

# **CITY OF VALPARAISO**

## **STORMWATER MASTER PLAN**



**APPROVED BY THE VALPARAISO CITY UTILITIES BOARD**

**OCTOBER, 2016**

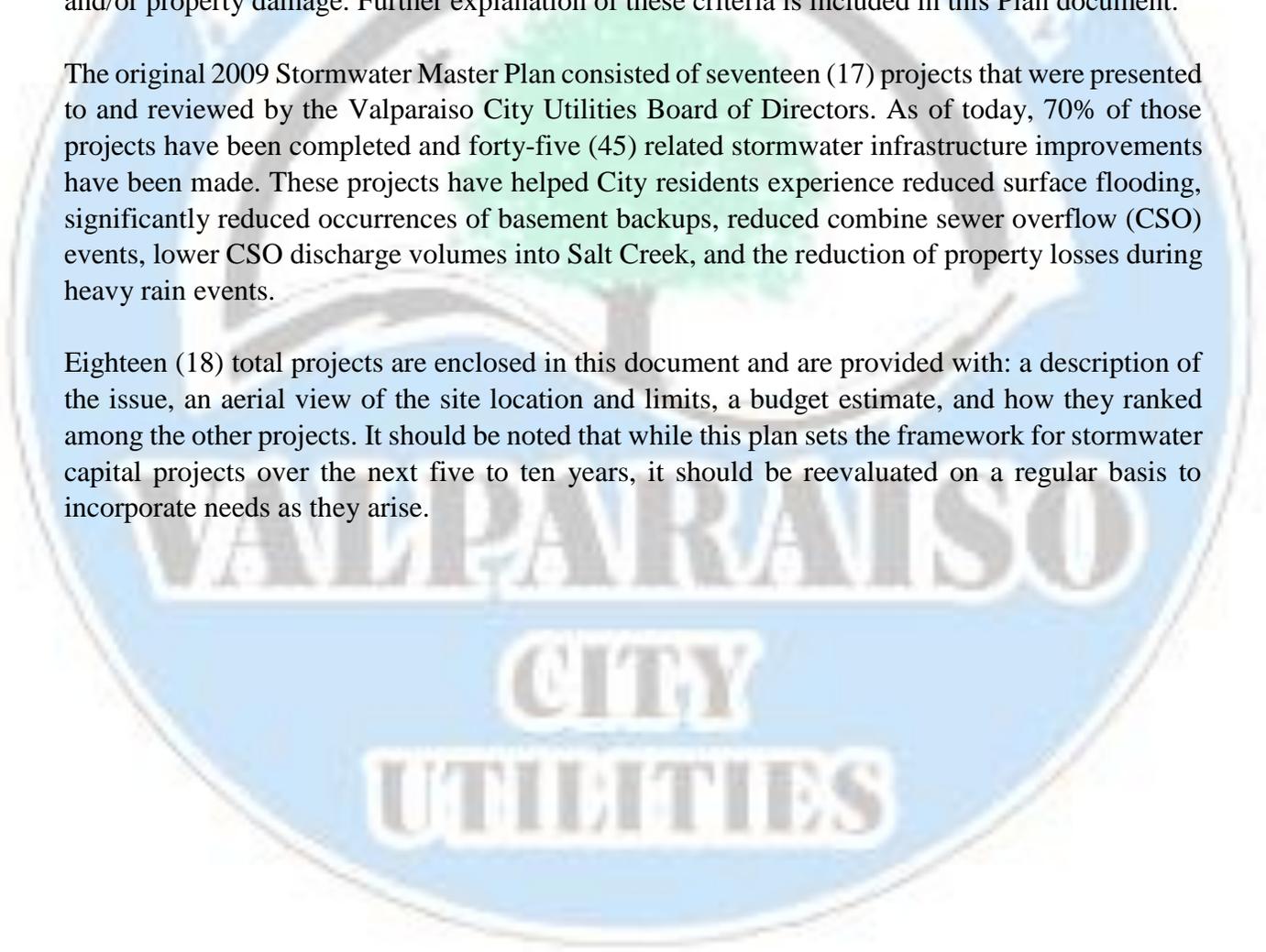
Prepared by the City of Valparaiso Engineering Department

## **PLAN SUMMARY**

Major flash flooding in August 2014 resulted in the need to further study the stormwater drainage problematic areas of the Valparaiso watershed and led to the reevaluation of the City's 2009 Stormwater Master Plan. The revised Stormwater Master Plan has updated the project priority list due to declining critical infrastructure that needs immediate attention based upon the long term impacts on the community. These projects were ranked by Engineering Department Staff based on location, extent of obligation, risk, impact, environment, term, and efficacy. These criteria were accepted by the original Stormwater Management board in 1997 and most recently reaffirmed in 2016 as the method of prioritizing projects. The need of these projects also takes into account the destructive impacts and financial risks of not correcting these issues with respect to personal injury and/or property damage. Further explanation of these criteria is included in this Plan document.

The original 2009 Stormwater Master Plan consisted of seventeen (17) projects that were presented to and reviewed by the Valparaiso City Utilities Board of Directors. As of today, 70% of those projects have been completed and forty-five (45) related stormwater infrastructure improvements have been made. These projects have helped City residents experience reduced surface flooding, significantly reduced occurrences of basement backups, reduced combine sewer overflow (CSO) events, lower CSO discharge volumes into Salt Creek, and the reduction of property losses during heavy rain events.

Eighteen (18) total projects are enclosed in this document and are provided with: a description of the issue, an aerial view of the site location and limits, a budget estimate, and how they ranked among the other projects. It should be noted that while this plan sets the framework for stormwater capital projects over the next five to ten years, it should be reevaluated on a regular basis to incorporate needs as they arise.

The logo for Valparaiso City Utilities is a circular emblem. It features a stylized tree in the center, with a blue sky and white clouds above it. Below the tree, the words "VALPARAISO" are written in a large, bold, serif font. Underneath "VALPARAISO", the words "CITY UTILITIES" are written in a smaller, bold, sans-serif font. The entire logo is set against a light blue background.

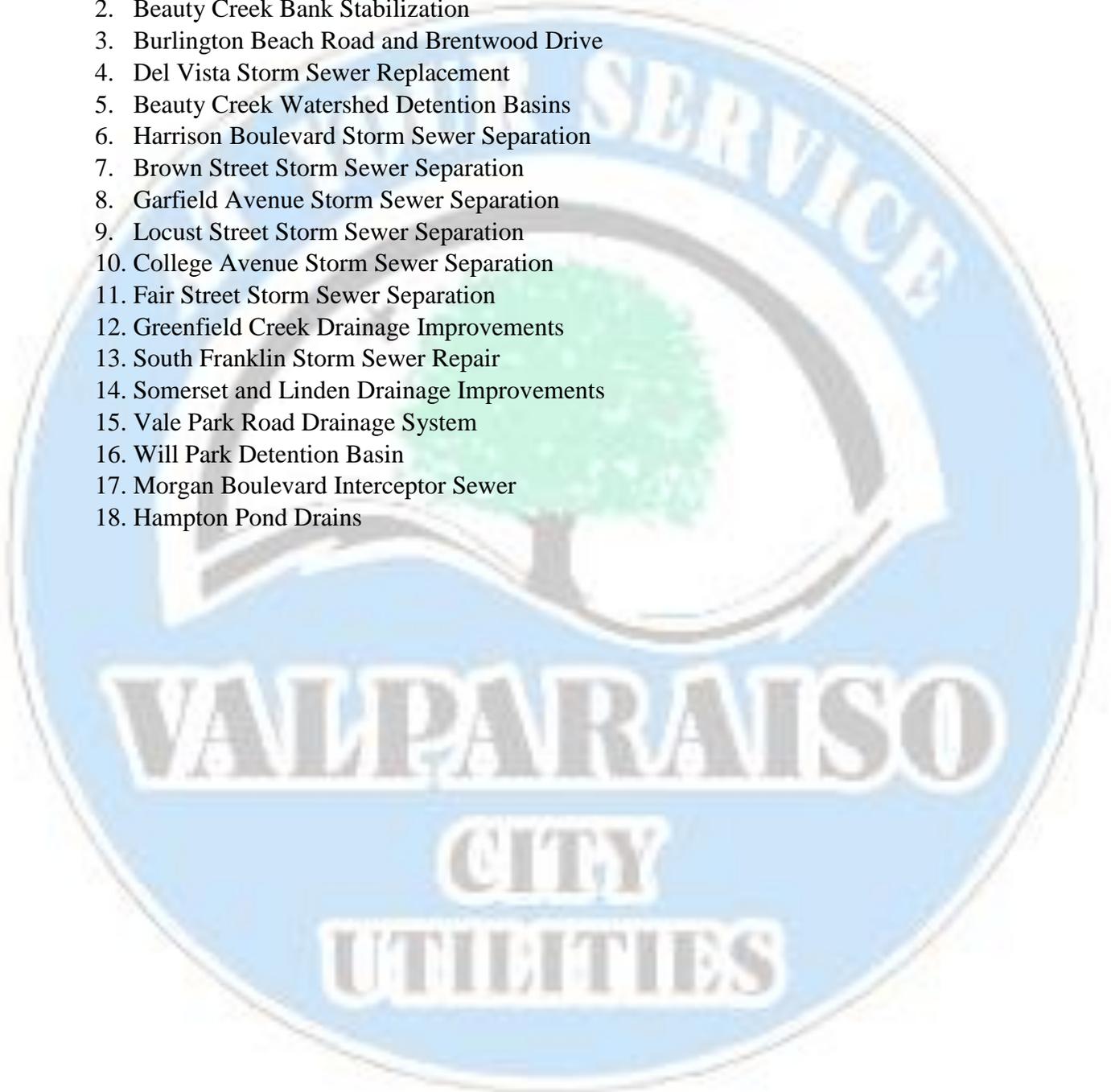
**VALPARAISO**  
**CITY UTILITIES**



**PROJECT DESCRIPTIONS**

## PROJECTS

1. Village Station Railroad Culvert
2. Beauty Creek Bank Stabilization
3. Burlington Beach Road and Brentwood Drive
4. Del Vista Storm Sewer Replacement
5. Beauty Creek Watershed Detention Basins
6. Harrison Boulevard Storm Sewer Separation
7. Brown Street Storm Sewer Separation
8. Garfield Avenue Storm Sewer Separation
9. Locust Street Storm Sewer Separation
10. College Avenue Storm Sewer Separation
11. Fair Street Storm Sewer Separation
12. Greenfield Creek Drainage Improvements
13. South Franklin Storm Sewer Repair
14. Somerset and Linden Drainage Improvements
15. Vale Park Road Drainage System
16. Will Park Detention Basin
17. Morgan Boulevard Interceptor Sewer
18. Hampton Pond Drains

