


**FEASIBILITY REPORT AND
COST ESTIMATE
FOR
IMPROVEMENT PROJECT NO. 13-12
HARPERS STREET AREA REGIONAL
STORM DRAINAGE IMPROVEMENTS**

**CITY OF BLAINE, MINNESOTA
April 2, 2015**

Storm drainage improvements, regional pond and appurtenant construction.

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.



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Minn. Reg. No. 41290



CITY OF BLAINE
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FEASIBILITY REPORT

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FEASIBILITY REPORT PROJECT NO. 13-12

EXECUTIVE SUMMARY

The proposed project will construct a regional storm water pond and trunk storm sewer line to serve various properties generally surrounding Harpers Street and Flanders Street south of 128th Avenue. The properties in this area are all approximately five acres in size. This regional storm water pond and trunk storm sewer system will allow for development of individual parcels without requiring each parcel to create a storm sewer pond which would reduce the total number of lots on a five acre parcel by two to three lots.

The estimated cost of improvements is \$459,000.00 with \$446,696.71 proposed to be assessed amongst benefitting properties over a ten-year period. The remaining \$12,303.29 is assigned to the City portion of Harpers Street which drains to this system and is proposed to be paid for from City Public Utility Funds

The project is necessary, cost-effective, and feasible and will result in a benefit to the properties proposed to be assessed.

1. **PROJECT HISTORY**

The Blaine City Council initiated the project and ordered the preparation of a feasibility report on June 6, 2013, with Resolution No. 13-100.

Prior to 2005, two developers were working on assembling parcels in the Harpers Street area for subdivision. While assembling these 5-acre parcels, they put together a concept development plan that laid out the streets and utilities to serve the entire area. Several parcels were developed under this concept plan prior to the economic downturn and the development that did occur installed the main line sanitary sewer and water main in the Harpers Street alignment. This has left the opportunity for the remaining undeveloped five acre parcels along Harpers Street to easily connect to sanitary sewer and water, but the regional storm sewer pipe and pond from the concept plan was not built which creates problems for further development.

There are parcels abutting Harpers Street that developers have expressed some interest in, but developing the parcels would require storm water to be contained within each specific parcel until a connection can be made to a future regional system. To handle the storm water rate and volume requirements, most 5 acre developments would lose two to three developable lots for the required onsite temporary ponding. A potential developer must also take into account the risk that a regional storm sewer system may never materialize and the temporary loss of lots would become permanent.

A City initiated project to acquire necessary easements and build a regional storm sewer infrastructure would aid in the orderly development of the Harpers Street area and would eliminate the need to utilize various temporary ponding locations until a regional system could be completed through development of various parcels over time.

This report is based on field observations, record drawing information, 2014 aerial photography, and a 2013 topographic survey.

2. **PROJECT AREA CHARACTERISTICS**

The project area consists of eleven approximately 5-acre parcels and two 2.5-acre parcels which are generally located adjacent to either Harpers Street or Flanders Street between 125th Avenue and 128th Avenue. Some of these parcels currently have a single family home on them while the others do not have any homes on them.

There are wetlands located within the project area.

See Figure 1 for the project location.

3. **PROPOSED IMPROVEMENTS**

The proposed improvements will include the installation of a trunk storm sewer system and regional storm water pond which is based off of the concept development plans done in 2005. See Figure 2 for the proposed trunk storm sewer alignment and the properties it would serve.

Regional Pond

The regional storm water pond is proposed to be sited adjacent to the headwaters of County Ditch 59-4, which will serve as the receiving body for the storm water pond outlet. The regional pond system is required to provide both storm water quality treatment to remove suspended sediments and provide rate control prior to discharge into the ditch system consistent with Coon Creek Watershed rules.

The pond shown on the figures in this report shows the general location where a regional pond would be located. Staff is currently working with Coon Creek Watershed District to determine to what extent the wetlands surrounding the ditch headwaters area could be utilized to provide temporary storage and rate control. This would allow the design of a smaller regional pond which would mainly provide the water quality treatment component.

If this project were to go forward, the exact location, shape and size of the pond would need to be determined. There will be the ability to adjust the pond location and shape somewhat from what is shown but constraints such as wetlands along the west and southwest sides of the pond, pipe grades and the ability to most efficiently lay out roads and lots will dictate location. In addition, staff would work with the affected property owners to try and accommodate any feasible requests as to final location and shape.

This regional pond system will be sized to meet the Coon Creek Watershed District rules for water quality treatment and volume/rate control of storm water runoff from future public streets as shown in the 2005 concept development plans along with the typical impervious surfaces that drain to the street such as driveways and sidewalks.

