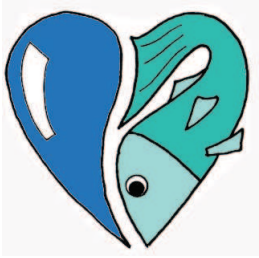
CITY OF LAFAYETTE

WET WEATHER PROGRAM

City Of Lafayette Stormwater Program Study

A Supplemental Engineering Summary For The Determination Of The Stormwater Service Charge

Prepared for the Lafayette Common Council
September 2009



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1.0 EXECUTIVE SUMMARY

The City of Lafayette is a federal and state regulated stormwater community. The city carries out required annual stormwater program activities per its approved National Pollution Discharge Elimination System (NPDES) permit (INR040129). The city also carries out annual operation and maintenance activities for more than 200 miles of storm sewer system and associated assets which are funded by non-dedicated sources. The city proposes to establish stormwater service charge to provide a dedicated funding source for annual regulatory, operations and maintenance costs and provide revenue for proposed stormwater capital projects, which address current and ongoing stormwater issues within the Lafayette community. The city share of joint permit services is approximately $45,195. The city proposes to expend approximately $686,425 annually for system operations and maintenance. The city's nine proposed stormwater improvement capital projects, which are proposed to be completed during a multi-year program, are estimated to cost approximately $14,967,907 million over the determined funding period.

A proposed monthly service charge will be assessed to land owners within the corporate limits and is based on the amount of impervious surface area, which subsequently generates stormwater runoff from the property. To determine a fair and equitable monthly charge, the city determined an Equivalent Residential Unit (ERU), which defines the average amount of impervious surface on an average residential parcel as 3,200 square feet (sq.ft.) The city utilized the Tippecanoe County Unified Zoning Ordinance, the county's existing parcel zoning overlay and aerial photography to identify approximately 66,000 chargeable ERUs within the corporate stormwater collection system.

2.0 PURPOSE

The purpose of this study is to illustrate costs associated with the City of Lafayette Stormwater Program including regulatory costs, proposed capital project costs and costs associated with ongoing system operations and maintenance.

The study also describes the determination of the Equivalent Residential Unit (ERU) and an estimate of the numbers of ERUs systemwide. The ERUs estimate combined with the program cost information was utilized to assist in the city's financial analysis/rate study for service charge determination.

3.0 BACKGROUND

The City of Lafayette is a State of Indiana designated owner and operator of a Municipal Separate Storm Sewer System (MS4). The city is required to implement and maintain the NPDES stormwater permit per 327 IAC 15-13 (Rule 13). The city operates approximately 223 miles of MS4 on an annual basis. The city also is responsible for maintaining stormwater discharges into the combined sewer system, which operates approximately 66 miles of infrastructure within the historic core of the city.

In 2008, the city's Engineering Department and the Water Pollution Control Department began to study specific stormwater program regulatory, operations and maintenance, and system rehabilitation and expansion costs throughout the stormwater collection system. The city has historically supported stormwater program costs through non-dedicated general funding sources or sanitary sewer revenues.

Because of declining general funding revenue and ongoing, growing obligations of the sanitary sewer fund the city determined it was necessary to explore the implementation of a dedicated stormwater funding mechanism such as the stormwater service charge in order to meet the continued and growing revenue needs of the stormwater program.

The city proposes to create a stormwater program fund supported by a service charge within the corporate limits of the City of Lafayette. The Water Pollution Control Department will oversee the Stormwater Division, associated personnel and stormwater program activities.

4.0 REGULATORY REQUIREMENTS

In 2005, the City of Lafayette entered into its first NPDES Stormwater Permit. The permit, obtained jointly among and for the MS4 communities of Lafayette, West Lafayette, Tippecanoe County, Purdue University, Dayton, Battle Ground and Ivy Tech Community College, establishes requirements for formulating and implementation of the Stormwater Quality Management Program. While the permit is a joint permit administered by the Tippecanoe County Surveyor's Office, each individual MS4 community participant is responsible for meeting specific permit requirements individually.

A number of permit requirements are shared by the joint permit committee. Specific task development and associated costs for these shared permit-required services are determined by the articles of an interlocal agreement among the MS4 communities. The interlocal agreement, included in Appendix A, was updated in 2008 and states in Exhibit D the specific share of costs for activities for each MS4 community. The share of cost for each MS4 community is based on a base fee plus an amount determined by calculation using the respective MS4 area and population.

As shown in Exhibit D of Appendix A, the City of Lafayette is responsible for a base fee of $5,000 plus 38.1593% of the remaining costs of the shared permit required activities per year. For purposes of this study, the estimated 2009 services cost is considered to be an ongoing annual cost since similar services will continue annually through the five-year permit term. A summary of joint services and estimated annual costs for the City of Lafayette are illustrated in Table 4.1 below.

TABLE 4.1 – CITY'S SHARE OF JOINT ANNUAL MS4 ACTIVITY COSTS

Tasks	Cost (estimated)
Public Outreach and Education	$23,497
Public Participation and Involvement	$2,377
Illicit Discharge Detection and Elimination	$1,719
Construction Site Stormwater Runoff Control	$3,151
Post Construction Stormwater Runoff Control	$1,432
Municipal Operations Pollution Prevention and Good Housekeeping	$3,436
Other	$4,583
Base Fee	$5,000
Total	**$45,195**

Other individual required permit costs for services such as construction site inspections, post construction stormwater quality controls for capital projects and retrofitting the same to existing stormwater management facilities, illicit discharge outfall inspections, street sweeping and others are included in the estimated proposed capital project and operations and maintenance program costs sections of this report or the accompanying financial analysis/rate study.

5.0 PROPOSED PROJECTS

An important element of an ongoing stormwater program is the development of a system rehabilitation and expansion program. Based on area-wide concerns for stormwater improvements, the city has identified a list of proposed capital projects to address ongoing system needs. Generally, capital project cost estimates should include planning, design and construction administration and inspection (otherwise known as project "soft costs") when determining revenue needs. Land acquisition costs can be considered if the municipality commonly acquires easements or extends right-of-way to complete projects. Estimates for land acquisition services and land purchase were included in project costs if acquisition was considered necessary for project completion.

Program term and project schedule will impact project costs due to inflation of energy, materials and labor costs during the program term. Typically, such indexing of costs can be estimated to be 2%-4% per year. Accelerated inflation of energy and raw material costs could cause indexing consistently at the higher end of the price range. These considerations are more importantly related to larger scale projects containing greater capital outputs including materials impacted by petroleum and steel-based products.

Table 5.1 on the following page contains preliminary cost estimates based on the DLZ review of the projects proposed by city staff. The table illustrates preliminary estimates for Construction, Planning, Design, Construction Administration and Inspection costs. The estimated construction cost includes a 20% contingency while soft costs are estimated at 25% of the estimated construction cost, which is considered typical for this level of planning. The total project cost includes land acquisition services and land costs if discussed during preliminary project discussions.

Project priority was determined using a template Initial Priority Rating (IPR) form that was furnished by DLZ for the use by city staff. This document uses a series of criteria, such as frequency of flooding, property classification, apparent erosion, and public/private benefit. The completed IPR forms for the proposed Capital Improvement Program projects have been provided as an attachment.

The completed IPR forms for the proposed Capital Improvement Program projects have been provided in Appendix B.

TABLE 5.1 - ESTIMATED MULTI-YEAR STORM WATER CAPITAL PROGRAM PROJECT COSTS[1]

Project Number	Proposed Project	Proposed Construction Cost[2]	Planning, Design Construction Management and Inspection Costs[3]	Land Acquisition Cost[4]	Total Estimated Cost
1	Valley Street Drainage Improvements	$3,335,888	$750,575	$162,350	$4,248,813
2	Elliot Ditch Stream Bank Restoration Project	$540,635	$121,643	n/a	$662,278
3	Southside Drainage – 30th Street Project	$3,420,393	$769,588	$181,150	$4,371,131
4	Rain Gardens and Rain Barrels	$199,780	$120,220	n/a	$320,000
5	Armstrong Park Regional Detention Basin BMP Retrofit	$570,600	$240,600	n/a	$694,000
6	Durkees Run East Improvements Project	$2,198,100	$555,563	$250,000	$3,003,663
7	Vinton Woods Detention Pond Rehabilitation Project	$956,500	$229,995	n/a	$1,186,495
8	Orchard Heights Sanitary Stormwater Improvements Project	$310,184	$71,342	n/a	$381,527
9	Storm Sewer Outfall Repairs	$100,000	n/a	n/a	$100,000
Total Estimated Capital Program Costs (Multi-year program)[1]					**$14,967,907**

Notes:
[1]All costs are preliminary estimates in 2008 dollars
[2]Includes mobilization and demobilization costs and a 20% contingency
[3]Estimated at 25% of the construction cost
[4]Includes land acquisition services and actual land costs

PROJECT SUMMARIES

Project #1 – Valley Street Drainage Improvements Project – Valley Street is located in a natural depression near the center of the City of Lafayette, Indiana. When heavy storms occur, runoff floods the road, preventing vehicular access, along with stormwater flows entering the combined sewer system within this neighborhood area.

Proposed improvements within this project area include the construction of a new storm sewer along the length of Valley Street including several stormwater detention ponds and rain gardens to facilitate water quality improvements. These best management practices (BMPs) will be situated near the northern end of Valley Street in the vicinity of intersection of South Street and Ninth Street. Additional ponds are proposed for the areas north and south of Mary Hill Road.

Project #2 – Elliot Ditch Stream Bank Restoration Project – Elliot Ditch is major drainageway for the City of Lafayette, providing stormwater conveyance for a majority of residential neighborhoods on the southern end of the city. Stream bank erosion has occurred in the vicinity of the Poland Hill Road bridge (Bridge #49) , which crosses Elliot Ditch between East 300 South and East 350 South Roads.

Proposed improvements to Elliot Ditch include erosion control consisting of stream bank armoring, stream realignment, and a high-flow bypass channel designed to prevent future scour due to high flow velocity near the bend in the river. The proposed solutions will work in unison to provide protection to the bridge and channel.

Project #3 – Southside Drainage – 30th Street Drainage Project – The industrial park located south of Teal Road between Apache Road and Concord Road consistently floods during storm events due to its location within a natural depression and a general lack of stormwater drainage infrastructure. Existing impervious area coupled with the land use has the potential for significant pollutant loadings without any forms of water quality infrastructure present to reduce pollutant loadings.

In order to reduce flooding and improve stormwater runoff from the project area, the city proposes to construct a storm sewer along South 30th Street from Teal Road to the southern end of the industrial park near Beck Lane. A proposed stormwater management facility would be constructed in the open area to the west of the existing Rea Wire Magnet Company, which will allow for proper stormwater treatment and provide for improved stormwater quality before entering the Wabash River.

Project #4 – Citywide Rain Gardens and Rain Barrels Project – In order to improve the quality of stormwater runoff entering the Wabash River, the city has committed funding to develop several rain garden projects within the combined sewer areas of the city. Rain gardens are BMPs designed to retain stormwater runoff, facilitate the removal of pollutants, and aid in the infiltration of stormwater into the soil. Not only do these gardens provide an environmental benefit of slowing runoff into the Wabash, but they also provide water quality enhancements and educational opportunities for nearby neighborhoods. Typically, rain gardens are installed in areas served by a combined sewer, in order to slow and prevent runoff from entering the system.

Project #5 – Armstrong Park Stormwater Regional Detention Basin Water Quality Retrofits – Armstrong Park is a city park located near the vicinity of Beck Lane and South 9th Street. This facility

provides a public recreational area which includes tennis courts, baseball fields, and a walking path around the periphery. The pond located on the property is not only a water feature, but acts as a regional stormwater detention basin. The pond accepts stormwater from a large portion of the south side of the city situated between Teal Road on the north, Brady Lane on the south, and Concord Road to the east.