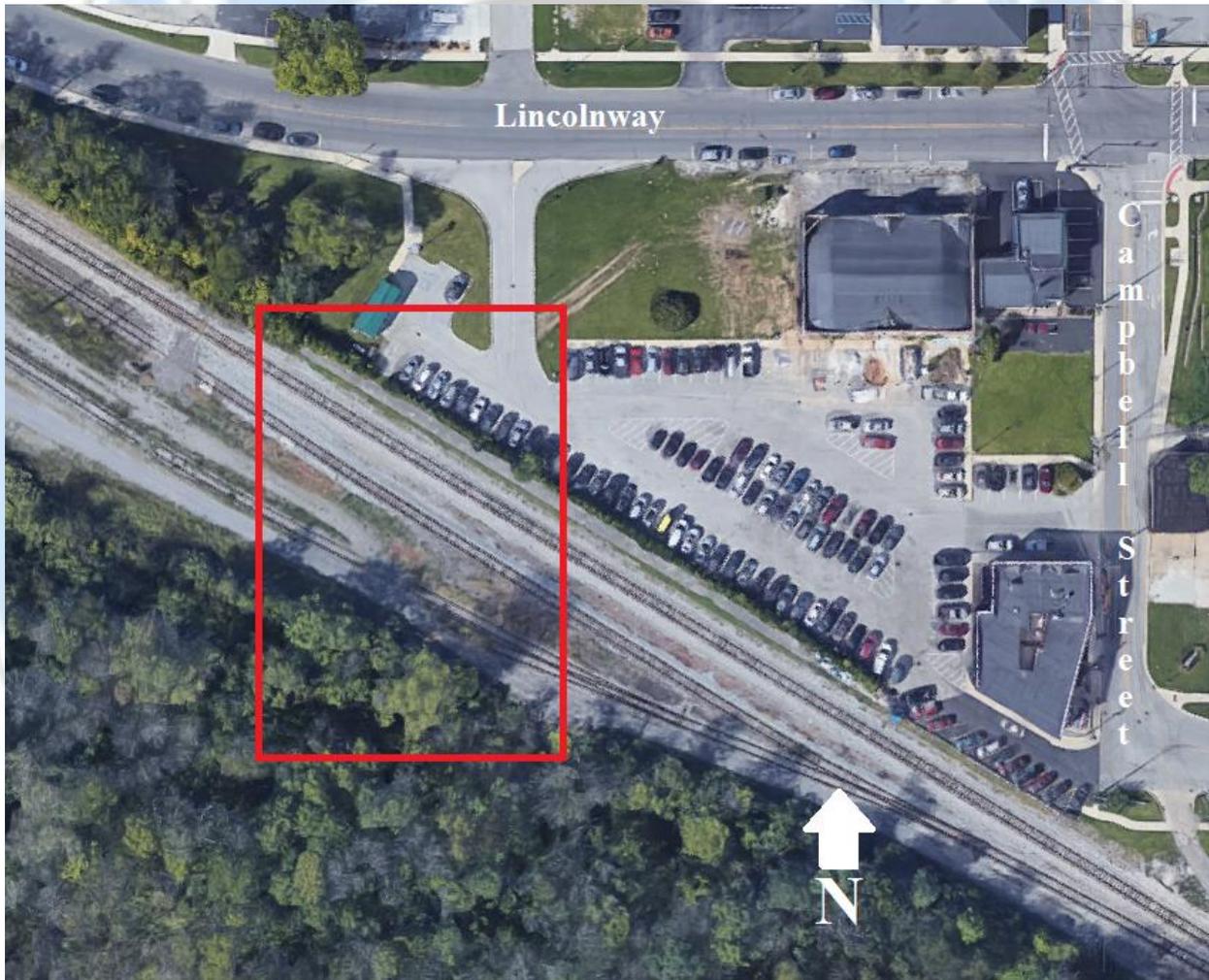


## 1. Village Station Railroad Culvert

This project consists of the replacement of an aged 24" diameter brick storm sewer culvert below a set of railroad tracks with a 70" diameter storm sewer.

Construction Estimate: \$2,500,000

Engineering Services: \$140,000



**Figure 1.** Village Station Railroad Culvert Site Limits

## 2. Beauty Creek Bank Stabilization

Repair and stabilize the stream banks along the most severely eroded and highest priority locations. The work will occur during three separate phases.

Construction Estimate: \$3,000,000

Engineering Services: \$200,000

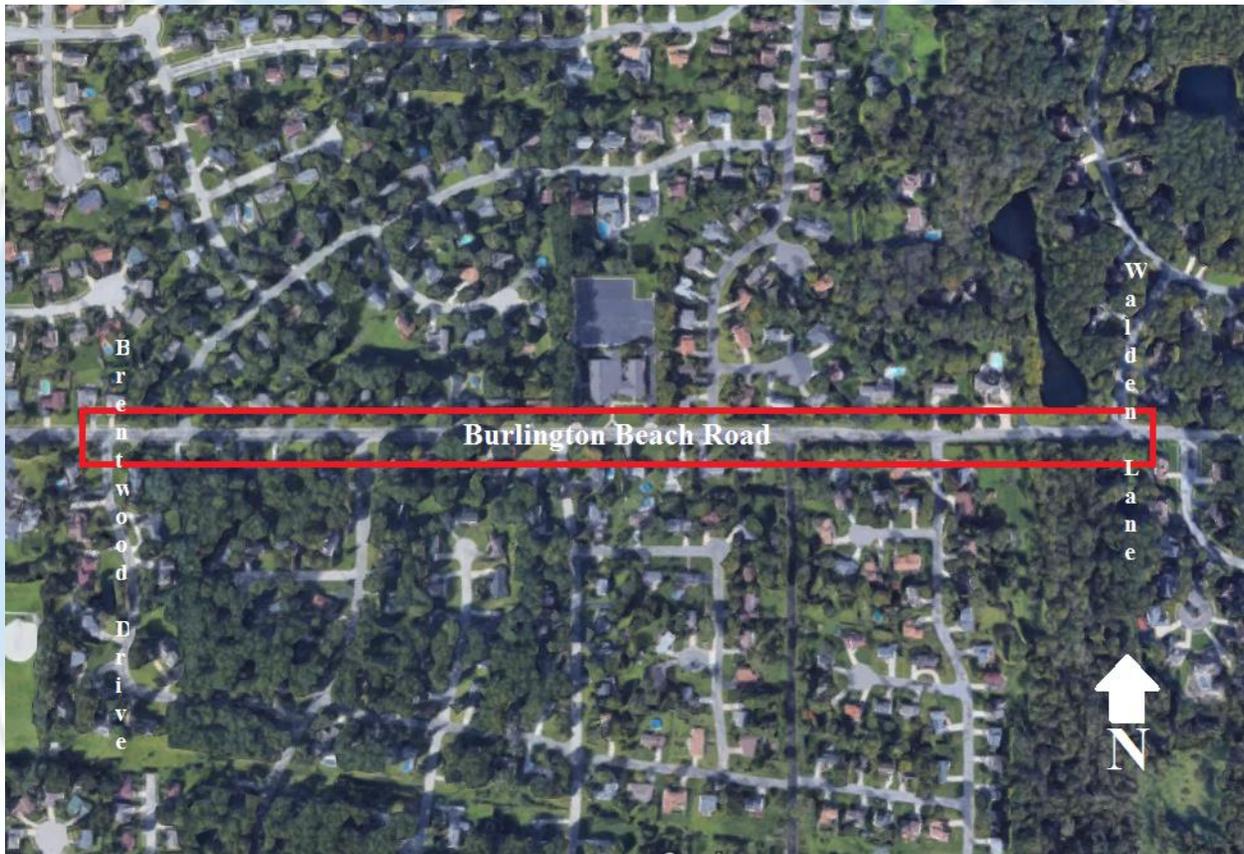


**Figure 2.** Beauty Creek Stabilization Site Limits

### 3. Burlington Beach Road and Brentwood Drive

This project consists of the study and installation of a storm water drainage system to alleviate flooding at the intersection of Burlington beach Road and Brentwood Drive. Large rain events tend to flood this intersection and, at times, threaten nearby homes.

