CITY OF EDEN PRAIRIE DELL ROAD - Crestwood Terrace to Connection North of Flying Cloud Drive (CSAH 61) FEASIBILITY REPORT **Street and Utility Improvements Improvement Contract No. 17-5990** Assisted by: Prepared by: **WSB** City of Eden Prairie 540 Gateway Blvd **Public Works Department** Burnsville, MN 55337 **Engineering Division** 8080 Mitchell Road Eden Prairie, MN 55344

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CERTIFICATIO	N
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I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Minnesota.

Carter Schulze, PE

Reg. No. 44908

Date

I. <u>INTRODUCTION</u>

This report presents the results of a preliminary engineering study for street and utility improvements on Dell Road from Crestwood Terrace to approximately 580-feet north of CSAH No. 61 (Flying Cloud Drive) (Improvement Area). This feasibility study was authorized by the Eden Prairie City Council on March 15, 2022.

The street and trail improvements described in this report will provide for a safer vehicular and pedestrian friendly connection to Flying Cloud Drive by reconstructing the existing unimproved narrow roadway which has sharp curves, steep grades and poor sight lines. The utility improvements will provide access to City sanitary sewer and water for the residential properties along Dell Road and future connection opportunity along Turnbull Road. The Improvement Area (in the southwest quadrant of the City) is within Section 29 and 30, Township 116, Range 22 and is shown on **Figure No. 1**.

The Eden Prairie City Council ordered the preparation of this feasibility study for the Dell Road area on March 15, 2022. This council action was approved without a petition so therefore, any council action related to this project will require a 4/5ths approval of the City Council. Work on upgrading this rural gravel section of roadway has been ongoing since 2006. Most recently on July 20, 2021, a neighborhood meeting was held to discuss the project and its complexities. Assessments, traffic and changing of the area were the largest concerns from the group.

This report identifies properties deriving benefit from the proposed improvements. The proposed street improvements described later in this report will provide benefit to the adjacent residential properties, as well as the residential properties that take access off of Dell Road. The proposed sanitary sewer and water improvements will provide benefit to many of the same residential properties described above as it will provide the benefitting properties with the ability to connect to individual service lines, obtain access to City utilities directly (or with mainline extensions), or at the time of future development for some of the larger parcels. For the identified Improvement Area, we estimate a total of 78 residential units, which includes potential developable units for properties along Dell Road and Turnbull Road. Later in this report, the proposed assessment rates will be described for each benefitting component of the proposed improvements. The parcel acreage, potential units, estimated assessments, connection fees, etc. is shown on the attached Preliminary Assessment Roll.

II. STREET AND TRAIL IMPROVEMENTS

The street and trail segments proposed for improvement are shown on **Figure No. 1**. The existing road within the project area varies between a typical city collector section with curb and gutter, a narrow rural paved section and a narrow gravel section. The narrow gravel and rural paved sections make up most of the Improvement Area. An improved street with adequate structure, storm drainage and pedestrian facilities is needed to support the residential development that has and is occurring in this area as well as provide safer curves and flatter grades on a slightly adjusted horizontal alignment.

This segment of Dell Road is functionally classified as a major collector and is on the City's municipal state aid system. The recommended street section is a 32-foot wide (as measured from back-of-curb to back-of-curb) urban two-lane road with concrete curb and gutter. A new eight-foot bituminous trail separated by a

5-foot turf boulevard is proposed along the west/south side that will extend the existing trail on Dell Road southerly to the existing trail along Flying Cloud Drive that was completed as part of the County's CSAH 61 project in 2020. The County's project provided an improved three-lane county highway with a ten-foot bituminous trail along the north side. As part of the County's project, the intersection with Dell Road was raised to accommodate a safer approach to Flying Cloud Drive from Dell Road.

The proposed Dell Road will be designed to meet MnDOT State Aid Standards including both vertical and horizontal curves. Vertical grades will aim to be less than or equal to 10% throughout with horizontal curves meeting a 30-mph design, but a variance may be required considering the constraints within the existing corridor. The City's typical collector street section is estimated to include 1.5-inch bituminous wear course, 2-inch bituminous base course, 10-inches of Class 5 aggregate base and an 18-inch sand section. The proposed trail is to be 2.5-inches of bituminous pavement over 8-inches of Class 5 aggregate base. The final street and trail section recommendations will be made following a geotechnical evaluation to be completed with the final design phase of the project.

