drains from county to town. The customer database would need to be updated at least once and perhaps two times per year for the spring and fall tax statements. Avon would need to provide support to answer billing inquiries and administer the billing database.

Information exchange between the county and town could make it difficult to audit the payment received versus the billing for each parcel. It is unknown if the county could provide a tabulation of each parcel's stormwater payment matching the total money received.

Piggyback Billing on Existing Area Utility Billing

The Town could pay a fee per bill to an existing utility already billing in the area. The candidates are:

1. West Central Conservancy District
2. Citizens Water
3. Duke Energy
4. Vectren Energy

Regardless of which existing utility is considered, the customer information system will not match the Avon Department of Stormwater Management customer base one for one. The utility's billing software might not be able to handle an additional line item on the bill. It is unknown if the other utility's customer information system will permit quarterly billing of the Avon residential base or be capable of dividing the Avon customer base into billing cycles. Monthly residential customer bills of $3 to $5 make monthly billing unrealistic, as the utility is likely to charge at least $1 per bill.

Duke and Vectren may not be good candidates due to the large territory covered relative to the Avon service area.

Piggyback billing is not recommended for Avon.

Direct Billing

The town could set up a new billing system and bill directly, either through new town utility employees or through a third party.

The study considered several similarly sized water and wastewater utilities to estimate the number of billing clerks necessary to run a department for Avon. It seems at least two people would be necessary. The salary for two employees would be about $35,000 per person annually for a total of $70,000.

Billing software costs are $13,150 to purchase and $2,275 for annual maintenance based on a quote from Boyce / Keystone / Komputrol.

Entity	Customers	Billing Department Employees
Whitestown Utilities	2,500	2
Hoosier Hills Water	3,200	2
Fall Creek Regional Waste	6,000	3
Twin Lakes Regional Waste	6,500	3
Northern Ohio Rural Water	12,000	4
Clay Township Waste	15,000	3

Billing Through a Third Party Service

The following billing service fee summary is based on general estimates from three separate billing service providers. Each service provider offered a variety of features and clients can choose the package that best suits their needs. For the purpose of this analysis and comparison, it was assumed that billing would be quarterly for residential customers (5,200) and monthly for non-residential customers (350). The cost estimates varied based on the quantity of services desired.

The estimated fee for the minimum set of services is outlined below and includes:

- No software required

- Only printing and mailing of hard copy bills (including postage and return envelope)
- Customers mail payments (checks) directly to the utility for processing.

Minimum Third Party Billing Service Costs

Service Item	**Cost**
Set up Fee (one time)	$1,000.00
Billing Fee (per bill sent)	$0.90

***Annual Total for 1st year**	**$23,500.00**
***Annual Total after 1st year**	**$22,500.00**

**Based on 5,200 residential customers billed quarterly and 350 non-residential customers billed monthly*

The estimated fee for the most comprehensive set of services is outlined below and includes:

- No software required
- Printing and mailing of hard copy bills (including postage and return envelope)
- Customers mail payments (checks) directly to the billing service for processing or customers may pay online by credit card for processing by the billing service.
- Funds are electronically transferred to the utility's bank account.
- Electronic invoicing
- Online customer account access (with access to 12 months of billing history)
- Staff Training for online account access
- Ability to generate customized reports
- Customer Service Call Center provided

Maximum Third Party Billing Service Costs

Service Item	**Cost**
Set up Fee (one time)	$500.00
Billing Fee (per bill sent)	$1.40

***Annual Total for 1st year**	**$35,500.00**
***Annual Total after 1st year**	**$35,000.00**

**Based on 5,200 residential customers billed quarterly and 350 non-residential customers billed monthly*

The following is a chart that shows each of the billing services who responded to the inquiry and the various services they provide:

Summary of Third Party Billing Options

	SmartBill Corp	OSG Billing	American Accounting & Billing Service
	www.smartbillcorp.com	www.osgbilling.com	www.aabs1.com
	Hebron, OH	Ridgefield Park, NJ (with Indianapolis representative)	Atlanta, GA
Billing Fee (per bill sent)	$0.90	$0.57	$1.40
First year set up fee for basic service	$1,000	$500	$500
First year set up fee for website and electronic billing services	$849 (optional)	$5,400 (optional)	$0
Annual total for all services (basic and electronic) after first year	$26,688	$26,550	$35,000
Service type	Strictly a bill sending service	Strictly a bill sending service	A comprehensive accounting and bill sending service
Special software required?	No – will work with raw data	No – will work with raw data	No – will work with raw data
Design, printing, postage, and mailing of bills	Yes	Yes	Yes
Collection and processing of payments by check	No – customers send checks to utility	No – customers send checks to utility	Yes
Collection and processing of payments by credit card	Yes – with online bill pay	Yes – with online bill pay	Yes – with online bill pay
Online bill pay	Yes	Yes	Yes
Website for customers to view bill	Yes	Yes	Yes
Customer service call center provided	No - calls go directly to utility office	No - calls go directly to utility office	Yes
Delinquent bills	Utility tracks whether payment is received	Utility tracks whether payment is received	Utility tracks whether payment is received
Collection of NSF	Utility manages collections	Utility manages collections	Utility manages collections
Returned letters	Will notify utility of new address if customer has notified post office with a change of address form. Up to utility to update address data.		
Do customers have flexibility to decide how frequently they are individually invoiced?	No	No	No
Is there flexibility to invoice only a portion of the customers each month?	Yes, but cost of postage increases	Yes, but cost of postage increases	Yes, but cost of postage increases
Frequency of data updates	Data is forwarded prior to each billing cycle	Data is forwarded prior to each billing cycle	Data is forwarded prior to each billing cycle

Billing Cycle Alternatives

The study considered two monthly billing cycle alternatives to calculate annual third party billing costs. Alternative 1 divides the residential customer base into three cycles for quarterly billing. Alternative 2 divides the residential customer base into 12 cycles for annual billing. The analysis assumes 5,200 residential customers and 350 non-residential customers.

Alternative 1							
Residential Billing	Quarterly						
Residential Billing Cycles	3		**Residential Quarterly Billing Cycles**				
Non-residential Billing	Monthly		Cycle 1	Jan	Apr	Jul	Oct
Residential Bills per Month (avg)	1,733		Cycle 2	Feb	May	Aug	Nov
Non-residential Bills Per Month	350		Cycle 3	Mar	Jun	Sep	Dec
Total Bills Per Month	2,083						
Cost Per Bill	$1.40						
Annual Billing Cost	$35,000						
Alternative 2							
Residential Billing	Annual		**Residential Annual Billing Cycles**				
Residential Billing Cycles	12		Cycle 1	Jan		Cycle 7	Jul
Non-residential Billing	Monthly		Cycle 2	Feb		Cycle 8	Aug
Residential Bills per Month (avg)	433		Cycle 3	Mar		Cycle 9	Sep
Non-residential Bills Per Month	350		Cycle 4	Apr		Cycle 10	Oct
Total Bills Per Month	783		Cycle 5	May		Cycle 11	Nov
Cost Per Bill	$1.40		Cycle 6	Jun		Cycle 12	Dec
Annual Billing Cost	$13,160						

Non-residential customers with 1 to 5 ERU or so may be added to the alternative billing cycles to avoid small value monthly billing.

For a new utility, it may be advantageous to get smaller bills out more often so the customer base becomes familiar with the billing routine. For this reason, quarterly billing of residential customers is recommended to get started.

Recommendations on Billing System

The study recommends setting up a new third party billing system and budgeting $35,000 per year plus one billing clerk on staff at $35,000 salary and benefits for a total of $70,000 annual budget.

Chapter 4

CHAPTER 4 COUNTY REGULATED DRAIN ANALYSIS

Introduction, Summary of Findings and Recommendations

The Hendricks County Drainage Board operates, maintains and assesses 94 regulated drains in Washington Township through semi-annual taxation under Indiana Code 36-9-27. The Indiana regulated drain assessment authority--dating to the 1800s--created a mechanism to construct and maintain public drains that benefit multiple properties, principally for agricultural production. Over the years, counties have used the statute to operate and maintain agricultural drain tiles, open ditches and, more recently, storm sewer systems.

[Map 2 Regulated Drains in Washington Township.]

In 2015, the County assessed $245,585 from 4,978 parcels in the Town of Avon and $327,472 from 9,569 parcels in Washington Township outside Avon for a total assessment of $573,057 from 14,547 parcels. Numerous other parcels—inside and outside the Town--subject to assessment were not get assessed in 2015 due to the existing drain balance exceeding statutory limits.

[Map 3 Regulated Drain 2015 Assessment Fee by Parcel.]
[Appendix G Washington Township Regulated Drain 2015 Assessment Analysis.]

The study approximated the fund balance and annual expenditures inside and outside the Town by proportioning the area of the drain assessment parcels inside and outside the corporate boundary.

The study obtained 5 years of county drain maintenance expenditures and existing drain balances for the 94 regulated drains in Washington Township. The County spent an annual average of $105,773 inside Avon and $151,229 outside Avon over the five-year study period.

[Map 4 Regulated Drain 5 Year Annual Average Expenditure by Drain.]
[Appendix H Washington Township Regulated Drain Expenditures Inside and Outside Avon.]

Appendix H shows existing regulated drain fund balances for the 94 Washington Township drains total $4,157,098, with approximately $1,643,775 from inside Avon and $2,508,590 from outside Avon.

[Map 5 – 2015 Regulated Drain Account Balance.]
[Map 6 – 2015 Partial Drain Assessments Inside Avon.]
[Map 7 – 2015 Partial Drain Assessments Outside Avon.]

Further cooperation with the County will be necessary to agree on how the regulated drains within the corporate boundary are addressed. Upon transfer, utility policy will determine how the funds are incorporated into the budget and financial plan.

The study recommends the Town and County Drainage Board enter into a joint resolution where:

1. Hendricks County transfers the regulated drains within the Town to the Town's jurisdiction under IC 36-9-27-20;
2. Hendricks County transfers the fund balances for the transferred drains based on the proportional area approximation of this study, or other negotiated method, under IC 36-9-27-20.5;
3. The Town Council and Drainage Board abandon the regulated drain assessments under IC 36-9-27.

Regulated Drain Assessments

The Hendricks County Drainage Board operates and maintains regulated drains within Washington Township and the Avon corporate limits under Indiana statute IC 36-9-27. The Hendricks County Surveyor's and Auditor's offices provided information to conduct this analysis.

[Map 2 Regulated Drains in Washington Township.] [Insert]

Regulated drains are important to the Town's Department of Stormwater Management because property owners within a county regulated drain pay assessments on their tax bill for maintenance (and sometimes construction or reconstruction) of the drains.

The regulated drain statute permits assessments for annual maintenance, construction and reconstruction. The drainage board conducts public hearings to establish assessments. The statute defines remonstrance procedures for property owners to challenge assessments.

The county's practice over the recent past has been to assess each new subdivision as an independent regulated drain. Lots are assessed $50 per year for maintenance assessments if the County does not take over storm sewers; $100 per year if storm sewers are included. Most Avon subdivisions are in the $100 per year category.

When properties within a defined drain are assessed an annual maintenance fee under IC 36-9-27-44, the money raised must only be spent on that unique drain under IC 36-9-27-45. The county must maintain a separate accounting of each drain's revenues and expenses. This creates significant administrative expense for the County. By statute, when the cash balance in an individual drain reaches 4-years revenue, the board may omit (suspend) annual assessments under IC 36-9-43.