Construction Estimate: \$930,000

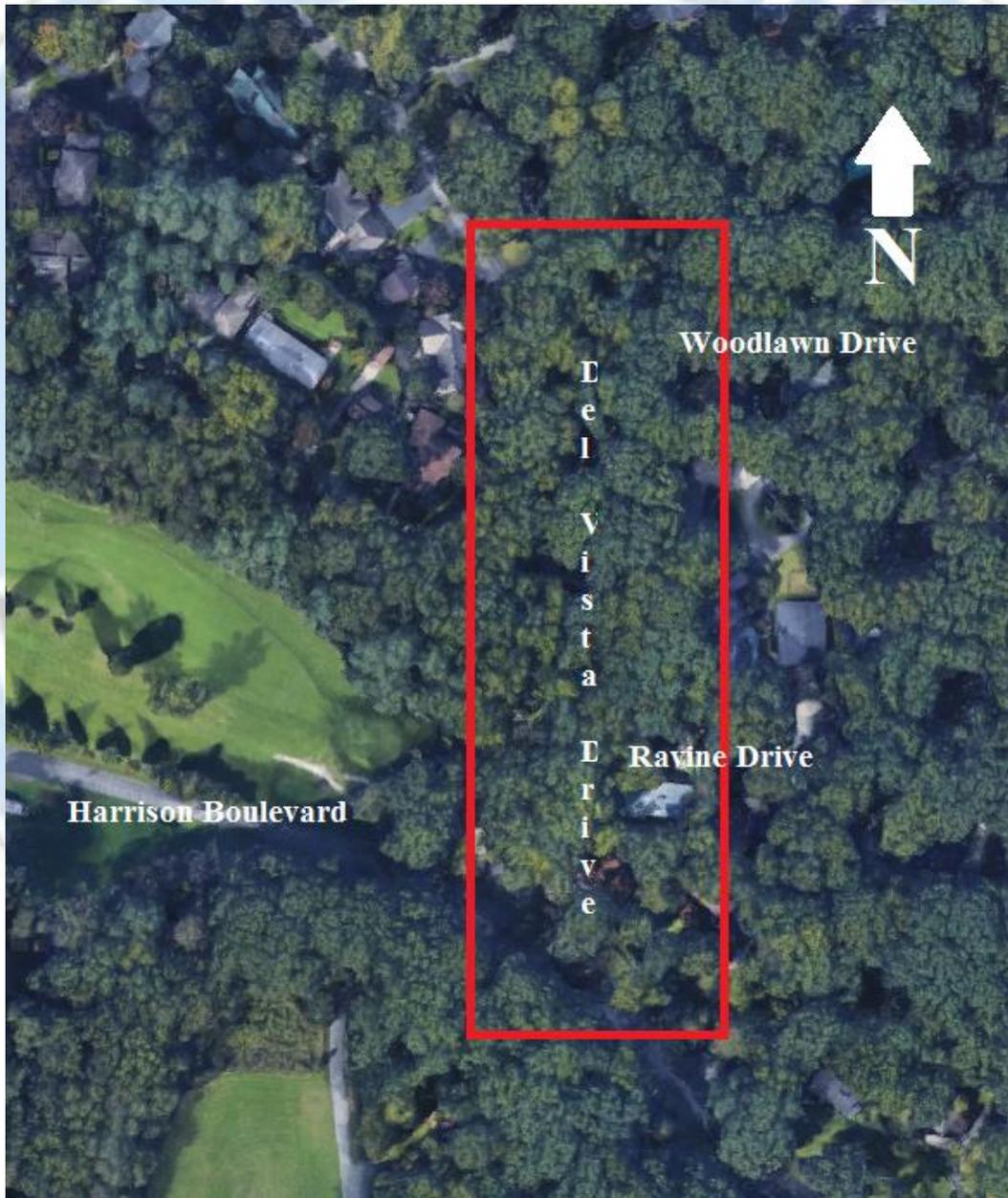


**Figure 3.** Burlington Beach Road Site Limits

#### 4. Del Vista Storm Sewer Replacement

This project consists of the installation of a larger storm sewer utility system and full roadway reconstruction. Additional project elements include the construction of a stream along the golf course property from Del Vista to the nearby Forest Park branch of Beauty Creek.

Construction Estimate: \$1,100,000



**Figure 4.** Del Vista Storm Sewer Replacement Site Limits

## 5. Beauty Creek Watershed Detention Basins

The City of Valparaiso finalized an engineering study of the Beauty Creek watershed in April, 2016. The study identified areas within the watershed where regional detention basins are recommended to slow the flow rates.

Construction Estimate: \$1,400,000

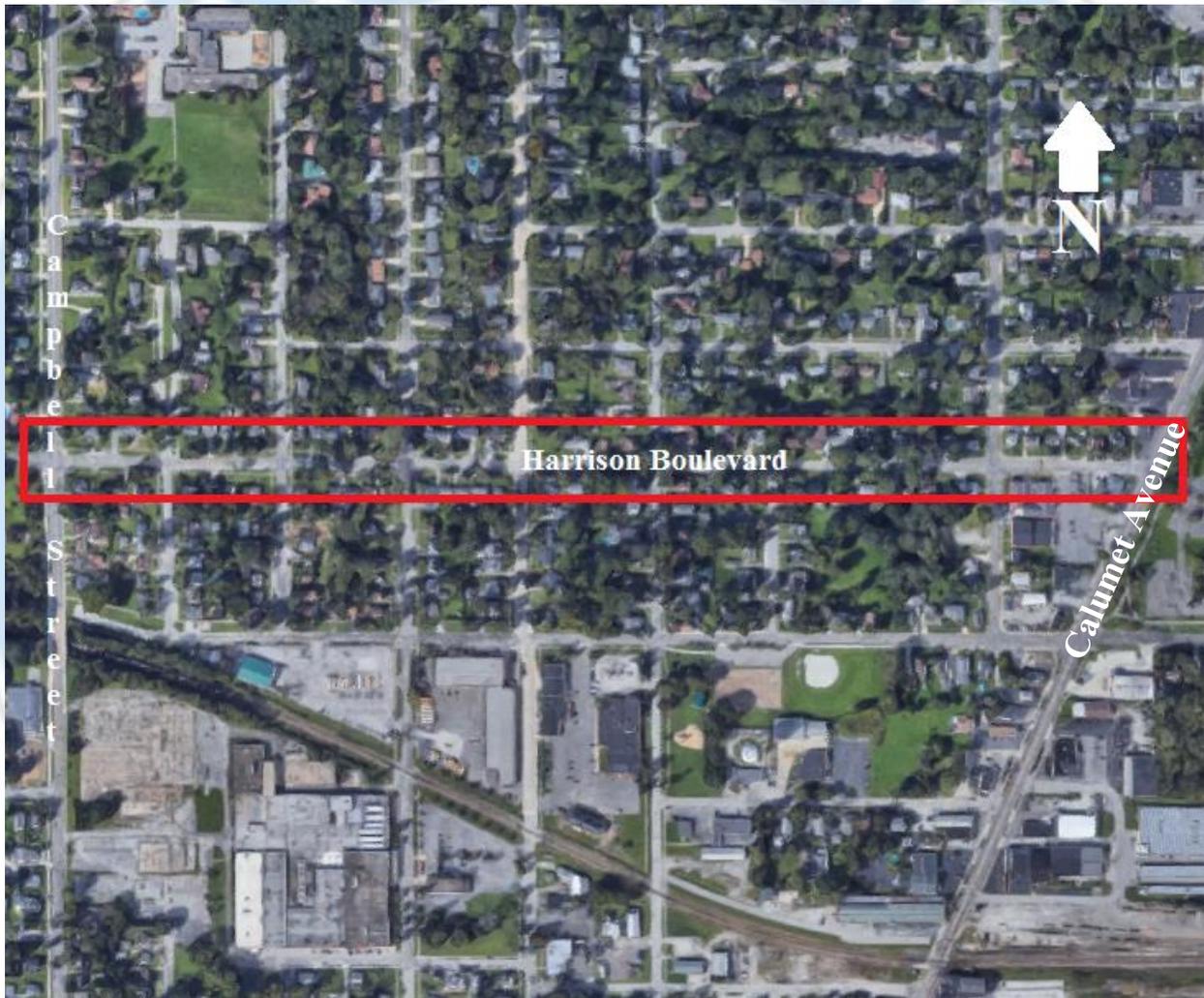


**Figure 5.** Beauty Creek Watershed Detention Basins Site Limits

## 6. Harrison Boulevard Storm Sewer Separation

This project consists of the installation of a dedicated storm sewer utility system between Campbell Street to the west and Calumet Avenue to the east. Additional work elements may include roadway reconstruction with curb and gutter installation.

Construction Estimate: \$750,000

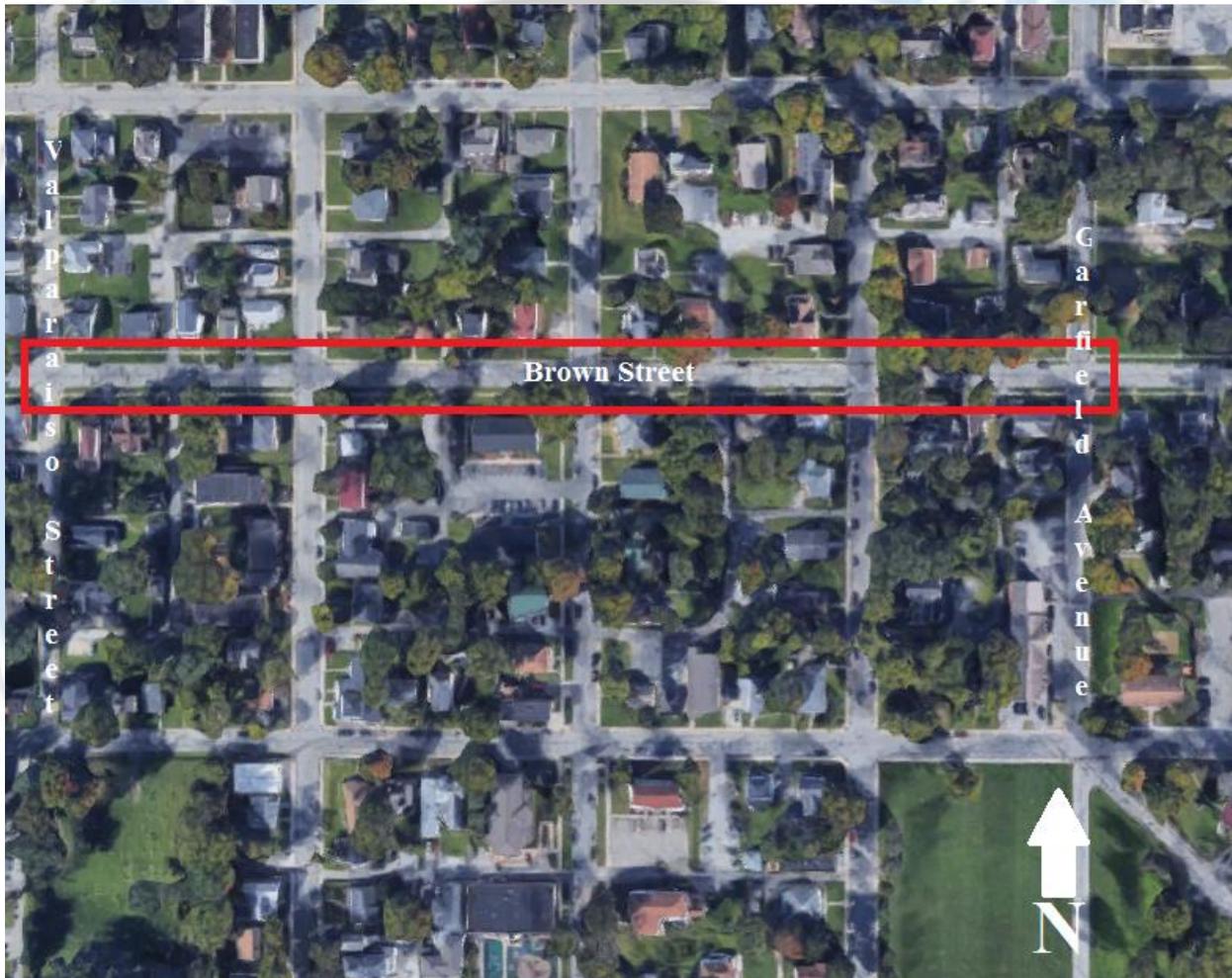


**Figure 6.** Harrison Boulevard Site Limits

## 7. Brown Street Storm Sewer Separation

This project consists of the design and construction of a storm drainage system that will connect to the existing storm sewer system. The project limits for the work are from Valparaiso Street to Garfield Avenue, and this project will remove all combination sewer flow along this corridor.