The intersection of Dell Road and Turnbull Road will be reconstructed with the landing of Turnbull Road improved for a safer intersection as Turnbull Road currently approaches Dell Road at a downslope. It is intended that the proposed curb on Dell Road will wrap around to Turnbull Road, but no further curb improvements will extend on Turnbull Road. Bituminous improvements involved with flattening the grade are anticipated with the project and could extend approximately 200-feet to the east.

The varied terrain throughout the corridor will require construction of retaining walls to reduce impacts to adjacent properties as compared to graded slopes outside of the roadway section. Retaining walls are proposed as precast large block modular gravity walls estimated at 5 to 20-feet in height, however, alternative wall designs built to lessen construction limits could be required during final design. Where retaining walls are not necessary, slopes will be constructed to maximum 3H:1V to tie-in to existing ground.

The proposed street and trail assessments for the adjacent and accessing properties along Dell Road will be based on the cost of an equivalent 28-foot residential street with an eight-foot bituminous trail along the west and south side of the road. The assessable street cost will include only the portion of the roadway and trail from the north tie-in point on Dell Road (where the curb and gutter improvements end) to a point approximately 300 feet south of Turnbull Road not including approximately 400 feet of the Riley Creek/floodplain area. This is shown on **Figure No. 2**. The remainder of the costs for the new roadway and trail to Flying Cloud Drive, as well as the extra roadway width, retaining walls, culvert crossing and grading is proposed to be a City cost.

The estimated construction cost for the street and trail improvements, including grading, retaining walls and a 10% contingency, is \$4,400,000. The estimated total project cost for street and trail improvements including 25% for engineering and testing for the City portion and an additional 10% for the assessable portion (due to additional administration and interim financing costs) is \$5,600,000. The estimated total project cost for the assessable portion of street and trails is \$1,203,100. The assessable costs are made up of a current assessment rate per unit of \$16,300. Previously developed/or divided properties within the Improvement Area have pending development agreement assessments for Dell Road Improvements totaling \$9,800 per unit dating back to 2003. The balance of the street, trail, grading, and retaining wall costs (estimated at \$4,396,900) will be funded with Municipal State Aid funds.

The proposed street and trail assessment rate is based on the potential of 69 residential lot units (not including the 9 units of previous pending assessments) that are adjacent or take access from this portion of the roadway. This is the most equitable method of distributing street improvement costs due to the variable frontages, unique geography and limited access points of the benefitting properties.

The proposed assessment for the street improvements for each parcel is shown on the Preliminary Assessment Roll.

III. STORM DRAINAGE IMPROVEMENTS

The existing corridor is a rural roadway relying on ditches and sheet flow to drain stormwater and a 72" corrugated metal pipe culvert conveying Riley Creek from west to east under Dell Road. The southerly 500 feet of Dell Road was reconstructed as part of the Flying Cloud Drive improvements in 2020 and included raising the intersection and adding curb and gutter with storm sewer that discharges directly into a wetland that ultimately flows to Rice Lake south of Flying Cloud Drive. All rate control and water quality improvements associated with the Flying Cloud Drive reconstruction project were aggregated within a filtration BMP located approximately 0.5 miles west of the Dell Rd Intersection near the entrance to Richard T. Anderson Park. A small rate control basin was constructed in the southwest corner of the Dell Road and Riley Creek crossing by the city in 2016 to stabilize an eroding bank.

The construction of an urban roadway section will require storm sewer to convey and treat drainage. Riley Creek has a history of erosion due largely to uncontrolled Dell Road runoff. The proposed drainage system will split discharge with a portion of the drainage to Riley Creek and a portion to drainage basins near Flying Cloud Drive. Storm water will be treated by an infiltration BMP located on the east side of Dell Road just south of Riley Creek, in accordance with requirements from the Riley-Purgatory-Bluff Creek Watershed District (RPBCWD). The project exists within both the RPBCWD and the Lower Minnesota River Watershed District (LMRWD), and as such must be permitted with each watershed district (refer to **Figure No. 3** for proposed storm drainage improvements).