Map 2
Regulated Drains in Washington Township Town of Avon, Indiana

TOWN OF AVON

Legend

- Hydrology
- Open Drain or Tile
- Parcel Boundary
- Avon Town Boundary
- Washington Twp.
- HUC14 Watersheds

Assessment Name

- 400 Garvey Neal Pollard Todd
- 459 Alfred Cox Drain
- 460 Thomas Feeney Drain
- 471 George E Mercer Drain
- 497 Lingerman Hardin Drain
- 499 JF Lingerman
- 539 Lucy King Drain
- 555 Abner Creek Estates Drain
- 557 Apple Creek Drain
- 558 Ashford Estates Drain
- 559 Ashley Oakes Drain
- 560 Ashton Drain
- 563 Auburn Meadows Drain
- 564 Austin Lakes Drain
- 565 Avalon Springs Drain
- 566 Avon Commerce Park Drain
- 567 Avon Estates Drain
- 568 Avon North Drain
- 569 Avon Square Drain
- 570 Beechwood Farms Drain
- 577 Bridgewater/Reserve Drain
- 583 Canak Place Drain
- 584 Cedar Bend Drain
- 585 Cedar Mill Drain
- 591 Cobblestone Springs Drain
- 600 County Line Corners Drain
- 601 Coventry Ridge Drain
- 604 Creekview Acres Drain
- 608 Crystal Springs Drain
- 625 Forest Commons Drain
- 633 Glen Elen Drain
- 634 Glenbrook Drain
- 635 Glenfield Drain
- 640 Harlan Bakeries Drain
- 641 Harvest Ridge Drain
- 644 Heritage Hill/New Engl Dr
- 647 Hidden Valley Drain
- 652 Hollowbrook Drain
- 654 Ian's Point Drain
- 661 Ledgewood Drain
- 662 Liberty Meadows Drain
- 663 Linden Square Drain
- 665 Londenberry Heights Drain
- 669 Mar-Rae Acres Drain
- 670 Matthew Meadows Drain
- 671 Medallion Meadows Drain
- 680 Minor Plat #555 Drain
- 684 Muirfield Village Drain
- 687 Oak Bend Drain
- 688 Oakes Of Avon Drain
- 691 Park Place Drain
- 692 Parks at Prestwick Drain
- 693 Patterson Woods Drain
- 697 Pines Of Avon Drain
- 699 Prairie Manor Drain
- 701 Prestwick Drain
- 702 Prestwick Chrysler Drain
- 703 R - Z Acres Drain
- 706 Rising Sun Drain
- 709 Rudgate in the Woods Dr.
- 710 Shiloh Creek Est Drain
- 711 Shiloh Crossing Drain
- 714 Southwind Estates Drain
- 718 Station Hill Drain
- 720 Stonebridge Drain
- 721 Stonemill Drain
- 723 Stratford Of Avon Drain
- 725 Sugarwood Drain
- 726 Sunchase Drain
- 728 Sycamore Ridge Drain
- 733 Thornridge Drain
- 736 Timber Bend Drain
- 737 Timber Grove Drain
- 738 Valley Vista Est Drain
- 740 Village Oaks Drain
- 741 Vista Park Drain
- 744 Waverly Commons Drain
- 750 Whispering Pines Drain
- 751 Whispering Wind Drain
- 759 Windmill Pointe Drain
- 761 Woodcreek Farms Drain
- 762 Woodridge Drain
- 763 Wynebrook/Derby Run Dr.
- 764 Wynne Farms Drain
- 767 Grant Park

(767) Drain Number

(459) Drain Number for Drains Located Inside Avon and Washington Twp.

N W E S

0 1,500 3,000

Scale in Feet

April 2016

Overview Map

engineering | architecture | geospatial

The following table identifies Drainage Board actions on reinstatements and suspensions for 2015 and 2016.

Drainage Board Suspensions and Reinstatements for 2015

Date	Action	Drains
January 13, 2015	Suspensions	Shiloh Farms, Austin Lakes, Branches, Bridgewater, Clermont Lakes, Cobblestone Springs, Eagle Crossing, Forest Commons, Harvest Ridge, Hawthorne Ridge, Highland Springs, Hollowbrook, Kennesaw, Linden Square, Oak Bend, Sunchase, Waverly Commons, Wynebrook, Wynee Farms, Harlan Bakeries, Oakes of Avon, Park Place, Muirfield Village, Ian's Point, Glenfield, Parks at Prestwick, Pines of Avon, Timber Bend, Williamsburg Village, Stonemill, Stonebridge, Sycamore Estates, Whispering Pines
January 27, 2016	Reinstatements	Glenbrook, Harlan Bakeries, Hawthorne Ridge, Ian's Point, Kennesaw, Linden Square, Muirfield Village, Oak Bend, Oakes of Avon, Park Place, Stonebridge, Stonemill, Sycamore Estates, Timber Bend, Whispering Pines, Wynne Farms
January 27, 2016	Suspensions	Austin Lakes, Branches, Bridgewater, Clermont Lakes, Cobblestone Springs, Eagle Crossing, Forest Commons, Harvest Ridge, Highland Springs, Hollowbrook, Parks at Prestwick, Pines of Avon, Shiloh Farms, Sunchase, Waverly Commons, Wynebrook, Williamsburg Village

Construction and reconstruction are administered under IC 36-9-27. Under the statute, the Drainage Board assesses the cost of the project over a 6-year period at an established interest rate. The Board may asses on a per acre basis for agricultural and commercial properties and a per lot basis for single-family parcels.

The regulated drain statute is a cumbersome mechanism to construct public drainage projects compared to the Public Works statute IC 36-9-12 that the Town would use for the Department of Stormwater Management. Further, the existing condition, with 94 separate, independent drains, creates administrative difficulties for operation and maintenance of the drainage system serving the Town's residents.

Transfer of Regulated Drains to Municipalities

The statute allows the transfer of regulated drains to the Town under IC 36-9-27-20, the relevant text of which is included in Appendix F. In the event of a transfer, the money in the individual drain funds must be transferred into municipal drain funds for the specified drain.

[Appendix F Applicable Sections of Indiana Code 36-9-27 Regulated Drains.]

Under the regulated drain statute, money collected from an individual drain can be spent only on that drain. With the establishment of the Department of Stormwater Management; however, it may be advisable to transfer the drains then abandon them, as the Department likely will not assess by individual watershed, but by impervious area, where all funds benefit the Department as a whole.

Several statutory issues to consider relative to drain transfer if the Town decides to move forward include:

- Urban drains
- Easements
- Assessments of regulated drains by municipality
- Abandonment of existing drains

Existing Regulated Drain Assessment Analysis

The study considered the number of customers currently being assessed regulated drain fees and the relative comparison of the Department of Stormwater Management fees to the regulated drain assessments.

Hendricks County provided information on the regulated drain assessments potentially impacted by the formation of a Department of Stormwater Management in Avon. There are 94 regulated drains assessed in Washington Township.

In 2015, the County assessed $245,585 from 4,978 parcels in the Town of Avon and $327,472 from 9,569 parcels in Washington Township outside Avon for a total assessment of $573,057 from 14,547 parcels. Numerous other parcels—inside and outside the Town--subject to assessment were not get assessed in 2015 due to the existing drain balance exceeding statutory limits.

[Map 3 Regulated Drain 2015 Assessment Fee by Parcel.] [Insert]
[Appendix G Washington Township Regulated Drain 2015 Assessment Analysis.] [Insert]

The following tables summarize the results.

2015 Regulated Drain Assessments in Washington Township

	Number of Parcels	Spring Assesment	Fall Assesment		Total Assessments
Total	14,547	$305,287	$267,770		$573,057
In Avon	4,978	$126,290	$119,294		$245,585
Outside of Avon	9,569	$178,996	$148,476		$327,472

Avon offers abatement of town taxes for agricultural properties for voluntary annexation. The study considered the parcels receiving agricultural abatements from Avon that pay regulated drain fees.

Map 3
Regulated Drain 2015 Assessment Fee by Parcel
Town of Avon, Indiana

Legend

- Avon Town Boundary
- Washington Township
- Ag-Abatement Parcels
- Parcel Boundary

2015 Assessment Fee

- Not Assessed
- $0
- $1 - $10
- $11 - $50
- $51 - $100
- $101 - $500
- $501 - $1000
- > $1001

N
W E
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0 1,500 3,000
Scale in Feet

April 2016
Overview Map

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Washington Township Regulated Drain 2015 Assessment Analysis