The proposed project includes the use of an existing city-owned parcel near Beck Lane and South 18th Street to provide stormwater quality treatment before runoff flows to the Armstrong Park regional pond. This pond upstream of Armstrong Park would be retrofitted with wetland plantings, and re-graded to allow for water enhanced detention resulting in enhanced pollutant removal. This project also complies with the City NPDES permit requirement to retrofit existing facilities for water quality treatment.

Project #6 – Durkees Run East Improvements Project – Combined sewer overflows (CSOs) occur whenever large amounts of stormwater inundate the existing storm/sanitary sewer system within the City. In order to reduce the amount of stormwater entering the combined sewer system, the city has decided to separate a portion of the combined sewer along Durkees Run near Jefferson High School. This project will focus on the conveyance of stormwater flow to detention ponds planned for the vacant land along 18th Street across from Jefferson High School. The runoff held in the proposed ponds will eventually discharge to the Durkees Run ditch which originates in this area. Approximately 1,200 feet of new storm sewer is proposed as part of this project, along with ordinance-required water quality retention ponds.

Project #7 – Vinton Woods Detention Pond Rehabilitation Project – Vinton Woods is a residential neighborhood located near US-52 and Greenbush Street, which contains a series of three stormwater detention ponds that provide storage and conveyance of stormwater runoff. The stormwater ponds provide water quality retention; however, during heavy rains, they flood due to stormwater from upstream land development that occurred after these ponds were constructed. Currently, these ponds have become clogged with silt and are in need of rehabilitation in order to restore these facilities and provide the necessary water quality treatment before discharge to the Wabash River.

Proposed improvements to the Vinton Woods detention ponds include the dredging of silt from the basins, improving the pipes connecting the stormwater ponds, and improving the outlet structure near the existing embankment present along the northern edge of the northernmost detention pond.

Project #8 – Orchard Heights Stormwater/Sanitary Improvements Project – The Orchard Heights neighborhood is located near Interstate-65 in the vicinity of Union Street and Courtland Avenue. The neighborhood experiences sanitary sewer backups due to excessive stormwater entering the sanitary sewer during heavy rainstorms. Also, the existing stormwater infrastructure within this neighborhood is undersized and doesn't allow for proper stormwater conveyance.

In order to correct existing stormwater inflow and infiltration into the existing sanitary sewer and to prevent future backups, the city proposes constructing a new storm sewer along Orchard Drive in order to drain stormwater more quickly from the neighborhood. Also, as part of the sanitary sewer program, the city intends to rehabilitate several hundred feet of sanitary sewer with cured-in-place pipe liner.

Project #9 – Storm Sewer Outfall Repairs – Storm sewer outfalls are locations along the Wabash River and the various open drainageways within the city where stormwater from Municipal Separate Storm

Sewer System (MS4) is discharged. Various outfalls along the drainageways have deteriorated due to lack of maintenance, stream bank erosion, and age. The proposed project would provide funding for the repair work needed to rehabilitate the storm sewer outfalls and protect the facilities from future erosion and further deterioration.

Capital improvement project fact sheets, IPR rating forms and a capital improvement projects overall location map are provided in Appendix B.

6.0 System Operations and Maintenance Costs

The Operations & Maintenance (O&M) Program is a separate division within the overall City of Lafayette Stormwater Capital Improvement Program. The intent of the O&M Program is to provide funding for the various city-owned MS4 facilities that are in constant need of attention for cleaning, repair, and replacement throughout the stormwater drainage system. The city's MS4 system consists not only of pipe, but includes manholes, catch basins, inlets, regulators, detention ponds, and open channels that provide conveyance of stormwater from the point of collection to the Wabash River. In order to provide a summary of the assets under the city's jurisdiction and planned expenditures, Table 6.1 is provided below:

Table 6.1 - City of Lafayette MS4 System Assets

Asset Type	Quantity	Unit	Current Annual Attainment[1]	Planned Expenditure	Proposed Annual Attainment[3]
Storm Sewer	223.5	MILES	5%	$394,650	20%
Catch Basins & Street Inlets	10,499	EACH	4%	$98,000	6%
Storm Manholes	3,398	EACH	11%	$106,625	25%
Open Channels	75,000	LINEAR FEET	3.5%	$75,000	6%
Street Sweeping	25,000	CURB-MILES	5%	$11,250	10%
Rain Garden Maintenance	n/a	EACH	n/a	$900	100%[2]
			Total O&M Costs Annually	**$686,425**	

[1] Current Annual Attainment based on 2007 City of Lafayette Pollution Control Department Annual Report.
[2] Rain Garden maintenance will be required yearly after BMP has been developed.
[3] Proposed Annual Attainment figures will be adjusted based on actual need and amount of work completed as part of first year of work.

After reviewing the Water Pollution Control Department's 2007 Annual Report, DLZ has determined that annually the city maintains approximately 2%-5% of the existing assets within the city's MS4, with the exception of manhole structures that have been cleaned each year. This item has an attainment rate of approximately 11%. Overall, the operation and maintenance program activities are proposed to increase to attain an asset capture rate of 10-15% or more of all structures and piping annually.

Disparity in proposed annual attainment numbers arise from the need to complete a once-through full televising of the entire MS4 in order to determine the condition of all pipes within the storm sewer system. Once specific problem areas within the system have been identified, proper pipe rehabilitation projects can be planned. Catch basins and inlets are typically surveyed visually from street-level, making it easier to determine the condition of surface drainage assets.

7.0 DETERMINATION OF THE EQUIVALENT RESIDENTIAL UNIT (ERU)

For purposes of the analysis and determination of the stormwater service charge it was necessary to calculate the Equivalent Residential Unit (ERU). To city's proposed stormwater service charge will be billed to property or parcels within the municipal boundaries of the City of Lafayette that contribute to stormwater runoff or discharge. Impervious surface area such as rooftops, parking lots and other hard surfaces cause stormwater to runoff and become concentrated flow from the property. The ERU is defined as an average of impervious surface area on an average residential property or parcel.

The calculation of the Equivalent Residential Unit (ERU) value was accomplished using data provided by the city and surrounding communities, and using industry standard analysis methods. Geographic data of the impervious areas for several hundred parcels was provided to DLZ. This was used as a sample set for estimation purposes. There are multiple files that represent different impervious area types – i.e. rooftops, driveways, etc. The various impervious surfaces were aggregated for each parcel in the sample area. This aggregation generated a total impervious area for each parcel. The analysis determined the ERU for an average residential parcel to be approximately 3,200 sq.ft.

8.0 PROBABLE NUMBER OF ERUS SYSTEMWIDE

Following the ERU analysis, the city determined the total number of ERUs or billable units in the entire system. To accomplish this task it was necessary to create a process to apply the ERU to each property or parcel in the municipality. The ERU is impervious area based. Each developed parcel within the incorporated area is considered to have impervious surface located on it. Therefore the city's task was to determine the number of ERUs attributable to each developed parcel in the proposed stormwater user group; the parcel owner. Per the proposed ordinance amendment, assessment of the stormwater service charge will be specific to parcels containing impervious surface area directly or indirectly discharging to the city's stormwater drainage system.

To calculate the number of ERUs systemwide, the city utilized the Tippecanoe County Unified Zoning Ordinance (UZO) to determine or estimate the amount of impervious surface area on each property or parcel. Section 4-2-1 "SUMMARY OF STANDARD AREA, WIDTH, COVERAGE, AND HEIGHT REQUIREMENTS," included in Appendix C, contains percentages for allowable maximum lot coverage

by all buildings per specific zone classification. Classifications include both residential and non-residential classification types. Other resources utilized for the determination of the ERUs was the current Tippecanoe County Zoning overlay and the 2008 digital orthophotographs of the City of Lafayette. The orthophotographs are aerial photographs geometrically corrected such that the scale is uniform and can be used to measure distances..

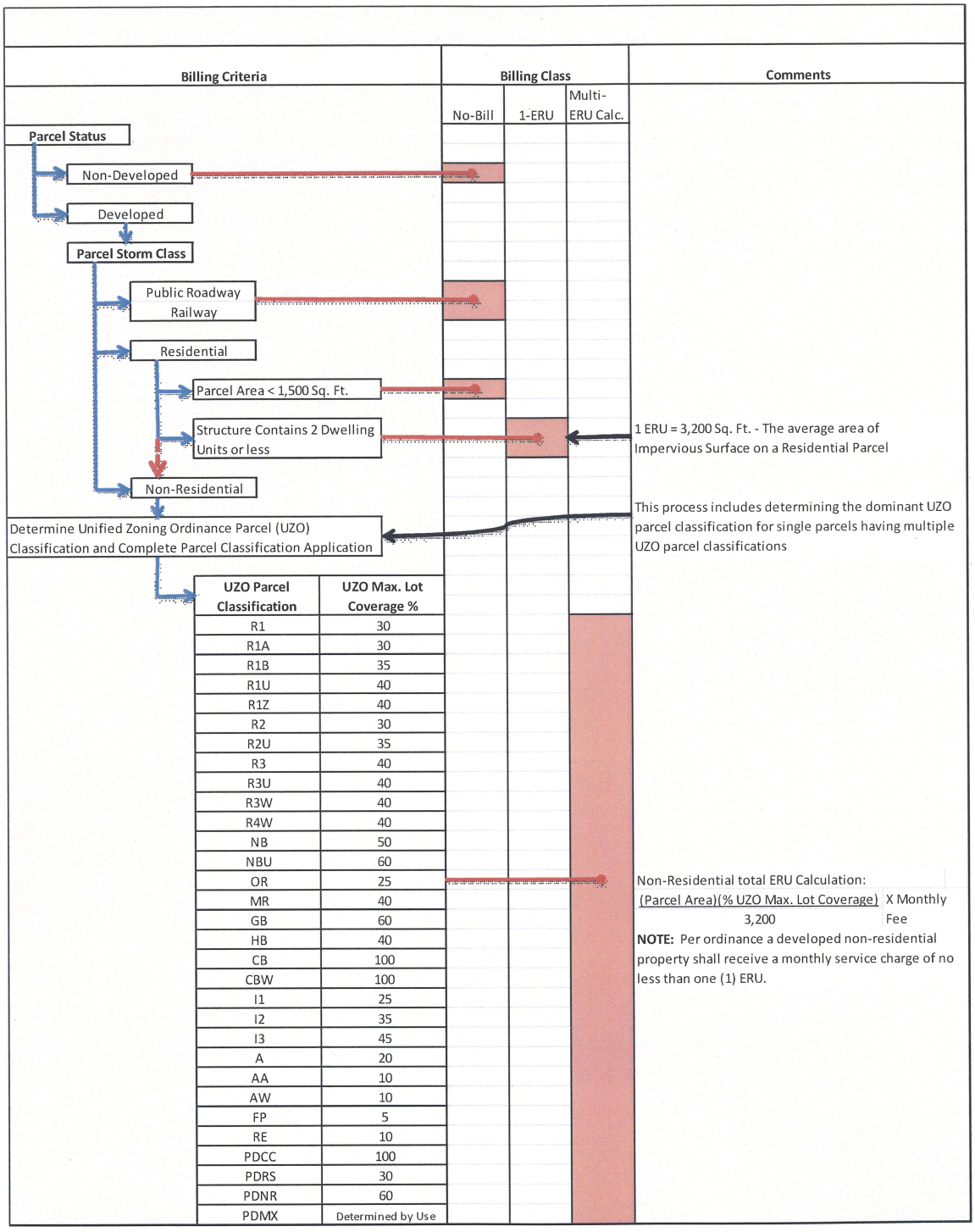
Residential parcels are defined as developed parcels having a single structure having no more than two dwelling units; these parcels are considered to equal one (1) ERU. All other developed parcels are considered to be non-residential with the total ERUs being calculated by a formula that multiplies the total parcel area by the respective maximum lot coverage by all buildings as determined by Section 4-2-1 of the UZO. The service charge calculation formula is shown below.

$$\frac{\text{(Total Parcel Area)(UZO Zoning Classification \% Max. Allowable Coverage by Buildings)}}{\text{3,200 square feet – One ERU}} \text{ X Monthly Fee}$$

While the current assessment strategy captures buildings as impervious surface area, it may not capture all property or parcel impervious area since parking lots and other surface lot areas are not considered. Figure 8.1 was developed to illustrate the service charge assessment structure and the application of the UZO to determine the number of chargeable ERUs. The figure also illustrates exceptions to a service charge

Figure 8.1 discusses specific billing criteria, billing class and associated comments. Following the billing criteria, a parcel is inspected visually for developed or non-developed status. Non-developed parcels, undisturbed by structures or building facilities, are classified as “No Bill” and considered to account for zero (0) ERUs. Developed parcels that contain public roadway, which is considered part of the stormwater conveyance system and railway easement (also considered transportation system) are classified as “No Bill” or zero (0) ERUs. Developed residential parcels containing less than 1,500 total square feet in area are classified as “No Bill” or Zero (0) ERUs. Developed residential parcels containing a single structure with two (2) or less dwelling units is classified as “1-ERU.”

