



Monday, October 12, 2020

5:30 PM

Civic Center Theater

CITY COUNCIL STUDY SESSION AGENDA

Pursuant to Phase 4 of Governor Pritzker's Executive Order, a maximum of 50 people will be allowed in the Civic Center Theater. An in-person meeting of all members of the City Council of the City of Decatur as well as in-person meetings of all members of other Boards and Commissions of the City of Decatur is not practical or prudent because of the COVID-19 pandemic.

I. Call to Order

1. Roll Call
2. Pledge of Allegiance

II. Study Session: Study Sessions are less formal meetings of the City Council called to discuss broad policy themes and obtain input from the governing body about proposals and initiatives that are still being developed. No formal votes are taken at Study Sessions, and no informal directions expressed at Study Sessions bind the City Council, or its individual members, to vote in a certain manner at a future City Council meeting. Members of the public should limit their remarks to three (3) minutes after Council discussion.

Stormwater and Sanitary Sewer Issues & Policies

III. Appearance of Citizens

Policy relative to Appearance of Citizens:

A 30-minute time period is provided for citizens to appear and express their views before the City Council. Each citizen speaking will be limited to one appearance of up to 3 minutes. No immediate response will be given by City Council or City staff members. Citizens are to give their documents (if any) to the Police Officer for distribution to the Council. When the Mayor determines that all persons wishing to speak in accordance with this policy have done so, members of the City Council and key staff may make comments.

IV. Adjournment

Engineering

DATE: 10/8/2020

MEMO: 2020-120

TO: Honorable Mayor Julie Moore Wolfe and City Council Members

FROM: Scot Wrighton, City Manager
Matt Newell, P.E., Public Works Director

SUBJECT: Storm and Sanitary Sewer Discussion

ATTACHMENTS:

| Description | Type |
|--|-----------------|
| Storm and Sanitary Sewer Discussion Memo | Cover Memo |
| Storm and Sanitary Sewer PointPoint Presentation | Backup Material |

PUBLIC WORKS MEMORANDUM
No. 2020-120

DATE: **October 7, 2020**

TO: **Honorable Mayor Moore Wolfe and City Council Members**

FROM: **Scot Wrighton, City Manager**
Matthew C. Newell, P.E., Public Works Director

SUBJECT: **Storm and Sanitary Sewer Discussion**

SANITARY SEWERS

The City of Decatur sanitary sewer system is comprised of approximately 2.2 million feet (424 miles) of sewers and 8,000 manholes. Nearly 40% of the City's sanitary sewers are combined (carry both storm water and sanitary sewage). The City also owns 19 sewage pump stations that the Sanitary District of Decatur maintains under a contract with the City.

1. City Interceptor Sewer Rehabilitation: These are large diameter sewer pipes, some nearly 8 feet in diameter, that carry both storm water and sanitary sewage away from large areas of the City.
 - a. Work Status: The \$25 million project initiated in 2010 to rehabilitate 4 of the City's 5 Interceptor sewers, concluded this year with the completion of the McKinley Sewer.

| Project # | Project Name | Design Engineering | Construction Engineering | Construction |
|------------------|---------------------|---------------------------|---------------------------------|---------------------|
| 2012-06 | Lake Shore Drive | \$303,000 | \$370,000 | \$7,700,000 |
| 2013-07 | Union Street | \$199,000 | \$204,000 | \$2,200,000 |
| 2015-07 | 7th Ward | \$298,000 | \$522,000 | \$7,700,000 |
| 2017-22 | McKinley | \$41,000 | \$197,000 | \$5,300,000 |
| Totals | | \$841,000 | \$1,293,000 | \$22,900,000 |

- b. Future Work: The Broadway Sewer under MLK was rehabilitated about 25 years ago and needs to be reviewed for possible future improvements.

2. Sanitary Sewer Overflows Due to Inflow and Infiltration

- a. On October 15, 2015, the City entered into an Administrative Consent Order with Region 5 of the United States Environmental Protection Agency. The Order requires that the City develop and implement programs to eliminate excessive Inflow/Infiltration (I/I) within the collection system which are causing Sanitary Sewer Overflows, Unauthorized Combined Sewer Overflows, and private property backups.

Wet weather overflows are caused by storm water entering the sanitary sewer system. The City has two sanitary sewage conveyance systems:

- Separate Sewer- Only sanitary sewer waste
- Combined Sewer- Sanitary and storm water. This system encompasses the older sections of the City and comprises nearly 40% of the system.

I/I reduction strategies generally fall into two categories, one that reduces the flow (Proactive) and one that lives with it (Reactive):

| PROACTIVE | REACTIVE |
|---|---|
| <ul style="list-style-type: none"> • Lining • Separation • Replacement • Maintenance • Diversion | <ul style="list-style-type: none"> • Overhead Sewers • New Sewers / Increase Capacity |

- b. A Sewer Collection System Alternatives Analysis Study (SCSAA) was completed as required by the Administrative Consent Order. It was submitted to the USEPA in 2017. To date, no response has been received.
- c. The SCSAA proposes 4 immediate focus areas and 5 future focus areas which are exhibiting continuing wet weather overflows or a significant number of private property backups.

Priority Sanitary Sewer Projects

| Project | Consultant | Engineering | Construction |
|------------------------------------|-------------------|--------------------|---------------------|
| Grand/Fairview Combined Sewer Area | AECOM | \$900,000 | \$10 million |
| Ellen/Division Area | AECOM | \$400,000 | \$3 million |
| North Lost Bridge Area | CMT | \$400,000 | \$6 million |
| Florian Avenue Area | CMT | \$400,000 | \$3.5 million |

Future Sanitary Sewer Focus Areas (VERY Rough 3 Year Old Estimates)
- est. 5-10 years out -

| Project | Consultant | Engineering | Construction |
|--------------------------|-------------------|--------------------|---------------------|
| William Street Road Area | TBD | \$300,000 | \$1.4 million |
| Southampton Road Area | TBD | \$80,000 | \$0.7 million |
| West Main Street Area | TBD | \$50,000 | \$0.5 million |
| Lynette Drive Area | TBD | \$100,000 | \$1 million |
| Sesom Drive Area | TBD | \$70,000 | \$0.7 million |

- d. **Requested Council Input Item:** City staff proposes that the City proceed with the final engineering designs for the Grand/Fairview Sewer Separation Project and the Ellen/Division I/I Reduction Project in the 2021 Budget. It is recommended that the City seek IEPA funded low interest loans to fund these major sanitary sewer projects.
- e. **Requested Council Input Item:** Proposed changes to the Overhead Sewer Program aimed at increasing participation and reducing private property sanitary sewer overflows.
 - i. Number of basement backups experienced yearly in the City.
 - ii. Since 2009, there have been 39 participants in the program.
 - iii. Propose move from 75% coverage to 100% coverage when conditions are met showing evidence of basement backups.
 - iv. Sanitary District of Decatur has indicated a willingness to continue its 25% participation.
 - v. City will increase the maximum amount from \$7,500 set in 2009, to \$10,000 per property.
 - vi. Allow funds to be used on rental properties.