Construction Estimate: \$420,000

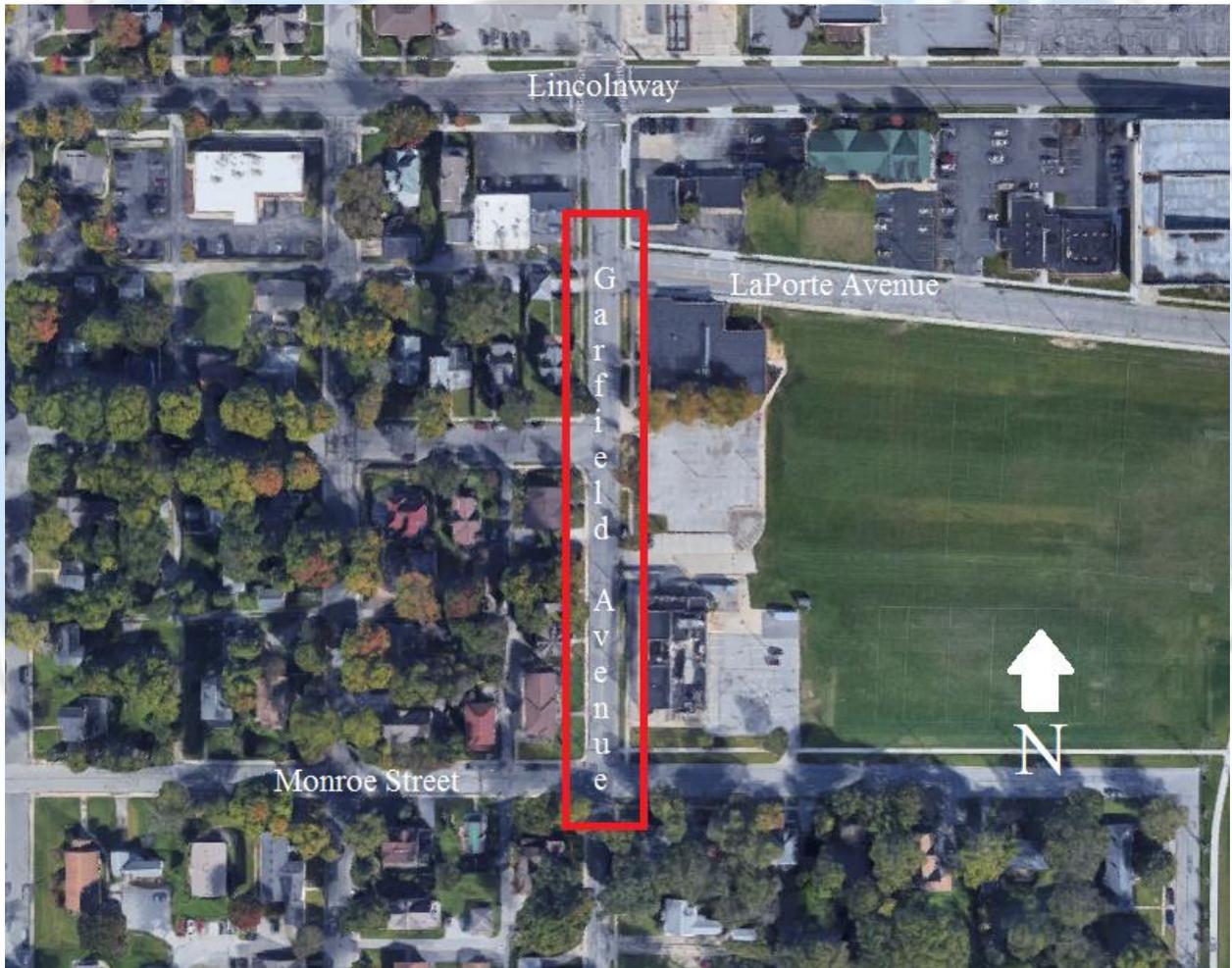


**Figure 7.** Brown Street Site Limits

## 8. Garfield Avenue Storm Sewer Separation

This project consists of the design and construction of a storm drainage system that will connect to the existing storm sewer system. The project limits for the work are from Monroe Street to LaPorte Avenue, and this project will remove all combination sewer flow along this corridor.

Construction Estimate: \$180,000

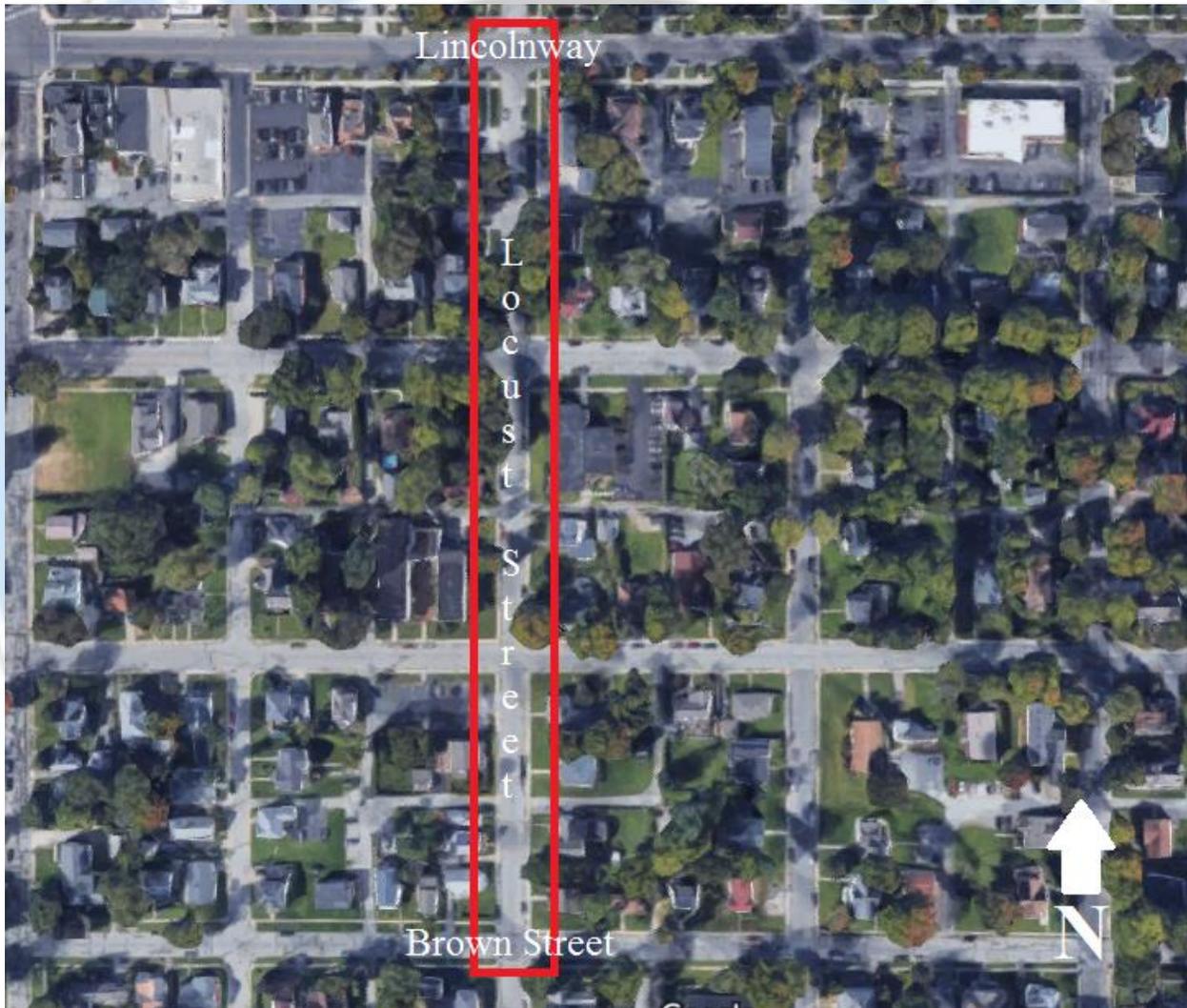


**Figure 8.** Garfield Avenue Site Limits

## 9. Locust Street Storm Sewer Separation

This project consists of the design and construction of a storm drainage system that will connect to the existing storm sewer system. The project limits for the work are from Brown Street to Lincolnway, and this project will remove all combination sewer flow along this corridor.