Developed, non-residential parcel ERUs are determined by application of UZO Sections 4-2-1 zone classifications and corresponding maximum lot coverage by all buildings. The calculation shown by the formula above is also illustrated by Figure 8.1. The calculation yields the total number of ERUs on the parcel. Developed non-residential parcels will be considered to contain no fewer than the minimum of one (1) ERU. The ERU determination process includes reviewing individual parcels having multiple zoning classifications for the dominant zoning class. The dominant zoning class then determines the variables for calculating the total parcel ERUs. The Planned Development Mixed Use (PDMX) parcel zone class is visually inspected for specific use and classified accordingly.



UZO Parcel Classification	UZO Max. Lot Coverage %
R1	30
R1A	30
R1B	35
R1U	40
R1Z	40
R2	30
R2U	35
R3	40
R3U	40
R3W	40
R4W	40
NB	50
NBU	60
OR	25
MR	40
GB	60
HB	40
CB	100
CBW	100
I1	25
I2	35
I3	45
A	20
AA	10
AW	10
FP	5
RE	10
PDCC	100
PDRS	30
PDNR	60
PDMX	Determined by Use

Figure 8.1

Using the logic illustrated in Figure 8.1, the city has determined that approximately 66,000 chargeable ERUs exist systemwide. This number will fluctuate as parcel classifications are modified and/or updated by Tippecanoe County.

9.0 CONCLUSION

The City of Lafayette is a federal and state regulated stormwater community. The city carries out required annual stormwater program activities per its approved National Pollution Discharge Elimination System (NPDES) permit (INR040129). The city also carries out annual operation and maintenance activities for more than 200 miles of storm sewer system and associated assets, which are funded by non-dedicated sources. Current sources of funding have become more limited or unavailable to continue to provide adequate stormwater program services to city residents. The city performs required annual regulatory compliance tasks and anticipates a growing need for annual system maintenance. The city has also identified capital stormwater projects that will address current drainage and water quality needs throughout the municipal area.

To meet the funding needs of the city's stormwater program, the city proposes to establish stormwater service charge to provide a dedicated funding source for annual regulatory, operations and maintenance costs and provide revenue for proposed stormwater capital projects which address current and ongoing stormwater quality and management issues within the Lafayette community. The city annual share of joint permit services is approximately $45,195. The city proposes to expend approximately $686,425 annually for system operations and maintenance. The city's nine proposed stormwater capital improvement projects, which are proposed to be completed during a multi-year program, are estimated to cost approximately $14,967,907 over the determined funding period. The city's operations and maintenance and proposed capital improvement projects include ongoing individual permit required services and costs.

A proposed monthly service charge will be assessed to land owners within the corporate limits, and is based on the amount of impervious surface area which subsequently generates stormwater runoff from the property. To determine a fair and equitable monthly charge, the city determined an Equivalent Residential Unit (ERU), which defines the average amount of impervious surface on an average residential parcel as 3,200 sq.ft. To assess parcels consistently, the city utilized the Tippecanoe County Unified Zoning Ordinance, the county's existing parcel zoning overlay and aerial photography to identify approximately 66,000 chargeable ERUs within the corporate stormwater collection system.

At present, other sources of funding are limited due to other regulatory program requirements. These funds will become unavailable as the city completes the required Combined Sewer Overflow Long Term Control Plan. General funding sources are becoming diminished as other city services compete for those funds. Similar to other city state and federal permitted programs, the stormwater program includes annual permit mandated tasks and continued operational and maintenance requirements. Funds collected by the service charge will be collected and target specific stormwater management and quality needs within the City of Lafayette. A dedicated stormwater funding source can provide the city with a means to address long-term and ongoing requirements of the stormwater program.

Appendix A

MS4 Joint Permittee Interlocal Agreement (Revised)

INTERLOCAL AGREEMENT(REVISED)

PROVIDING FOR IMPLEMENTATION OF NPDES PHASE II
STORM WATER QUALITY MANAGEMENT PLAN

THIS INTERLOCAL AGREEMENT is made and entered into as of the day of _____, 2008 by and between the following undersigned public agencies, all which are referred to collectively as the PARTIES:

TIPPECANOE COUNTY, a subdivision of the State of Indiana; CITY OF LAFAYETTE, a municipal corporation of the State of Indiana; CITY OF WEST LAFAYETTE, a municipal corporation of the State of Indiana; TOWN OF BATTLE GROUND; a municipal corporation of the State of Indiana; TOWN OF DAYTON, a municipal corporation of the State of Indiana; THE TRUSTEES OF PURDUE UNIVERSITY, an agency of the State of Indiana; and THE TRUSTEES OF IVY TECH COMMUNITY COLLEGE, an agency of the State of Indiana.

RECITALS

A. The National Pollutant Discharge Elimination System (NPDES) Phase II permit system authorized by the Clean Water Act as implemented pursuant to Indiana Department of Environmental Management (IDEM) Rule 13, required that the PARTIES develop a Storm Water Quality Management Plan (SWQMP) to control the discharge of pollutants from urban runoff.

B. In furtherance of their responsibility for development and continued implementation and maintenance of such NPDES Phase II SWQMP, the PARTIES have entered into this agreement to jointly fund the cost of preparing, completing and participating in certain SWQMP elements which provide a general benefit to the PARTIES (such as monitoring, public education and outreach, SWQMP program administration, etc.), and these elements of joint responsibility among the PARTIES are termed the "General Program" as named by Exhibit A and hereby made part of this agreement. In addition, the SWQMP contains other elements which are an individual Party responsibility and which provide individual benefits (such as

construction site controls, catch basin cleaning, and illicit and illegal connection inspections, monitoring and enforcement, and other Illicit Discharge Detection and Elimination (IDDE) program activities, etc.). These elements are termed the "Individual Program". Individual Program elements are hereby excluded from this agreement unless explicitly approved by an affirmative vote as described in the articles of this agreement. All Storm Water Utility formation and implementation activities are considered non-program activities and are specifically excluded from this agreement.

C. The PARTIES desire to continue development, implementation and maintenance of the SWQMP and to enter into this Agreement for the purpose of ensuring continued participation, in terms of cost and administrative responsibilities.

D. This Agreement amends and supersedes any prior agreement among the PARTIES regarding the SWQMP.

E. The PARTIES are each subdivisions or agencies of the State with authority to control the discharge of surface waters from their respective jurisdictions,

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. A Project Team consisting of one representative and one alternate from each of the PARTIES is hereby created to provide overall program direction, review and budget oversight, and to recommend an annual budget for the General Program for approval by the PARTIES, all in accordance with the SWQMP General Program elements. Project Team members, and their alternates, shall be appointed by and shall serve at the pleasure of the Executive Officer(s) of the respective PARTIES. They shall be appointed within thirty (30) days of the date of this Agreement and a confirming letter sent to the President of the Board of Commissioners of Tippecanoe County, and the Project Team "MS4 Operator" designated in the Rule 13 Notice of Intent (Part A) Initial Application Certification filed November 4, 2003 or subsequent revised Rule 13 Notice of

Intent (Part A) submittal.

(a) Each of the PARTIES to this agreement is allocated the number of votes shown in Exhibit B.

(b) A quorum for the conduct of business by the Project Team shall be a majority of the voting PARTIES to the Agreement.

(c) Approval of actions by the Project Team shall require a two-thirds affirmative vote of all allocated votes as shown in Exhibit B.

No action shall be taken by the MS4 Operator which requires expenditures of the PARTIES other than the MS4 Operator without prior Project Team approval as defined by this Agreement.

2. Pursuant to direction of the Project Team, the MS4 Operator shall administer and coordinate the Program, which duties include:

(a) Enforcement and implementation of the articles of this Agreement;

(b) Applying on behalf of the PARTIES to become co-permitees for a National Pollutant Discharge Elimination System (NPDES) SWQMP Permit;

(c) Administering General Project Funds, including preparing draft annual budget and, periodic status reports on General Program activities and expenditures and distributing same to PARTIES quarterly, or as may be required by the SWQMP;

(d) Consolidating and submitting reports prepared by the PARTIES required by the SWQMP, Rule 13, or the NPDES permit;

(e) Letting and administering approved consultant contracts for General Program implementation according to the MS4 Operator's policies and procedures with and consideration given to other PARTIES' requirements.

All consultant contracts will contain hold harmless and indemnity provisions and insurance requirements for the benefit of all PARTIES;

(f) Conducting audits of General Program consultant contracts in accordance with the MS4 operator's policies and procedures;

(g) Maintaining knowledge of and informing the PARTIES regarding current and proposed state and federal policies, regulations and programs that impact nonpoint source pollutant control programs and may potentially affect the terms or implementation of the current or future NPDES Phase II permit and advising the PARTIES in development and presentation of positions on these issues before local, State and Federal agencies;

(h) Preparing an annual report on the implementation of the Program, in accordance with Rule 13;

(i) Creation and maintenance of a complete list and current contact information of appointed Project Team members and respective alternates and distribute such initial or revised list within ten (10) business days to each project team member and Executive officer(s) of the Parties following an initial or replacement appointment;

(j) Prepare and distribute Project Team meeting agendas at least five (5) business days prior to all Project Team meetings;

(k) Prepare and distribute project team meeting minutes to all Project Team members within ten (10) business days of all project team meetings;

(l) Prepare and submit quarterly invoices for General Program activities charges to each Project Team member or designated representative;

(m) Provide copies of all correspondence to and from State and Federal agencies pertaining to NPDES SWQMP General Program activities to Project Team members at the team meeting immediately following the date of such correspondence. This includes both written and email correspondence;

(n) Facilitate the development and complete annual budgets for General Program activities ninety (90) days prior to the end of each calendar year; and

(o) Formally advising the appropriate State and Federal agencies of termination or amendment of this Agreement.

3. The PARTIES each individually accept and agree to perform the following duties:

(a) Implement the articles of this Agreement;

(b) Authorize and maintain a representative to serve as the NPDES SWQMP Permit co-permitees with the other PARTIES;

(c) Fully comply with the NPDES SWQMP Permit conditions applicable to its Individual Program elements and its identified portion of the General Program elements;

(d) Select a representative and an alternate to participate in Project Team meetings and other required meetings of the PARTIES. Each will make replacements of said representatives and alternates consistent with the articles of appointment stipulated within this agreement as not to allow a member vacancy to exist on the Project Team;

(e) Issue payment for quarterly invoices no later than sixty (60) days following the receipt of a correct and appropriate quarterly invoice;

(f) Fund, implement and maintain its Individual Program, and fund and implement elements of the General Program; and

(g) Provide reports (certified under penalty of perjury) to the MS4 Operator in compliance with applicable provisions of the NPDES Phase II permit and program implementation.