Drain Name	Act #	Number of Parcels	Spring Assessmentt	Fall Assessment		2015 Spring Assessment In Avon (Tax ID - 23)	2015 Spring Assessment Outside of Avon (Tax ID - 12)		2015 Fall Assessment In Avon (Tax ID - 23)	2015 Fall Assessment Outside of Avon (Tax ID - 12)		2105 Total Assessment In Avon (Tax ID - 23)	2105 Total Assessment Outside Avon (Tax ID - 23)
400 Garvey Neal Pollard Todd	400	147	$8,538.83	$8,500.00		$0.00	$8,538.83		$0.00	$8,500.00		$0.00	$17,038.83
459 Alfred Cox Drain	459	466	$23,463.50	$23,441.25		$6,188.50	$17,275.00		$6,166.25	$17,275.00		$12,354.75	$34,550.00
459 Alfred Cox Drain	459	466	$23,463.50	$23,441.25		$0.00	$550.00		$0.00	$0.00		$0.00	$550.00
460 Thomas Feeney Drain	460	939	$33,525.74	$29,299.83		$6,188.50	$17,275.00		$6,166.25	$17,275.00		$12,354.75	$34,550.00
460 Thomas Feeney Drain	460	939	$33,525.74	$29,299.83		$0.00	$30,125.00		$0.00	$25,400.00		$0.00	$55,525.00
471 George E Mercer Drain	471	161	$8,148.75	$8,148.75		$21,527.84	$11,997.90		$21,504.25	$7,795.58		$43,032.09	$19,793.48
471 George E Mercer Drain	471	161	$8,148.75	$8,148.75		$0.00	$1,048.00		$0.00	$1,048.00		$0.00	$2,096.00
497 Lingerman Hardin Drain	497	683	$16,505.67	$13,570.75		$21,527.84	$11,997.90		$21,504.25	$7,795.58		$43,032.09	$19,793.48
497 Lingerman Hardin Drain	497	683	$16,505.67	$13,570.75		$0.00	$175.00		$0.00	$0.00		$0.00	$175.00
499 JF Lingerman	499	40	$0.00	$0.00		$0.00	$75.00		$0.00	$75.00		$0.00	$150.00
539 Lucy King Drain	539	4	$100.00	$100.00		$4,198.75	$3,950.00		$4,198.75	$3,950.00		$8,397.50	$7,900.00
555 Abner Creek Estates Drain	555	16	$800.00	$800.00		$4,198.75	$3,950.00		$4,198.75	$3,950.00		$8,397.50	$7,900.00
557 Apple Creek Drain	557	124	$3,100.00	$3,100.00		$13,588.00	$2,917.67		$11,500.00	$2,070.75		$25,088.00	$4,988.42
558 Ashford Estates Drain	558	30	$750.00	$750.00		$13,588.00	$2,917.67		$11,500.00	$2,070.75		$25,088.00	$4,988.42
559 Ashley Oakes Drain	559	39	$975.00	$975.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
560 Ashton Drain	560	311	$0.00	$0.00		$0.00	$100.00		$0.00	$100.00		$0.00	$200.00
563 Auburn Meadows Drain	563	161	$6,575.00	$6,575.00		$0.00	$800.00		$0.00	$800.00		$0.00	$1,600.00
564 Austin Lakes Drain	564	611	$0.00	$0.00		$0.00	$3,100.00		$0.00	$3,100.00		$0.00	$6,200.00
564 Austin Lakes Drain	564	611	$0.00	$0.00		$0.00	$640.00		$0.00	$0.00		$0.00	$640.00
565 Avalon Springs Drain	565	50	$2,500.00	$2,500.00		$0.00	$750.00		$0.00	$750.00		$0.00	$1,500.00
566 Avon Commerce Park Drain	566	19	$2,296.50	$2,296.50		$0.00	$4,025.00		$0.00	$1,400.00		$0.00	$5,425.00
567 Avon Estates Drain	567	100	$2,500.00	$2,500.00		$0.00	$975.00		$0.00	$975.00		$0.00	$1,950.00
568 Avon North Drain	568	71	$1,775.00	$350.00		$3,020.25	$0.00		$3,020.25	$0.00		$6,040.50	$0.00
569 Avon Square Drain	569	4	$231.25	$181.25		$0.00	$200.00		$0.00	$0.00		$0.00	$200.00
570 Beechwood Farms Drain	570	37	$925.00	$925.00		$2,027.75	$1,275.00		$2,027.75	$1,275.00		$4,055.50	$2,550.00
577 Bridgewater/Reserve Drain	577	277	$0.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
583 Canak Place Drain	583	40	$2,000.00	$2,000.00		$0.00	$6,575.00		$0.00	$6,575.00		$0.00	$13,150.00
584 Cedar Bend Drain	584	54	$2,650.00	$2,650.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
584 Cedar Bend Drain	584	54	$2,650.00	$2,650.00		$2,027.75	$1,275.00		$2,027.75	$1,275.00		$4,055.50	$2,550.00
585 Cedar Mill Drain	585	67	$2,429.75	$2,429.75		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
585 Cedar Mill Drain	585	67	$2,429.75	$2,429.75		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
591 Cobblestone Springs Drain	591	240	$0.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
600 County Line Corners Drain	600	4	$500.00	$500.00		$0.00	$2,500.00		$0.00	$2,500.00		$0.00	$5,000.00
604 Creekview Acres Drain	604	12	$300.00	$0.00		$2,296.50	$0.00		$2,296.50	$0.00		$4,593.00	$0.00
608 Crystal Springs Drain	608	191	$6,850.00	$6,200.00		$0.00	$2,500.00		$0.00	$2,500.00		$0.00	$5,000.00
608 Crystal Springs Drain	608	191	$6,850.00	$6,200.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
625 Forest Commons Drain	625	336	$0.00	$0.00		$1,775.00	$0.00		$350.00	$0.00		$2,125.00	$0.00
633 Glen Elen Drain	633	123	$3,075.00	$0.00		$231.25	$0.00		$181.25	$0.00		$412.50	$0.00
634 Glenbrook Drain	634	63	$3,150.00	$3,150.00		$925.00	$0.00		$925.00	$0.00		$1,850.00	$0.00
635 Glenfield Drain	635	72	$0.00	$0.00		$4,675.00	$0.00		$3,450.00	$0.00		$8,125.00	$0.00
640 Harlan Bakeries Drain	640	20	$0.00	$0.00		$0.00	$675.00		$0.00	$135.00		$0.00	$810.00
641 Harvest Ridge Drain	641	204	$0.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
647 Hidden Valley Drain	647	152	$2,185.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
652 Hollowbrook Drain	652	255	$0.00	$0.00		$0.00	$875.00		$0.00	$875.00		$0.00	$1,750.00
654 Ian's Point Drain	654	72	$0.00	$0.00		$0.00	$2,000.00		$0.00	$2,000.00		$0.00	$4,000.00
661 Ledgewood Drain	661	69	$1,105.90	$100.00		$2,650.00	$0.00		$2,650.00	$0.00		$5,300.00	$0.00
661 Ledgewood Drain	661	69	$1,105.90	$100.00		$2,100.00	$0.00		$2,100.00	$0.00		$4,200.00	$0.00
662 Liberty Meadows Drain	662	19	$950.00	$950.00		$2,650.00	$0.00		$2,650.00	$0.00		$5,300.00	$0.00
663 Linden Square Drain	663	288	$0.00	$0.00		$854.75	$1,575.00		$854.75	$1,575.00		$1,709.50	$3,150.00
665 Londenberry Heights Drain	665	10	$250.00	$0.00		$854.75	$1,575.00		$854.75	$1,575.00		$1,709.50	$3,150.00
669 Mar-Rae Acres Drain	669	40	$2,000.00	$2,000.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
670 Matthew Meadows Drain	670	4	$100.00	$100.00		$0.00	$500.00		$0.00	$500.00		$0.00	$1,000.00
671 Medallion Meadows Drain	671	3	$0.00	$0.00		$0.00	$300.00		$0.00	$0.00		$0.00	$300.00
680 Minor Plat #555 Drain	680	1	$25.00	$25.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
684 Muirfield Village Drain	684	55	$0.00	$0.00		$4,150.00	$2,700.00		$4,150.00	$2,050.00		$8,300.00	$4,750.00
687 Oak Bend Drain	687	181	$0.00	$0.00		$0.00	$160.00		$0.00	$160.00		$0.00	$320.00
688 Oakes Of Avon Drain	688	152	$0.00	$0.00		$4,150.00	$2,700.00		$4,150.00	$2,050.00		$8,300.00	$4,750.00
691 Park Place Drain	691	193	$0.00	$0.00		$0.00	$500.00		$0.00	$500.00		$0.00	$1,000.00
692 Parks at Prestwick Drain	692	187	$0.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
693 Patterson Woods Drain	693	22	$575.00	$575.00		$0.00	$3,075.00		$0.00	$0.00		$0.00	$3,075.00
697 Pines Of Avon Drain	697	192	$0.00	$0.00		$0.00	$2,600.00		$0.00	$2,600.00		$0.00	$5,200.00
699 Prairie Manor Drain	699	22	$550.00	$0.00		$0.00	$3,150.00		$0.00	$3,150.00		$0.00	$6,300.00
701 Prestwick Drain	701	720	$30,125.00	$25,400.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
702 Prestwick Chrysler Drain	702	1	$1,048.00	$1,048.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
703 R - Z Acres Drain	703	7	$175.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
706 Rising Sun Drain	706	3	$75.00	$75.00		$0.00	$2,185.00		$0.00	$0.00		$0.00	$2,185.00
709 Rudgate in the Woods Drain	709	64	$640.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
710 Shiloh Creek Est Drain	710	133	$4,025.00	$1,400.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
711 Shiloh Crossing Drain	711	20	$3,020.25	$3,020.25		$642.75	$0.00		$642.75	$0.00		$1,285.50	$0.00
714 Southwind Estates Drain	714	8	$200.00	$0.00		$114.20	$991.70		$100.00	$0.00		$214.20	$991.70
718 Station Hill Drain	718	52	$3,302.75	$3,302.75		$114.20	$991.70		$100.00	$0.00		$214.20	$991.70
718 Station Hill Drain	718	52	$3,302.75	$3,302.75		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
720 Stonebridge Drain	720	73	$0.00	$0.00		$0.00	$950.00		$0.00	$950.00		$0.00	$1,900.00
720 Stonebridge Drain	720	73	$0.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
721 Stonemill Drain	721	110	$0.00	$0.00		$0.00	$2,850.00		$0.00	$2,850.00		$0.00	$5,700.00
723 Stratford Of Avon Drain	723	187	$4,675.00	$3,450.00		$0.00	$1,250.00		$0.00	$0.00		$0.00	$1,250.00
725 Sugarwood Drain	725	54	$675.00	$135.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
726 Sunchase Drain	726	345	$0.00	$0.00		$0.00	$250.00		$0.00	$0.00		$0.00	$250.00
728 Sycamore Ridge Drain	728	35	$875.00	$875.00		$0.00	$2,000.00		$0.00	$2,000.00		$0.00	$4,000.00
733 Thornridge Drain	733	84	$2,100.00	$2,100.00		$0.00	$3,500.00		$0.00	$3,500.00		$0.00	$7,000.00
736 Timber Bend Drain	736	267	$0.00	$0.00		$0.00	$585.00		$0.00	$0.00		$0.00	$585.00
737 Timber Grove Drain	737	8	$160.00	$160.00		$0.00	$100.00		$0.00	$100.00		$0.00	$200.00
738 Valley Vista Est Drain	738	20	$500.00	$500.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
740 Village Oaks Drain	740	80	$2,600.00	$2,600.00		$25.00	$0.00		$25.00	$0.00		$50.00	$0.00
741 Vista Park Drain	741	3	$642.75	$642.75		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
744 Waverly Commons Drain	744	176	$0.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
750 Whispering Pines Drain	750	135	$0.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
751 Whispering Wind Drain	751	57	$2,850.00	$2,850.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
759 Windmill Pointe Drain	759	50	$1,250.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
761 Woodcreek Farms Drain	761	85	$3,500.00	$3,500.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
762 Woodridge Drain	762	39	$585.00	$0.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
763 Wynebrook/Derby Run Drain	763	546	$0.00	$0.00		$0.00	$575.00		$0.00	$575.00		$0.00	$1,150.00
764 Wynne Farms Drain	764	71	$0.00	$0.00		$0.00	$2,875.00		$0.00	$2,875.00		$0.00	$5,750.00
767 Grant Park	767	115	$2,875.00	$2,875.00		$0.00	$0.00		$0.00	$0.00		$0.00	$0.00
TOTAL		**14,547**	**$305,286.70**	**$267,769.91**		**$126,290.33**	**$178,996.37**		**$119,294.25**	**$148,475.66**		**$245,584.58**	**$327,472.03**
Sum Double Counts		3,366.0											
Sum w/o Double Counts		11,181											

Summary of Washington Township Regulated Drain Assessments

		Number of Parcels	Spring Assesment	Fall Assesment		Total Assessments
Total		14,547	$305,287	$267,770		$573,057
In Avon		4,978	$126,290	$119,294		$245,585
Outside of Avon		9,569	$178,996	$148,476		$327,472

Last Updated 2/17/2016

Agricultural Parcels in Avon Assessed Regulated Drain Fees

Drain Name	Act #	Number of Parcels	Spring Assessmentt	Fall Assessment
460 Thomas Feeney Drain	460	9	$98	$71
497 Lingerman Hardin Drain	497	7	$26	$0
600 County Line Corners Drain	600	4	$500	$500
604 Creekview Acres Drain	604	1	$25	$0
661 Ledgewood Drain	661	2	$46	$0
661 Ledgewood Drain	661	2	$46	$0
720 Stonebridge Drain	720	1	$0	$0

Summary of Washington Township Ag-Abatement Assessments				
	Number of Parcels	Spring Assesment	Fall Assesment	Total Assessments
Total	26	$741	$571	$1,312

Agricultural abatement properties will not be adversely affected by Avon establishing a Department of Stormwater Management. The county will not be adversely affected by removing the assessments from these parcels.

Proportioning Expenditures and Balances for Drains Partially Inside and Partially Outside Avon

Difficulty may ensue where drains lie partly inside and partly outside the Avon corporate limits, potentially leaving a regulated drain without adequate assessments to provide maintenance. The statute allows for the proportional share of the transferred fund to be based on the length of the drain within the corporate limits under IC 36-9-27-20.5 (c) (1) or an agreed upon apportionment under IC 36-9-27-20.5 (d).

Most of the regulated drains in Washington Township are not actual tiles or ditches, but separate subdivisions with storm sewers. The apportionment by length of drain does not apply. Attorneys for the Town and County will need to assist in what is likely to be a negotiated settlement for transfer of fund balances for drains. The actual tiles or open drains potentially impacted by a transfer are:

- 459 Alfred Cox Drain
- 460 Thomas Feeney Drain
- 497 Lingerman Hardin Drain

For this case, the study analyzed the drains lying partially inside and partially outside the Avon corporate limits. This was done through GIS spatial analysis by proportioning the assessed parcel acreage of each affected drain inside and outside the corporate limits. The study used the percent of acreage inside the town for each drain to apportion the drain balance and average drain expenditures.

The study obtained 5 years of county drain maintenance expenditures and existing drain balances for the 94 regulated drains in Washington Township. The County spent an annual average of $105,773 inside Avon and $151,229 outside Avon over the five-year study period.

The study obtained 5 years of county drain maintenance expenditures and existing drain balances for the 94 regulated drains in Washington Township. The County spent an annual average of $105,773 inside Avon and $151,229 outside Avon over the five-year study period.

[Map 4 Regulated Drain 5 Year Annual Average Expenditure by Drain.] [Insert]
[Appendix H Washington Township Regulated Drain Expenditures Inside and Outside Avon.] [Insert]

Appendix H shows existing regulated drain fund balances for the 94 Washington Township drains total $4,157,098, with approximately $1,643,775 from inside Avon and $2,508,590 from outside Avon.

[Map 5 – 2015 Regulated Drain Account Balance.] [Insert]
[Map 6 – 2015 Partial Drain Assessments Inside Avon.] [Insert]
[Map 7 – 2015 Partial Drain Assessments Outside Avon.] [Insert]

Map 4
Regulated Drain
5 Year Annual Average Expenditure by Drain
Town of Avon, Indiana

TOWN OF AVON

Legend

- Hydrology
- Open Drain or Tile
- Parcel Boundary
- Avon Town Boundary
- Washington Township
- HUC14 Watersheds