3. System Operation and Maintenance

- a. The Sewer Fund's expected revenues for 2020 are approximately \$3.1 million and \$3.3 million in 2021. The fund is 5 years into a 6-year rate increase to meet the expected obligations of the Administrative Consent Order with the USEPA. The final set rate increase occurs in 2021 after which there will be annual rate increases of 2.5%.
 - i. In 2020, approximately \$1.6 million was transferred to the General Fund to reimburse for sanitary sewer fund supporting activities performed by Public Works and other departments.
 - ii. Nearly \$1.4 million is currently spent annually for debt service. It is anticipated that at the conclusion of the major projects identified above, that the debt service will be just over \$3 million/year. It is likely that additional rate increases will be needed in future years to fund the debt service and yearly maintenance and capital projects including I/I reduction work.
- b. As a result of the City's Capacity, Management, Operations and Maintenance (CMOM) program as approved by the USEPA under the Administrative Consent Order.
 - i. Equipment and staffing increased for additional sewer cleaning.
 - ii. Increased engineering staffing authorization added one new technician for sanitary sewer oversight.
 - iii. Increased and ongoing capital maintenance funding.
 - iv. Increased sewer investigations to eliminate inflow connections.

4. Unsewered Areas. At the September 21st City Council meeting, the City Council approved engineering services to research unsewered areas of the City.

- a. Identify unsewered areas
- b. Determine options for providing service
- c. Estimate costs
- d. Propose priority for providing service
- e. Proposed means to pay for the work

STORM DRAINAGE

The City has over 216 miles of storm sewers including nearly 3,200 manholes and 8,700 catch basins. Storm drainage problems often go hand in hand with sanitary sewer problems. If storm water cannot get away from an area, it tends to increase ground water pressure that finds relief in the sanitary sewer system. Wet weather tends to increase sanitary sewer overflows from manholes and in houses, therefore we generally look first at storm drainage when faced with sewer capacity problems.

1. Stormwater Problem Area Prioritization: In 2009, the City worked with the engineering firm, Clark Dietz Inc., to complete a Stormwater Master Plan – Phase I. This was an update to the 1966 and 1999 storm water plans prepared for the City. The purpose of the Phase I Update was to identify the many areas of the City with storm drainage problems, recommend potential solutions and prioritize them. The Update provided a list of criteria to prioritize storm drainage problem areas.
 - a. Public Health and Safety: Generally flooding that impacts buildings. Can also include flooding that causes sewer overflows.
 - b. Degree of Street Flooding: Flooding that impacts the use of City streets.
 - c. Construction Impacts: How difficult to construct.
 - d. Problems Identified in 1966 But Not Resolved: If there are lingering problems that still are a high priority to resolve.
 - e. Implementation Constraints: Other implementation issues such as heavy permitting, easements, project coordination.
 - f. Watershed Impact: How will it impact the watersheds in the City?
 - g. Infiltration and Inflow Problem Areas: Is this a known I/I problem area?
 - h. Water Quality: Erosion impacts, damage to the lake or wetlands, etc.

Top Ten Drainage Problem Areas: Identified in the 2009 stormwater master plan.

| Priority | Drainage Problem Area | Public or Private? | Size (Acres) | Description |
|----------|-------------------------|--------------------|--------------|--|
| 1 | Meadowlark Subdivision | Public | 37 | Preliminary design completed. Multimillion-dollar project on hold for funding. |
| 2 | Nelson Park | Public | 8 | Completed in 2018. |
| 3 | 32nd/Fulton | Both | 235 | Under Construction, public right of way only. |
| 4 | Southhampton/Buckingham | Public | 12 | Partially completed. |
| 5 | Mound Road | Private | 6 | Spring Creek affecting private property |
| 6 | Main Street Underpass | Public | 6 | Not fully investigated. |
| 7 | L&A Industrial | Both | 8.0 | Linked to Meadowlark area drainage project. |
| 8 | Karen Drive | Private | 8.8 | Mainly, private property concerns. |
| 9 | Marietta Street | Public | 5.1 | Linked to the Grand/Oakland combined sewer project. |
| 10 | Woodridge and Manor | Private | 6.5 | Mainly private property drainage concerns. |

Since completion of this study back in 2009, we have begun looking closer at the relationship between public and private property with respect to storm drainage and what role the City should play in private property drainage issues.

2. Regulation, Standards, and Policies

a. Private Drainage vs. Public Drainage

- i. Illinois Drainage Law. Most of the drainage in the City is conducted on and through private property. Illinois Drainage Law dictates that downstream properties must receive natural flow drainage from upstream properties in an unobstructed manner. It is incumbent on property owners to maintain their property in a manner that will protect it from area stormwater

drainage. Therefore, the City installs and maintains culverts under roadways, to allow water to travel from one side of the road to the other without obstruction. Simply passing through a culvert or under a bridge, does not make the drainage flow the City's responsibility from then on.

- ii. City Assistance. The City receives numerous inquiries about drainage that can be identified as a private property issue. In these instances, Public Works Department staff will discuss options regarding private property drainage concerns and work to provide right of way drainage such as ditches or storm drains to which private properties can drain if maintained properly by the owner.
- iii. The Department will generally not perform drainage improvements solely serving private interests. Questions of concern are: What is the private benefit vs. the public benefit? Should the public spend funds to increase property value for a few private property owners? Often City staff opts to provide public drainage facilities which private property owners can access to relieve their private drainage concerns. This is not always possible when people own property within a drainage way, creek or stream, that may flood in heavy rain.

b. What is private and what is public?

- i. Public. The City maintains a public storm drainage system throughout the City mainly consisting of buried pipes and ditches, some of which are on private property with easements. Most of the public storm drainage system is contained within the public right of way as part of the street system.
- ii. Private systems consist of all means of collecting and conveying storm water or drainage on private property from residential properties to large shopping centers or factory complexes and conveying that water to the downstream property or a City maintained storm drainage system. Until this drainage leaves the property, it is under the maintenance responsibility of the property owner. This is the situation when a creek traverses private property.
- iii. Other public systems are on land owned by other public bodies such as the school district, the park district, or County, State and Federal governments. Drainage systems serving these properties are the responsibility of the property owner with the exception of roadway systems. Under State law, the City is responsible for underground storm drainage systems on County or State highways within the City limits.

c. **Requested Council Input Item:** What Role Should the City Play in Private Property Drainage?