4. The MS4 Operator shall prepare a proper accounting of funds and reports of all invoices and receipts. In the event one or more of the PARTIES terminates this Agreement, any un-invoiced portion of its share of cost for completed General Program activities shall be invoiced within forty-five (45) business days of said termination.

5. Annual budgets for General Program activities shall be approved by the PARTIES and shall be based on an analysis of past budgets and current and future program needs and NPDES Phase II permit requirements.

6. By approval of the PARTIES, budget allocations for the General Program shall be made according to attached Exhibit C. The attached Exhibit D provides a copy of the formulas which are used to allocate costs. Each PARTIES' allocation of the General Program's annual costs for each fiscal year will be according to the percentages provided in Exhibit C, as it may be amended according to the articles of this Agreement. Cost allocations and associated formulas shall be examined and recalculated with necessary updates as specified by this Agreement. The budget allocation for the Individual Programs shall be made directly by the individual responsible PARTIES'.

7. This Agreement shall have an initial term beginning as of the date of this Agreement and continuing through December 31, 2012 and may be subject to renewal for a five (5) year period by a two-thirds affirmative vote of all allocated votes. Such vote shall be made during a period extending not more than one hundred-eighty (180) days prior to the expiration of the Agreement and following a review by the Project Team within said period of the articles of the Agreement.

8. The participation of any Party to this Agreement may be terminated by a two-thirds affirmative vote of all allocated votes upon thirty (30) days priors written notice in the event that such party fails to perform its obligations hereunder or the funds necessary for its continued involvement are not appropriated by its legislative body.

9. This Agreement shall be reviewed on an annual basis or as requested by the Project Team beginning in January 2009 and may be amended to reflect requested and required updates by an affirmative vote of the PARTIES representing two-thirds or more of all allocated votes as

shown in Exhibit B.

10. Participation in this Agreement may be terminated by any of the PARTIES for any reason after the terminating PARTY complies with the conditions of termination. The conditions of termination include the following: the terminating PARTY shall notify the MS4 Operator sixty (60)-days prior to its termination of the Agreement, the terminating PARTY shall obtain its own NPDES Phase II Rule 13 permit for urban runoff, and the terminating PARTY shall have its name deleted as a co-permittee of the PARTIES' NPDES Phase II permit. Expenses associated with the conditions of termination include filing for and obtaining the individual NPDES Phase II permit and the amendment of the PARTIES' NPDES Phase II permit and are limited to the submission and revisions of the 'Notice of Intent' requirements, 'SWQMP-Part B: baseline characterization and report', and 'SWQMP-Part C: program implementation'. Such termination expenses will be solely the responsibility of the terminating PARTY unless determined otherwise by the Project Team and a two-thirds affirmative vote of all allocated votes.

11. It is understood and agreed that, each of the PARTIES ("indemnitors") shall, to the extent permitted by law, defend, indemnify and save harmless every other PARTY, and its officers and employees from all claims, suits or actions of every name, kind and description resulting from indemnitor's performance of this Agreement, excluding any personal injuries, death, or property damage resulting from the negligence or willful misconduct of the other PARTIES, or their officers or employees.

BOARD OF COMMISSIONERS OF
TIPPECANOE COUNTY

_____
Ruth Shedd, President

ATTEST:

BY: _____
Jennifer Westin, Auditor of Tippecanoe County

CITY OF LAFAYETTE

_____
Tony Roswarski, Mayor

ATTEST:

By: _____
Cindy Murray City Clerk

CITY OF WEST LAFAYETTE

_____
John Dennis, Mayor

ATTEST:

By: _____
Judy Rhodes, City Clerk-Treasurer

TOWN OF BATTLE GROUND

_____
Brian Brewer, Council Member

ATTEST :

By: _____
Phyllis Hall, Clerk -Treasurer

TOWN OF DAYTON

_____
Mike Harris

ATTEST:

By: _____
Ron Koehler, Clerk-Treasurer

PURDUE UNIVERSITY

_____

ATTEST:

By: _____

IVY TECH COMMUNITY COLLEGE

_____

ATTEST:

By: _____

EXHIBIT A
GENERAL PROGRAM

In the fulfillment of the terms of this Agreement "General Program" shall include tasks pertaining to the following:

1. Tasks pertaining to the renewal and administration of the NPDES Storm Water Phase II permit.

2. Tasks pertaining to Minimum Control Measure (MCM) 1: Public Education and Outreach including:

    a. The development of program education materials for distribution at local schools;

    b. Determination of ongoing tasks for the Tippecanoe SWCD Educator and funding for the same.

3. Tasks pertaining to Minimum Control Measure (MCM) 2: Public Participation and Involvement including:

    a. The development and implementation of a public survey to assess the public awareness of storm water program activities.

4. Tasks pertaining to Minimum Control Measure (MCM) 6: Good Housekeeping and Pollution Prevention (GHPP) including:

    a. The development and implementation of educational materials that increase awareness of pollution prevention in daily activities.

    b. Continued GHPP annual training for employees of all entities.

5. The review and update of the "Storm Water Technical Standards" and "Storm Water Ordinance" to address changing industry standards and emerging storm water quality technologies.

6. The development and implementation of training as approved by the Project Team specific to programmatic needs.

EXHIBIT B

TIPPECANOE SWQMP PROJECT TEAM

	Votes
• Tippecanoe County	1
• City of Lafayette	1
• City of West Lafayette	1
• Town of Battle Ground	1
• Town of Dayton	1
• Purdue University	1
• Ivy Tech Community College	1

EXHIBIT C

TIPPECANOE SWQMP PROJECT TEAM

EXAMPLE

Total General Program Budget for Fiscal Year 2009: $100,000.00

EXAMPLE General Program Cost Allocations:

ENTITY	PERCENT	SHARE
City of Lafayette	$5,000 + 38.1593% ($65,000)	$29,803.55
Tippecanoe County	$5,000 + 38.1593% ($65,000)	$29,803.55
City of West Lafayette	$5,000 + 14.90215% ($65,000)	$14,686.40
Purdue	$5,000 + 6.8347% ($65,000)	$9,442.56
Town of Dayton	$5,000 + 0.9015% ($65,000)	$5,585.98
Town of Battle Ground	$5,000 + 0.9369% ($65,000)	$5,608.99
Ivy Tech Community College	$5,000 + 0.10615% ($65,000)	$5,069.00

EXHIBIT D

General Program Cost Allocation Formula:

$$\text{Base Cost} + \frac{(\text{Population Density \% X 50 \%}) + (\text{Land Area \% X 50 \%})}{100}$$

	Population	Land Area
Lafayette	$5,000.00 + (46.1432% x 50.0%) + (26.1571% x 50.0%) / 100	= $5,000.00 + (38.1593% x Remaining Balance)* / 100
County	$5,000.00 + (19.6534% x 50.0%) + (60.6901% x 50.0%) / 100	= $5,000.00 + (38.1593% x Remaining Balance)* / 100
W. Lafayette	$5,000.00 + (22.3824% x 50.0%) + (7.4243% x 50.0%) / 100	= $5,000.00 + (14.90215% x Remaining Balance) / 100
Purdue	$5,000.00 + (10.0172% x 50.0%) + (3.6494% x 50.0%) / 100	= $5,000.00 + (6.8347% x Remaining Balance) / 100
Dayton	$5,000.00 + (0.8270% x 50.0%) + (0.9730% x 50.0%) / 100	= $5,000.00 + (0.9015% x Remaining Balance) / 100
Battle Ground	$5,000.00 + (0.9768% x 50.0%) + (0.8938% x 50.0%) / 100	= $5,000.00 + (0.9369% x Remaining Balance) / 100
Ivy Tech Community College	$5,000.00 + (0.00% x 50.0%) + (0.2123% x 50.0%) / 100	= $5,000.00 + (0.10615% x Remaining Balance) / 100

* Per this agreement the City of Lafayette and Tippecanoe County agree to share equally the total sum of their calculated percentage of cost allocation as illustrated above. Each Party remains responsible to contribute in full the base payment of $5,000 as shown in the above cost allocation formula. The agreed equal percentage of cost allocation shall be as calculated below.

Calculated individual percentage of cost allocation - City of Lafayette	36.14855%
Calculated individual percentage of cost allocation - Tippecanoe County	40.17005%
Total sum of percentage of cost allocation (to be shared equally)	76.3186%
Agreed equal share of total percentage of cost share allocation (76.3186% ÷ 2)	38.1593%

The City of Lafayette and Tippecanoe County shall each be responsible for a cost allocation percentage of 38.1593 %.

AREA

MS4 AREA		63202.042 Acres	= 100%
Lafayette	2004	16118.58 Acres	= 25.50%
	2008	16531.82 Acres	= 26.1558%
County	2004	40077.80 Acres	= 63.41%
	2008	38357.38 Acres	= 60.6901%
W. Lafayette	2004	3519.30 Acres	= 5.57%
	2008	4692.30 Acres	= 7.4243%
Purdue	2004	2306.50 Acres	= 3.6494%
	2008	No Change	= No Change
Dayton	2004	614.98 Acres	= 0.9730%
	2008	No Change	= No Change
Battle Ground	2004	564.88 Acres	= 0.8938%
	2008	No Change	= No Change
Ivy Tech Community College			
	2008	134.18 Acres	= 0.2123%

Appendix B

Proposed Capital Project Location Map
Proposed Capital Project Fact Sheets
Completed Initial Priority Rating Forms

Proposed Capital Project Location Map

Legend

- City Limits
- Armstrong Park Water Quality Project
- Durkee's Run East Sewer Separation Project
- Elliott Ditch Streambank Restoration Project
- Kossuth Street Rain Gardens Project
- Munger Park Water Quality Project
- Southside Drainage Improvements Project
- Valley Street Drainage Project
- Vinton Woods Detention Pond Rehabilitation Project
- Orchard Heights Sewer Rehabilitation Project

DLZ
360 CENTURY BUILDING
36 S. PENNSYLVANIA
INDIANAPOLIS, IN 46204
T: 317.633.4120
F: 317.633.4177

DLZ Proj.: 0963-0640-70 Rev'd. 7-16-2009

STORMWATER PROGRAM CAPITAL PROJECTS EXHIBIT

CITY OF LAFAYETTE

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Proposed Capital Project Fact Sheets

CITY OF LAFAYETTE

WET WEATHER PROGRAM

Valley Street Drainage Improvements

In Lafayette, a natural depression, or low area, along Valley Street has been a source of poor drainage for years. Even after a short rainfall, streets and roadside ditches flood creating a challenge for those traveling in and out of the area. Excess stormwater also can overload the combined sanitary and storm sewer, which can result in raw sewage overflows into local waterways. Standing water in yards also inconveniences residents and businesses.

To resolve these drainage problems, the city will utilize natural and manmade solutions to reduce flooding and raw sewage overflows along Valley Street.

Rain Gardens to Filter Pollutants

Just north of Valley Street near the intersection of South and 9th streets, the city plans to plant rain gardens, which allow excess stormwater to seep or infiltrate into the ground rather than flood the roadway. The rain gardens also will serve as a natural filter, helping to remove pollutants such as silt, oil from cars, trash and other possible pollutants before the stormwater flows into local waterways.

North of Congress Street, a detention basin will reduce flooding by storing stormwater that runs off of rooftops, streets and yards in the surrounding neighborhood. When capacity becomes available in the sewer, the water will drain from the basin into the sewer. In addition to reducing flooding, the basin also will include water quality improvements to remove possible pollutants.