Regulated Drain 5 Year Annual Average

- $0
- $1 to $5,000
- $5,001 to $10,000
- $10,001 to $15,000
- > $20,000

N
W E 0 1,500 3,000
S

Scale in Feet
April 2016
Overview Map

engineering | architecture | geospatial

Verify
Drain Expenditures and Balances Inside and Outside Avon

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**Assessment_Name**	**Assessment_Number**	**Inside_Avon**	**Assessment_Number_Locator**	**Acers**	**%_INSIDE_AVON**	**%_OUTSIDE_AVON**	**Average_Drain_Expenditures**	**Drain_Balance**	**Avg_Expend_Inside_Avon**	**Avg_Expend_Outside_Avon**	**Balance_Inside_Avon**	**Balance_Outside_Avon**
2	400 Garvey Neal Pollard Todd	400	N	400	114.37	0	100	$35,685.14	$450,458.95	$0.00	$35,685.14	$0.00	$450,458.95
3	459 Alfred Cox Drain	459	Y	459A	175.26	72	0	$14,754.55	$232,865.16	$10,623.28	$0.00	$167,662.92	$0.00
4	459 Alfred Cox Drain	459	N	459B	68.83	0	28	$0.00	$0.00	$0.00	$4,131.28	$0.00	$65,202.24
5	460 Thomas Feeney Drain	460	Y	460A	337.16	59	0	$23,618.96	$334,064.28	$13,935.19	$0.00	$197,097.93	$0.00
6	460 Thomas Feeney Drain	460	N	460B	229.77	0	41	$0.00	$0.00	$0.00	$9,683.77	$0.00	$136,966.35
7	471 George E Mercer Drain	471	Y	471A	17.66	38	0	$11,167.93	$8,493.62	$4,243.81	$0.00	$3,227.58	$0.00
8	471 George E Mercer Drain	471	N	471B	28.85	0	62	$0.00	$0.00	$0.00	$6,924.12	$0.00	$5,266.04
9	497 Lingerman Hardin Drain	497	Y	497A	626.32	70	0	$10,382.61	$134,632.15	$7,267.83	$0.00	$94,242.51	$0.00
10	497 Lingerman Hardin Drain	497	N	497B	264.23	0	30	$0.00	$0.00	$0.00	$3,114.78	$0.00	$40,389.65
11	499 JF Lingerman	499	Y	499	12.28	100	0	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
12	539 Lucy King Drain	539	N	539	5.53	0	100	$0.00	$1,781.82	$0.00	$0.00	$0.00	$1,781.82
13	555 Abner Creek Estates Drain	555	N	555	13.79	0	100	$0.00	($1,727.22)	$0.00	$0.00	$0.00	($1,727.22)
14	557 Apple Creek Drain	557	N	557	44.27	0	100	$0.00	$64,525.75	$0.00	$0.00	$0.00	$64,525.75
15	558 Ashford Estates Drain	558	N	558	24.92	0	100	$1,945.80	$8,623.24	$0.00	$1,945.80	$0.00	$8,623.24
16	559 Ashley Oakes Drain	559	N	559	14.24	0	100	$424.20	$26,034.99	$0.00	$424.20	$0.00	$26,034.99
17	560 Ashton Drain	560	N	560	85.19	0	100	$1,110.99	$10,870.39	$0.00	$1,110.99	$0.00	$10,870.39
18	563 Auburn Meadows Drain	563	N	563	53.46	0	100	$162.86	$106,066.22	$0.00	$162.86	$0.00	$106,066.22
19	564 Austin Lakes Drain	564	Y	564A	157.81	61	0	$14,908.71	$205,007.71	$9,094.31	$0.00	$125,054.70	$0.00
20	564 Austin Lakes Drain	564	N	564B	101.22	0	39	$0.00	$0.00	$0.00	$5,814.40	$0.00	$79,953.01
21	565 Avalon Springs Drain	565	N	565	17.41	0	100	$82.80	$43,502.09	$0.00	$82.80	$0.00	$43,502.09
22	566 Avon Commerce Park Drain	566	Y	566	37.10	100	0	$2,310.23	$14,694.59	$2,310.23	$0.00	$14,694.59	$0.00
23	567 Avon Estates Drain	567	N	567	36.06	0	100	$151.13	$44,650.19	$0.00	$151.13	$0.00	$44,650.19
24	568 Avon North Drain	568	Y	568	34.46	100	0	$3,394.53	$5,752.79	$3,394.53	$0.00	$5,752.79	$0.00
25	569 Avon Square Drain	569	Y	569	6.97	100	0	$0.00	$3,857.70	$0.00	$0.00	$3,857.70	$0.00
26	570 Beechwood Farms Drain	570	Y	570	28.47	100	0	$0.00	$19,387.76	$0.00	$0.00	$19,387.76	$0.00
27	577 Bridgewater/Reserve Drain	577	N	577	94.60	0	100	$604.88	$24,739.94	$0.00	$604.88	$0.00	$24,739.94
28	583 Canak Place Drain	583	N	583	17.68	0	100	$0.00	($11,224.73)	$0.00	$0.00	$0.00	($11,224.73)
29	584 Cedar Bend Drain	584	Y	584A	28.94	100	0	$8,364.74	$5,605.00	$8,364.74	$0.00	$5,605.00	$0.00
30	585 Cedar Mill Drain	585	Y	585A	20.02	51	0	$0.00	$38,567.33	$0.00	$0.00	$19,669.34	$0.00
31	585 Cedar Mill Drain	585	N	585B	19.19	0	49	$0.00	$0.00	$0.00	$0.00	$0.00	$18,897.99
32	591 Cobblestone Springs Drain	591	Y	591	64.60	100	0	$4,009.40	$75,562.78	$4,009.40	$0.00	$75,562.78	$0.00
33	600 County Line Corners Drain	600	Y	600	6.10	100	0	$0.00	$9,420.36	$0.00	$0.00	$9,420.36	$0.00
34	604 Creekview Acres Drain	604	Y	604A	4.34	18	0	$240.00	$4,302.96	$43.20	$0.00	$774.53	$0.00
35	604 Creekview Acres Drain	604	N	604B	19.57	0	72	$240.00	$4,302.96	$0.00	$172.80	$0.00	$3,098.13
36	608 Crystal Springs Drain	608	Y	608A	25.28	36	0	$4,849.76	$39,986.56	$1,745.92	$0.00	$14,395.16	$0.00
37	608 Crystal Springs Drain	608	N	608B	45.76	0	64	$0.00	$0.00	$0.00	$3,103.85	$0.00	$25,591.40
38	625 Forest Commons Drain	625	N	625	152.16	0	100	$3,476.96	$78,322.21	$0.00	$3,476.96	$0.00	$78,322.21
39	633 Glen Elen Drain	633	N	633	77.53	0	100	$163.08	$14,314.72	$0.00	$163.08	$0.00	$14,314.72
40	634 Glenbrook Drain	634	N	634	43.29	0	100	$2,962.97	$2,550.00	$0.00	$2,962.97	$0.00	$2,550.00
41	635 Glenfield Drain	635	Y	635	12.70	100	0	$0.00	$43,839.10	$0.00	$0.00	$43,839.10	$0.00
42	640 Harlan Bakeries Drain	640	Y	640	27.57	100	0	$728.17	$60,727.02	$728.17	$0.00	$60,727.02	$0.00
43	641 Harvest Ridge Drain	641	Y	641	61.51	100	0	$400.00	$94,584.68	$400.00	$0.00	$94,584.68	$0.00
44	647 Hidden Valley Drain	647	N	647	102.80	0	100	$310.57	$74.50	$0.00	$310.57	$0.00	$74.50
45	652 Hollowbrook Drain	652	Y	652	85.44	100	0	$0.00	$112,305.23	$0.00	$0.00	$112,305.23	$0.00
46	654 Ian's Point Drain	654	N	654	0.22	0	100	$0.00	$25,553.88	$0.00	$0.00	$0.00	$25,553.88
47	661 Ledgewood Drain	661	Y	661A	72.81	38	0	$10,893.38	$48.00	$4,139.48	$0.00	$18.24	$0.00
48	661 Ledgewood Drain	661	N	661B	119.49	0	62	$0.00	$0.00	$0.00	$6,753.89	$0.00	$29.76
49	662 Liberty Meadows Drain	662	N	662	21.13	0	100	$92.00	$16,646.12	$0.00	$92.00	$0.00	$16,646.12
50	663 Linden Square Drain	663	N	663	71.59	0	100	$6,299.16	$79,157.90	$0.00	$6,299.16	$0.00	$79,157.90
51	665 Londenberry Heights Drain	665	N	665	8.93	0	100	$305.76	$2,927.14	$0.00	$305.76	$0.00	$2,927.14
52	669 Mar-Rae Acres Drain	669	N	669	20.54	0	100	$996.78	$34,730.00	$0.00	$996.78	$0.00	$34,730.00
53	670 Matthew Meadows Drain	670	N	670	14.36	0	100	$0.00	($10,437.99)	$0.00	$0.00	$0.00	($10,437.99)
54	671 Medallion Meadows Drain	671	N	671	0.80	0	100	$2,763.71	$3,323.82	$0.00	$2,763.71	$0.00	$3,323.82
55	680 Minor Plat #555 Drain	680	Y	680	0.39	100	0	$0.00	($1,799.89)	$0.00	$0.00	($1,799.89)	$0.00
56	684 Muirfield Village Drain	684	N	684	19.13	0	100	$420.00	$35,210.02	$0.00	$420.00	$0.00	$35,210.02
57	687 Oak Bend Drain	687	Y	687	133.90	100	0	$7,788.40	$26,668.46	$7,788.40	$0.00	$26,668.46	$0.00
58	688 Oakes Of Avon Drain	688	N	688	48.04	0	100	$618.60	$59,487.19	$0.00	$618.60	$0.00	$59,487.19
59	691 Park Place Drain	691	Y	691	47.81	100	0	$0.00	$50,866.05	$0.00	$0.00	$50,866.05	$0.00
60	692 Parks at Prestwick Drain	692	N	692	116.89	0	100	$1,011.37	$95,208.30	$0.00	$1,011.37	$0.00	$95,208.30
61	693 Patterson Woods Drain	693	N	693	11.82	0	100	$55.00	$11,814.82	$0.00	$55.00	$0.00	$11,814.82
62	697 Pines Of Avon Drain	697	Y	697	51.46	100	0	$802.69	$81,502.89	$802.69	$0.00	$81,502.89	$0.00
63	699 Prairie Manor Drain	699	N	699	16.79	0	100	$0.00	$11,106.91	$0.00	$0.00	$0.00	$11,106.91
64	701 Prestwick Drain	701	N	701	180.14	0	100	$31,093.62	$200,292.26	$0.00	$31,093.62	$0.00	$200,292.26
65	702 Prestwick Chrysler Drain	702	N	702	10.59	0	100	$859.40	$11,424.70	$0.00	$859.40	$0.00	$11,424.70
66	703 R - Z Acres Drain	703	N	703	12.16	0	100	$0.00	$2,367.70	$0.00	$0.00	$0.00	$2,367.70
67	706 Rising Sun Drain	706	N	706	23.02	0	100	$0.00	$1,617.99	$0.00	$0.00	$0.00	$1,617.99
68	709 Rudgate in the Woods Drain	709	N	709	43.30	0	100	$6,507.76	($10,995.46)	$0.00	$6,507.76	$0.00	($10,995.46)
69	710 Shiloh Creek Est Drain	710	N	710	89.68	0	100	$0.00	$50,515.20	$0.00	$0.00	$0.00	$50,515.20
70	711 Shiloh Crossing Drain	711	Y	711	38.78	100	0	$0.00	$55,667.84	$0.00	$0.00	$55,667.84	$0.00
71	714 Southwind Estates Drain	714	Y	714	4.69	100	0	$439.22	$1,344.73	$439.22	$0.00	$1,344.73	$0.00
72	718 Station Hill Drain	718	Y	718A	80.60	73	0	$0.00	$28,996.26	$0.00	$0.00	$21,167.27	$0.00
73	718 Station Hill Drain	718	N	718B	29.82	0	27	$0.00	$0.00	$0.00	$0.00	$0.00	$7,828.99
74	720 Stonebridge Drain	720	Y	720A	20.93	49	0	$160.00	$42,882.87	$78.40	$0.00	$21,012.61	$0.00
75	720 Stonebridge Drain	720	N	720B	21.98	0	51	$0.00	$0.00	$0.00	$81.60	$0.00	$21,870.26
76	721 Stonemill Drain	721	Y	721	27.32	100	0	$280.00	$55,667.96	$280.00	$0.00	$55,667.96	$0.00
77	723 Stratford Of Avon Drain	723	Y	723	70.41	100	0	$12,815.34	$2,728.74	$12,815.34	$0.00	$2,728.74	$0.00
78	725 Sugarwood Drain	725	N	725	26.35	0	100	$308.69	$18,864.67	$0.00	$308.69	$0.00	$18,864.67
79	726 Sunchase Drain	726	N	726	47.16	0	100	$681.06	$176,243.46	$0.00	$681.06	$0.00	$176,243.46
80	728 Sycamore Ridge Drain	728	N	728	22.93	0	100	$0.00	$17,169.37	$0.00	$0.00	$0.00	$17,169.37
81	733 Thornridge Drain	733	Y	733	26.18	100	0	$2,076.26	$28,396.41	$2,076.26	$0.00	$28,396.41	$0.00
82	736 Timber Bend Drain	736	Y	736	206.53	100	0	$4,025.48	$51,737.37	$4,025.48	$0.00	$51,737.37	$0.00
83	737 Timber Grove Drain	737	N	737	4.93	0	100	$0.00	$6,619.18	$0.00	$0.00	$0.00	$6,619.18
84	738 Valley Vista Est Drain	738	N	738	14.74	0	100	$130.00	$14,069.51	$0.00	$130.00	$0.00	$14,069.51
85	740 Village Oaks Drain	740	N	740	25.32	0	100	$6,818.00	$16,954.55	$0.00	$6,818.00	$0.00	$16,954.55
86	741 Vista Park Drain	741	Y	741	22.66	100	0	$4,313.15	($5,765.81)	$4,313.15	$0.00	($5,765.81)	$0.00
87	744 Waverly Commons Drain	744	N	744	25.68	0	100	$130.00	$127,622.50	$0.00	$130.00	$0.00	$127,622.50
88	750 Whispering Pines Drain	750	Y	750	45.25	100	0	$1,062.30	$48,271.61	$1,062.30	$0.00	$48,271.61	$0.00
89	751 Whispering Wind Drain	751	Y	751	41.74	100	0	$1,737.42	$7,992.18	$1,737.42	$0.00	$7,992.18	$0.00
90	759 Windmill Pointe Drain	759	Y	759	41.54	100	0	$0.00	$11,544.69	$0.00	$0.00	$11,544.69	$0.00
91	761 Woodcreek Farms Drain	761	N	761	87.38	0	100	$4,279.73	$45,180.13	$0.00	$4,279.73	$0.00	$45,180.13
92	762 Woodridge Drain	762	N	762	34.69	0	100	$0.00	$11,120.34	$0.00	$0.00	$0.00	$11,120.34
93	763 Wynebrook/Derby Run Drain	763	N	763	101.33	0	100	$996.00	$180,411.66	$0.00	$996.00	$0.00	$180,411.66
94	764 Wynne Farms Drain	764	Y	764	21.13	100	0	$55.00	$118,891.65	$55.00	$0.00	$118,891.65	$0.00
95	767 Grant Park	767	N	767	17.85	0	100	$0.00	$5,727.50	$0.00	$0.00	$0.00	$5,727.50
96													
97													
98	**Summ of Columns**				**5,687.61**			**$257,266.24**	**$4,157,098.18**	**$105,773.73**	**$151,228.51**	**$1,643,774.66**	**$2,508,590.26**
99													
100									Sum J + Sum K =	$257,002.24		L + M =	$4,152,364.92
101													
102									Sum H - (Sum J + Sum K) =	$264.00		I - (L + M)	$4,733.26