Construction Estimate: \$280,000

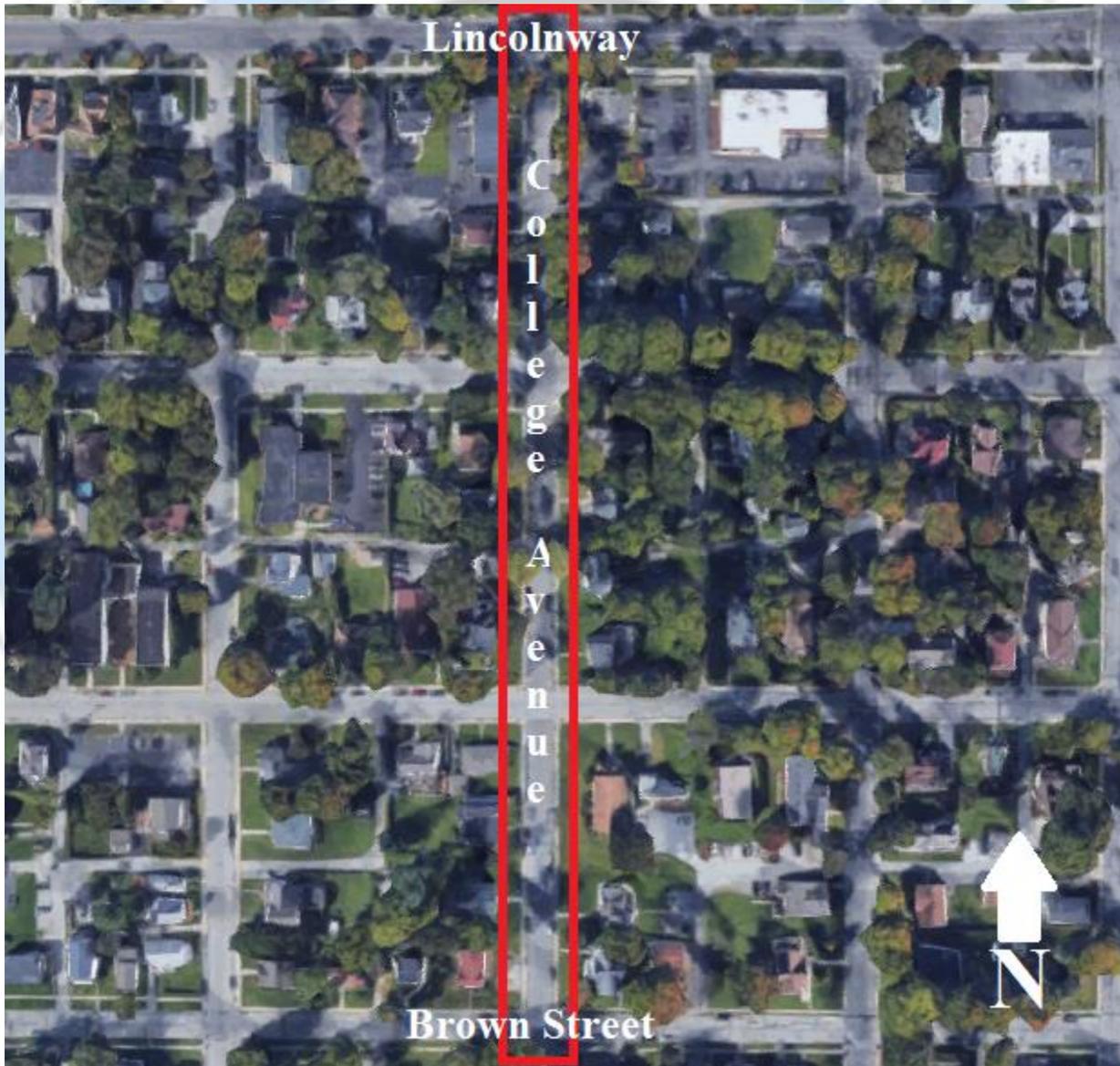


**Figure 9.** Locust Street Site Limits

## 10.College Avenue Storm Sewer Separation

This project consists of the design and construction of a storm drainage system that will connect to the existing storm sewer system. The project limits for the work are from Brown Street to Lincolnway, and this project will remove all combination sewer flow along this corridor.

Construction Estimate: \$400,000

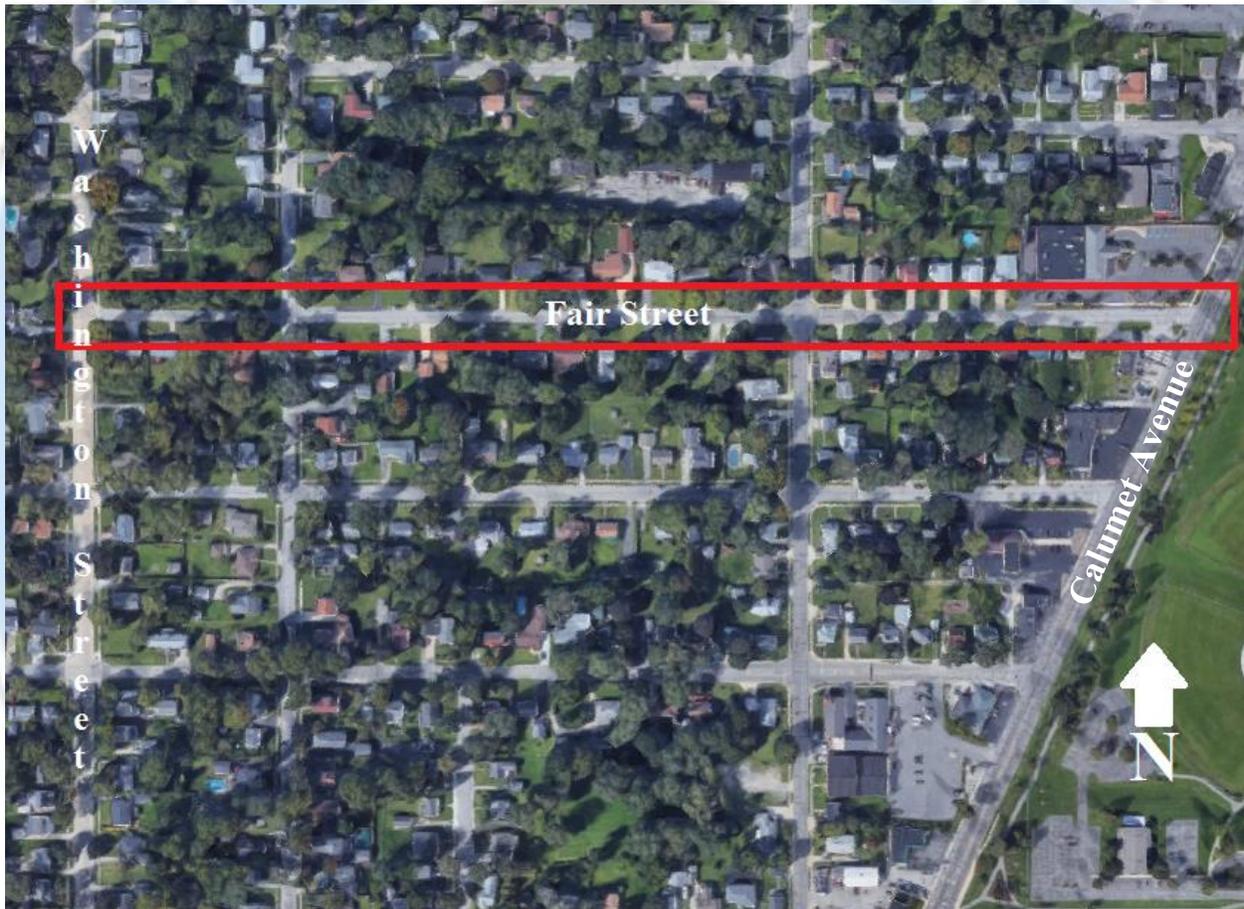


**Figure 10.** College Avenue Site Limits

## 11. Fair Street Storm Sewer Separation

This project consists of the design and construction of a storm drainage system that will connect to the existing storm sewer system. The project limits for the work are from Calumet Avenue to Washington Street, and this project will remove all combination sewer flow along this corridor.

Construction Estimate: \$530,000

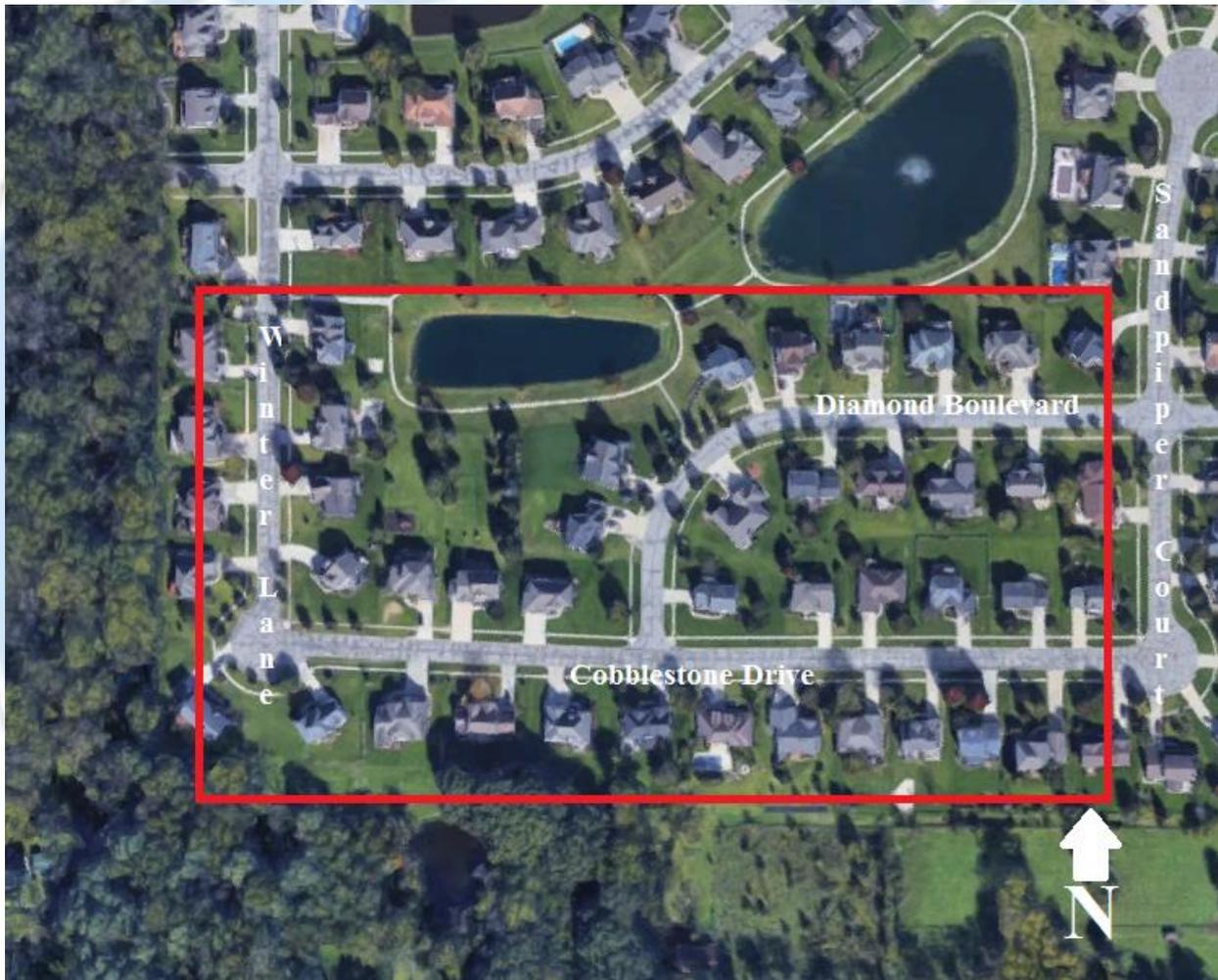


**Figure 11.** Fair Street Site Limits

## 12.Greenfield Creek Drainage Improvements

This project consists of altering the north standpipe outlet structure and placing a box culvert on the south outlet along the west side of Greenfield Creek Subdivision. Additional work includes upsizing the storm sewer system in the southern portion of the subdivision.