Along with these environmental-based solutions, Lafayette also will separate the combined stormwater and sanitary system along Valley Street. The sewer separation will reduce raw sewage overflows into local waterways, which can occur during and after wet weather.

Sewer Separation to Reduce Raw Sewage Overflows

Highlights

Project: Drainage improvements
Estimated Project Cost: $4,249,000
Status: Planning
Project Benefits:

- Reduced flooding in streets and yards
- Improved water quality in the Wabash River
- Reduced pollutants in local waterways
- Enhanced aesthetics with rain gardens in neighborhood
- Compliance with state and federal regulations

The Valley Street Drainage Improvements project is part of Lafayette's capital improvement program to improve the water quality of the Wabash River and other local streams and to address poor drainage conditions. The projects will reduce flooding and satisfy the requirements of the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management.

CITY OF LAFAYETTE

WET WEATHER PROGRAM

Elliot Ditch Stream Bank Restoration

To prevent further damage to Bridge 49 in southeastern Lafayette, the city will restore the stream banks of Elliott Ditch near Poland Road.

Located south of Stonewick neighborhoods, Bridge 49, which carries Poland Road over Elliott Ditch, is frequently traveled. When the bridge was installed, the city installed gabions, which are rock-filled wire baskets, to retain the slope of the bank and strengthen it. Riprap, or loose stone, also was installed; however the erosion of the stream bank has continued. In 2007, the city found that a large tree northeast of the bridge also had been uprooted, which caused extensive damage to the stream bank.

Improved Erosion Control

To provide additional protection against erosion of the stream bank, the city proposes design of an improved erosion control system.

Along the northeast bank, a fallen tree that was blocking flow upstream of the bridge was removed. Rip rap and native vegetation will be utilized to stabilize the bank. The stormwater outlet pipe locations also will be adjusted, and the stream alignment will be modified. Upstream of Bridge 49, two sandbars will be removed, and native vegetation will be left intact along channel bottom.

Downstream of Bridge 49, a proposed high-water bypass channel will reduce erosion during and after heavy rain and high flows.

Native Vegetation, A Natural Option

Highlights

Project: Stream bank restoration
Project Cost: $662,000
Status: Planning
Project Benefits:

- Reduced erosion to the stream banks of Elliott Ditch
- Improved safety for driving and walking along Poland Road
- Enhanced aesthetics of Elliott Ditch as a result of native vegetation

The channel will allow stormwater to avoid a bend in the ditch that often is under water after heavy rain. On the southwest corner of the bridge, a modification of the Elliott Ditch alignment will reduce erosion as well.

Lafayette also will replace a portion of the curb, which has settled, along Poland Hill Road.

Stormwater improvement projects are part of Lafayette's capital improvement program to improve the water quality of the Wabash River and other local streams and to address poor drainage conditions.

CITY OF LAFAYETTE

WET WEATHER PROGRAM

South 30th Street Drainage Improvements

In Lafayette, the South 30th Street area was developed for industries such as trucking and manufacturing. This area is highly developed with a great deal of pavement, and when it rains or snows, stormwater runoff from rooftops and pavement floods the area. To resolve this drainage problem, the City of Lafayette is planning to expand the storm sewer along South 30th Street.

A proposed 54-inch sewer pipe will begin at Elliott Ditch and run from Brady Lane to South Beck Lane just west of Rea Magnet Wire Company. To the west of the building, the city is considering installing a wetland that would filter pollutants from the water and temporarily store it during and after wet weather. Located adjacent to Miami Elementary School, the wetland also may provide an opportunity for students and the general public to learn about natural stormwater Best Management Practices (BMPs) and enjoy a naturalized area including native plants.

Sewer and Wetland to Alleviate Flooding

From the wetland, the stormwater will be transported in a storm sewer pipe to South 30th and Summer streets, and outlet into a detention pond, which will store excess stormwater during and after wet weather.

From Summer Street to Teal Road, a new 36-inch storm sewer pipe will be constructed. Manholes and storm drains also will be installed along the sewer route, and pavement will be replaced as needed.

The South 30th Street Drainage Improvements project is part of Lafayette's capital improvement program to improve the water quality of the Wabash River and other local streams and to address poor drainage conditions. The projects will reduce flooding and satisfy the requirements of the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management.

Highlights

Project: Drainage and water quality improvements

Estimated Project Cost: $4,371,000

Status: Planning

Project Benefits:

- Reduced street and yard flooding
- Improved water quality in stormwater runoff to the Wabash River
- Reduced pollutants in local waterways
- Educational opportunities for students and the general public
- Resurfaced streets
- Compliance with state and federal regulations

CITY OF LAFAYETTE

WET WEATHER PROGRAM

City Rain Garden Planting

The City of Lafayette will design and plant rain gardens, a natural option for managing stormwater, to improve drainage and stormwater quality at three locations.

Located at Kossuth and 19th streets, Prange Drive and along four city blocks of Earl Avenue, the rain gardens will reduce standing water. Rather than flooding street and yards, the rain water will flow into rain gardens, and it will seep or infiltrate naturally into the ground.

By placing the rain gardens close to stormwater inlets, the amount of stormwater entering the combined sanitary and

Rain Gardens Beautify Community

stormwater sewer will be reduced as well. During and after wet weather, stormwater in the combined sewer can take up space needed to transport sewage to the treatment plant, and when the sewer reaches capacity, raw sewage overflows into a nearby stream or river can occur. After a storm, the rain gardens may absorb much of the stormwater that otherwise would flow directly into the combined sewer.

The rain gardens also will serve as a natural filter, helping to remove pollutants such as oil from cars, trash and lawn chemicals from the stormwater before it flows into local waterways. Each area will be planted with a variety of native plants that are well adapted to the humid, Indiana climate. Wildflowers, ferns, grasses, trees and shrubs all can thrive in rain gardens.

Native Plants Filter Pollutants

Highlights

Project: Drainage improvements
Estimated Project Cost: $320,000
Status: Planning
Project Benefits:

- Improved water quality of stormwater runoff to the Wabash River
- Reduced pollutants in local waterways
- Enhanced aesthetics in neighborhood as a result of rain gardens
- Compliance with state and federal regulations

The City Rain Garden Planting project is part of Lafayette's capital improvement program to improve the water quality of the Wabash River and other local streams and to address existing drainage conditions. The projects will reduce flooding and satisfy the requirements of the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management.

CITY OF LAFAYETTE

WET WEATHER PROGRAM

Armstrong Park Stormwater Detention Basin

Armstrong Park, which is located in a mixed residential and commercial area along Beck Lane and South Ninth Street, offers recreational opportunities such as fishing, baseball, and open green space. The 26-acre park also is located near Central Catholic Junior-Senior High School, and it is a favorite gathering spot in the community.

During and after wet weather, a detention basin in the park serves as a temporary storage area for stormwater that runs off of rooftops, streets and yards in the surrounding neighborhood. Unfortunately, the stormwater that enters the basin can become polluted with oil from cars, trash and other pollutants. These pollutants can lower the water quality in the detention basin, as well as in Durkees Run and the Wabash River. As a result, the waterways can become an unhealthy environment for humans and aquatic life.

Water Quality Best Management Practice Retrofit

To protect local streams and rivers, the City of Lafayette has completed a preliminary study and identified alternatives that will improve the quality of stormwater flowing into the Armstrong Park detention basin. After consideration of the alternatives the city determined that a combination of enhanced detention and infiltration practices located upstream of the park may be most effective in removing pollutants.

City to Reduce Stormwater Pollution

Highlights

Project: Water quality improvements
Estimated Project Cost: $694,000
Status: Planning
Project Benefits:

- Improved water quality in Armstrong Park detention basin, Durkees Run and Wabash River
- Reduced pollutants in local waterways
- Enhanced aesthetics of Armstrong Park as a result of wetlands
- Compliance with state and federal regulations

The proposed stormwater quality project will include improvements to an existing detention area consisting of native plantings and coordination with land owners for the development of rain gardens in the existing neighborhoods. The combination of filtering and infiltration practices will remove pollutants upstream of the Armstrong Park.

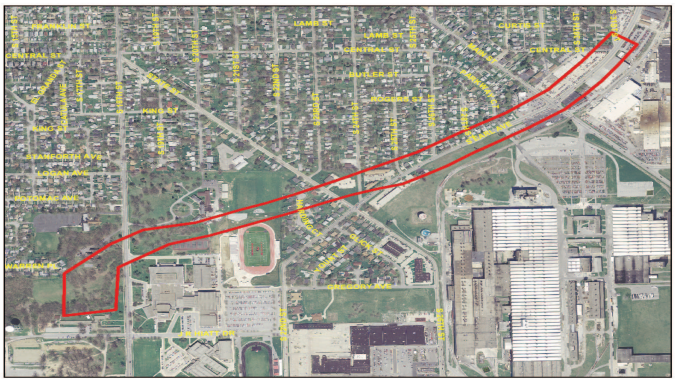
Armstrong Park regional detention basin also will be adapted to improve stormwater quality. The project is part of the City's approved stormwater National Pollutant Discharge Elimination System Phase II Storm Water Quality Management Plan.

CITY OF LAFAYETTE

WET WEATHER PROGRAM

Durkees Run East Stormwater Improvements

The Durkees Run stormwater project will reduce street and basement flooding in the Earl Avenue area, and west of 18th Street near Lafayette Jefferson High School.



Near the high school on 18th Street and along Earl Avenue between 23rd and 27th streets, the city will separate the stormwater and sanitary sewers, and stormwater will flow into a ditch at 18th Street. The sewer separation will alleviate capacity problems in the existing sanitary sewer and reduce raw sewage overflows into Durkees Run. Approximately 1,000 feet of 48 inch pipe and 220 feet of 54 inch pipe and new stormwater outlets will be installed to eliminate cross connections of the sanitary and storm sewers.

Bioretention Best Management Practices

In addition to the sewer separation, Lafayette also plans to incorporate Best Management Practices (BMPs) to remove pollutants from the stormwater before it enters local waterways. Bioretention landscaping and a shallow detention infiltration basin will slow the flow of stormwater, while also filtering silt, sediment and other pollutants. The use of BMPs will improve the quality of stormwater entering Durkees Run and the Wabash River.

By completing these stormwater improvements, the city will reduce the volume of stormwater in the sanitary sewer and free up capacity to transport wastewater for treatment. Thanks to the Durkees Run stormwater project, the city expects that the diameter of a future Combined Sewer Overflow (CSO) tunnel can be reduced. The tunnel will temporarily store raw sewage, that would otherwise flow untreated into the Wabash River. When capacity becomes available, the wastewater will be pumped to the treatment plant. A reduction in the CSO tunnel size will result in significant savings for the city and sewer users.

City to Improve Water Quality

Highlights

Project: Storm water improvements
Estimated Project Cost: $3,004,000
Status: Planning
Project Benefits:

- Improved water quality in Durkees Run and the Wabash River
- Reduced street and basement flooding
- Reduced pollutants in local waterways
- Opportunity for future savings on CSO tunnel project

The Durkees Run East Stormwater Improvements project is part of Lafayette's capital improvement program to improve the water quality of the Wabash River and other local streams and to address poor drainage conditions. The projects will reduce flooding and satisfy the requirements of the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management.

CITY OF LAFAYETTE

WET WEATHER PROGRAM

Vinton Woods Detention Pond Rehabilitation

Vinton Woods neighborhood, which is located near U.S. 52 and Greenbush Street, is situated in an established residential area. When the neighborhood was developed in the 1960s, stormwater from approximately 130 acres at Munger Park drained to its three connected detention ponds, and today, due to ongoing development upstream, approximately 521 acres drain from Vinton Woods and the surrounding residential area.