- i. Should City staff propose for Council approval, a set of decision parameters that will govern the extent of public participation in drainage problems?
- ii. Parameters may include:
 1. Providing easements

2. Private financial participation based on the received benefit.
3. Stormwater Expenditures and Funding Mechanisms
 - a. In April 2014, the City Council approved the creation of a Stormwater Utility to provide a dedicated funding source to improve known drainage problems and to improve maintenance on existing stormwater facilities.
 - b. The Stormwater Fund has a yearly revenue stream of approximately \$1.6 million.
 - c. On a yearly basis approximately \$550,000 is transferred to the General fund to reimburse for stormwater related activities in Public Works, Billing and Purchasing. Just over \$200,000 goes toward an IEPA low interest loan repayment for the Nelson Park Neighborhood Sewer Separation project.
 - d. Approximately \$500,000 is available yearly for capital improvement projects. This level of funding cannot support significant drainage improvement projects which can easily run into millions of dollars.
 - e. Apart from grants and other external funding, the primary revenue sources to support additional storm water improvements are:
 - i. Rate hikes; and,
 - ii. Project costs sharing through the implementation of project specific special service areas.

October 12, 2020

SANITARY SEWERS AND STORM DRAINAGE

Sanitary Sewer Priorities

City Interceptor Rehabilitation

Sanitary Sewer Overflows Due To Inflow / Infiltration

Ongoing System Maintenance

Capacity, Maintenance, Operations, Management (CMOM)

Unsewered Areas of the City

Sanitary Sewer Priorities

City Interceptor Rehabilitation

CITY INTERCEPTORS



| Project # | Project Name | Design Engineering | Construction Engineering | Construction |
|-----------|------------------|--------------------|--------------------------|--------------|
| 2012-06 | Lake Shore Drive | \$303,000 | \$370,000 | \$7,700,000 |
| 2013-07 | Union Street | \$199,000 | \$204,000 | \$2,200,000 |
| 2015-07 | 7th Ward | \$298,000 | \$522,000 | \$7,700,000 |
| 2017-22 | McKinley | \$41,000 | \$197,000 | \$5,300,000 |
| | Totals | \$841,000 | \$1,293,000 | \$22,900,000 |