It should be noted that the regional pond may not be able to meet all pretreatment and volume/rate control requirements for future development on the benefitting parcels. In addition, this regional pond and trunk storm sewer is not proposed to meet any Coon Creek Watershed District requirements with regard to infiltration or any other future regulatory requirements that may be in place at the time of development of a parcel. Future developers will have to create additional storm water facilities on each development site to meet infiltration requirements and any other regulatory requirements not met by the regional system.

Coon Creek is currently working on updating the hydrologic model for County Ditch 59-4 which will give a better understanding of allowable discharge rates. This location is at the headwaters of County Ditch 59-4 and thus one determining

factor for the design of this project will be that the rate of discharge from the regional pond system that will be allowed.

The concept plan showed over excavation of the regional pond beyond the normal requirement of a permanent wet pool with dead storage equal to the runoff volume from a 2.5-inch rainfall over 24 hours to the area tributary to the pond. This was likely done to generate fill for the concept development. This report does not include the over excavation, and only sizes the permanent dead pool to meet watershed requirements.

Trunk Storm Sewer

The trunk storm sewer will be sized and located to appropriately handle single family residential development of each benefitting property based on the 2005 concept development plans. See Figure 2 for a map showing all three alignments based on the 2005 concept.

This project only includes the trunk storm sewer line; additional storm sewer lines and structures will be required to be installed when properties develop. Future development will be required to take the trunk storm sewer into account when laying out right of way and property lines. The trunk storm sewer was divided into three trunk lines or alignments and analyzed as follows:

Alignment 1 – This alignment runs from the regional pond to the east and connects to the existing storm sewer line stub in Harper’s Street at 126th Lane. This trunk line would serve the properties shown in Figure 3.

Alignment 1 appears feasible to construct at this time. The existing ground elevations are high enough to allow the pipe to be buried with sufficient cover over the pipe while maintaining existing ground elevations and drainage patterns after installation. There are only minor areas where additional fill would be needed to ensure sufficient cover over the pipe. These areas requiring additional fill will not negatively impact existing surface drainage patterns.

This alignment would be the most beneficial of the three alignments as it would allow the Harpers Street storm sewer to function as designed. Currently the existing Harpers Street storm sewer dead ends at 126th Lane. This forces the storm water to back up in the pipe and flow out an outlet into a landlocked temporary pond on private property (Hennum Meadows North) currently in the development process with the City. The developer will also utilize this temporary pond and is losing two lots to development until this temporary pond can be removed.

In addition, this alignment would allow the properties along the west side of Harpers Street to develop and extend sanitary sewer and water through them so the properties to the west can be developed.

Alignment 2 – This alignment runs from the regional pond to the south, serving the properties shown in Figure 2. The alignment runs to the north property line of the northernmost property of the two five acre properties that would be served, both of which are owned by one property owner.

While this alignment is feasible from a construction perspective, it does not appear feasible from a cost perspective. The two properties are dependent on the properties to the north and north east developing first and extending sanitary sewer and water to these properties. In addition, these two properties are adjacent to the County Ditch 59-4 and would have the ability, upon development, to easily create a storm sewer pond on site with a direct outlet to the ditch and thus have no need to be a part of a regional system like the properties that are not immediately adjacent to County Ditch 59-4.

Alignment 3 – This alignment runs from the regional pond to the north, then turns east at the 127th Avenue alignment and would serve the properties shown in Figure 2.

Alignment 3 is not feasible to construct at this time. Over half of the alignment has pipe elevations that would be above existing ground. This would require significant amounts of fill to bury the pipe, essentially creating a 3 to 6 foot high berm on the ground to cover the pipe. This berm would block current drainage patterns in this area, requiring some sort of drainage mitigation measures to be taken into account if constructed. A portion of this berm would also be located in a wetland, impacting approximately 4,000 square feet of wetland which would need to be mitigated.

At the January 22, 2015 City Council Workshop, staff presented an item discussing the above alignments and feasibility of each. Council directed that staff to proceed with the preparation of this Feasibility Report based on a project to include Alignment 1 and a regional storm water pond to serve it. See Figure 3 for Alignment 1 and the properties served by it.

Coon Creek Watershed District will conduct a plan review for the project.

4. **IMPACT OF PROPOSED IMPROVEMENTS**

The proposed storm sewer improvements will require future periodic maintenance consistent with what is required for existing storm sewer pipe and storm water ponds. The City will work with affected property owners and the Contractor to resolve any situation that may arise during construction. Short term traffic delays, construction dust and noise, and erosion will occur. Efforts to minimize these impacts include the restriction of work hours and dust and erosion control measures included in the project. Any disruptions that occur to existing yards, sprinkler systems, and driveways will be restored.

Existing property owners need to be aware that if this proposed project goes forward, it will place certain constraints on future development of their properties. As mentioned previously, future development will be required to take the trunk storm sewer into account when platting the property. The trunk storm sewer will be required to be located within public right of way under a future street except for certain sections which will be required to be placed within easements along lot lines as shown in the 2005 concept development plans.