In addition to the proposed drainage system associated with the urban roadway improvements, the project also includes the replacement of the 72" corrugated metal pipe culvert carrying Riley Creek under Dell Road. A concrete box culvert meeting RPBCWD rules and municipal state aid standards is proposed for the replacement. This work will likely be done under a road closure due to its deep excavation and associated construction limits.

The shared private driveway that serves five homes within the Meadowcroft and Doyle addition developments intersects Dell Road north of Riley Creek. The private driveway traverses south to the homes, and in doing so, crosses Riley Creek. This report analyzes the cost and feasibility of lining the existing private culvert which conveys the creek. The City has been approached by a representative of the developments requesting improvements to the culvert be completed as a part of the City's Dell Road improvements and the costs specially assessed to the benefitting properties. Cured in place pipe lining of the culvert is being considered as an alternative to completely replacing the culvert in an effort to minimize the restoration costs that would typically accompany a deep, open trench excavation of the culvert while still improving the structural integrity of the culvert. The estimated costs of the private improvements are \$188,300. This project component will be bid and costs tracked separately from all other Dell Road improvements and will be 100% assessed back to the benefitting units upon receipt of a petition and signing of a special assessment agreement. See **Figure No. 3** showing private improvements and related parcels.

As shown in Table No. 1, the total construction cost for storm drainage (not including the private storm sewer work) is \$1,067,600. The storm sewer infrastructure improvements and the treatment/infiltration facilities will be funded with a combination of Municipal State Aid and storm water utility funds.

IV. SANITARY SEWER AND WATERMAIN IMPROVEMENTS

Sanitary Improvements

This feasibility report considered several options to extend sanitary sewer south of the Riley Creek crossing that would serve not only those properties along Dell Road, but also future development needs in the area, specifically along Turnbull Road.

The recommended option is the construction of a public lift station. The public lift station is proposed to be sited north of Riley Creek near the low point in the alignment and will pump wastewater through a 4" forcemain west and north to the existing sanitary sewer manhole located just south of the improved Dell Road section. The construction of 8" PVC gravity sewer would extend from the lift station southeast along Dell Road to Turnbull Road, and in the future, to the east within Turnbull Road to the last parcel able to be served via a gravity system (approximately 10001 Dell Road). 4" PVC sanitary sewer services are proposed to be stubbed to each property along Dell Road as applicable. The lift station is proposed as a submersible dual-pump system with controls meeting City of Eden Prairie public works requirements. **Figure No. 4** illustrates the public lift station layout as well as future utility installations.

Other options to extend sanitary sewer within Dell Road and along Turnbull Road in the future included low pressure 3" sanitary forcemains where each homeowner would connect to the forcemain with privately owned grinder pumps. Extension of the forcemains extended both east to the existing Beverly Drive sanitary system and west to the existing sanitary system on Dell Road.

In the interest of best serving all the properties along Dell Road and along Turnbull Road equitably in the future, the recommended sanitary sewer option is the public lift station. That will provide gravity sanitary sewer options for properties along Turnbull Road in the future. This doesn't eliminate the possibility of private grinder pumps needed along Turnbull Road as many of the existing properties have their septic systems located downhill from the roadway. Gravity options would still exist from the end of the Beverly Drive system and the Reeder Ridge development to capture the parcels at the end of Turnbull Road that are unable to reach the Dell Road system by gravity.

Watermain Improvements

Watermain improvements consist of the extension of 12" trunk watermain in Dell Road from the existing stub near Crestwood Terrace to Turnbull Road, connection to the Meadowcroft stub, and termination of the watermain extension at Turnbull Road with a hydrant and stub towards Turnbull Road at the terminus. Connection to the City's watermain at Meadowcroft and extension of the proposed 12" trunk watermain along Turnbull Road in the future will both complete necessary watermain loops and improve water quality and reliability for the City's distribution system. **Figure No. 4** illustrates the proposed watermain layout.