Sanitary Sewer Priorities

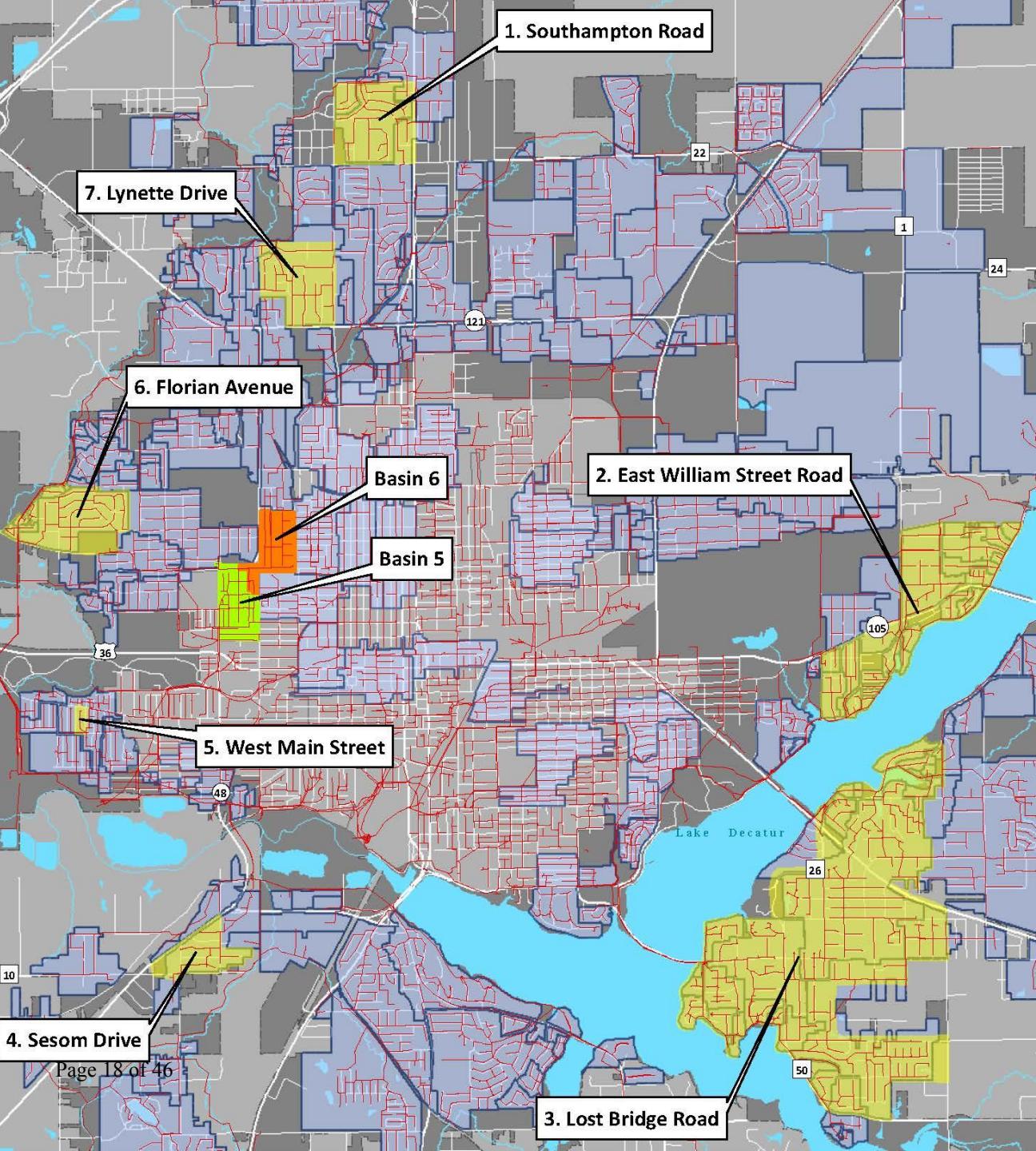
City Interceptor Rehabilitation

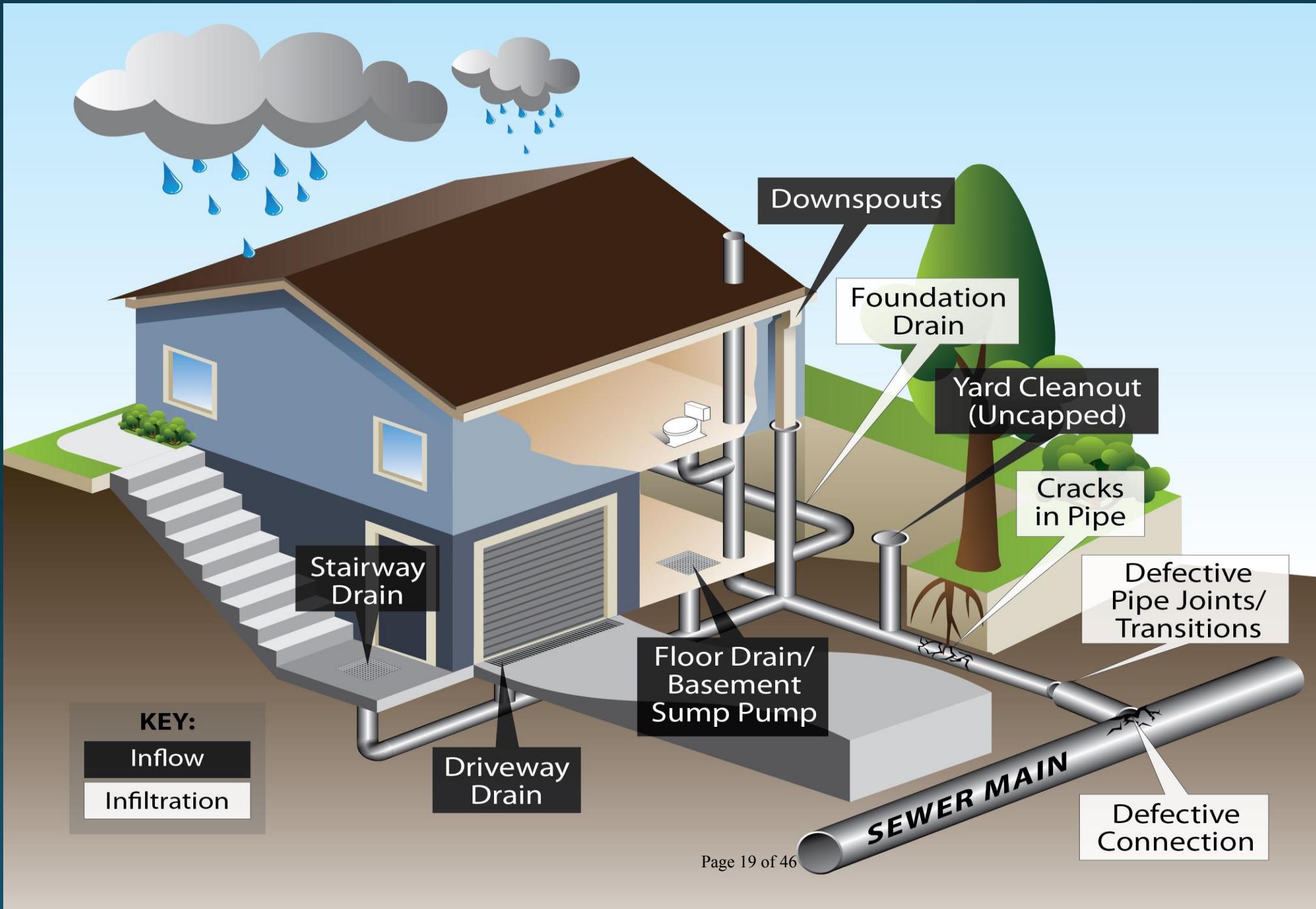
Sanitary Sewer Overflows Due To
Inflow / Infiltration

Oct. 15, 2015 – The City approved an Administrative Consent Order with the USEPA to address sanitary sewer overflows and basement backups

- Sewer Collection System Alternatives Analysis (SCSAA)
- Capacity, Management, Operation, and Maintenance (CMOM)