Construction Estimate: \$380,000

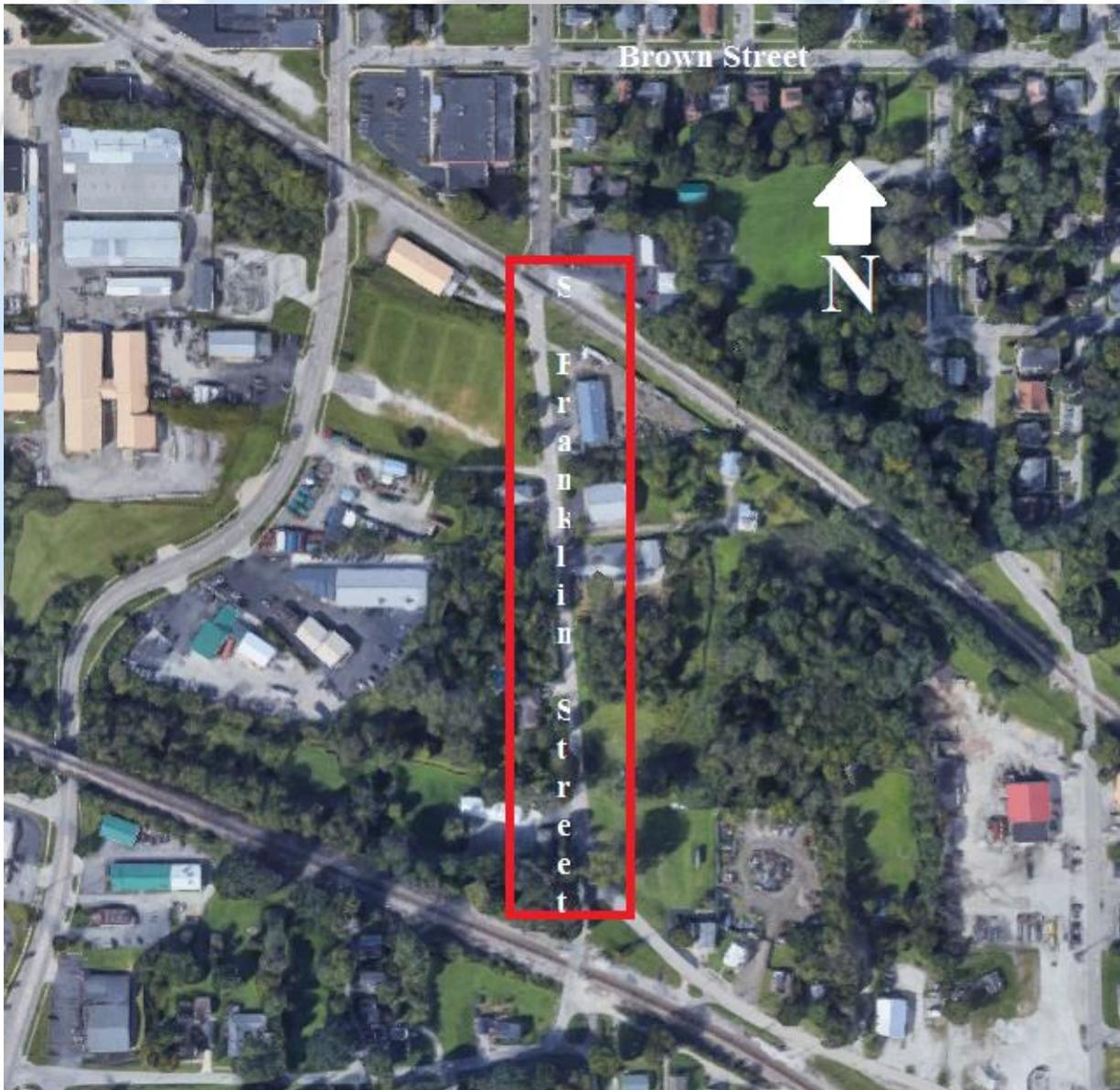


**Figure 12.** Greenfield Creek Drainage Improvements Site Limits

### 13. South Franklin Street Storm Sewer

This project involves constructing a new storm sewer from the Norfolk Southern Railroad south to Crosby Run. The new sewer would replace the existing deteriorated storm sewers. The project could include the construction of new pavement and curb and gutter so as to contain the runoff in the street until it reaches inlet points.

Construction Estimate: \$280,000

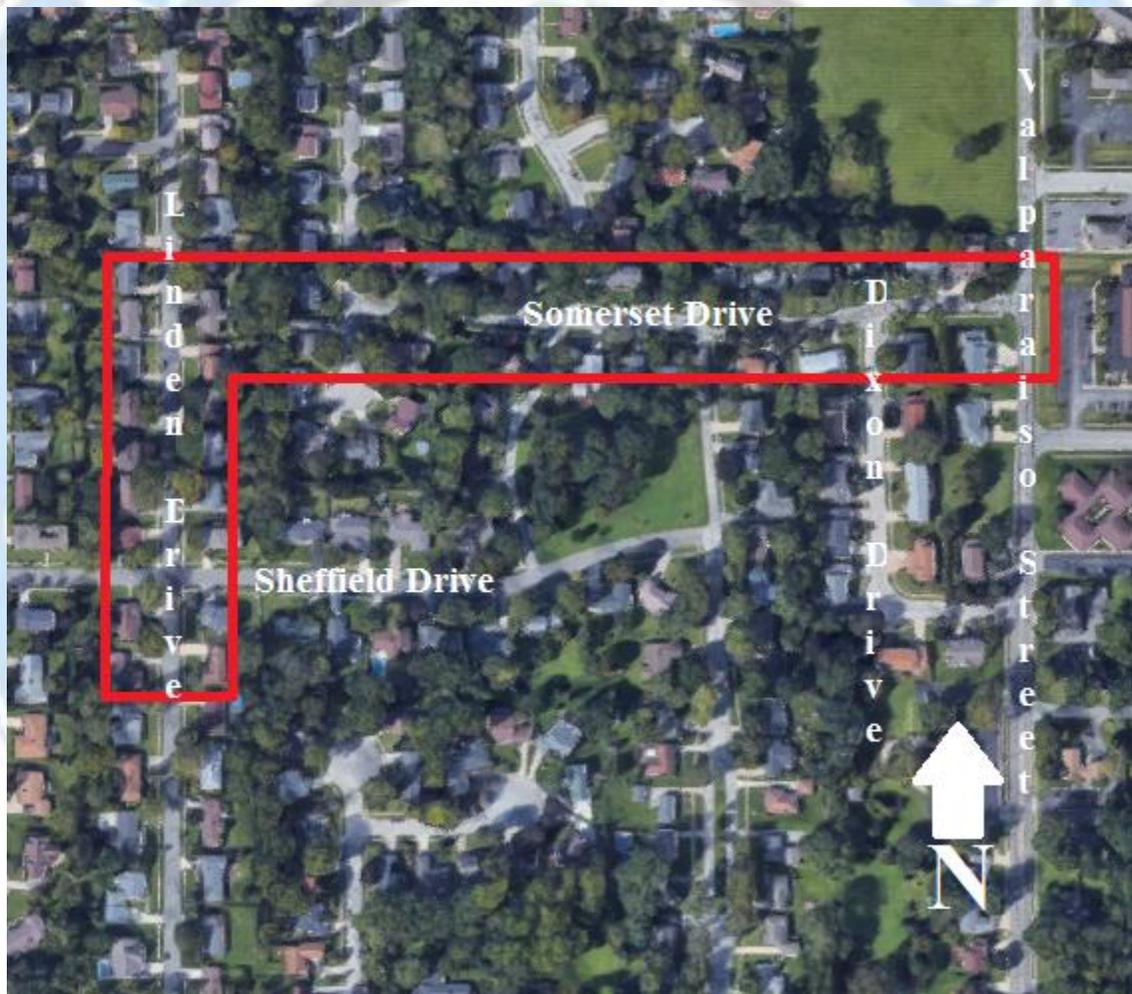


**Figure 13.** South Franklin Street Storm Sewer Site Limits

## 14.Somerset and Linden Drainage Improvements

This project consists of extending a storm sewer system from the Valparaiso Street system north and west along Somerset Drive. The storm sewer system will extend west to the rear yard areas between Linden Drive and Vine Street. Residents within these areas have experienced basement back-ups, surface flooding in the roadways, and standing water in rear yard areas.

Construction Estimate: \$800,000



**Figure 14.** Somerset and Linden Drainage Improvements Site Limits

## 15. Vale Park Road Drainage System

This project consists of alleviating surface flooding conditions along Vale Park Road which regularly becomes flooded after a heavy rain event. Project elements will include roadway reconstruction to elevate the low point, installation of an appropriately sized culvert, and examining the downstream storm sewer system to ensure adequate capacity.