Water services of 1-inch are proposed along the watermain length to service existing parcels, as

applicable, and also the future subdivision of parcels. Hydrants and gate valves are proposed along the length of watermain to provide better fire protection and maintenance ability.

Analysis of the trunk watermain indicates a high-pressure potential at the Riley Creek crossing, estimated to be about 110 psi. A valve, hydrant and manhole for pressure monitoring at this low point have been included in the opinion of probable cost for maintenance purposes.

V. PROJECT COST SUMMARY

Table No. 1 summarizes the estimated costs for the various components of the project. These costs are based upon anticipated construction costs assuming adequate subsurface soil conditions, as well as a 10% contingency, 25% estimated engineering and testing costs, 9% administration fee, and 1% interim financing costs. Any right-of-way or easement costs associated with this project are not included in any cost estimates. These unknown costs will become project costs determined during final design and will be funded with Municipal State Aid funds.

Any homesteaded properties that are generally un-developed will be granted a deferment of all assessments except an equivalent single unit of street and trail assessment until the property subdivides based on the City's Special Assessment Policy. Non-homesteaded parcels will be granted a deferment on all assessments until the time of development or connection. Since homesteaded and non-homesteaded properties will be charged a connection fee at the time of development or connection to city utilities, the exclusion policy (having a functional on-site system) for homesteaded parcels will not apply.

In addition to the street and trail assessments proposed in this report, each benefitted property is subject to trunk utility assessments. Based on the City's Special Assessment Policy, it is proposed to levy trunk assessments in the year subdivision/development approvals are granted to a property or the determination of lateral benefit. For this project, the determination of lateral benefit will be at the time of connection. Homesteaded parcels will be subject to a trunk utility (sewer and water) assessment of \$520 for the first half acre, with the balance of the developable acreage subject to the prevailing acreage rate (2023 rate = \$9,526.00 per acre) at the time of development or connection. Utility connection fees, for sanitary sewer and water, will be charged at the prevailing rate at the time of development or connection based on the actual developed, subdivided or connected units.

This report proposes to apportion assessable project costs to identified benefitting properties on a unit or lot unit basis. Potential units have been estimated for each of the benefitting properties that are currently undeveloped or under-developed based on a review of the properties and their development potential, as well as taking into account existing topography and Metropolitan Urban Service Area (MUSA) boundaries.

VI. CONCLUSIONS AND RECOMMENDATIONS

Based on this study, Improvement Contract No. 17-5990 is feasible, cost effective, necessary, and the resulting benefit will equal or exceed the proposed assessments to the abutting and benefitting properties. It is therefore recommended that the Eden Prairie City Council proceed with the project on a schedule similar to the one suggested in this report.

CITY OF EDEN PRAIRIE

NOTICE OF HEARING ON PROPOSED PUBLIC WORKS IMPROVEMENTS

I.C. 17-5990

TO WHOM IT MAY CONCERN:

NOTICE IS HEREBY GIVEN that the Eden Prairie City Council will meet at the City Center, 8080 Mitchell Road, at 7:00 p.m. January 16th to consider the making of the following described improvements:

I.C. 17-5990 – Street, Storm Drainage, Sanitary Sewer and Watermain improvements on Dell Road. The project includes grading, pavement, curb and gutter, retaining walls, storm sewer, sanitary sewer, lift station, forcemain, watermain, and trail. The area proposed to be assessed lies in Section 29 and 30, Township 116, Range 22.

The total estimated project cost is \$8,392,600.

Pursuant to Minnesota State Laws, Section 429.011 to 429.111, the area proposed to be assessed for such improvements is all that property within or abutting on the above described limits. Written or oral comments relating to the proposed improvements will be received at this meeting.