- Sewer Collection System Alternatives Analysis (SCSAA) for select areas
- Capacity, Management, Operations and Maintenance (CMOM) for entire system



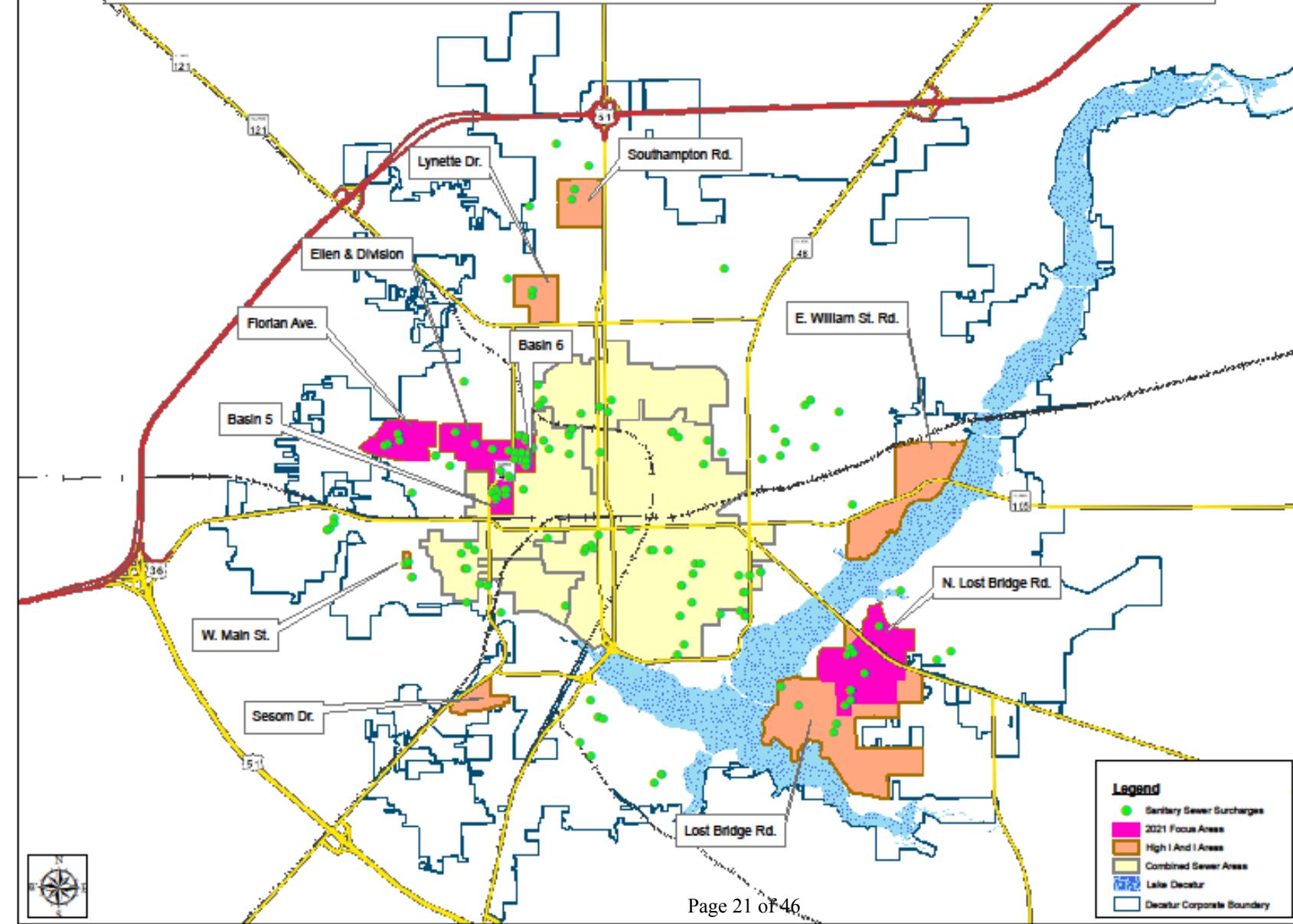


Sewer Collection System Alternatives Analysis (SCSAA)

USEPA ordered City to develop and implement alternatives to eliminate excessive inflow and infiltration in ...target areas causing

Sanitary sewer overflows,
Combined sewer overflows, and
Property backups.