Construction Estimate: \$1,200,000

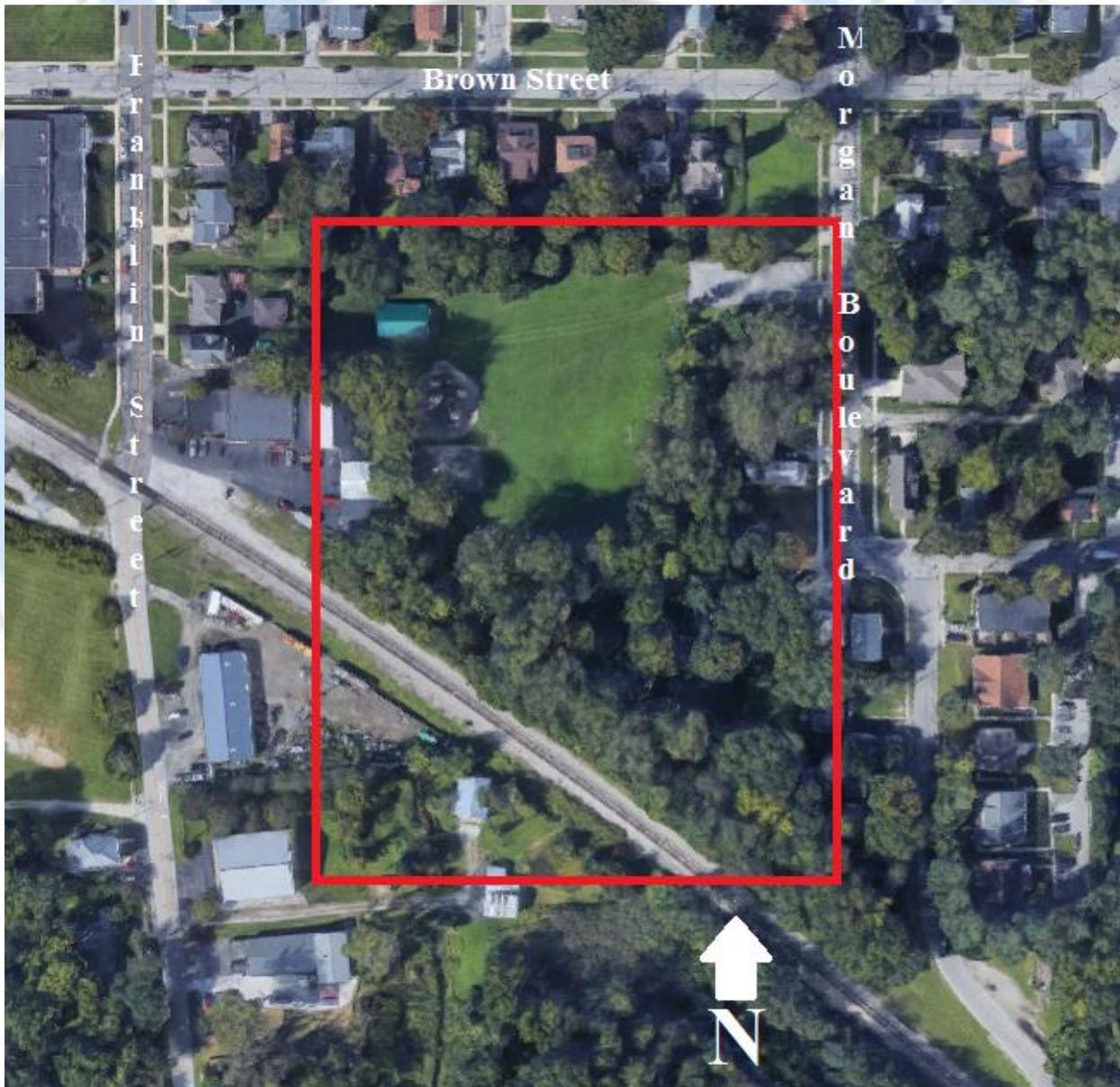


**Figure 15.** Vale Park Road Drainage System Site Limits

## 16. Will Park Detention Basin

This project consists of the excavation of a large regional detention basin west of Morgan Boulevard and north of the Norfolk Southern railroad tracks. Additional work includes the reroute of buried sanitary sewer piping within the same area. Past flooding has indicated this area is prone to surface flooding within the residential neighborhood.

Construction Estimate: \$1,750,000

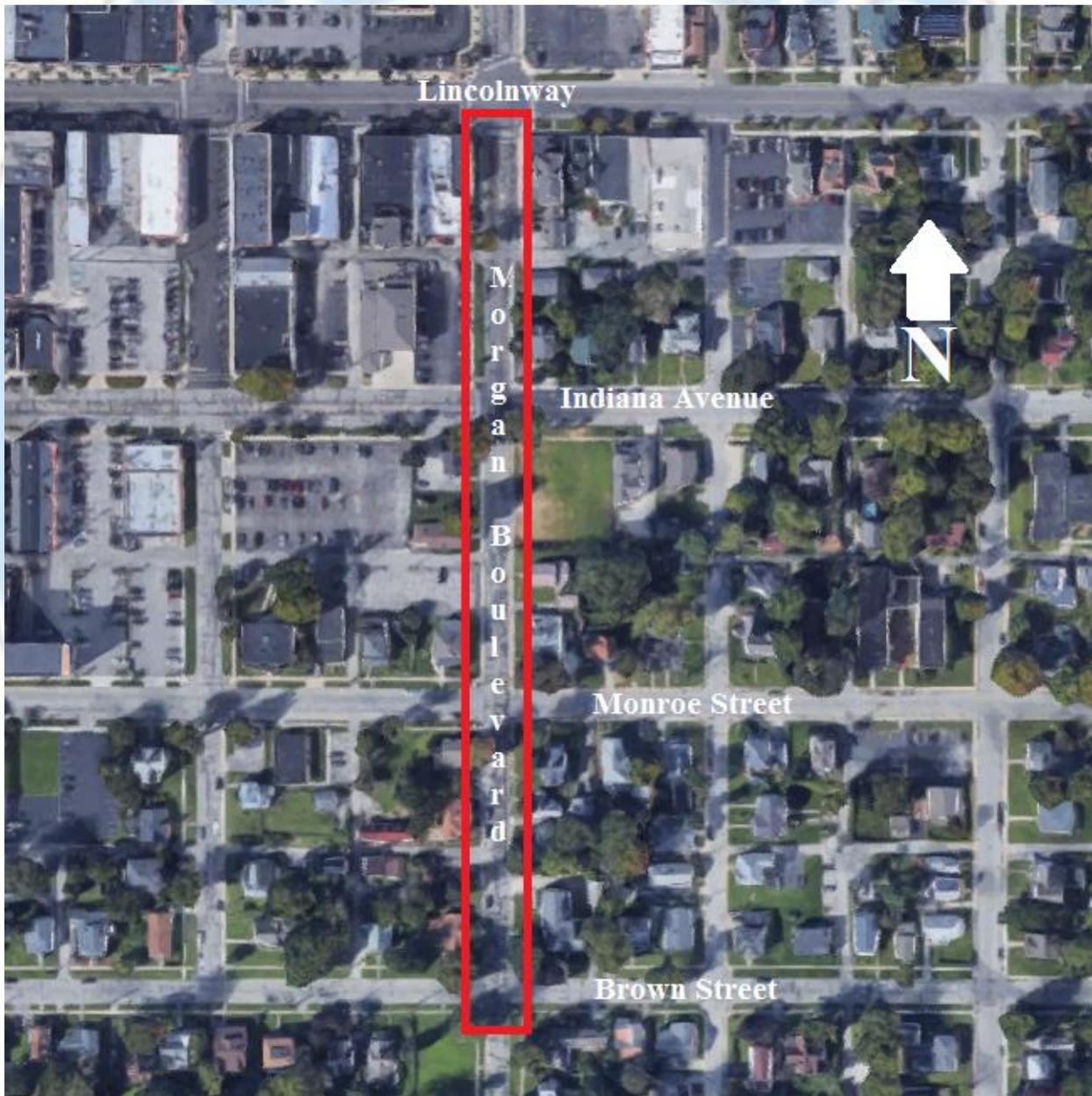


**Figure 16.** Will Park Detention Basin Site Limits

## 17. Morgan Boulevard Interceptor Sewer

This project consists of the installation of large trunk storm sewer from Lincolnway to Brown Street. This will allow for more storm sewer separation in the future at all cross streets and within the areas north of Lincolnway.

Construction Estimate: \$1,500,000

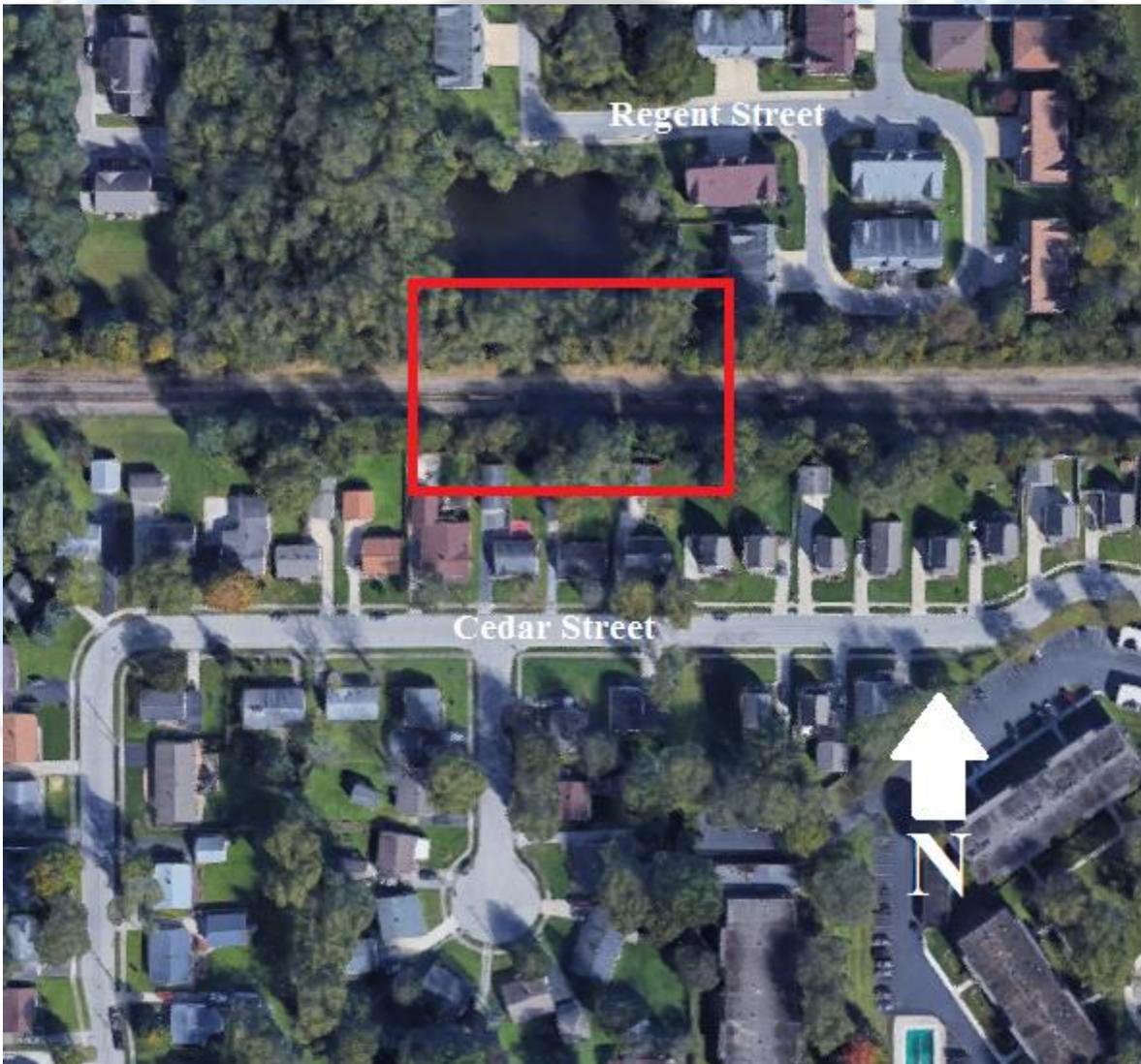


**Figure 17.** Morgan Boulevard Interceptor Sewer Site Limits

## 18. Hampton Pond Drains

This project consists of storm sewer work under Canadian National railroad such as the installation of two inlet structures and a standpipe structure, existing pipe removal and replacement, sanitary sewer repair, and concrete removal and replacement with any necessary yard restoration.