By Order of the City Council City Clerk City of Eden Prairie 8080 Mitchell Road Eden Prairie, MN 55344

Publish:

Eden Prairie Sun Sailor January 4 and January 11, 2024

PROJECT SCHEDULE

(I.C. 17-5990)

November 14, 2023	City Council to Receive Feasibility Report
December 28, 2023	Deliver Notice of Public Hearing to Eden Prairie Sun Current Publish January 4 and January 11, 2023
January 4, 2024	Mail Notice of Public Hearing to Public
January 16, 2024	Hold Public Hearing, Order Improvements and Preparation of Plans and Specifications
February 2024	Approve Final Design Agreement with City Consultant
September 17, 2024	Approve Plans and Specifications and Order Advertisement of Bids
	Advertise for Bids in Eden Prairie Sun Current and online QuestCDN on October 10 (estimated)
October 31, 2024	Open Bids (estimated)
November 12, 2024	Award Contract (estimated)
November 2025	Substantial Completion
July 2026	Final Completion
October 2026	Final Assessment Hearing
Spring 2027	Assessments First Appear on Tax Statements

TABLE NO. 1 ESTIMATED COSTS EDEN PRAIRIE IMPROVEMENT CONTRACT NO. 17-5990 DELL ROAD IMPROVEMENTS STREET and UTILITIES

	Street	Storm Drainage	Sewer and Water	Total
Total Project Cost ¹	\$5,600,000	\$1,067,600	\$1,725,000	\$8,392,600
Total City Cost	\$4,396,900	\$1,067,600	\$1,725,000	\$7,189,500 (86%)
Project Assessment Cost ²	\$1,203,100	NA	NA	1,203,100 (14%)

¹ Includes construction, 10% construction contingency, and 25% for engineering and testing

² Includes additional 10% beyond the project costs for financing and administration