In addition, the elevation of the trunk storm sewer and regional pond will require **significant amounts of fill** to be brought in to bring road and house pad grades up to an elevation that will function with the trunk storm sewer. This may impact the future value of the land to a developer as this cost will need to be accounted for. The concept development plan featured a large number of full basement walkout lots. If this type of lot were to be utilized in future development, four to eight feet of fill will be needed to construct the roads and fronts of the lots. If future development uses different types of lots such as full basement lookouts, the amount of fill required may be able to be reduced somewhat.

The presence of the trunk storm sewer lines may make future development construction more difficult in some instances. For example, when sanitary sewer in the road alignments is being installed, additional measures such as trench boxes may be required to prevent undermining of the trunk storm sewer pipe and structures.

Development will also depend upon an orderly progression of the sanitary sewer and water main to each parcel. For example, parcels not immediately adjacent to Harpers Street will have to wait to develop until sanitary sewer and water main are extended through the parcels adjacent to Harpers Street.

5. SUMMARY OF ESTIMATED PROJECT COSTS AND FUNDING

Project: 13-12

Description: Harpers Street Area Regional Storm Drainage Improvements

Cost Item	Percent	Amount
Construction Costs		
Trunk Storm Sewer		\$ 169,600
Regional Storm Water Pond		<u>114,800</u>
Total Construction Costs		\$ 284,400
Administrative Costs (round to nearest hundred)		
Engineering	18%	\$ 51,200
Assessment	1%	2,800
Legal	2%	5,700
Administration	4%	11,400
Capitalized Interest	8%	22,800
Bonding	2%	<u>5,700</u>
Total Administrative Costs		\$ 99,600
Easement Costs		
Regional Storm Water Pond		\$ 75,000
TOTAL ESTIMATED PROJECT COSTS		<u>\$ 459,000</u>

Temporary Funding Source	City Internal Funds
Permanent Funding Source	Assessments, Public Utility Funds

Funding	
Total Generation from Assessments	\$ 446,696.71
Total Paid from Public Utility Funds	\$ 12,303.29

6. ASSESSMENT METHODOLOGY

It is proposed that the project cost be assessed to benefitting properties over 10 years in accordance with the City's Assessment Policy. A deferral of up to three years is proposed to be available for those properties which are not under development. At such time as any undeveloped property begins the development process (recording of final plat) or at the expiration of the 3 year deferral period, the 10 year assessment period would begin. The deferral period would be subject to interest charges at the rate set at the assessment hearing.

It is proposed to assess this project using the area method for benefitting properties. The assessments are based on dividing the total cost of the regional pond amongst the total gross area of the properties served by the regional pond and dividing the total cost of the trunk storm sewer alignment amongst the total gross area of the properties served by each respective trunk storm sewer alignment per the City of Blaine Special Assessment Policy.

It should be noted that this Feasibility Report does not include costs for acquiring easements over the trunk storm sewer. Under developed conditions the trunk storm sewer would be placed within easements along rear and side yard lot lines or within public right of way and thus will not impact the number of lots a property owner might achieve under development based on the 2005 concept plan. If, during negotiations for easements, the property owners require compensation for the easements necessary to install the trunk storm sewer, the estimated assessable costs to property owners shown in this report would be increased by the amount of the easement acquisition costs and the feasibility of proceeding with the project would need to be reevaluated.

Costs for acquiring the land for the regional pond are included in this report. The regional pond will reduce the amount of developable lots on the properties on which it is located. As a result, compensation to the property owner is required for the lost developable land.

See Figure 4 for the parcels proposed to be assessed and Exhibit Nos. 1, 2 and 3 for the proposed assessment rolls.

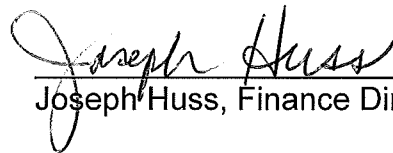
7. FINANCE

The proposed project will be temporarily financed by the City. Permanent funding will be provided by the costs assessed to the benefitting parcels in accordance with current City Assessment Policy and Minnesota Statutes Chapter 429, Special Assessment Laws and Public Utility Funds.

A. Finance Director Statement

With reference to this Feasibility Report for Improvement Project 13-12 as prepared by the City of Blaine Engineering Department dated April 2, 2015, I find the following:

1. The project will be temporarily funded through existing City internal funds whereupon permanent financing will be obtained through the City's Storm Water Utility Funds and assessments.
2. Sufficient moneys are currently available from the City's internal funds to temporarily fund the special assessment portion of the project. It is estimated that \$446,696.71 will be assessed.
3. Sufficient moneys are currently available from the City's Public Utility Funds to pay for the proposed portion of Harper's Street which would contribute storm water to this system at an estimated cost of \$12,303.29.