As a result, the ponds become overloaded with excess stormwater, which is causing local street flooding and damage to a dam downstream of the neighborhood detention pond system.

Street and Yard Flooding to be Reduced

Currently, after heavy rain or snow, public roadways can flood with stormwater measuring more than one foot deep. Flooding of this magnitude creates dangerous conditions for residents and emergency vehicles traveling in and out of the area. In warmer weather, standing water also can become stagnant. To resolve these safety concerns, the city proposes to improve drainage of public roadways by restoring functionality of the detention pond system and dam.

As part of the Vinton Woods Detention Pond Rehabilitation project, the city will dredge the three ponds and repair leaks in the approximately nine-foot tall dam. Currently, the average depth of the ponds is two to three feet, and when installed the average depth was six to seven feet. The city will complete a study to determine the approximate depth or capacity needed to allow for better management of stormwater runoff and proper functioning of the dam.

Public Safety to Improve

Highlights

Project: Drainage improvements
Estimated Project Cost: $1,200,000
Status: Planning
Project Benefits:

- Reduced street and yard flooding in Vinton Woods and surrounding neighborhoods
- Improved public safety
- Reduced pollutants and sediment in local waterways

Stormwater drains to the Vinton Woods detention ponds from the area bounded by Greenbush Street to the north, State Road 26 to the south, Creasy Lane to the east and U.S. 52 to the west.

The Vinton Woods Detention Pond Rehabilitation project is part of Lafayette's capital improvement program to improve the water quality of the Wabash River and other local streams and to address poor drainage conditions.
The projects will reduce flooding and satisfy the requirements of the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management.

CITY OF LAFAYETTE

WET WEATHER PROGRAM

Orchard Heights Sewer and Drainage Improvements

Residents of the Orchard Heights neighborhood have experienced sewer backups during and after heavy rain for years. When overloaded with stormwater the sanitary sewer may not have sufficient capacity to transport wastewater and excess stormwater to the treatment plant, and as a result, raw sewage can back up into basements and eventually overflow into the Wabash River.

The City of Lafayette has completed smoke testing to identify sources of stormwater inflow/infiltration (I/I) into the neighborhood sanitary sewer. The inspection confirmed that stormwater was entering the sewer through manholes and weak joints and cracks in the pipes. Incorrect downspout and sump pump connections to the sanitary sewer also were identified, and residents and businesses were contacted to correct the improper connections.

Correct Connections to Reduce Inflow

In addition to the neighborhood inspections, Lafayette also plans to rehabilitate sanitary manholes and sewers to further reduce stormwater I/I. Approximately 75 percent of the sanitary sewers in the area will be rehabilitated with cured in place pipe technology. A pre-measured liner will be placed inside the existing pipe and then water will force the liner in place. Cured-in-place pipe saves time and money compared to traditional pipe replacement methods because it avoids costly excavation and requires minimal road closures and traffic inconveniences.

To improve overall performance of the Orchard Heights sewer system, the city will install a sanitary relief sewer on Pippen Lane and Golden Place as well. The new relief sewer will reduce bottlenecks and increase the amount of wastewater that can be transported to the treatment plant.

Environmentally Conscious Drainage Improvements

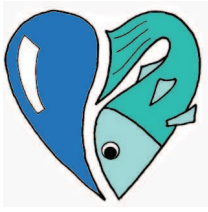
As part of the neighborhood improvements, Lafayette also will complete stormwater improvements. Aging, undersized infrastructure will be replaced, and several drainage outfall locations will be repaired with turf reinforcement mats. The high performance mats are composed of recycled materials and grasses, and they will help to prevent erosion.

Highlights

Project: Sewer and drainage improvements
Estimated Construction Cost: $381,500
Status: Planning
Project Benefits:

- Reduce basement flooding
- New relief sewer to reduce raw sewage overflows in Wabash River
- Improved water quality in local waterways
- Reduced system maintenance and operating costs
- Improved drainage using environmentally friendly practices

The Orchard Heights Sewer Rehabilitation project is part of Lafayette's capital improvement program to improve the water quality of the Wabash River and other local streams and to address poor drainage conditions. The projects will reduce flooding and satisfy the requirements of the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management.



Completed Initial Priority Rating Forms

City of Lafayette — **Stormwater Program**

Stormwater Problem Area — **Initial Priority Rating Evaluation Sheet**

Street Address: Valley Street

Nearest address or intersection of problem:

Rating By: Crystal Joshua — **Date: 8/18/2009**

INSTRUCTIONS: Fill in only 1 "X" per Group Rating as applicable

Revision Date: 08-12-2009

STREET FLOODING	STREET CLASSIFICATION		STREET FLOODING OCCURRENCES					Rating
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr		
			4	3	2	1		
	Primary Arterial	4						0
	Secondary Arterial	3						0
	Collector	2						0
	Local Street or Place	1	X					4
INFRASTRUCTURE DETERIORATION	PUBLIC INFRASTRUCTURE TYPE		MAJOR FAILURE POSSIBLE WITHIN					Rating
			Immediate	1-2 Years	3 -5 Years	6-10+ Years		
	(as applicable)		4	3	2	1		
	Arterial/Sanitary Int./Major Tributary	4						0
	Collector/Storm/Sanitary Collector/Stream	3						0
	Local Storm/Sanitary Main/Road Drainage	2	X					8
FLOODED	PROPERTY OR FACILITY CLASSIFICATION		FLOODING FREQUENCY					Rating
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr		
			4	3	2	1		
	Homes	4		X				12
	Business/Industry	3						0
	Parking Lots	2						0
	Yards / Fields	1						0
NUMBER IMPACTED	PROPERTY CLASSIFICATION		NUMBER OF FEATURES AFFECTED					Rating
			1 - 10	11 - 25	26 - 50	> 50		
			1	2	3	4		
	Homes	4		X				8
	Business/Industry	2						0
FLOODING IMPACT	FLOODING CONCERN		Sewage in basement	Standing water > 1 wk	Standing water 2-7 d	Standing water < 48 hr		Rating
			15	10	5	0		
	Observed Impact					x		0
EXTENT OF EROSION	EROSION		LINEAL FEET OF EROSION					Rating
			10 - 100	101 - 250	251 - 500	> 500		
			10	20	30	40		
	Observed Erosion				X			40
WATER QUALITY	(AREA TYPE)		Non-Combined Sewer Area	Erosion Effecting Water Quality	Combined Sewer Area			Rating
			5	10	15			
	Area Type				x			15
SOLUTIONS	RESOLUTION TYPE		Storm Sewer	Structural BMP	Bridge/ Culvert	Open Channel		Rating
			2	4	6	8		
	Solution		x					2
PUBLIC INVOLVE.	COST SHARE (When property owner ask to participate or is required for a solution)		> 75%	26 - 75%	6 - 25%	0 - 5%		Rating
			15	10	5	0		
	% by Developer/Owner					x		0
MS4 REQ'MNT	SATISFIES REGULATORY REQUIREMENT FOR MS4 PERMIT		YES		NO			
			5		0			
					x			0
							Subtotal	89
	Public or Private Benefit?		Public	X	Private		IPR RATING	89

City of Lafayette — **Stormwater Program**

Stormwater Problem Area — **Initial Priority Rating Evaluation Sheet**

Street Address: Elliot Ditch

Nearest address or intersection of problem:

Rating By: Crystal Joshua — **Date: 8/18/2009**

INSTRUCTIONS: Fill in only 1 "X" per Group Rating as applicable

Revision Date: 08-12-2009

STREET FLOODING	STREET CLASSIFICATION		STREET FLOODING OCCURRENCES					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr	none	Rating
			4	3	2	1		
	Primary Arterial	4						0
	Secondary Arterial	3						0
	Collector	2						0
	Local Street or Place	1						0
INFRASTRUCTURE DETERIORATION	PUBLIC INFRASTRUCTURE TYPE		MAJOR FAILURE POSSIBLE WITHIN					
			Immediate	1-2 Years	3 -5 Years	6-10+ Years		Rating
	(as applicable)		4	3	2	1		
	Arterial/Sanitary Int./Major Tributary	4						0
	Collector/Storm/Sanitary Collector/Stream	3		X				9
	Local Storm/Sanitary Main/Road Drainage	2						0
FLOODED	PROPERTY OR FACILITY CLASSIFICATION		FLOODING FREQUENCY					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr		Rating
			4	3	2	1		
	Homes	4						0
	Business/Industry	3						0
	Parking Lots	2						0
	Yards / Fields	1						0
NUMBER IMPACTED	PROPERTY CLASSIFICATION		NUMBER OF FEATURES AFFECTED					
			1 - 10	11 - 25	26 - 50	> 50		Rating
			1	2	3	4		
	Homes	4	X					4
	Business/Industry	2	X					2
FLOODING IMPACT	FLOODING CONCERN		Sewage in basement	Standing water > 1 wk	Standing water 2-7 d	Standing water < 48 hr		Rating
			15	10	5	0		
	Observed Impact					x		0
EXTENT OF EROSION	EROSION		LINEAL FEET OF EROSION					
			10 - 100	101 - 250	251 - 500	> 500		Rating
			10	20	30	40		
	Observed Erosion					X		40
WATER QUALITY	(AREA TYPE)		Non-Combined Sewer Area	Erosion Effecting Water Quality	Combined Sewer Area			Rating
			5	10	15			
	Area Type			x				10
SOLUTIONS	RESOLUTION TYPE		Storm Sewer	Structural BMP	Bridge/ Culvert	Open Channel		Rating
			2	4	6	8		
	Solution					x		8
PUBLIC INVOLVE.	COST SHARE (When property owner ask to participate or is required for a solution)		> 75%	26 - 75%	6 - 25%	0 - 5%		Rating
			15	10	5	0		
	% by Developer/Owner					x		0
MS4 REQ'MNT	SATISFIES REGULATORY REQUIREMENT FOR MS4 PERMIT		YES		NO			
			5		0			
			x					5
							Subtotal	73
	Public or Private Benefit?		Public	X	Private		IPR RATING	73

City of Lafayette — **Stormwater Program**

Stormwater Problem Area — **Initial Priority Rating Evaluation Sheet**

Street Address: 30th Street

Nearest address or intersection of problem:

Rating By: Crystal Joshua — **Date: 8/12/2009**

INSTRUCTIONS: Fill in only 1 "X" per Group Rating as applicable

Revision Date: 08-12-2009

STREET FLOODING	STREET CLASSIFICATION		STREET FLOODING OCCURRENCES					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr	none	Rating
			4	3	2	1		
	Primary Arterial	4						0
	Secondary Arterial	3						0
	Collector	2						0
	Local Street or Place	1		X				3
INFRASTRUCTURE DETERIORATION	PUBLIC INFRASTRUCTURE TYPE		MAJOR FAILURE POSSIBLE WITHIN					
			Immediate	1-2 Years	3 -5 Years	6-10+ Years		Rating
	(as applicable)		4	3	2	1		
	Arterial/Sanitary Int./Major Tributary	4						0
	Collector/Storm/Sanitary Collector/Stream	3						0
	Local Storm/Sanitary Main/Road Drainage	2			X			4
FLOODED	PROPERTY OR FACILITY CLASSIFICATION		FLOODING FREQUENCY					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr		Rating
			4	3	2	1		
	Homes	4						0
	Business/Industry	3		X				9
	Parking Lots	2						0
	Yards / Fields	1						0
NUMBER IMPACTED	PROPERTY CLASSIFICATION		NUMBER OF FEATURES AFFECTED					
			1 - 10	11 - 25	26 - 50	> 50		Rating
			1	2	3	4		
	Homes	4						0
	Business/Industry	2		X				4
FLOODING IMPACT	FLOODING CONCERN		Sewage in basement	Standing water > 1 wk	Standing water 2-7 d	Standing water < 48 hr		Rating
			15	10	5	0		
	Observed Impact				x			5
EXTENT OF EROSION	EROSION		LINEAL FEET OF EROSION					
			10 - 100	101 - 250	251 - 500	> 500		Rating
			10	20	30	40		
	Observed Erosion		X					10
WATER QUALITY	(AREA TYPE)		Non-Combined Sewer Area	Erosion Effecting Water Quality	Combined Sewer Area			Rating
			5	10	15			
	Area Type		x					5
SOLUTIONS	RESOLUTION TYPE		Storm Sewer	Structural BMP	Bridge/ Culvert	Open Channel		Rating
			2	4	6	8		
	Solution		x	x				6
PUBLIC INVOLVE.	COST SHARE (When property owner ask to participate or is required for a solution)		> 75%	26 - 75%	6 - 25%	0 - 5%		Rating
			15	10	5	0		
	% by Developer/Owner					x		0
MS4 REQ'MNT	SATISFIES REGULATORY REQUIREMENT FOR MS4 PERMIT		YES		NO			
			5		0			
			x					5
							Subtotal	46
	Public or Private Benefit?		Public	X	Private	X	IPR RATING	46