Sanitary Sewer Problem Areas with Sewer Surcharges from '10-'20

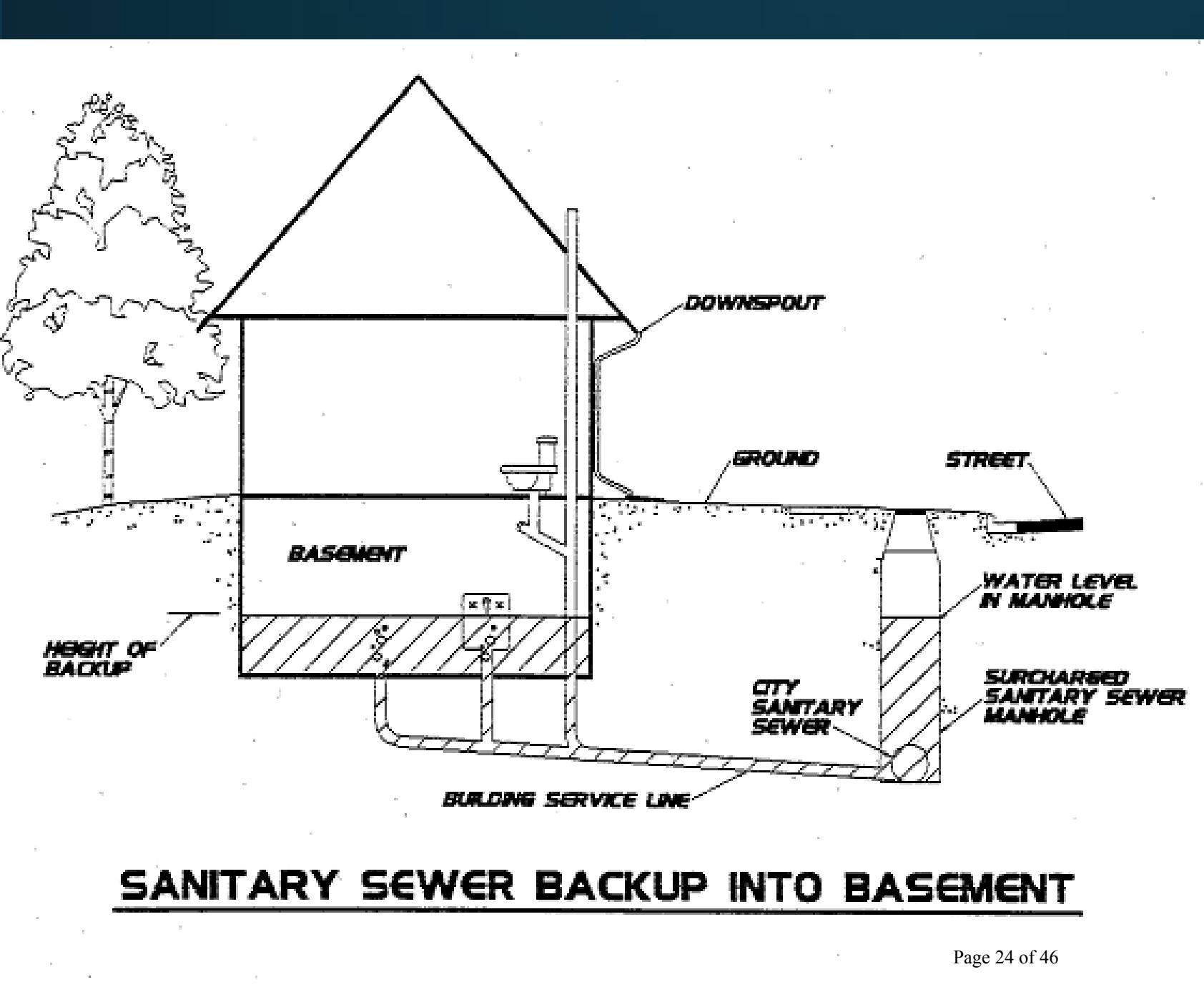


I/I REDUCTION STRATEGIES

- PROACTIVE
 - Lining
 - Separation
 - Replacement
 - Maintenance
 - Diversion

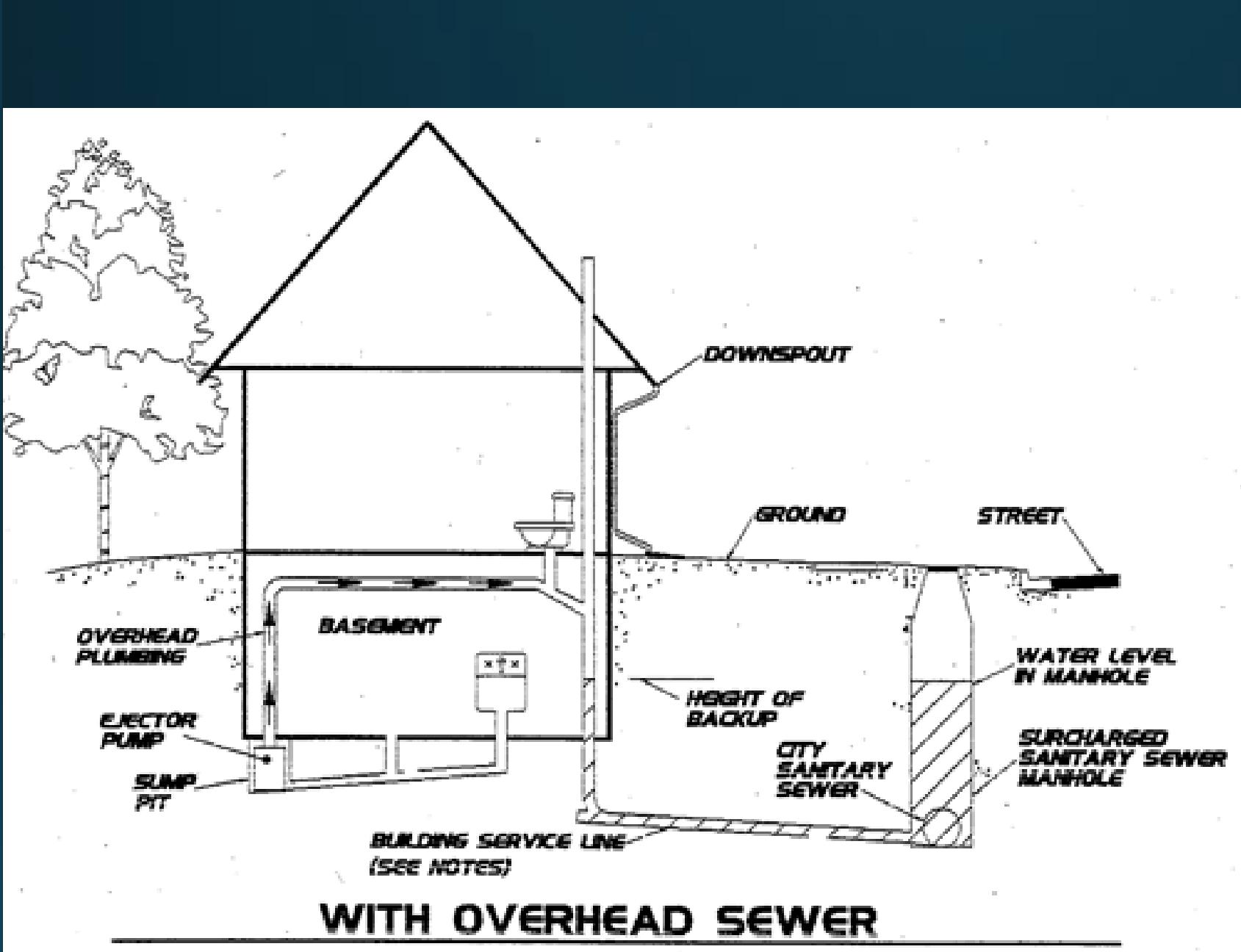
- REACTIVE
 - Overhead Sewers
 - New Sewers / Increase Capacity (Transport and Treat)

| Project | Consultant | Engineering | Construction |
|---------------------------------------|------------|-------------|---------------|
| North Lost Bridge Area | CMT | \$400,000 | \$6 million |
| Florian Avenue Area | CMT | \$400,000 | \$3.5 million |
| Grand/Fairview Combined Sewer Area | AECOM | \$900,000 | \$10 million |
| Ellen/Division Area | AECOM | \$400,000 | \$3 million |



Beginning in 2009, when a homeowner has a basement backup problem the City offers to pay 75% of the cost to install an overhead sewer to a maximum of \$7,500.

- 50% from the City
- 25% from the Sanitary District
- 25% from the homeowner

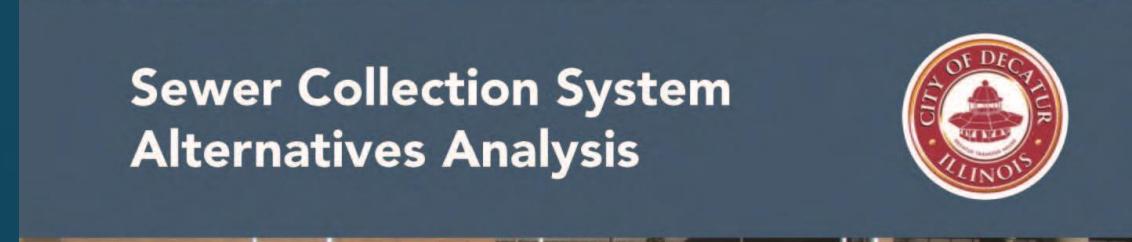


We proposed to the USEPA that this policy be eased to allow the City to pay 100% of the cost to install an overhead sewer to a maximum of \$10,000.

- 75% from the City
- 25% from the Sanitary District
- 0% from the homeowner

USEPA Review

- SCSAA Not Approved.
- The last draft was submitted in 2017



Prepared for
City of Decatur Public Works Department | 1 Gary K. Anderson Plaza | Decatur, IL 62523-1196

Prepared by
AECOM | 303 E. Wacker Drive, Suite 1400 | Chicago, IL 60601

April 12, 2016

AECOM

AECOM Project No. 60447509



Proposals For Council Consideration

- Initiate final engineering design on the four focus areas beginning with the Grand/Fairview combined sewer area and the Ellen/Division Area
 - Will begin negotiations with AECOM to perform these designs and return to the City Council for final approval.
- Implement changes to the overhead sewer program to allow 100% reimbursement of eligible overhead installations to a maximum of \$10,000
 - City will pay 75% of costs to install an overhead sewer in an eligible house.
 - The Sanitary District will fund 25%.

Sanitary Sewer Priorities

City Interceptor Rehabilitation

Sanitary Sewer Overflows Due To
Inflow / Infiltration

Ongoing System Maintenance

Capacity, Maintenance, Operations, Management (CMOM)

CMOM Implementation

- Increase sewer cleaning and de-rooting.
- Increase Sewer Engineering and Inspections.
- Increase / Continue capital maintenance program.
- Eliminate Inflow Connections.