Joseph Huss, Finance Director

8. PROJECTED SCHEDULE

April 2, 2015	Receive Feasibility Report Order Public Hearing
April 21, 2015	Neighborhood Information Meeting to discuss project and proposed assessments
May 21, 2015	Hold Public Hearing Order Improvements and Order Preparation of Plans and Specifications
July, 2015	Approve Plans and Specifications Order Advertisement for Bids
August, 2015	Open Bids
August, 2015	Award Contract
Fall 2015/Spring 2016	Construct Improvements
September 2016	Assess Project
2017	First assessment payment due with real estate taxes

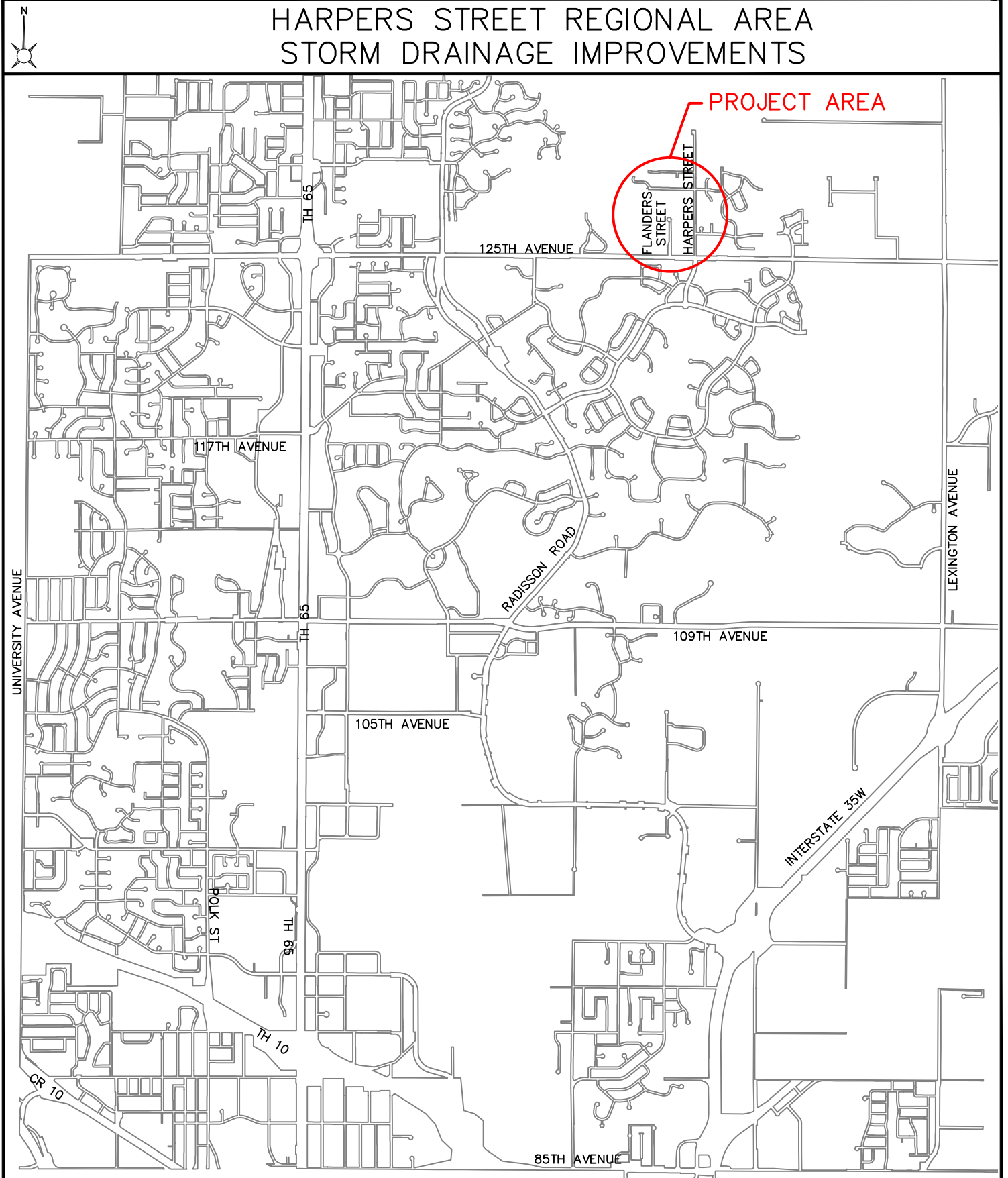
9. **PROJECT FEASIBILITY AND RECOMMENDATION**