City of Lafayette — **Stormwater Program**

Stormwater Problem Area — **Initial Priority Rating Evaluation Sheet**

Street Address: Rain Gardens

Nearest address or intersection of problem:

Rating By: Crystal Joshua — **Date: 8/18/2009**

INSTRUCTIONS: Fill in only 1 "X" per Group Rating as applicable

Revision Date: 08-12-2009

	STREET CLASSIFICATION		STREET FLOODING OCCURRENCES					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr	none	Rating
			4	3	2	1		
STREET FLOODING	Primary Arterial	4						0
	Secondary Arterial	3						0
	Collector	2	X					8
	Local Street or Place	1						0

	PUBLIC INFRASTRUCTURE TYPE		MAJOR FAILURE POSSIBLE WITHIN					
			Immediate	1-2 Years	3 -5 Years	6-10+ Years		Rating
	(as applicable)		4	3	2	1	None	
INFRASTRUCTURE DETERIORATION	Arterial/Sanitary Int./Major Tributary	4						0
	Collector/Storm/Sanitary Collector/Stream	3						0
	Local Storm/Sanitary Main/Road Drainage	2			X			4

	PROPERTY OR FACILITY CLASSIFICATION		FLOODING FREQUENCY					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr	none	Rating
			4	3	2	1		
FLOODED	Homes	4					x	0
	Business/Industry	3						0
	Parking Lots	2						0
	Yards / Fields	1						0

	PROPERTY CLASSIFICATION		NUMBER OF FEATURES AFFECTED					
			1 - 10	11 - 25	26 - 50	> 50		Rating
			1	2	3	4		
NUMBER IMPACTED	Homes	4				X		16
	Business/Industry	2				X		8

	FLOODING CONCERN		Sewage in basement	Standing water > 1 wk	Standing water 2-7 d	Standing water < 48 hr		Rating
			15	10	5	0	None	
FLOODING IMPACT	Observed Impact				x			5

	EROSION		LINEAL FEET OF EROSION					
			10 - 100	101 - 250	251 - 500	> 500		Rating
			10	20	30	40	None	
EXTENT OF EROSION	Observed Erosion						x	

	(AREA TYPE)		Non-Combined Sewer Area	Erosion Effecting Water Quality	Combined Sewer Area			Rating
			5	10	15			
WATER QUALITY	Area Type		x		x			20

	RESOLUTION TYPE		Storm Sewer	Structural BMP	Bridge/ Culvert	Open Channel		Rating
			2	4	6	8		
SOLUTIONS	Solution			x				4

	COST SHARE (When property owner ask to participate or is required for a solution)		> 75%	26 - 75%	6 - 25%	0 - 5%		Rating
			15	10	5	0		
PUBLIC INVOLVE.	% by Developer/Owner			x				10

	SATISFIES REGULATORY REQUIREMENT FOR MS4 PERMIT		YES	NO		
			5	0		
MS4 REQ'MNT			x			5

							Subtotal	65
	Public or Private Benefit?		Public	X	Private	X	IPR RATING	65

City of Lafayette — **Stormwater Program**

Stormwater Problem Area — **Initial Priority Rating Evaluation Sheet**

Street Address: Armstrong Park

Nearest address or intersection of problem:

Rating By: Crystal Joshua — **Date: 8/12/2009**

INSTRUCTIONS: Fill in only 1 "X" per Group Rating as applicable

Revision Date: 08-12-2009

STREET FLOODING	STREET CLASSIFICATION		STREET FLOODING OCCURRENCES					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr	none	Rating
			4	3	2	1		
	Primary Arterial	4						0
	Secondary Arterial	3						0
	Collector	2						0
	Local Street or Place	1						0
INFRASTRUCTURE DETERIORATION	PUBLIC INFRASTRUCTURE TYPE		MAJOR FAILURE POSSIBLE WITHIN					
			Immediate	1-2 Years	3 -5 Years	6-10+ Years		Rating
	(as applicable)		4	3	2	1	None	
	Arterial/Sanitary Int./Major Tributary	4						0
	Collector/Storm/Sanitary Collector/Stream	3						0
	Local Storm/Sanitary Main/Road Drainage	2						0
FLOODED	PROPERTY OR FACILITY CLASSIFICATION		FLOODING FREQUENCY					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr		Rating
			4	3	2	1		
	Homes	4						0
	Business/Industry	3						0
	Parking Lots	2						0
	Yards / Fields	1						0
NUMBER IMPACTED	PROPERTY CLASSIFICATION		NUMBER OF FEATURES AFFECTED					
			1 - 10	11 - 25	26 - 50	> 50		Rating
			1	2	3	4		
	Homes	4				X		16
	Business/Industry	2				X		8
FLOODING IMPACT	FLOODING CONCERN		Sewage in basement	Standing water > 1 wk	Standing water 2-7 d	Standing water < 48 hr		Rating
			15	10	5	0		
	Observed Impact					x		0
EXTENT OF EROSION	EROSION			LINEAL FEET OF EROSION				
			10 - 100	101 - 250	251 - 500	> 500		Rating
			10	20	30	40		
	Observed Erosion			X				20
WATER QUALITY	(AREA TYPE)		Non-Combined Sewer Area	Erosion Effecting Water Quality	Combined Sewer Area			Rating
			5	10	15			
	Area Type		x	x				15
SOLUTIONS	RESOLUTION TYPE		Storm Sewer	Structural BMP	Bridge/ Culvert	Open Channel		Rating
			2	4	6	8		
	Solution		x	x				6
PUBLIC INVOLVE.	COST SHARE (When property owner ask to participate or is required for a solution)		> 75%	26 - 75%	6 - 25%	0 - 5%		Rating
			15	10	5	0		
	% by Developer/Owner					x		0
MS4 REQ'MNT	SATISFIES REGULATORY REQUIREMENT FOR MS4 PERMIT		YES		NO			
			5		0			
			x					5
							Subtotal	65
	Public or Private Benefit?		Public	X	Private	X	IPR RATING	65

City of Lafayette — **Stormwater Program**

Stormwater Problem Area — **Initial Priority Rating Evaluation Sheet**

Street Address: Durkees Run

Nearest address or intersection of problem:

Rating By: Crystal Joshua — **Date: 8/18/2009**

INSTRUCTIONS: Fill in only 1 "X" per Group Rating as applicable

Revision Date: 08-12-2009

STREET FLOODING	STREET CLASSIFICATION		STREET FLOODING OCCURRENCES					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr	none	Rating
			4	3	2	1		
	Primary Arterial	4					x	0
	Secondary Arterial	3					x	0
	Collector	2					x	0
	Local Street or Place	1					x	0
INFRASTRUCTURE DETERIORATION	PUBLIC INFRASTRUCTURE TYPE		MAJOR FAILURE POSSIBLE WITHIN					
			Immediate	1-2 Years	3 -5 Years	6-10+ Years		Rating
	(as applicable)		4	3	2	1		
	Arterial/Sanitary Int./Major Tributary	4						0
	Collector/Storm/Sanitary Collector/Stream	3			X			6
	Local Storm/Sanitary Main/Road Drainage	2						0
FLOODED	PROPERTY OR FACILITY CLASSIFICATION		FLOODING FREQUENCY					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr		Rating
			4	3	2	1		
	Homes	4		X				12
	Business/Industry	3		X				9
	Parking Lots	2						0
	Yards / Fields	1						0
NUMBER IMPACTED	PROPERTY CLASSIFICATION		NUMBER OF FEATURES AFFECTED					
			1 - 10	11 - 25	26 - 50	> 50		Rating
			1	2	3	4		
	Homes	4				X		16
	Business/Industry	2				X		8
FLOODING IMPACT	FLOODING CONCERN		Sewage in basement	Standing water > 1 wk	Standing water 2-7 d	Standing water < 48 hr		Rating
			15	10	5	0		
	Observed Impact		x					15
EXTENT OF EROSION	EROSION			LINEAL FEET OF EROSION				
			10 - 100	101 - 250	251 - 500	> 500		Rating
			10	20	30	40		
	Observed Erosion		X					10
WATER QUALITY	(AREA TYPE)		Non-Combined Sewer Area	Erosion Effecting Water Quality	Combined Sewer Area			Rating
			5	10	15			
	Area Type				x			15
SOLUTIONS	RESOLUTION TYPE		Storm Sewer	Structural BMP	Bridge/ Culvert	Open Channel		Rating
			2	4	6	8		
	Solution		x	x	x	x		20
PUBLIC INVOLVE.	COST SHARE (When property owner ask to participate or is required for a solution)		> 75%	26 - 75%	6 - 25%	0 - 5%		Rating
			15	10	5	0		
	% by Developer/Owner					x		0
MS4 REQ'MNT	SATISFIES REGULATORY REQUIREMENT FOR MS4 PERMIT		YES		NO			
			5		0			
			x					5
							Subtotal	111
	Public or Private Benefit?		Public	X	Private		IPR RATING	111

City of Lafayette — **Stormwater Program**

Stormwater Problem Area — **Initial Priority Rating Evaluation Sheet**

Street Address: Vinton Woods

Nearest address or intersection of problem:

Rating By: Crystal Joshua — **Date: 8/19/2009**

INSTRUCTIONS: Fill in only 1 "X" per Group Rating as applicable

Revision Date: 08-12-2009

STREET FLOODING	STREET CLASSIFICATION		STREET FLOODING OCCURRENCES					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr	none	Rating
			4	3	2	1		
	Primary Arterial	4						0
	Secondary Arterial	3						0
	Collector	2						0
	Local Street or Place	1		X				3
INFRASTRUCTURE DETERIORATION	PUBLIC INFRASTRUCTURE TYPE		MAJOR FAILURE POSSIBLE WITHIN					
			Immediate	1-2 Years	3 -5 Years	6-10+ Years		Rating
	(as applicable)		4	3	2	1		
	Arterial/Sanitary Int./Major Tributary	4						0
	Collector/Storm/Sanitary Collector/Stream	3						0
	Local Storm/Sanitary Main/Road Drainage	2		X				6
FLOODED	PROPERTY OR FACILITY CLASSIFICATION		FLOODING FREQUENCY					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr		Rating
			4	3	2	1		
	Homes	4		X				12
	Business/Industry	3						0
	Parking Lots	2						0
	Yards / Fields	1						0
NUMBER IMPACTED	PROPERTY CLASSIFICATION		NUMBER OF FEATURES AFFECTED					
			1 - 10	11 - 25	26 - 50	> 50		Rating
			1	2	3	4		
	Homes	4			X			12
	Business/Industry	2						0
FLOODING IMPACT	FLOODING CONCERN		Sewage in basement	Standing water > 1 wk	Standing water 2-7 d	Standing water < 48 hr		Rating
			15	10	5	0		
	Observed Impact					x		0
EXTENT OF EROSION	EROSION			LINEAL FEET OF EROSION				
			10 - 100	101 - 250	251 - 500	> 500		Rating
			10	20	30	40		
	Observed Erosion					X		40
WATER QUALITY	(AREA TYPE)		Non-Combined Sewer Area	Erosion Effecting Water Quality	Combined Sewer Area			Rating
			5	10	15			
	Area Type		x	x				15
SOLUTIONS	RESOLUTION TYPE		Storm Sewer	Structural BMP	Bridge/ Culvert	Open Channel		Rating
			2	4	6	8		
	Solution		x	x		x		14
PUBLIC INVOLVE.	COST SHARE (When property owner ask to participate or is required for a solution)		> 75%	26 - 75%	6 - 25%	0 - 5%		Rating
			15	10	5	0		
	% by Developer/Owner					x		0
MS4 REQ'MNT	SATISFIES REGULATORY REQUIREMENT FOR MS4 PERMIT		YES		NO			
			5		0			
			x					5
							Subtotal	102
	Public or Private Benefit?		Public	X	Private	X	IPR RATING	102