PRELIMINARY ASSESSMENT ROLL DELL ROAD

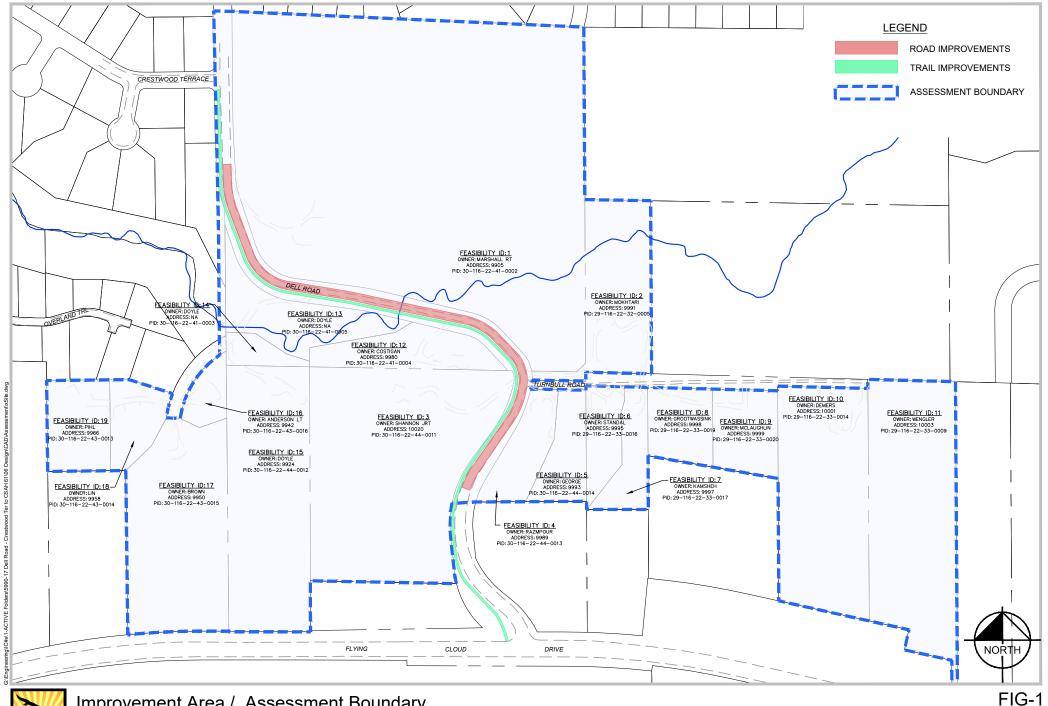
EDEN PRAIRIE, MINNESOTA

I.C. 17-5990

PARCEL P.I.D. NO. ADDRESS		ADDRESS	OWNER	HMSTD	GROSS	FOOT	POTENTIAL	STREET (2. 3.)		ESTIMATED
NO.				Y OR N	AC	NOTES	UNITS (1.)	UNITS	AMOUNT	TOTAL ASSESSMENT (6. 4.)
1	30-116-22-41-0002	9905 Dell Rd	Mable Marshall Revocable Trust	Υ	30.53	5	52	52	\$847,600.00	\$847,600.00
2	29-116-22-32-0005	9991 Dell Rd	Sasan Mokhtari	Y	3.63	5	2	2	\$32,600.00	\$32,600.00
3	30-116-22-44-0011	10020 Dell Rd	Shannon Joint Revocable Trust	Y	10.66	5	3	3	\$48,900.00	\$48,900.00
4	30-116-22-44-0013	9989 Dell Rd	Bahman Razmpour	N	1.46	5. 7.	1	1	\$9,800.00	\$9,800.00
5	30-116-22-44-0014	9993 Dell Rd	Ajay George	N	1.33	5. 7.	1	1	\$9,800.00	\$9,800.00
6	29-116-22-33-0016	9995 Dell Rd	Robert Standal	Y	1.11	5	1	1	\$16,300.00	\$16,300.00
7	29-116-22-33-0017	9997 Dell Rd	Husam Kamsheh	Y	1.20	5	1	1	\$16,300.00	\$16,300.00
8	29-116-22-33-0019	9998 Dell Rd	Robert Grootwassink	N	1.45	5	2	2	\$32,600.00	\$32,600.00
9	29-116-22-33-0020	9999 Dell Rd	Tim McLaughlin	Y	1.64	5	2	2	\$32,600.00	\$32,600.00
10	29-116-22-33-0014	10001 Dell Rd	Charles Demers	Y	6.16	5	3	3	\$48,900.00	\$48,900.00
11	29-116-22-33-0009	10003 Dell Rd	Robert Wengler	N	7.08	5	3	3	\$48,900.00	\$48,900.00
12	30-116-22-41-0004	9980 Dell Rd	Andrew J Costigan	Y	1.87	7	1	1	\$4,900.00	\$4,900.00
13	30-116-22-41-0005	NA	Margaret Doyle	Y	2.34					\$0.00
14	30-116-22-41-0003	NA	Margaret Doyle	Y	0.57	7	1	1	\$4,900.00	\$4,900.00
15	30-116-22-44-0012	9924 Dell Rd	Margaret Doyle	Y	6.69	7	1	1	\$9,800.00	\$9,800.00
16	30-116-22-43-0016	9942 Dell Rd	L Timothy & Karen Anderson Living Trust	Y	0.70	7	1	1	\$9,800.00	\$9,800.00
17	30-116-22-43-0015	9950 Dell Rd	Steven E. Brown	Y	6.16	7	1	1	\$9,800.00	\$9,800.00
18	30-116-22-43-0014	9958 Dell Rd	David Lin	Y	1.24	7	1	1	\$9,800.00	\$9,800.00
19	30-116-22-43-0013	9966 Dell Rd	Paul Pihl	Υ	1.75	7	1	1	\$9,800.00	\$9,800.00
TOTALS	TOTALS							78	\$1,203,100.00	\$1,203,100.00

- 1. With the existing topography, potential units are based on a general determination of potential developable or buildable areas taking into account steep slopes and subdivision potential.
- 2. Based on an assessment rate of \$16,300 per unit for an equivalent 28' wide street and 8' trail.
- 3. Based on an assessment rate of \$9,800 per unit for Dell Road improvements as part of the Meadowcroft and Doyle Addition Development Agreements.
- 4. Utility connection fees will be charged at the prevailing rate at the time of development or connection based on actual developed or connected units (units are estimated). 2023 connection fee is \$24,227 per connection (60% for sanitary sewer and 40% for water).
- 5. Subject to additional trunk assessments at the time of development or connection to utilities (at the prevailing rate).
- 6. Excludes future connection fees and trunk assessments.
- 7. Dell Road Improvements assessed as part of previous development agreement

Note: Homesteaded properties will be subject to a trunk sewer and water assessment of \$520 for the first half acre with the balance of the parcel's developable acreage (if applicable) subject to the prevailing acreage rate for trunk assessments at the time of development or connection. Any homesteaded parcel that has development potential will be assessed the equivalent of one full unit of assessment with the balance of the assessment deferred with interest until the time of development. Assessments for non-homesteaded and vacant parcels will be deferred with interest until the time of development or connection.