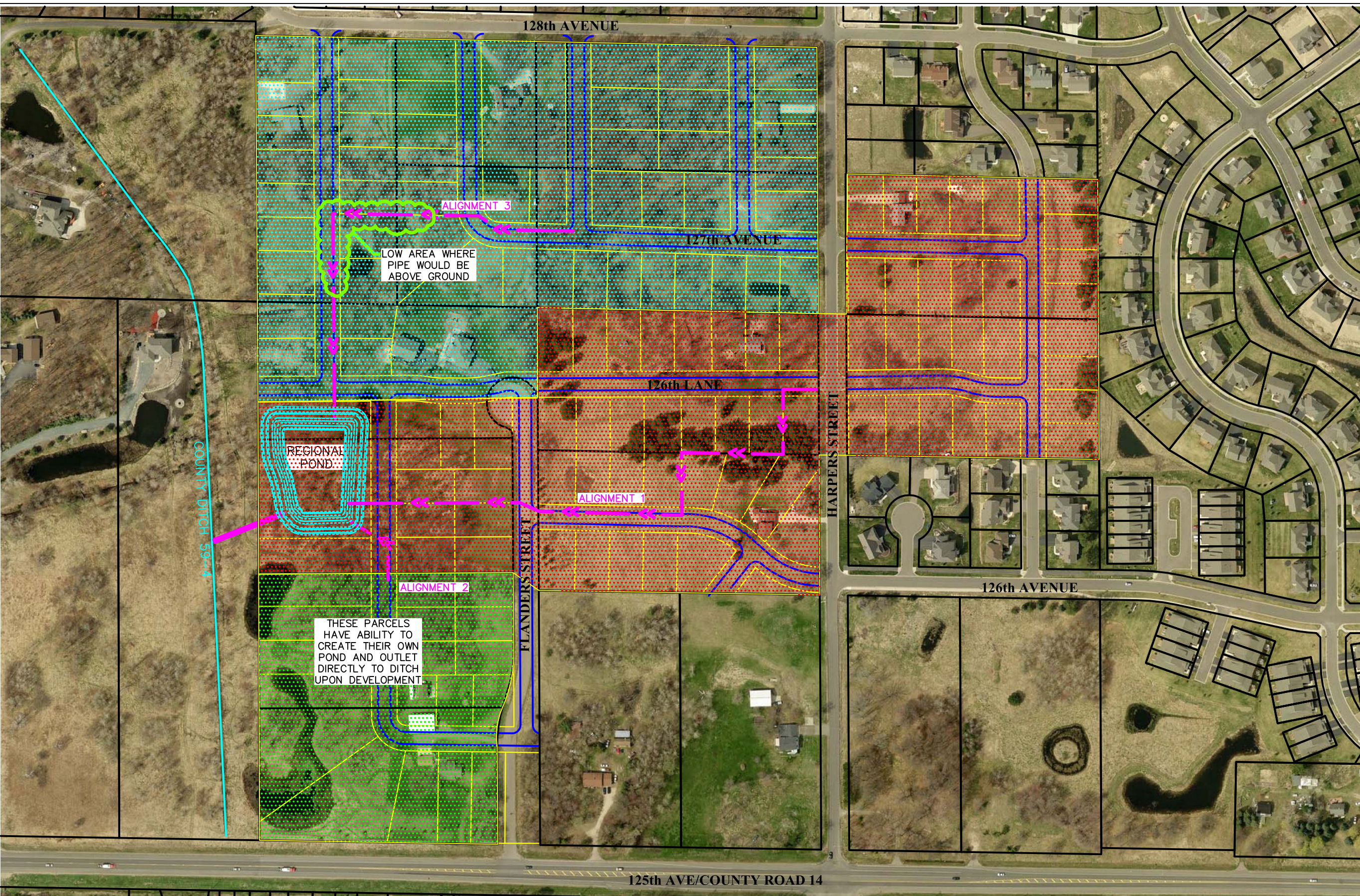
The project as proposed is technically and financially feasible, cost effective, and will result in a benefit to the properties proposed to be assessed. It is recommended that the Council accept this report, hold the public hearing, and order the improvements.