Map 5
2015 Regulated Drain Account Balance
Town of Avon, Indiana

TOWN OF AVON

Legend

- Hydrology
- Open Drain or Tile
- Parcel Boundary
- Avon Town Boundary
- Washington Township
- HUC14 Watersheds

2015 Account Balance

- < $0
- $0
- $1 to $50,000
- $50,001 to $100,000
- $100,001 to $200,000
- $200,001 to $300,000
- > $300,000

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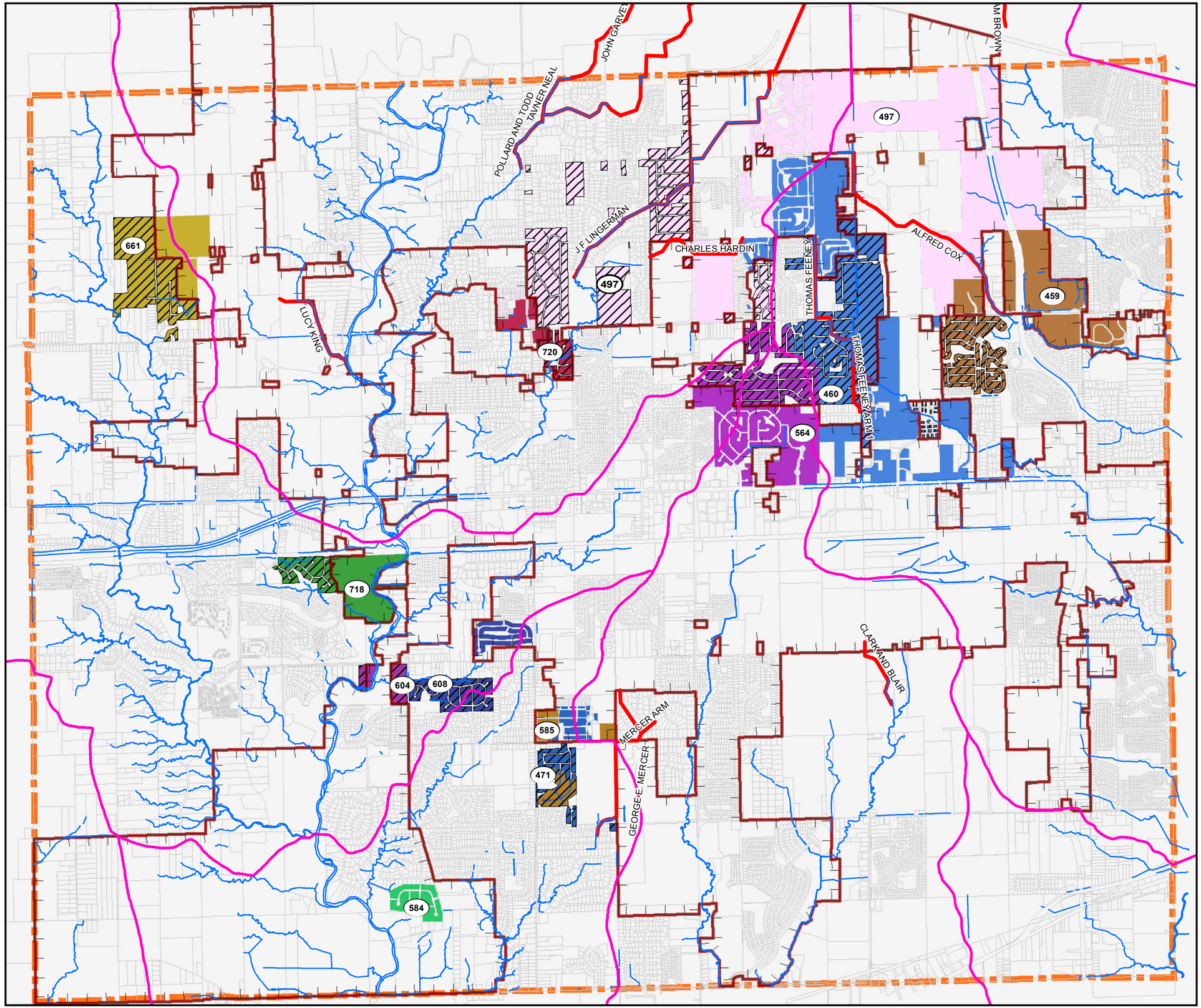
April 2016
Overview Map

engineering | architecture | geospatial

Map 6
2015 Partial Drain Assessments Inside Avon
Town of Avon, Indiana



Legend

- Hydrology
- Open Drain or Tile
- Parcel Boundary
- Avon Town Boundary
- Washington Township
- HUC14 Watersheds

Assessment Name

- 459 Alfred Cox Drain
- 460 Thomas Feeney Drain
- 471 George E Mercer Drain
- 497 Lingerman Hardin Drain
- 564 Austin Lakes Drain
- 584 Cedar Bend Drain
- 585 Cedar Mill Drain
- 604 Creekview Acres Drain
- 608 Crystal Springs Drain
- 661 Ledgewood Drain
- 718 Station Hill Drain
- 720 Stonebridge Drain

Note: Cross Hatching Represents Drains Outside Avon

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Scale in Feet

April 2016

Overview Map

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Map 7
2015 Partial Drain Assessments Outside Avon
Town of Avon, Indiana

TOWN OF AVON

Legend

- Hydrology
- Open Tile or Drain
- Parcel Boundary
- Avon Town Boundary
- Washington Township
- HUC14 Watersheds

Assessment Name

- 459 Alfred Cox Drain
- 460 Thomas Feeney Drain
- 471 George E Mercer Drain
- 497 Lingerman Hardin Drain
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- 584 Cedar Bend Drain
- 585 Cedar Mill Drain
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- 718 Station Hill Drain
- 720 Stonebridge Drain
- Note: Cross Hatching Represents Drains Inside Avon

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Scale in Feet
April 2016
Overview Map

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Recommendations

Further cooperation with the County will be necessary to agree on how the regulated drains within the corporate boundary are addressed. Upon transfer, utility policy will determine how the funds are incorporated into the budget and financial plan.

The study recommends the Town and County Drainage Board enter into a joint resolution where:

1. Hendricks County transfers the regulated drains within the Town to the Town's jurisdiction under IC 36-9-27-20;
2. Hendricks County transfers the fund balances for the transferred drains based on the proportional area approximation of this study, or other negotiated method, under IC 36-9-27-20.5;
3. The Town Council and Drainage Board abandon the regulated drain assessments under IC 36-9-27.

CHAPTER 5 CUSTOMER BASE AND RATE ANALYSIS

Introduction, Summary of Findings and Recommendations

The study analyzed the customer base in detail to determine the following:

- Equivalent Residential Unit (ERU) for billing
- Impervious area for non-residential customers to convert to ERU billing units
- The total number of billing units
- Bundled billing units by customer class
- Summary of billing units
- Projected annual revenue for selected monthly rates
- Projected annual revenues using alternative rates
- Residential annual ERU payment compared to tax rates

The study extracted 521 residential parcels (approximately 10% of the total residential parcels of less than or equal to three units per building based on the State Property Class Codes) from the GIS database and calculated the impervious surface area for each parcel. The average impervious surface area for these sampled parcels was 3,942 square feet. This value becomes the Equivalent Residential Unit (ERU) for non-residential parcels.

[Map 8 Avon Residential Parcels for ERU Value.]
[Appendix J Avon Residential Impervious Surface Report.]
[Appendix L Non-residential Impervious Surface Report – Sorted by Owner Name.]
[Appendix M Non-residential Impervious Surface Report – Sorted by Land Use Code.]

The study then tabulated the impervious area for each non-residential parcel. The study deleted right-of-way and vacant parcels from the final tabulations. The study applied 3,942 square feet per ERU to the database and tabulated the results.

[Map 9 Avon Non-Residential Impervious Areas for ERU Rate.]
[Apendix K Non-residential Impervious Surface Report – Sorted Largest to Smallest.

The CSX rail yard was isolated for special analysis.

Additional database cleanup necessary prior to sending out the first stormwater bill involves resolving the disputes between the one-to-many and many-to-one relationships within the database. A one-to-many condition means there is one parcel that has many individual billing customers, such as condominiums or commercial centers. Billing the property owner eliminates this issue. A many-to-one relationship exists where many adjacent parcels are owned by a single owner and it is desirable to send a single bill, such as schools and large commercial developments.

The study bundled the many-to-one relationship adjacent parcels with the same or similar owner into a single billing customer for customer base analysis. If Avon decides to move forward, additional effort will be necessary to clean up the database.

Further database cleanup if the Town chooses to move forward with implementation entails updating impervious area calculations for properties with improvements dating after the aerial photography from building permits or other sources.

A series of tables summarize the customer base calculations.

The Bundled Billing Units by Customer Class table tabulates the total number of billing units in Avon by customer class. The residential class all pay a flat base rate based on the average impervious area of 3,942 square feet, the Equivalent Residential Unit (ERU). The non-residential class pays a rate where the impervious area on the parcel is divided by 3,942 square feet ERU, then multiplied by the base rate.

The projected budget of $850,000 requires Avon to charge between $4.00 and $5.00 per month per ERU. Actual revenues depend on collections and disbursements. Some variations from these projections are to be expected.

The large discrepancy in the number of residential to non-residential customers makes it appropriate to consider different rates for residential and non-residential customers. It is justified because the large number of residential customers requires additional administrative and maintenance services per billing unit. Further, most non-residential customers maintain the private stormwater infrastructure on their property; the local government— in this case, the Town of Avon, maintains the infrastructure in subdivisions where the residential customers reside.

The CSX rail yard presents a unique circumstance for the Town and has been isolated to consider a separate rail yard rate. The projections attempted to show alternatives to achieve the desired $850,000 budget.

The Residential Annual ERU Payment Compared to Tax Rates table shows that the Town would need to assess a tax rate between $0.08 to $0.09 per $100 assessed value to generate the targeted $850,000 budget. The equivalent revenue generating ERU would be between $4.28 and $4.82. Only taxable parcels would pay a tax rate. Actual revenues depend on collections and disbursements. Some variations from these projections are to be expected.

Under a tax rate, residential customers would pay from $84 to $285 per year, based on home value. Under the proposed ERU rate, residential customers would pay from $51 to $58 per year.

Customer Base Analysis

The study calculated the impervious area within the Avon corporate boundary for residential and non-residential customers to determine the total stormwater billing units. The Hendricks County Auditor and GIS department provided parcel data used in the study. GRW supplemented the county data with the most recent aerial photography for Hendricks County from Pictometry flown in fall 2013.

The study analyzed the customer base in detail. First, all parcels within the Avon corporate boundary were extracted using parcel identification numbers. The data contained several parcel identification numbers, parcel acreage, property owner, and a three-digit State Land Use Code.