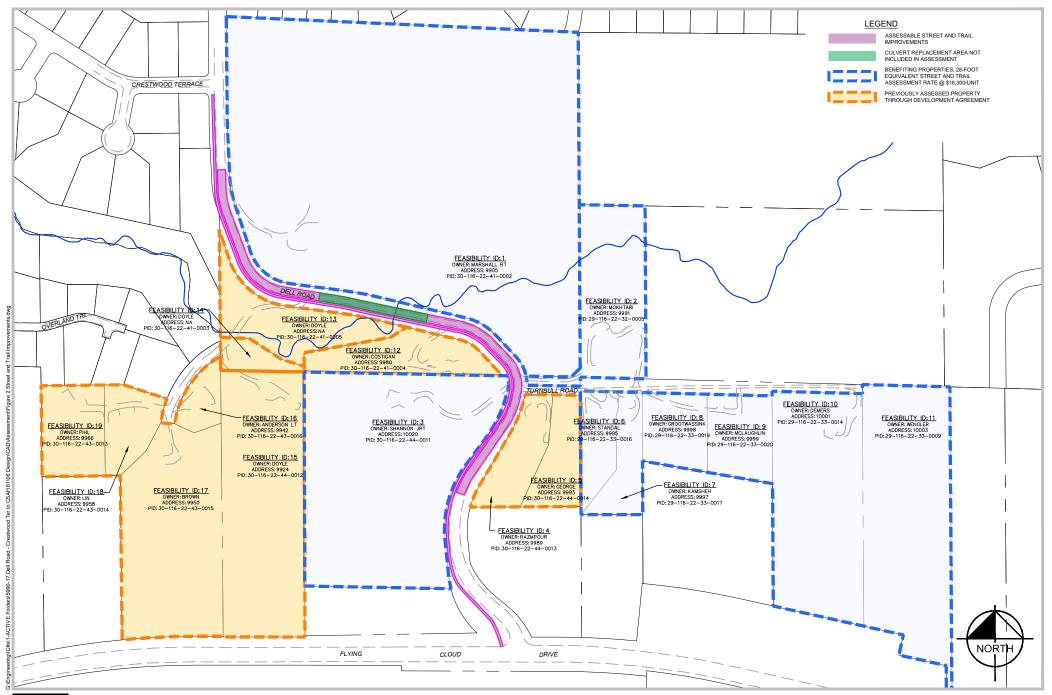


Improvement Area / Assessment Boundary

Dell Road Improvements

DATE: 11/6/2023

City of Eden Prairie IC# 17-5990





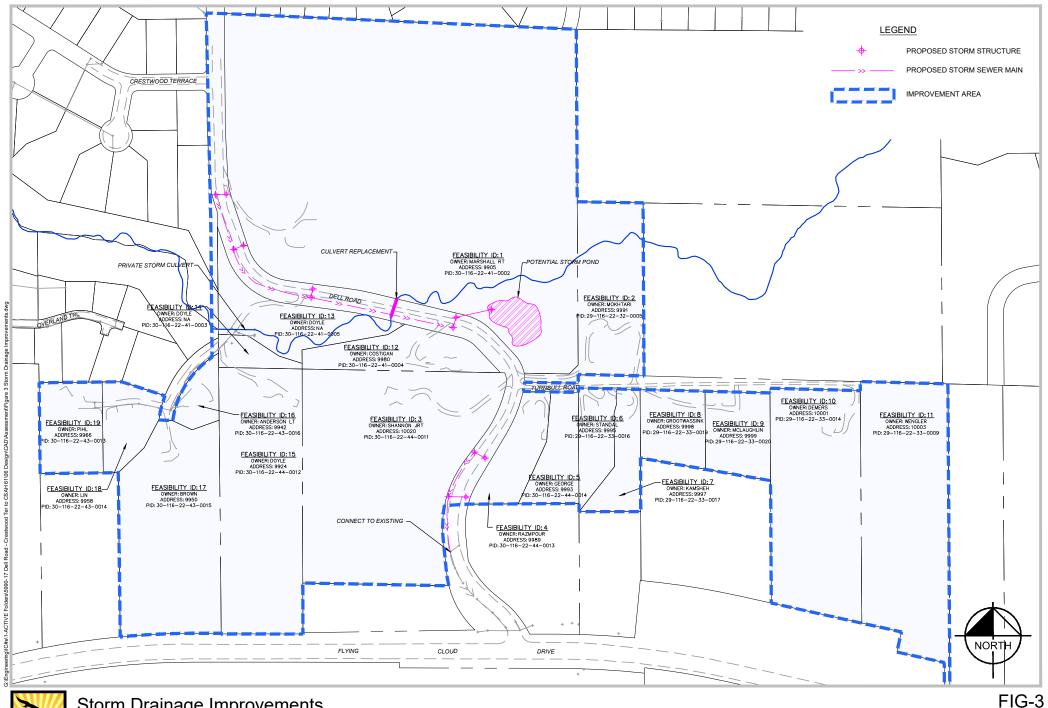
Street And Trail Improvements

Dell Road Improvements

DATE: 11/6/2023

City of Eden Prairie IC# 17-5990