CITY OF BLAINE

FIGURE 1 - LOCATION MAP



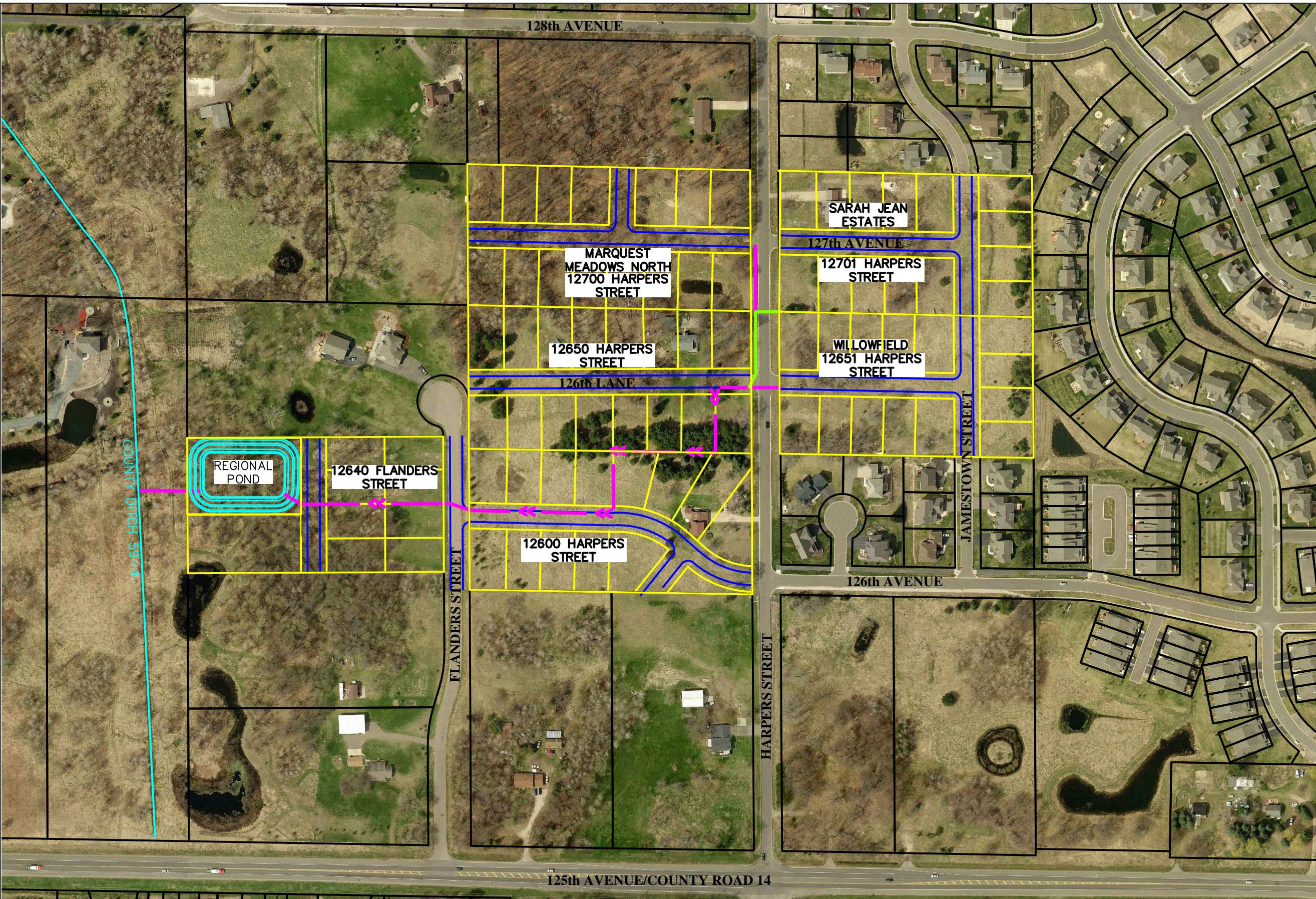


LEGEND

-  TRUNK STORM SEWER
-  CONCEPT LOT LINE
-  CONCEPT ROAD

NOTE:
 THIS MAP IS BASED ON A
 CONCEPT DEVELOPMENT PLAN
 DONE IN 2005. FUTURE
 DEVELOPMENT MAY DIFFER FROM
 WHAT IS SHOWN.

HARPERS STREET AREA REGIONAL STORM DRAINAGE IMPROVEMENTS
 FIGURE 2 – OVERALL 2005 CONCEPT LOT LAYOUT AND TRUNK STORM SEWER MAP