The Department of Stormwater Management may establish customer classes to assess fees. The study uses the three-digit State Land Use Codes from the 2011 Real Property Assessment Manual to determine customer classes between residential and non-residential land uses. Appendix I provides the full description of the land use codes. Residential parcels included agricultural parcels with improvements. Non-residential parcels include commercial, industrial and institutional parcels.

[Appendix I Indiana 2011 Real Property Assessment Manual Appendix A.]

The study mapped approximately 10% of the residential customers to establish an average impervious surface area on residential property. The resulting average value is called the Equivalent Residential Unit (ERU). Each residential customer is billed for one ERU. Non-residential customers are billed by the amount of impervious area on the parcel divided by the ERU. The total number of ERU in the system represents the total billing units, much like a gallon of water in a water system. This is recognized as a fair and equitable method of assessing stormwater fees for customer classes.

The process for determining the residential customer ERU follows:

1. The study mapped impervious areas for 521 of 5,185 residential parcels to determine a statistical representation of the Equivalent Residential Unit (ERU).
2. These 521 parcels included State Land Use codes 101, 199, and 510 – 599.
3. The average impervious area for the 521 mapped residential parcels is 3,942 square feet.
4. The Equivalent Residential Unit for the Town of Avon is 3,942 square feet.

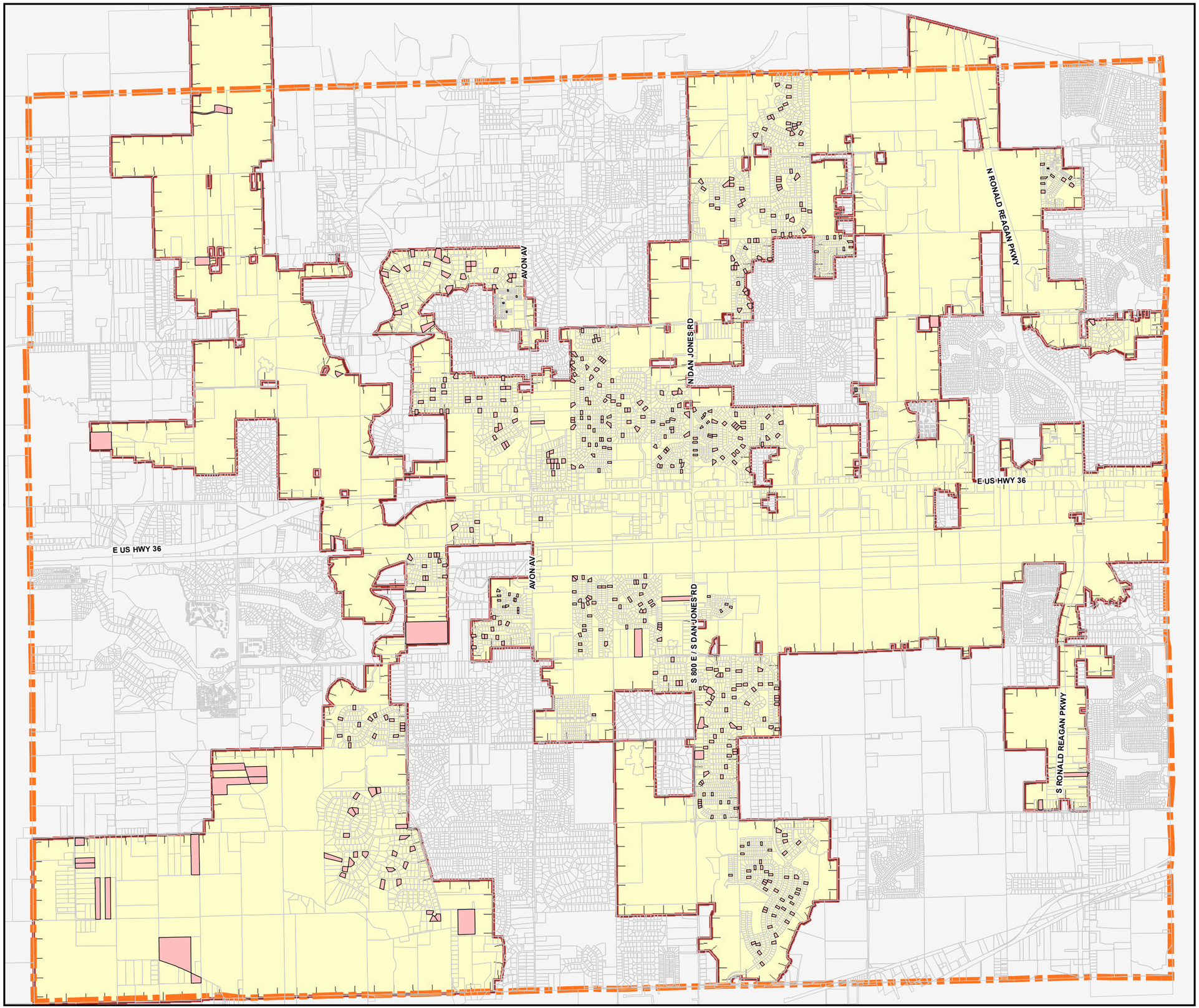
[Map 8 Avon Residential Parcels for ERU Value.] [Insert]
[Appendix J Avon Residential Impervious Surface Report.]

The study then tabulated the impervious area for each non-residential parcel. GRW deleted right-of-way and vacant parcels from the final tabulations. The study applied 3,942 square feet per ERU to the database and tabulated the results.

The process for determining non-residential customer ERU follows:

1. The study mapped 617 non-residential parcels based on State Land Use Code and 15 parcels with no State Land Use Code that appeared to be non-residential customers, yielding 632 non-residential parcel polygons.
2. The county data included 30 duplicate State_PIN numbers which were combined to yield 602 actual records for calculation.
3. The study bundled contiguous parcels with the same or similar owners to reduce the final non-residential customer count to 344.
4. The study calculated 40,933,591 square feet of impervious area from these parcels.
5. Dividing the non-residential impervious area (40,933,591) by the average residential impervious area (ERU) yielded a total of 10,384 non-residential ERUs.

Map 8
Avon Residential Parcels for ERU Value
Town of Avon, Indiana



Legend

- Avon Town Boundary
- Washington Township
- Residential Parcels - ERU Value
- Parcel Boundary

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Scale in Feet

April 2016
Overview Map

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[Map 9 Avon Non-Residential Impervious Areas for ERU Rate.] [Insert]
[Appendix K Non-residential Impervious Surface Report – Sorted Largest to Smallest.]
[Appendix L Non-residential Impervious Surface Report – Sorted by Owner Name.]
[Appendix M Non-residential Impervious Surface Report – Sorted by Land Use Code.]

The CSX rail yard was isolated for special analysis.

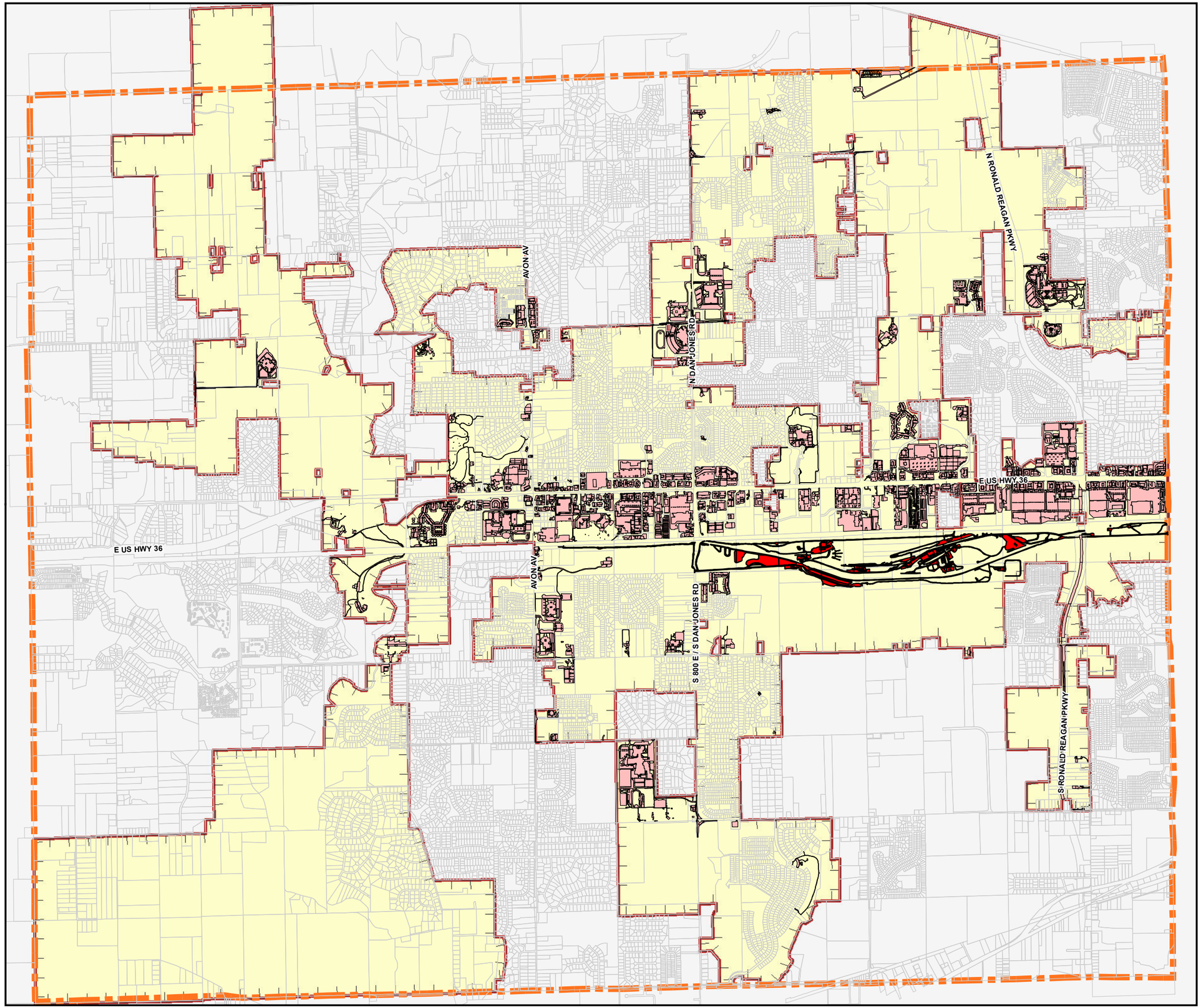
Additional database cleanup necessary prior to sending out the first stormwater bill involves resolving the disputes between the one-to-many and many-to-one relationships within the database. A one-to-many condition means there is one parcel that has many individual billing customers, such as condominiums or commercial centers. Billing the property owner eliminates this issue. A many-to-one relationship exists where many adjacent parcels are owned by a single owner and it is desirable to send a single invoice, such as schools and large commercial developments.

The study bundled the many-to-one relationship adjacent parcels with the same or similar owner into a single billing customer for customer base analysis. If Avon decides to move forward, additional effort will be necessary to clean up the database.

Further database cleanup if the Town chooses to move forward with implementation entails updating impervious area calculations for properties with improvements dating after the aerial photography from building permits or other sources.

A series of tables summarize the customer base calculations.

Map 9
Avon Non-Residential Impervious Areas for ERU Rate
Town of Avon, Indiana



Legend

- Avon Town Boundary
- Washington Township
- Railroad Impervious Areas
- Non-Residential Impervious Areas
- Parcel Boundary

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Scale in Feet

April 2016
Overview Map

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The first step is to identify the number of customers to be billed as detailed in the following table. It summarizes the breakdown of the total billing units between the residential and non-residential customer classes.

The Bundled Billing Units by Customer Class table tabulates the total number of billing units in Avon by customer class. The residential class all pay a flat base rate based on the average impervious area of 3,942 square feet, the Equivalent Residential Unit (ERU). The non-residential class pays a rate where the impervious area on the parcel is divided by 3,942 square feet ERU, then multiplied by the base rate.

Bundled Billing Units by Customer Class

State Property Class Code	Parcels or Bundled Customers	Total Square Feet Impervious Area	Equivalent Residential Unit Count at 3,942 sf/unit
Residential Base Rate Customers = Residential and Agricultural Parcels Improved (101, 199, 510-599)	5,185		
Bundled Non-residential Customers = Commercial Industrial Institutional Parcels Improved (309-399, 401-499, 600-699 801-840, 850-899)	342	37,306,263	9,464
CSX Railyard (841)	2	3,627,328	920
Totals w/ CSX Railyard	5,529	40,933,591	10,384
Bundled Non-residential Customers = Commercial Industrial Institutional Parcels Improved (309-399, 401-499, 600-699 801-840, 850-899)	342	37,306,263	9,464
Total Billable Parcels w/o CSX Railyard	5,527	37,306,263	9,464
Base Residential Rate Customers			
Non-residential ERU Rate Customers			

The next step is to quantify the total number of billing units. The table below shows the breakdown of the customer base between residential and non-residential customers. There is a total of 15,569 ERU billing units in the customer base.