City of Lafayette — **Stormwater Program**

Stormwater Problem Area — **Initial Priority Rating Evaluation Sheet**

Street Address: Orchard Heights

Nearest address or intersection of problem:

Rating By: Crystal Joshua — **Date: 8/18/2009**

INSTRUCTIONS: Fill in only 1 "X" per Group Rating as applicable

Revision Date: 08-12-2009

STREET FLOODING	STREET CLASSIFICATION		STREET FLOODING OCCURRENCES					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr	none	Rating
			4	3	2	1		
	Primary Arterial	4						0
	Secondary Arterial	3						0
	Collector	2						0
	Local Street or Place	1	X					4
INFRASTRUCTURE DETERIORATION	PUBLIC INFRASTRUCTURE TYPE		MAJOR FAILURE POSSIBLE WITHIN					
			Immediate	1-2 Years	3 -5 Years	6-10+ Years		Rating
	(as applicable)		4	3	2	1	None	
	Arterial/Sanitary Int./Major Tributary	4						0
	Collector/Storm/Sanitary Collector/Stream	3						0
	Local Storm/Sanitary Main/Road Drainage	2			X			4
FLOODED	PROPERTY OR FACILITY CLASSIFICATION		FLOODING FREQUENCY					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr		Rating
			4	3	2	1		
	Homes	4		X				12
	Business/Industry	3						0
	Parking Lots	2						0
	Yards / Fields	1						0
NUMBER IMPACTED	PROPERTY CLASSIFICATION		NUMBER OF FEATURES AFFECTED					
			1 - 10	11 - 25	26 - 50	> 50		Rating
			1	2	3	4		
	Homes	4				X		16
	Business/Industry	2						0
FLOODING IMPACT	FLOODING CONCERN		Sewage in basement	Standing water > 1 wk	Standing water 2-7 d	Standing water < 48 hr		Rating
			15	10	5	0		
	Observed Impact		x		x			20
EXTENT OF EROSION	EROSION			LINEAL FEET OF EROSION				
			10 - 100	101 - 250	251 - 500	> 500		Rating
			10	20	30	40		
	Observed Erosion			X				20
WATER QUALITY	(AREA TYPE)		Non-Combined Sewer Area	Erosion Effecting Water Quality	Combined Sewer Area			Rating
			5	10	15			
	Area Type		x	x				15
SOLUTIONS	RESOLUTION TYPE		Storm Sewer	Structural BMP	Bridge/ Culvert	Open Channel		Rating
			2	4	6	8		
	Solution		x	x				6
PUBLIC INVOLVE.	COST SHARE (When property owner ask to participate or is required for a solution)		> 75%	26 - 75%	6 - 25%	0 - 5%		Rating
			15	10	5	0		
	% by Developer/Owner					x		0
MS4 REQ'MNT	SATISFIES REGULATORY REQUIREMENT FOR MS4 PERMIT		YES		NO			
			5		0			
			x					5
							Subtotal	97
	Public or Private Benefit?		Public	X	Private	X	IPR RATING	97

City of Lafayette — **Stormwater Program**

Stormwater Problem Area — **Initial Priority Rating Evaluation Sheet**

Street Address: Outfall Repairs

Nearest address or intersection of problem:

Rating By: Crystal Joshua — **Date: 8/18/2009**

INSTRUCTIONS: Fill in only 1 "X" per Group Rating as applicable

Revision Date: 08-12-2009

	STREET CLASSIFICATION		STREET FLOODING OCCURRENCES					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr	none	Rating
			4	3	2	1		
STREET FLOODING	Primary Arterial	4					x	0
	Secondary Arterial	3						0
	Collector	2						0
	Local Street or Place	1						0

	PUBLIC INFRASTRUCTURE TYPE		MAJOR FAILURE POSSIBLE WITHIN					
			Immediate	1-2 Years	3 -5 Years	6-10+ Years		Rating
	(as applicable)		4	3	2	1	None	
INFRASTRUCTURE DETERIORATION	Arterial/Sanitary Int./Major Tributary	4						0
	Collector/Storm/Sanitary Collector/Stream	3			X			6
	Local Storm/Sanitary Main/Road Drainage	2						0

	PROPERTY OR FACILITY CLASSIFICATION		FLOODING FREQUENCY					
			Every Rain	Once/1-2 Yr	Once/2-10 Yr	Once/10-25 Yr	none	Rating
			4	3	2	1		
FLOODED	Homes	4					x	0
	Business/Industry	3						0
	Parking Lots	2						0
	Yards / Fields	1						0

	PROPERTY CLASSIFICATION		NUMBER OF FEATURES AFFECTED					
			1 - 10	11 - 25	26 - 50	> 50		Rating
			1	2	3	4		
NUMBER IMPACTED	Homes	4				X		16
	Business/Industry	2				X		8

	FLOODING CONCERN		Sewage in basement	Standing water > 1 wk	Standing water 2-7 d	Standing water < 48 hr		Rating
			15	10	5	0		
FLOODING IMPACT	Observed Impact							0

	EROSION		LINEAL FEET OF EROSION					
			10 - 100	101 - 250	251 - 500	> 500		Rating
			10	20	30	40		
EXTENT OF EROSION	Observed Erosion			X				20

	(AREA TYPE)		Non-Combined Sewer Area	Erosion Effecting Water Quality	Combined Sewer Area			Rating
			5	10	15			
WATER QUALITY	Area Type		x	x	x			30

	RESOLUTION TYPE		Storm Sewer	Structural BMP	Bridge/ Culvert	Open Channel		Rating
			2	4	6	8		
SOLUTIONS	Solution		x					2

	COST SHARE (When property owner ask to participate or is required for a solution)		> 75%	26 - 75%	6 - 25%	0 - 5%		Rating
			15	10	5	0		
PUBLIC INVOLVE.	% by Developer/Owner					x		0

	SATISFIES REGULATORY REQUIREMENT FOR MS4 PERMIT		YES		NO			
			5		0			
MS4 REQ'MNT			x					5

							Subtotal	82
	Public or Private Benefit?		Public	X	Private	X	IPR RATING	82

Appendix C

Tippecanoe County Unified Zoning Ordinance
Section 4-2-1

(17) employee restaurants and cafeterias at permitted nonresidential ***uses*** (standard);
(18) retail sales at permitted industrial ***uses*** (standard);
(19) on-premise rental offices(standard);
(20) ***recycling collection facilities*** (as regulated in 4-11-8 below);
(21) a ***caretaker's residence*** (standard);
(22) automatic teller machines (ATMs), located on a bank or other primary use building (standard); (Not an ***accessory use*** if free-standing, unless located on the same ***lot*** as the bank it serves);
(23) other ***accessory buildings*** (standard); and
(24) ***rural home occupations*** and related outside storage other than ***uses*** in 4-1-c-10 above (standard). (Amend 34)

4-2 STANDARD DIMENSIONAL REQUIREMENTS

Except as in 4-3 through 4-5 below, no ***primary use*** shall be erected either:
(a) on a ***lot*** failing to meet the ***lot area*** and ***lot width*** standards; or
(b) in any configuration that fails to meet the ***lot coverage***, ***building height*** and ***setback*** standards,

all of which are summarized in the following tables (4-2-1 and 4-2-2). These tables combine the *Zone Regulations* for all non-PD zones, as they appear in 2-1 through 2-26.

4-2-1 SUMMARY OF STANDARD AREA, WIDTH, COVERAGE, AND HEIGHT REQUIREMENTS: (Amend 41)

ZONE	MINIMUM *LOT AREA*[1] (sq.ft)		MINIMUM *LOT WIDTH*[1] (ft.)	MAXIMUM LOT COVERAGE BY ALL BUILDINGS (pct.)	MINI-MUM VEGE-TATIVE COVER (pct.)	(Amend 10) MAXIMUM BLDG. HEIGHT (ft.)
	PER *USE*	PER D.U.[2]				
R1	10000	----	75[12]	30	40	35[9]
R1A	7500	----	60	30	40	35[9]
R1B	6000	----	50	35	35	35[9]
R1U	4000	----	40	40	30	35[9]
R1Z	5000	----	48[3]	40	30	35
R2	SF :7500	TF: 3750	60	30	30	35[9]
R2U	SF: 4000	TF: 3000	SF: 40 TF: 60	35	30	35[9]
R3	SF: 6000 MF: none	TF: 3000 2000[4]	60 70	40	30	35[9]
R3U	SF: 4000 MF: none	TF: 3000 2000[4]	SF: 40 TF: 60 70	40	30	35[9]

See next pages for abbreviations and footnotes.

4-2-1 SUMMARY OF STANDARD AREA, WIDTH, COVERAGE, AND HEIGHT REQUIREMENTS (cont'd.):

ZONE	MINIMUM *LOT AREA*[1] (sq.ft)		MINIMUM *LOT WIDTH*[1] (ft.)	MAXIMUM LOT COVERAGE BY ALL BUILDINGS (pct.)	MINI-MUM VEGE-TATIVE COVER (pct.)	(Amend 10) MAXIMUM BLDG. HEIGHT (ft.)
	PER *USE*	PER D.U.[2]				
R3U	SF: 4000 MF: none	TF: 3000 2000**4**	SF: 40 TF: 60 70	40	30	35**9**
R3W **R4W**	SF: 6000 MF: none UP: none	TF: 3000 2000**4** **6**	60 70 70	40	30	**5**
NB	none	----	none	50	20	35
NBU (Ams 5, 10)	none UP: none	none **6**	none 70	60 40	none 30	35**9** **5**
OR	30000	----	100	25	30	50
MR	SF: 4000 MF: none NR: none	TF:2500 2000**4**	40 60 40	40	30	35 35 60
GB	none	----	none	60	10	35
HB	none	----	none	40	20	35
CB	none	none	none	100	----	100
CBW	none UP: none	none **6**	none none (Am 18)	100	----	35**7** 35**7**
I1	10000	----	75	25	30	35
I2	10000	----	75	35	25	50
I3	10000	----	75	45	20	100
A	SF: 15000 NR: none	TF: 7500 ----	100 none	20	50	35 none
AA **AW**	SF: 10000 NR: none	----	100 none	10	75	35**8**
FP	none	----	none	5	90	35**8**
RE (Amend 27)	**10**	2 acres	100**11**	10	80	35**8**

ABBREVIATIONS:

D.U. = ***dwelling unit***
SF = ***single-family dwelling***
TF = ***two family dwelling***
MF = ***multi-family dwelling***
UP = ***university-proximate multi-family residence***
NR = nonresidential ***use***