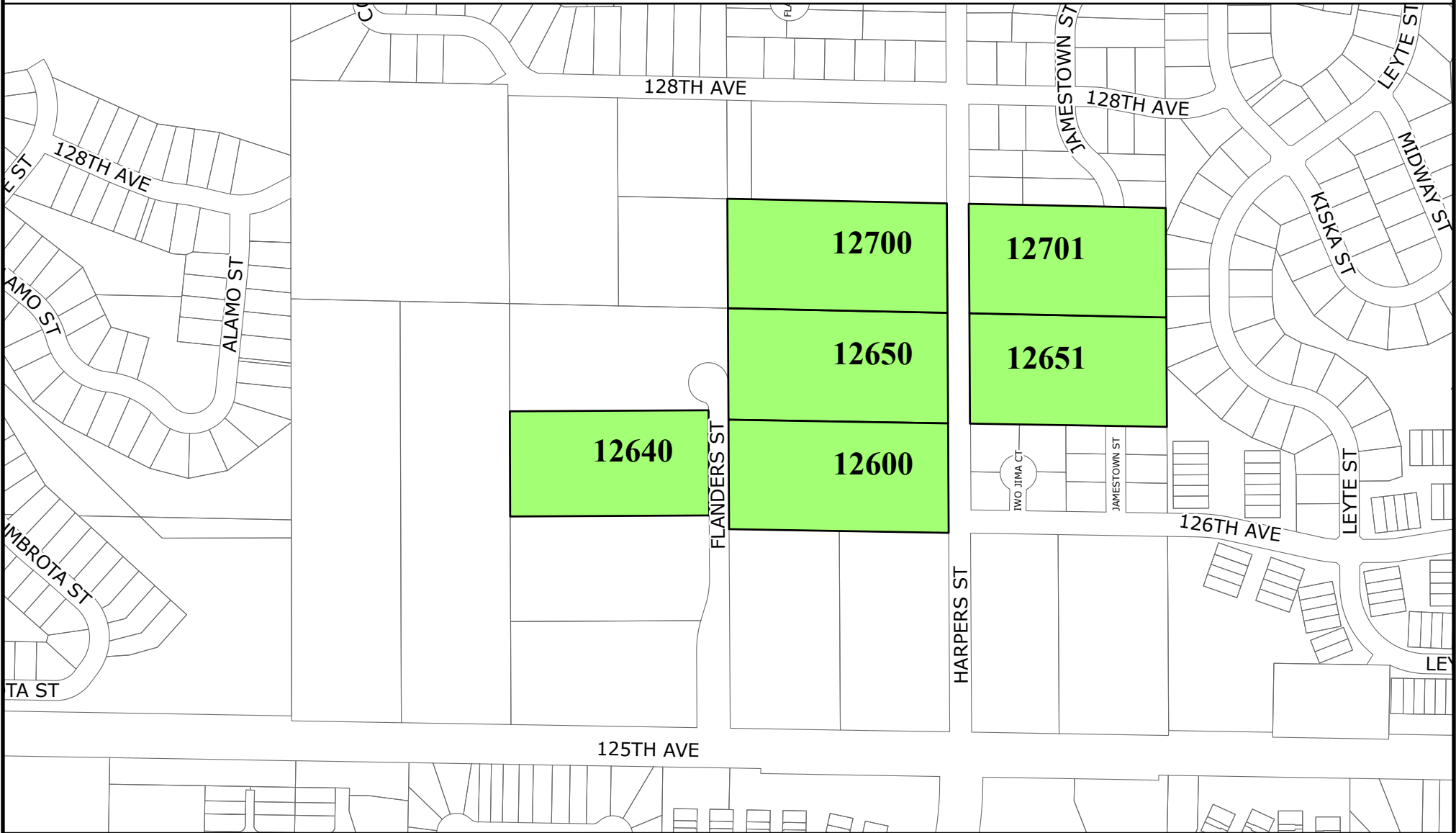
LEGEND

- ← EXISTING TRUNK STORM SEWER
- ← PROPOSED TRUNK STORM SEWER
- CONCEPT LOT LINE
- CONCEPT ROAD

NOTE:
 THIS FIGURE IS BASED ON A CONCEPT DEVELOPMENT PLAN DONE IN 2005. FUTURE DEVELOPMENT MAY DIFFER FROM WHAT IS SHOWN. NAMED PLATS ARE IN THE DEVELOPMENT PROCESS WITH THE CITY..

FIGURE 3 – PROPOSED TRUNK STORM SEWER ALIGNMENT AND PROPERTIES SERVED

Figure 4




 Assessable Parcels



Figure 4
Harpers Street Area
Regional Storm Drainage Improvements



PROJECT 13-12
HARPERS STREET AREA REGIONAL STORM DRAINAGE IMPROVEMENTS
CITY OF BLAINE
EXHIBIT NO. 1
PRELIMINARY ASSESSMENT ROLL - SUMMARY

PROPERTY ASSESSMENTS						
PROPERTY PIN	PROPERTY ADDRESS	PROPERTY OWNER	ASSESSABLE ACREAGE	ASSESSMENTS ALIGNMENT 1	ASSESSMENTS REGIONAL POND	TOTAL ASSESSMENT
033123420006	12700 HARPERS ST NE	G & G LAND DEVELOPMENTS LLC	5.01	\$41,003.94	\$41,183.00	\$82,186.95
033123420007	12701 HARPERS ST	SUMMIT LAND DEVELOPMENT LLC	4.50	\$36,829.89	\$36,990.72	\$73,820.61
033123430002	12651 HARPERS ST NE	HARPERS WEST LLC	4.51	\$36,911.73	\$37,072.92	\$73,984.66
033123430003	12650 HARPERS ST NE	BYHOFFER, STEVEN & PATRICIA	5.09	\$41,658.70	\$41,840.61	\$83,499.31
033123430004	12600 HARPERS ST NE	BOXRUD, DANIEL & NANCY	5.01	\$41,003.94	\$41,183.00	\$82,186.95
033123340008	12640 FLANDERS ST NE	GLUHIC, ENES	3.11	\$25,453.55	\$25,564.70	\$51,018.24
TOTALS:			27.23	\$222,861.76	\$223,834.96	\$446,696.71