Sanitary Sewer Priorities

City Interceptor Rehabilitation

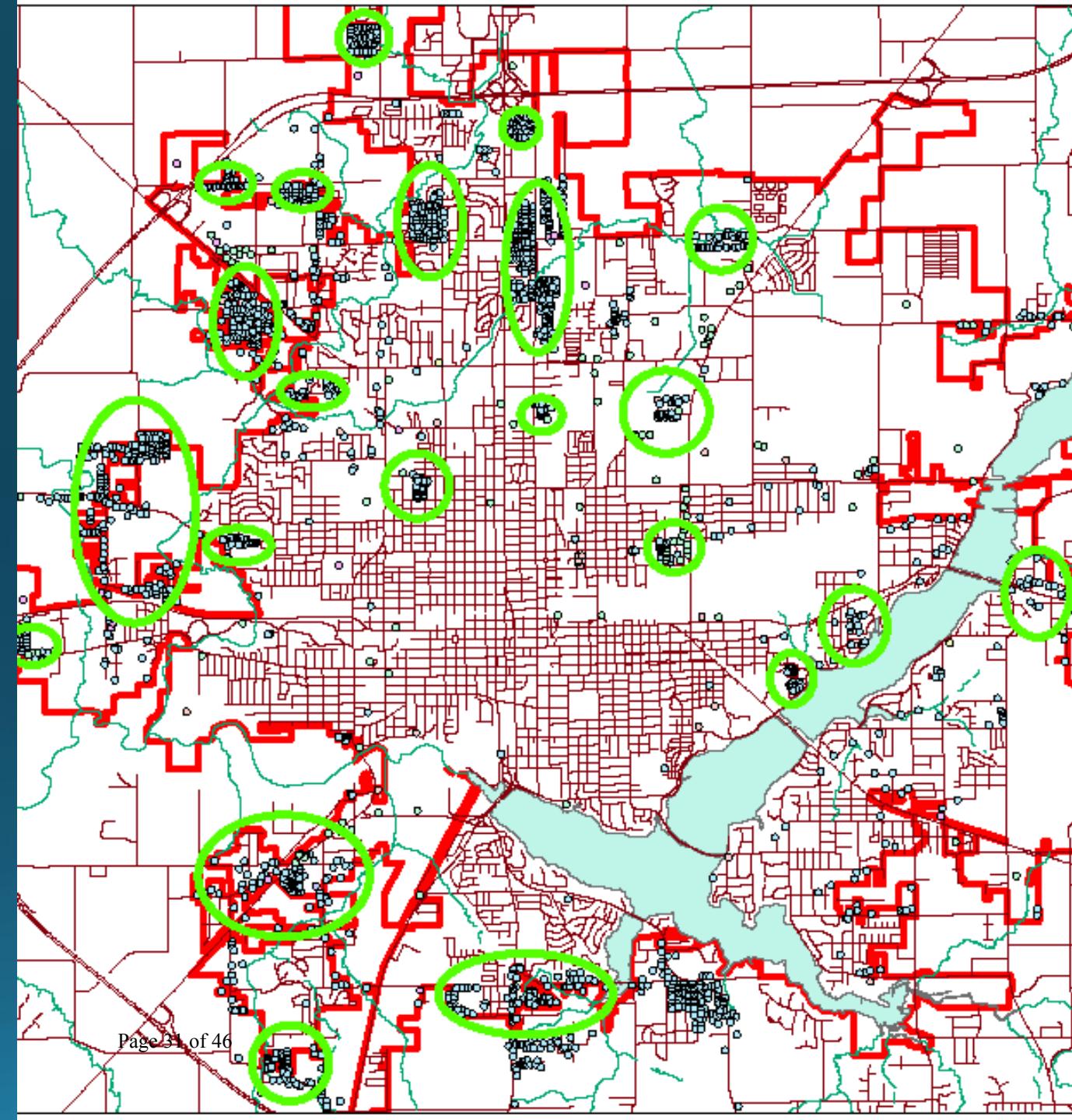
Sanitary Sewer Overflows Due To
Inflow / Infiltration

Ongoing System Maintenance

Capacity, Maintenance, Operations, Management (CMOM)

Unsewered Areas of the City

Numerous areas of the City are not currently served by sanitary sewers. Clark Dietz Inc. is reviewing these areas and will recommend options and priorities.



Storm Drainage

Priorities

Regulation, Standards and Policies

Funding

Storm Drainage

Priorities

In 2009, the City contracted with CDI to prepare a Stormwater Master Plan Update



City of Decatur, Illinois



Stormwater Master Plan – Phase I

2009 Update – Pre-Final Report

June 2009



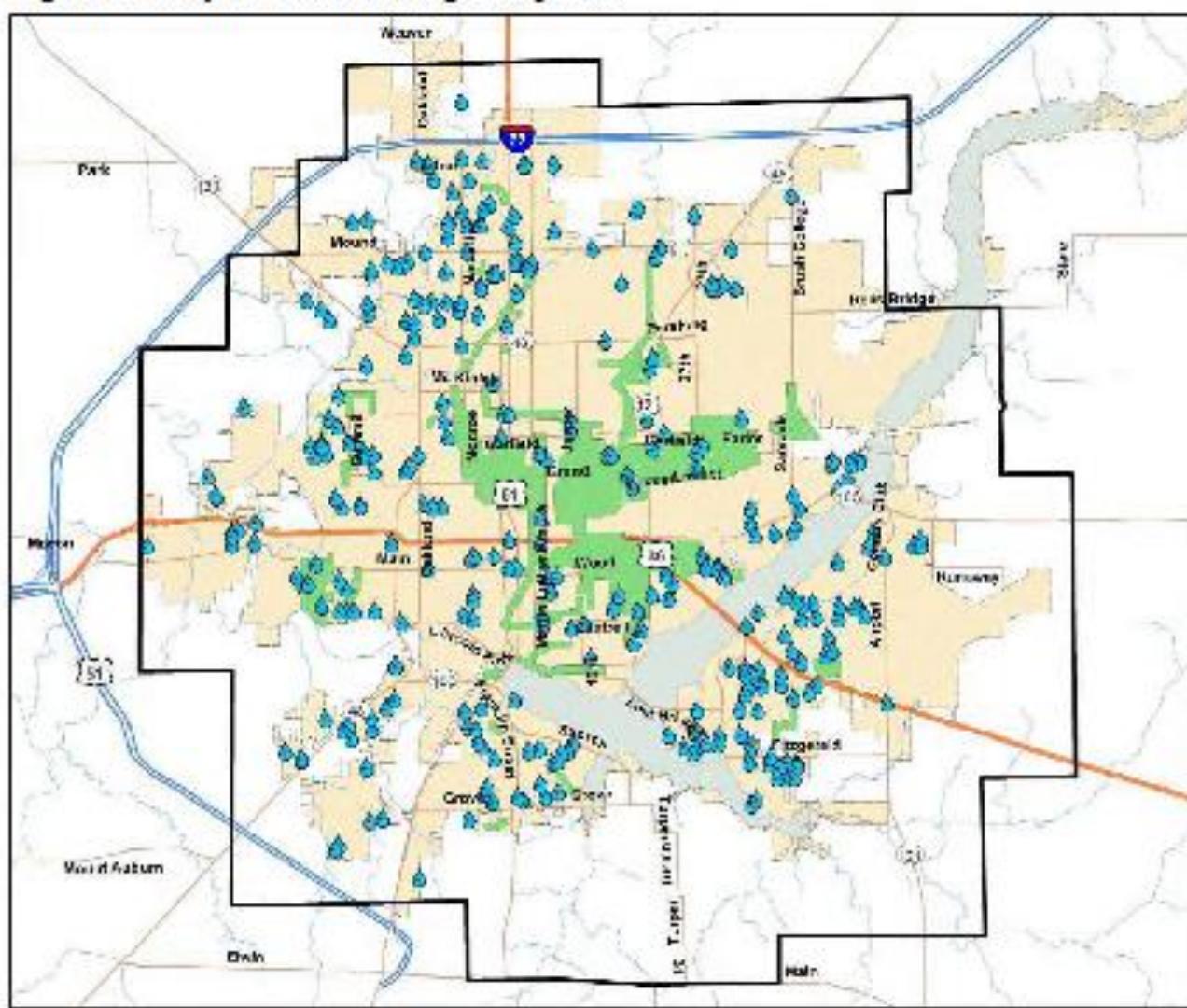
Prepared by

Clark Dietz, Inc.