Summary of Billing Units

Customer Class	ERU Count	$2/mo/ERU	$3/mo/ERU	$4/mo/ERU	$5/mo/ERU
Residential Customer Count	5,185	$124,440	$186,660	$248,880	$311,100
Non-residential ERU Count	9,464	$227,131	$340,696	$454,262	$567,827
CSX	920	$22,084	$33,126	$44,168	$55,210
Total Billable Unit Count w/ CSX	15,569	$373,655	$560,483	$747,310	$934,138

Customer Class	ERU Count	$6/mo/ERU	$7/mo/ERU	$8/mo/ERU	$9/mo/ERU
Residential Customer Count	5,185	$373,320	$435,540	$497,760	$559,980
Non-residential ERU Count w/o CSX	9,464	$681,393	$794,958	$908,524	$1,022,089
CSX	920	$66,253	$77,295	$88,337	$99,379
Total Billable Unit Count	15,569	$1,120,965	$1,307,793	$1,494,621	$1,681,448

The next step is to project revenues for several base billing rates. The table below projects revenues for base billing rates from $2 to $9 per ERU. The projected revenues multiply the billing unit count times the base billing unit dollar times 12 months for a projected annual revenue estimate.

Projected Annual Revenue for Selected Monthly Rates

Customer Class	ERU Count	$2/mo/ERU	$3/mo/ERU	$4/mo/ERU	$5/mo/ERU
Residential Customer Count	5,185	$124,440	$186,660	$248,880	$311,100
Non-residential ERU Count	9,464	$227,131	$340,696	$454,262	$567,827
CSX	920	$22,084	$33,126	$44,168	$55,210
Total Billable Unit Count w/ CSX	15,569	$373,655	$560,483	$747,310	$934,138

Customer Class	ERU Count	$6/mo/ERU	$7/mo/ERU	$8/mo/ERU	$9/mo/ERU
Residential Customer Count	5,185	$373,320	$435,540	$497,760	$559,980
Non-residential ERU Count w/o CSX	9,464	$681,393	$794,958	$908,524	$1,022,089
CSX	920	$66,253	$77,295	$88,337	$99,379
Total Billable Unit Count	15,569	$1,120,965	$1,307,793	$1,494,621	$1,681,448

The projected $850,000 budget requires Avon to charge between $4.00 and $5.00 per month per ERU. Actual revenues depend on collections and disbursements. Some variations from these projections are to be expected.

Alternative Rate Considerations

The large discrepancy in the number of residential to non-residential customers makes it appropriate to consider different rates for residential and non-residential customers. It is justified because the large number of residential customers requires additional administrative and maintenance services per billing unit. Further, most non-residential customers maintain the private stormwater infrastructure on their property; the local government— in this case, the Town of Avon, maintains the infrastructure in subdivisions where the residential customers reside.

The CSX rail yard presents a unique circumstance for the Town and has been isolated to consider a separate rail yard rate. The projections attempted to show alternatives to achieve the desired $850,000 budget.

Projected Annual Revenues Using Alternative Rates

Projected Annual Revenue from Selected Base Rates - Various Residential v Non-residential Rates - All Parcels

Customer Class	ERU Count	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split
Residential Customer Count	5,185	$5.00	$311,100	38%	$5.00	$311,100	36%	$6.00	$373,320	43%	$7.00	$435,540	50%
Non-residential ERU Count	10,384	$4.00	$498,430	62%	$4.50	$560,734	64%	$4.00	$498,430	57%	$3.50	$436,127	50%
Total Billable Unit Count	15,569		$809,530	100%		$871,834	100%		$871,750	100%		$871,667	100%

Projected Annual Revenue from Selected Base Rates - Various Residential v Non-residential Rates - All Parcels w/ Railyard Rate

Customer Class	ERU Count	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split	ERU Rate ($/mo)	Annual Revenue	Split
Residential Customer Count	5,185	$5.00	$311,100	40%	$5.00	$311,100	39%	$6.00	$373,320	44%	$6.00	$373,320	43%
Non-residential ERU Count	9,464	$4.00	$454,262	58%	$4.00	$454,262	57%	$4.00	$454,262	53%	$4.00	$454,262	53%
CSX	920	$2.00	$22,084	3%	$3.00	$33,126	4%	$2.00	$22,084	3%	$3.00	$33,126	4%
Total Billable Unit Count	15,569		$787,446	100%		$798,488	100%		$849,666	100%		$860,708	100%

Equivalent Tax Rate Comparison

The Department of Stormwater Management statute permits assessment of a special benefits tax on property within the district. For comparison, the study considered the equivalent tax rate for several selected budgets. The net assessed value was taken from the Town of Avon Sustainability Analysis performed by Financial Solutions in 2015. The following table compares the budget from user fees to a comparable tax rate necessary to raise similar revenue.

The Residential Annual ERU Payment Compared to Tax Rates table shows that the Town would need to assess a tax rate between $0.08 to $0.09 per $100 assessed value to generate the targeted $850,000 budget. The equivalent revenue generating ERU would be between $4.28 and $4.82. Only taxable parcels would pay a tax rate. Actual revenues depend on collections and disbursements. Some variations from these projections are to be expected.

Under a tax rate, residential customers would pay from $84 to $285 per year, based on home value. Under the proposed ERU rate, residential customers would pay from $51 to $58 per year.

Residential Annual ERU Payment Compared to Tax Rates

Annual Budget ERU Rate Compared to Tax Rate - All Taxable Parcels				
Monthly ERU Rate = Budget / (Total ERU / 12)				
Annual Budget	$700,000	$800,000	$900,000	$1,000,000
Total Billable Unit Count	15,569	15,569	15,569	15,569
Required Monthly Rate / ERU	$3.75	$4.28	$4.82	$5.35
Annual Payment for Each ERU	$44.96	$51.38	$57.81	$64.23
Tax Rate = Budget / (Assessed Value/$100)				
Annual Budget	$700,000	$800,000	$900,000	$1,000,000
Total Net Assessed Value in Town [1]	$948,895,808	$948,895,808	$948,895,808	$948,895,808
Tax Rate ($ / $100 AV)	$0.07	$0.08	$0.09	$0.11
Annual Assessment for $100,000 house	$74	$84	$95	$105
Annual Assessment for $150,000 house	$111	$126	$142	$158
Annual Assessment for $200,000 house	$148	$169	$190	$211
Annual Assessment for $250,000 house	$184	$211	$237	$263
Annual Assessment for $300,000 house	$221	$253	$285	$316
[1] Avon Sustainability Study 2015				

Chapter 6

CHAPTER 6 JUSTIFICATION TO ESTABLISH THE DEPARTMENT

Introduction and Summary of Findings

Several drivers prompt cities, towns and counties in Indiana to start up stormwater utilities. The study documents factors for Avon to consider prior to establishing a revenue funded Department of Stormwater Management.

The principal justifications for establishing a dedicated fund Department of Stormwater Management in Avon include:

1. Capital and maintenance activities for stormwater are currently funded from the general fund or food and beverage on an as-requested basis with no long-term asset management mechanism in place.
2. Indiana General Assembly legislation capped property taxes based on the land use and assessed value.
3. Indiana General Assembly legislation encourages local governments to pursue alternative revenue sources.
4. Avon could reduce homeowner costs for stormwater services as Hendricks County Drainage Board currently assesses 4,978 parcels in the Town a regulated drain maintenance fee, typically $100 per year.
5. Transfer of regulated drains to the Town and elimination of regulated drain maintenance fees from the county simplifies and improves stormwater operations for the citizens of the town.
6. Creates a stronger position for grant applications by providing local match funds for stormwater projects.
7. Fund Federal Clean Water Act regulations for Municipal Separate Storm Sewer Systems (MS4).

Residential rates of $4 to $7 per month for Avon are appropriate relative to other Indiana communities. Brownsburg, Danville and Plainfield all have existing stormwater utilities with rates ranging from $4 to $7 per month per ERU.

The study compared Avon to other Hendricks County towns for taxes and growth. The facts support the Town's financial position for pursuing dedicated stormwater funding. The analysis considered similar Hendricks County towns for impact of tax caps and tax levy per person.

Relative to similar Hendricks County towns, Avon has:

- The highest population growth rate;
- Experienced the greatest impact from tax levy circuit breakers;
- The lowest tax levy per person.

Justification for Establishing a Department of Stormwater Management

The principal justifications for establishing a dedicated fund Department of Stormwater Management in Avon include:

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Population Growth

The area population has grown significantly from the 2000 census to the 2014 estimate. The growing population puts demands on local government units. Population estimates for 2014 vary by source. Population projections references are cited where used in this report and may vary due to date of population estimate.

Area Population Trends

Location	2000	2010	2000 - 2010 Change	2010 – 2014 Change Number	2010 – 2014 Change %
Town of Avon	6,248	12,446	99%	2,306	16.90%
Washington Township	26,319	44,764	70%	3,678	8.20%
Hendricks County	104,093	145,448	40%	10,207	7.00%

[1] http://www.stats.indiana.edu/population/PopTotals/historic_counts_twps.asp
[2] http://www.stats.indiana.edu/population/sub_cnty_estimates/2014/e2014_townships.asp
[3] http://www.stats.indiana.edu/population/PopTotals/historic_counts_cities.asp
[4] http://www.stats.indiana.edu/population/sub_cnty_estimates/2014/e2014_places.asp

Summary of Stormwater Utilities in Indiana

The study surveyed other communities in Indiana to provide background information.

Tabulation of Stormwater Utilities in Indiana

Location	Authority	Year Established	2010 Census Population	Rate Basis	ERU (sq ft)	Base Rate $/ERU		Base Rate Period	Rate Updated
Anderson			56,129	-	2,500	$3.50	$3.50	monthly	2011
Bargersville			4,013	ERU	4,110	$6.96	$8.36	monthly	2011
Bloomington	36-9-23	1998	80,405	ERU	2,000	$2.70	$2.35	monthly	2012
Brownsburg	36-9-23	2006	21,285	ERU	2,900	$5.00		monthly	2008
Carmel Res & Non-Res			79,191	ERU	4,150	$5.10	$4.95	monthly	2016
Carmel Unimproved				ERU	0.33*(ERU)	$1.69		monthly	2013
Chandler			2,887	ERU	3,500	-	$4.00	monthly	2009
Clarksville			21,757	ERU	2,527	$6.00	$2.95	monthly	201x
Connersville				ERU	2,662	$5.15	$5.15	monthly	2002
Cumberland			5,169	ERU	-	$7.50	$5.20	monthly	2014
Danville			9,001	ERU	3,700	$7.00		monthly	
Dyer	8-1.5-5	2002	16,390	ERU	4,343	-	$6.00	monthly	2002
Fishers			76,794	ERU	3,318	$4.95			2007
Fort Wayne	8-1.5-5 & 36-9-23	2007	253,691	ERU	2,500	$3.65	$3.65	monthly	2015
Franklin		early 1990s	23,712	Flat	Single Family	$5.00	-	monthly	2004
Franklin				Flat	Apt & Mobile	$2.50		monthly	2004
Franklin				Flat	Non-R < 40 ksf	$5.00		monthly	2004
Franklin				Flat	Non-R > 40 ksf	$15.00		monthly	2004
Goshen	36-9-23	2004	31,719	ERU	3,600	$15.00	$15.00	annually	2007
Greenfield	8-1.5-5	2005	20,602	ERU		-	-		
Greenwood			49,791	ERU	2,800	$5.00	-	monthly	2012
Indianapolis			820,445	ERU	2,800	$2.25	$1.25	monthly	2015
Jasper			15,038	-	5,000	$3.96	$2.00	monthly	2003
Jeffersonville			44,953	ERU	2,500	-	$3.50	monthly	2009
Kokomo	36-9-12	2005	45,468	Water meter		-	$2.38	monthly	2005
Logansport			18,396	-		-	$2.95	monthly	1995
Marion			29,948	ERU	2,462	-	$5.00	monthly	1995
Middletown			2,322	ERU		$6.00	$6.00	monthly	2004
Muncie	36-9-25		70,192	ERU	2,500	$6.00	$1.00	2x annual	2014
New Albany			36,372	ERU	2,500	-	$3.17	monthly	2009
North Manchester			6,112	ERU	2,650	-	$4.50	monthly	
Peru			11,417	ERU	3,497	$4.00	$4.00	monthly	2004
Plainfield	36-9-23	2006	27,631	ERU	3,000	$4.00		monthly	
Shelbyville			19,191	ERU		$6.00	$6.00	monthly	2009
Valparaiso	8-1.5-5	1998	31,730	Water meter		$11.00	$3.00	monthly	2009
Warrick County	8-1.5-6	2006		ERU	3,100	$5.00	$5.00	monthly	2007
Westfield	36-9-23	2007	30,068	Water meter		$2.75-$5.00	$2.75-$5.00	monthly	2007
Yorktown	36-9-23			ERU	2,550		$2.00	monthly	2012

The table shows that the establishment of dedicated funds for stormwater services is an accepted practice throughout the state for small and large communities. The ERU method is the most common technique used for assessing stormwater service charges.