PROJECT 13-12
HARPERS STREET AREA REGIONAL STORM DRAINAGE IMPROVEMENTS
CITY OF BLAINE
EXHIBIT NO. 2
PRELIMINARY ASSESSMENT ROLL - TRUNK STORM SEWER ALIGNMENT 1

ASSESSMENT RATE BREAKDOWN					
CONSTRUCTION COSTS	\$169,600.00				
ADMINISTRATIVE COSTS (35%)	\$59,400.00		TOTAL ACREAGE**	ASSESSMENT RATE PER ACRE	
TOTAL ASSESSABLE COST	\$229,000.00	/	27.98	=	\$8,184.42

PROPERTY ASSESSMENTS					
PROPERTY PIN	PROPERTY ADDRESS	PROPERTY OWNER	ASSESSABLE ACREAGE	ASSESSMENT RATE PER ACRE	PROPOSED ASSESSMENT
033123420006	12700 HARPERS ST NE	G & G LAND DEVELOPMENTS LLC	5.01	\$8,184.42	\$41,003.94
033123420007	12701 HARPERS ST	SUMMIT LAND DEVELOPMENT LLC	4.50	\$8,184.42	\$36,829.89
033123430002	12651 HARPERS ST NE	HARPERS WEST LLC	4.51	\$8,184.42	\$36,911.73
033123430003	12650 HARPERS ST NE	BYHOFFER, STEVEN & PATRICIA	5.09	\$8,184.42	\$41,658.70
033123430004	12600 HARPERS ST NE	BOXRUD, DANIEL & NANCY	5.01	\$8,184.42	\$41,003.94
033123340008	12640 FLANDERS ST NE	GLUHIC, ENES	3.11	\$8,184.42	\$25,453.55
TOTALS:			27.23		\$222,861.76

NOTES:

** TOTAL ACREAGE INCLUDES 0.75 ACRES OF EXISTING HARPERS STREET (CITY PROPERTY) WHICH IS SERVED BY THIS ALIGNMENT

PROJECT 13-12
HARPERS STREET AREA REGIONAL STORM DRAINAGE IMPROVEMENTS
CITY OF BLAINE
EXHIBIT NO. 3
PRELIMINARY ASSESSMENT ROLL - REGIONAL POND

ASSESSMENT RATE BREAKDOWN					
CONSTRUCTION COSTS	\$114,800.00				
EASEMENT COSTS	\$75,000.00				
ADMINISTRATIVE COSTS (35%)*	\$40,200.00		TOTAL ACREAGE**	TOTAL COST PER ACRE	
TOTAL ASSESSABLE COST	\$230,000.00	/	27.98	=	\$8,220.16

PROPERTY ASSESSMENTS					
PROPERTY PIN	PROPERTY ADDRESS	PROPERTY OWNER	ASSESSABLE ACREAGE	ASSESSMENT RATE PER ACRE	PROPOSED ASSESSMENT
033123420006	12700 HARPERS ST NE	G & G LAND DEVELOPMENTS LLC	5.01	\$8,220.16	\$41,183.00
033123420007	12701 HARPERS ST	SUMMIT LAND DEVELOPMENT LLC	4.50	\$8,220.16	\$36,990.72
033123430002	12651 HARPERS ST NE	HARPERS WEST LLC	4.51	\$8,220.16	\$37,072.92
033123430003	12650 HARPERS ST NE	BYHOFFER, STEVEN & PATRICIA	5.09	\$8,220.16	\$41,840.61
033123430004	12600 HARPERS ST NE	BOXRUD, DANIEL & NANCY	5.01	\$8,220.16	\$41,183.00
033123340008	12640 FLANDERS ST NE	GLUHIC, ENES	3.11	\$8,220.16	\$25,564.70
TOTALS:			27.23		\$223,834.96

NOTES:

* ADMINISTRATIVE COSTS FOR CONSTRUCTION ONLY (NOT ASSIGNED TO EASEMENT ACQUISITION)

** TOTAL ACREAGE INCLUDES 0.75 ACRES OF EXISTING HARPERS STREET (CITY PROPERTY) WHICH IS SERVED BY THIS ALIGNMENT