FIG-2



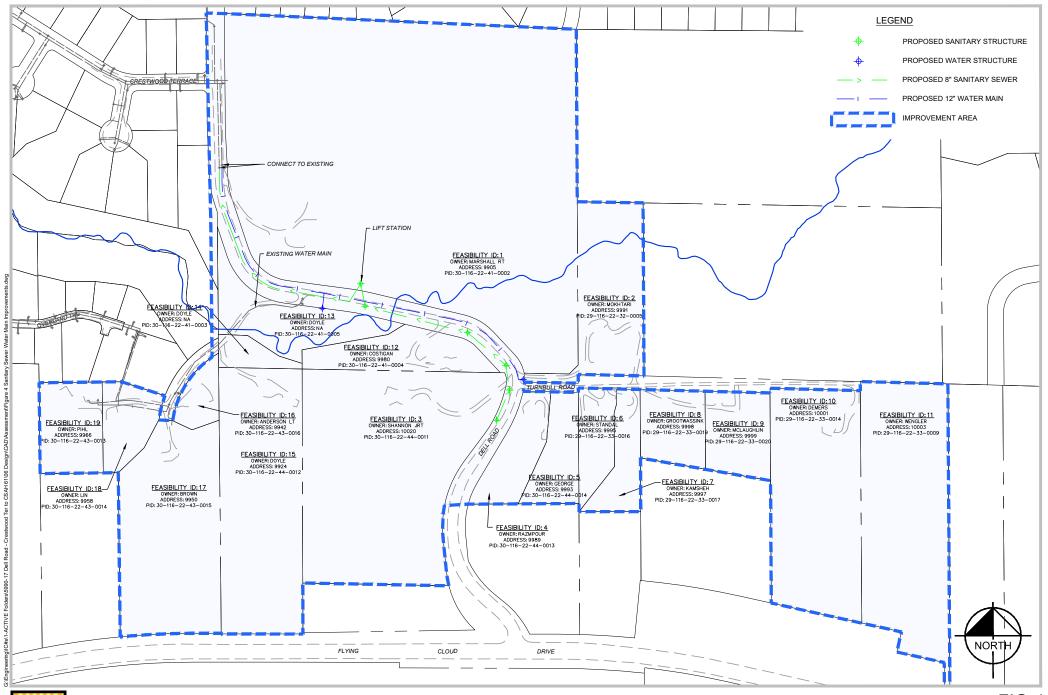


Storm Drainage Improvements

Dell Road Improvements

DATE: 11/1/2023

City of Eden Prairie IC# 17-5990





Sanitary Sewer & Water Main Improvements

Dell Road Improvements

DATE: 11/1/2023

City of Eden Prairie IC# 17-5990

FIG-4