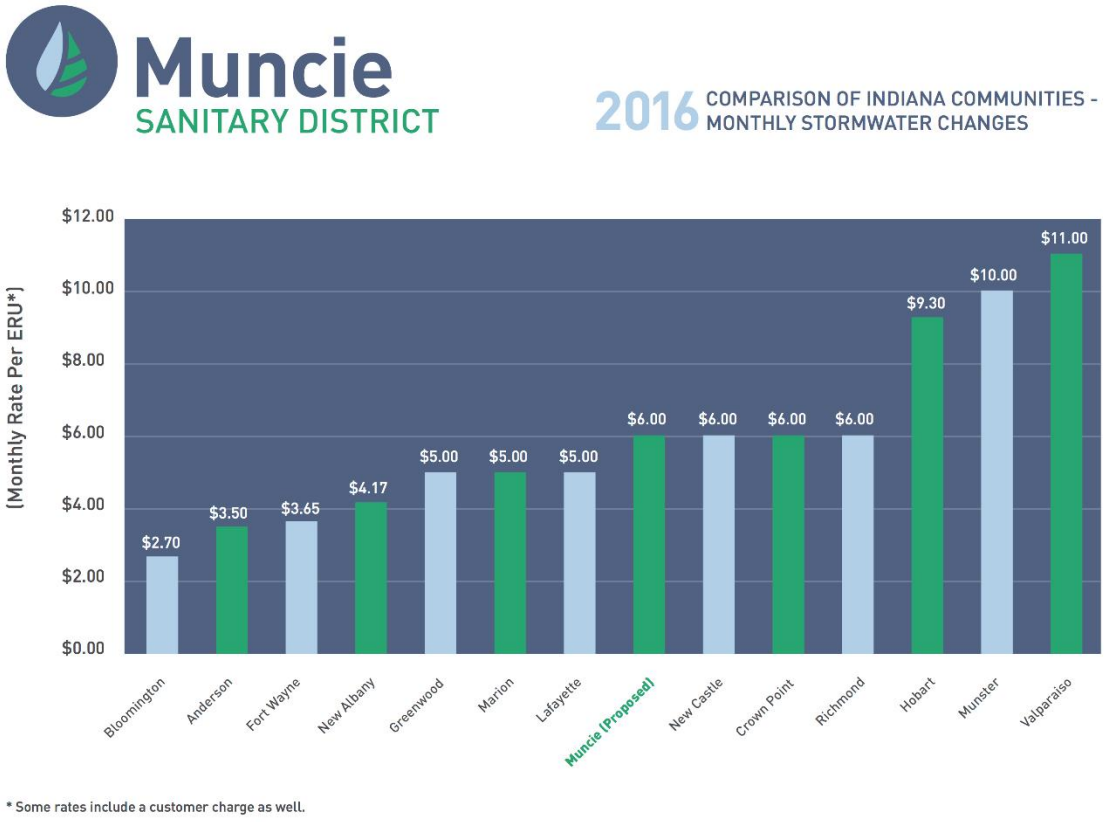
Residential rates of $4 to $7 per month for Avon are appropriate relative to other Indiana communities. Brownsburg, Danville and Plainfield all have existing stormwater utilities with rates ranging from $4 to $7 per month per ERU.

Appendix N contains information for selected Indiana communities obtained from a web search. The documents in Appendix N reveal how other communities dealt with appeals, credits, public notification, and other issues.

[Appendix N Stormwater Enabling Ordinances from other Cities and Towns in Indiana.]

The Muncie Sanitary District compiled the following chart for its recent rate case.

Muncie Sanitary District 2016 Comparison of Indiana Community Monthly Stormwater Charges



http://www.munciesanitary.org/department-pages/stormwater/news-and-updates/?back=Department_Pages

Avon Compared to Similar Hendricks County Towns

The study compared Avon to other Hendricks County towns for taxes and growth. The facts support the Town's financial position for pursuing dedicated stormwater funding. The analysis considered similar Hendricks County towns for impact of tax caps and tax levy per person.

The table below compares the Town of Avon to adjacent Hendricks County towns. Avon had the lowest tax levy per person for 2010 and 2015 tax years and the highest negative impact from circuit breaker tax caps for 2015.

Levy and Circuit Breaker Comparison by Civil Tax Unit

Town	2010 Population [1]	2010 Levy [2]	Circuit Breaker as % of Levy [2]	2010 $ Levy / 2010 Population	2014 Population [3]	2015 Levy [4]	Circuit Breaker as % of Levy [4]	2015 $ Levy / 2014 Population
Brownsburg Civil Town	21,285	$10,731,533	9.2%	$504	23,322	$13,543,429	13.0%	$581
Plainfield Civil Town	27,631	$13,458,210	3.6%	$487	30,409	$14,812,220	3.8%	$487
Danville Civil Town	9,001	$2,254,537	8.4%	$250	9,593	$2,800,207	14.2%	$292
Avon Civil Town	12,446	$2,908,813	8.3%	$234	15,971	$3,582,081	17.5%	$224

[1] http://www.stats.indiana.edu/population/PopTotals/historic_counts_cities.asp
[2] 2010 Prpoerty Tax Report Hendricks County by Legislative Services Agency
[3] http://www.stats.indiana.edu/population/sub_cnty_estimates/2014/e2014_places.asp
[4] 2015 Property Tax Report Hendricks County by Legislative Services Agency

Avon has the highest population growth rate relative to other towns in Hendricks County.

Hendricks County Towns - Population Growth 2010 - 2014

Geographic Area	Population Estimates (July 1 of Each Year)					1-Apr-10		Change		Rank: Pop Change	
								July 1, 2010 to July 1, 2014		July 1, 2010 to July 1, 2014	
	2014	2013	2012	2011	2010	Estimates Base	Census	Number	Percent	Number	Percent
Avon town	15,971	14,809	14,432	14,076	13,665	13,566	12,446	2,306	16.90%	11	4
Brownsburg town	23,322	23,025	22,545	22,045	21,613	21,542	21,285	1,709	7.90%	16	24
Danville town	9,593	9,415	9,153	9,139	9,061	9,006	9,001	532	5.90%	32	31
Plainfield town	30,409	30,069	29,204	28,407	27,717	27,634	27,631	2,692	9.70%	9	11

http://www.stats.indiana.edu/population/sub_cnty_estimates/2014/e2014_places.asp

Relative to similar Hendricks County towns, Avon has:

- The highest population growth rate;
- Experienced the greatest impact from tax levy circuit breakers;
- The lowest levy per person.

Umbaugh Report on Indiana Stormwater Utilities in 2012

Utility rate and municipal finance consultants, Umbaugh, worked in cooperation with the Indiana Association of Cities and Towns (IACT) in 2012 to prepare a report titled *Establishing Stormwater Rates*. The report is included as Appendix O. The report advocates for stormwater user fee utilities to alleviate pressure on general fund expenses due to tax caps and other stressors. Further, it makes

the case for stormwater rates and charges to establish dedicated funds for stormwater infrastructure management in response to regulatory mandates.

> [Appendix O Establishing Stormwater Rates, January 2012, Prepared by Umbaugh in cooperation with Indiana Association of Cities and Towns.]

For 63 Umbaugh clients in Indiana that have enacted stormwater rates over the 10 years prior to the study, the average residential rate was $5 per month. For the 14 clients with populations under 5,000, the average residential monthly rate was $6.91.

Other Reasons to Consider a Department of Stormwater Management User Fee

Dave Frederick, retired from Umbaugh, a utility rate consultant firm in Indiana, prepared a list of reasons to consider forming a Department of Stormwater Management.

Top Ten Reasons to Form a Department of Stormwater Management with a User Fee System

1. Limited resources (property taxes and income taxes) available to cities, towns and counties to meet general governmental needs.

2. With increasing environmental needs, it may not be practical to use and expand sanitary sewer systems to meet stormwater needs.

3. A separate Department of Stormwater Management provides the best method of matching costs and benefits.

4. User fees in proportion to impervious surface area are a natural extension of charging those who use the service.

5. A self-sustained Department of Stormwater Management can take some of the stormwater expense burden off other departments, i.e., street department, sanitary sewage.

6. A dedicated stream of user fee revenue makes it possible to plan and budget for needed programs and capital improvements.

7. A Department of Stormwater Management with user fees allows you to bill tax-exempt properties that contribute to stormwater problems.

8. Established practice and customer acceptance of user fees for other utility-type services.

9. The competition from many other governmental services for the few available "ad valorem" taxes.

10. Federal and State funds for local communities have been greatly reduced or eliminated.

Chapter 7

CHAPTER 7 CAPITAL PROJECT SUMMARY

Introduction, Summary of Findings and Recommendations

Stormwater project funding is a primary driver motivating local governments to startup dedicated fund stormwater utilities. Avon has wrestled with stormwater project development for years. Funding has always been the biggest influence in getting projects constructed to address known problems. The study evaluated a series of projects to determine appropriate maintenance capital project budgets.

Project costs have escalated for the jobs over time. Dedicated funds provide the opportunity to pursue projects on a regular basis. Implementation of the Department of Stormwater Management will resolve stormwater program management for the Town.

The study developed a list of projects from staff input. Proposed solutions and cost estimates came from field investigations, preliminary evaluation or previous studies.

History of Stormwater Project Development in Avon

Avon has wrestled with stormwater project development for years. Funding has always been the biggest influence in getting projects constructed for known problems. Numerous projects have been identified, evaluated and considered. The staff has worked with citizens, developers, engineers, the county and INDOT to address issues. Dependable capital funding has never been available to fund large projects.

Some of the projects that languished in various states of development prior to funding include Avon Heights, Beechwood Center, Dan Jones and Cobblestone. Public Works has typically done a project of $150,000 to $250,000 every three or four years using Food and Beverage funding. The table below summarizes the number of years the Avon staff have known about the selected stormwater problem areas.

Years Problem Known for Stormwater Project Areas

Project Area	Years Since Problem Identified
Avon Heights	15
Cobblestone	10 – 15
Dan Jones Road	10
Avon Woods	8
Pines of Avon and CR 100 S	10
Timber Bend	3 – 5
Oak Bend	5 – 10
Stratford of Avon	10 – 15
Austin Lakes	10
Raceway Road CSX Underpass	5
CR 625 Culvert South of CR 91 N	10 - 15

Project costs have escalated for the jobs over time. Dedicated funds provide the opportunity to pursue projects on a regular basis. Implementation of the Department of Stormwater Management will resolve stormwater program management for the Town.

Identification of Maintenance and Capital Projects

The study developed a list of projects from staff input. Proposed solutions and cost estimates came from field investigations, preliminary evaluation or previous studies. Full project reports are included in a separate document.

The budget annually allocates approximately $100,000 for maintenance projects and $300,000 to $400,000 for capital projects. Maintenance projects include smaller infrastructure repairs requiring minimal planning, engineering and design. Capital projects include larger jobs requiring outside consultants to prepare plans. Identified projects in the following list may be funded by either budget source.

Proposed Stormwater Projects

TOWN OF AVON **Engineer's Opinion of Probable Cost** **Overall Project Costs**		engineering | architecture | geospatial
Item	**Description**	**Estimated Cost**
1.1	Table SW #1.1 - Avon Heights Middle	$465,000
1.2	Table SW #1.2 - Avon Heights South	$450,000
2	Table SW #2 - Cobblestone	$485,000
3	Table SW #3 - Dan Jones	$185,000
4	Table SW #4 - Avon Woods	$8,000
5	Table SW #5 - Pines of Avon and CR 100 South	$350,000
6	Table SW #6 - Timber Bend	$78,000
7	Table SW #7 - Oak Bend	$87,000
8	Table SW #8 - Stratford of Avon	$100,000
9	Table SW #9 - Austin Lakes	$162,000
10	Austin Lakes Capital	$750,000
11	Raceway Rd. CSX Underpass	$60,000
12	CR 625 Culvert South of CR91N	$125,000
	Estimate of Capital Needs	**$3,305,000**