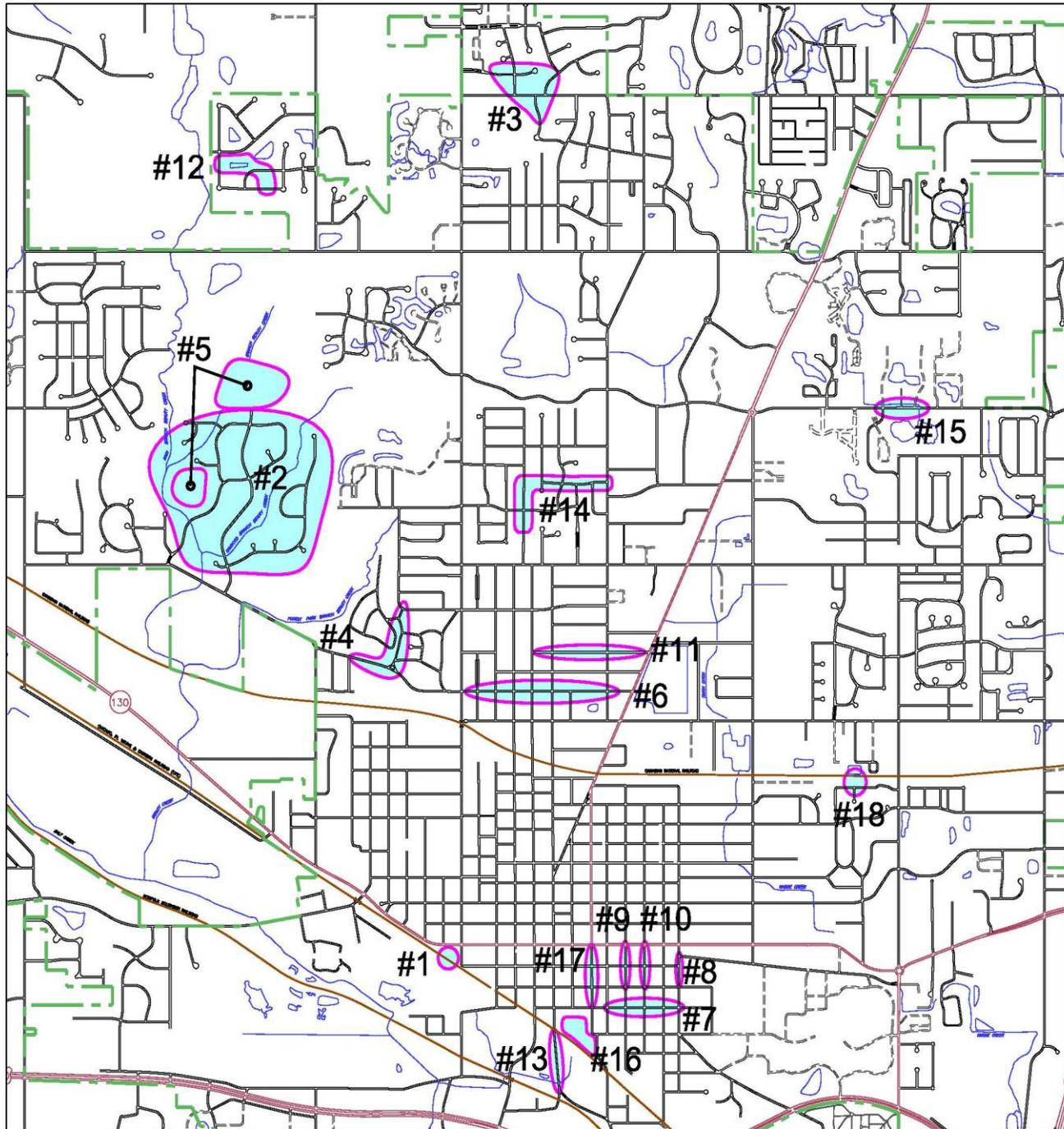
Construction Estimate: \$200,000



**Figure 18.** Hampton Pond Drains Site Limits



**PROJECT LOCATION MAP**



Priority #	Project Number
1	Village Station Railroad Culvert
2	Beauty Creek Bank Stabilization
3	Burlington Beach Road and Brentwood Drive
4	Del Vista Storm Sewer Replacement
5	Beauty Creek Watershed Detention Basins
6	Harrison Boulevard Storm Sewer Separation
7	Brown Street Storm Sewer Separation
8	Garfield Avenue Storm Sewer Separation
9	Locust Street Storm Sewer Separation
10	College Avenue Storm Sewer Separation
11	Fair Street Storm Sewer Separation
12	Greenfield Creek Drainage Improvements
13	South Franklin Street Storm Sewer
14	Somerset and Linden Drainage Improvements
15	Vale Park Road Drainage System
16	Will Park Detention Basin
17	Morgan Boulevard Interceptor Sewer
18	Hampton Pond Drains



**PROJECT COST ESTIMATES**

## DRAINAGE PROJECTS FOR CONSIDERATION

As of 2017

Projects	Budget Amount
Village Station Railroad Culvert	\$2,500,000.00
Beauty Creek Bank Stabilization, Phase A	\$1,000,000.00
Burlington Beach Road and Brentwood Drive	\$930,000.00
Del Vista Storm Sewer Replacement	\$1,100,000.00
Beauty Creek Watershed Detention Basins	\$1,400,000.00
Beauty Creek Bank Stabilization, Phase B	\$1,000,000.00
Harrison Boulevard Storm Sewer Separation	\$750,000.00
Beauy Creek Bank Stabilization, Phase C	\$1,000,000.00
Brown Street Storm Sewer Separation	\$420,000.00
Garfield Avenue Storm Sewer Separation	\$180,000.00
Locust Street Storm Sewer Separation	\$280,000.00
College Avenue Storm Sewer Separation	\$400,000.00
Fair Street Storm Sewer Separation	\$530,000.00
Greenfield Creek Drainage Improvements	\$380,000.00
South Franklin Street Storm Sewer	\$280,000.00
Somerset and Linden Drainage Improvements	\$800,000.00
Vale Park Road Drainage System	\$1,200,000.00
Will Park Detention Basin	\$1,750,000.00
Morgan Boulevard Interceptor Sewer	\$1,500,000.00
Hampton Pond Drains	\$200,000.00
<b>TOTAL:</b>	<b>\$17,600,000.00</b>



**CRITERIA FOR RANKING  
STORMWATER PROJECTS**

# CRITERIA FOR RANKING STORMWATER DRAINAGE PROJECTS

## LOCATION

Is this project related to a water course over which the City has jurisdiction?

## EXTENT OF OBLIGATION

Is the problem related to or independent of normal operation of the facility?

## RISK

What is the potential for property damage or personal injury?

## IMPACT

How many people and/or properties are affected?

## ENVIRONMENT

Does the project improve water quality or other environmental issues?

## TERM

How long has the project been "on the table"?

## EFFICACY

How well does the project fit into the current timetable, budget, and overall plan?

# RANKING OF STORMWATER DRAINAGE PROJECTS

Committee Members: Tim Burkman, Adam McAlpine, Mike Steege, Nate McGinley

Date: 8/29/16

	Village Station Railroad Culvert	Hampton Pond Drains	Locust Street Storm Sewer Separation	South Franklin Street Storm Sewer	Beauty Creek Bank Stabilization	Beauty Creek Watershed Detention Basin(s)	Greenfield Creek Drainage Improvements	Harrison Boulevard Storm Sewer Separation	College Avenue Storm Sewer Separation	Garfield Avenue Storm Sewer Separation	Brown Street Storm Sewer Separation	Del Vista Storm Sewer Replacement	Hoffer Lagoon Spill Protection	Lind Court Storm Sewer System	Burlington Beach Road and Brentwood Drive	Fair Street Storm Sewer Separation	Somerset and Linden Drive Storm Sewer	Morgan Blvd Interceptor Sewer	Will Park Detention Basin	Vale Park Road Drainage System
LOCATION (1-10, 1-NO, 10-YES)	10	5	10	10	3	7	7	10	10	10	10	10	10	10	10	10	10	10	9	10
OBLIGATION (1-10, 1-INDEP, 10-RELATED)	10	3	7	8	7	7	3	7	7	7	7	8	2	8	9	7	7	5	7	8
RISK (1-10, 1-NONE, 10-MUCH)	10	3	6	1	10	8	8	6	6	6	6	7	2	3	10	6	6	5	5	5
IMPACT (1-10, 1-NONE, 10-MANY)	10	2	7	2	10	8	5	7	7	7	7	8	2	2	8	5	7	8	8	9
ENVIRONMENT (1-10, 1-NO IMPACT, 10-BENEFIT)	4	1	7	1	7	7	1	7	7	7	7	4	10	1	1	6	4	7	7	1
TERM (1-10, 1-NEW, 10-OLD)	6	10	10	10	10	7	8	10	10	10	10	10	4	7	10	10	5	2	2	6
EFFICACY (1-10, 1-NOT WELL, 10-WELL)	10	8	6	8	10	10	10	7	6	6	6	8	2	1	7	7	2	1	1	1
<b>TOTAL</b>	<b>60</b>	<b>32</b>	<b>53</b>	<b>40</b>	<b>57</b>	<b>54</b>	<b>42</b>	<b>54</b>	<b>53</b>	<b>53</b>	<b>53</b>	<b>55</b>	<b>32</b>	<b>32</b>	<b>55</b>	<b>51</b>	<b>41</b>	<b>38</b>	<b>39</b>	<b>40</b>
<b>RANK</b>	<b>1</b>	<b>18</b>	<b>7</b>	<b>14</b>	<b>2</b>	<b>5</b>	<b>12</b>	<b>5</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>3</b>	<b>18</b>	<b>18</b>	<b>3</b>	<b>11</b>	<b>13</b>	<b>17</b>	<b>16</b>	<b>14</b>