1817 S. Neil Street, Suite 100
Champaign, Illinois 61820

www.clark-dietz.com

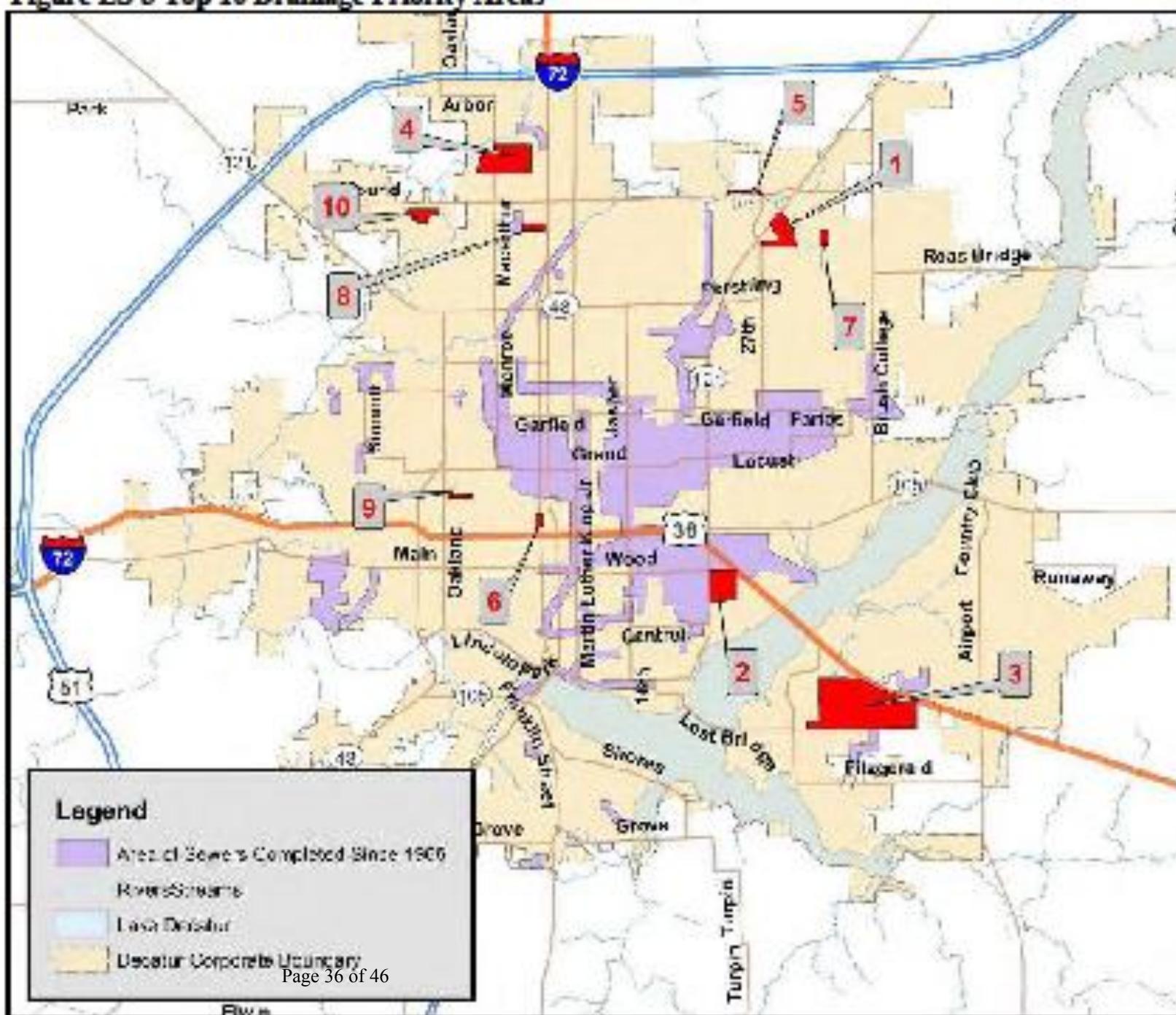
Drainage
complaints
were
plotted



Legend

- GIS Complaint Database
- Area of Sewers Complained Since 1968
- 1968_Study_Limits
- Decatur Corporate Boundary

The top
10 were
ranked



Ranking Criteria

- a. Public Health and Safety
- b. Degree of Street Flooding
- c. Construction Impacts
- d. Unresolved Problems Identified in 1966
- e. Implementation Constraints
- f. Watershed Impact
- g. Infiltration and Inflow Problem Areas
- h. Water Quality

Top Ten Drainage Problem Areas: Identified in the 2009 stormwater master plan.

| Priority | Drainage Problem Area | Public or Private? | Size (Acres) | Description |
|----------|-------------------------|--------------------|--------------|--|
| 1 | Meadowlark Subdivision | Public | 37 | Preliminary design completed. Multimillion-dollar project on hold for funding. |
| 2 | Nelson Park | Public | 8 | Completed in 2018. |
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Top Ten Drainage Problem Areas: Identified in the 2009 stormwater master plan.

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| 6 | Main Street Underpass | Public | 6 | Not fully investigated. |
| 7 | L&A Industrial | Both | 8.0 | Linked to Meadowlark area drainage project. |
| 8 | Karen Drive | Private | 8.8 | Mainly, private property concerns. |
| 9 | Marietta Street | Public | 5.1 | Linked to the Grand/Oakland combined sewer project. |
| 10 | Woodridge and Manor | Private | 6.5 | Mainly private property drainage concerns. |

Storm Drainage

Priorities

Regulation, Standards and Policies

Storm Drainage

Most of the drainage in the City is conducted on and through private property.

Illinois Drainage Law dictates:

- Downstream properties must receive natural flow drainage from upstream properties
- No obstruction of upstream drainage

Property owners need to maintain their property in a manner that will protect it from stormwater.

The City receives numerous inquiries about drainage that can be identified as a private property issue.

- Discuss what are private property issues
- Seek ways to provide right-of-way improvements to promote private property drainage.
- Generally will not perform drainage work that solely serve private property.

Proposals For Council Consideration

- Should staff propose decision parameters that will govern the extent of public participation in resolving drainage problems?
 - Provide easements.
 - Private participation based on received benefit.

Storm Drainage

Priorities

Regulation, Standards and Policies

Funding

April 2014 Council created a Storm Water Utility

- **\$1.6 million in yearly revenues**
- **\$550,000 per year to support General Fund services**
- **\$200,000 to repay project loans**
- **\$500,000 available for yearly capital improvements**

Future Projects

- Grants or other external funding sources
- Rate Increases
- Project cost sharing with benefited properties