Farmington
Minnesota

Meeting Location:
Farmington City Hall
430 Third Street
Farmington, MN 55024

CITY COUNCIL REGULAR MEETING AGENDA

February 21, 2017
7:00 PM

1. CALL TO ORDER 7:00 PM

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL

4. APPROVE AGENDA

5. ANNOUNCEMENTS / COMMENDATIONS

(a) Introduction of Public Works Director/City Engineer Katy Gehler

6. CITIZEN COMMENTS / RESPONSES TO COMMENTS

(This time is reserved for citizen comments regarding non-agenda items. No official action can be taken on these items. Speakers are limited to five minutes to address the city council during citizen comment time.)

7. CONSENT AGENDA

(a) Approve Minutes of the February 6, 2017 City Council Meeting-Administration
(b) Approve Minutes of the February 6, 2017 City Council Work Session-Administration
(c) Approve Minutes of the February 13, 2017 City Council Work Session-Administration
(d) Approve Lease Agreement Between City of Farmington and The Legacy of Farmington-Administration
(e) Approve Appointments to Parks and Recreation Commission-City Council
(f) Approve Clean Water Minnesota-Metro WaterShed Partners Membership-Engineering
(g) Adopt Resolution Declaring Surplus Property-Fire
(h) Approve Building Inspector Position Change from Part Time to Full Time-Human Resources
(i) Appointment Recommendation Parks and Recreation - Human Resources
(j) Approve Seasonal Hiring-Human Resouces
(k) Adopt Resolution Approving Gambling Event Permit Farmington Travel Baseball-Community Development
(l) Approve Bills-Finance

REGULAR AGENDA

8. PUBLIC HEARINGS

9. AWARD OF CONTRACT

10. PETITIONS, REQUESTS AND COMMUNICATIONS

(a) Seed/Genstar Final AUAR and Mitigation Plan Update - Fairhill

(b) Application to Amend Comprehensive Plan from Low Density Residential to Commercial and Rezone Property from R-1 (Low Density Residential) to B-4 (Neighborhood Business) - Mr. Craig Bongard - 20522 Akin Road

11. UNFINISHED BUSINESS

(a) Wetland Health Evaluation Program Joint Powers Agreement

12. NEW BUSINESS

13. CITY COUNCIL ROUNDTABLE

14. ADJOURN

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: David McKnight, City Administrator

SUBJECT: Introduction of Public Works Director/City Engineer Katy Gehler

DATE: February 21, 2017

INTRODUCTION

At the February 21, 2017 city council meeting you will be introduced to our new Public Works Director/City Engineer Katy Gehler. Katy comes to Farmington from a similar position with the city of Prior Lake.

DISCUSSION

NA

BUDGET IMPACT

NA

ACTION REQUESTED

Welcome Katy Gehler as our new Public Works Director/City Engineer.

City of Farmington

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TO: Mayor, Councilmembers and City Administrator

FROM: David McKnight, City Administrator

SUBJECT: Approve Minutes of the February 6, 2017 City Council Meeting-Administration

DATE: February 21, 2017

INTRODUCTION

Attached for your review are the minutes from the February 6, 2017 city council meeting.

DISCUSSION

NA

BUDGET IMPACT

NA

ACTION REQUESTED

Approve the minutes from the February 6, 2017 city council meeting.

ATTACHMENTS:

	Type	Description
	Backup Material	February 6, 2017 City Council Minutes

CITY OF FARMINGTON
CITY COUNCIL MINUTES
REGULAR MEETING
FEBRUARY 6, 2017

1. Call to Order

Mayor Larson called the meeting to order at 7:00 p.m.

2. Pledge of Allegiance

Mayor Larson led those in attendance in the Pledge of Allegiance.

3. Roll Call

Present-Larson, Craig, Pitcher, Bartholomay and Donnelly
Absent-None

Staff Present-Administrator McKnight, Finance Director Hanson, Community Development Director Kienberger, Human Resources Director Wendlandt, Parks and Recreation Director Distad, Fire Chief Larsen, Police Chief Lindquist, Administrative Assistant Muller and Attorney Jamnik.

4. Agenda

Motion by Bartholomay, second by Donnelly, to approve the agenda removing item 7B from the agenda. APIF, motion carried.

5. Announcements/Commendations

a) Adopt Resolution Accepting Donation from the Shakopee Mdewkanton Sioux Community.

Fire Chief Larsen shared that the Shakopee Mdewakanton Sioux Community has awarded two automated external defibrillators to the Farmington Fire Department and Farmington Police Department. Jenny McCloud and Rick Fisher made the presentation to the city. The city council expressed their appreciation for this generous donation.

Motion by Bartholomay, second by Pitcher, to adopt resolution R4-2017 accepting donations to the Farmington Fire and Police Departments from the Shakopee Mdewkanton Sioux Community. APIF, motion carried.

b) Adopt Resolution Accepting Donation from the Farmington Firefighters Relief Association

Fire Chief Larsen presented a donation in the amount of $30,000 from the Farmington Fire Relief Association to the Farmington Fire Department. These funds will be deposited into the Fire Capital Projects Fund for future equipment purchases and to supplement special projects. Over the past four years the Fire Relief Association has donated over $100,000 to the department.

Motion by Bartholomay, second by Craig, to adopt resolution R5-2017 accepting $30,000 from the Farmington Fire Relief Association to the Farmington Fire Department and acknowledge and thank the membership for the generous donation. APIF, motion carried.

6. Citizen Comments

a) Response to Mr. Jason Lamberson

7. Consent Agenda

Motion by Bartholomay, second by Donnelly, to approve the consent agenda:

a) Approve Minutes of the January 17, 2017 City Council Meeting-Administration
b) REMOVED
c) Adopt Resolution R6-2017 Approving the Dakota County All-Hazard Mitigation Plan Update-Police
d) Adopt Resolution R7-2017 Accepting Donation to the Rambling River Center-Parks
e) Adopt Resolution R8-2017 Approving Gambling Event Permit for Vermillion River Longbeards-Community Development
f) Approve Temporary On-Sale Liquor License for Knights of Columbus-Community Development
g) Adopt Resolution R9-2017 Approving an Application of the City of Farmington for Fiscal Year 2017 Dakota County Community Development Block Grant Funding-Community Development
h) Adopt Resolution R10-2017 Approving Curbside Cleanup Day Agreement-Municipal Services
i) Approve Seasonal Hiring-Human Resources
j) Approve Bills-Finance

APIF, motion carried.

Councilmember Craig asked that item 7B, Adopt Resolution Approving a Joint Powers Agreement with Dakota County for the Wetland Health Evaluation Program-Engineering, be pulled from the agenda and be brought back for further discussion.

8. Public Hearings

a) On-Sale Beer and Wine License for Farmington Billiards

Mayor Larson opened the public hearing.

Administrative Assistant Muller presented an application for an on-sale beer and wine license for Farmington Billiards. Pursuant to city ordinance 3-12-6-2, a public hearing must be held to establish an on-sale beer and wine license.

Mr. Jeffrey Wallis has submitted the required license fees and application for this license for Farmington Billiards located at 933 8th Street. The application and required documentation have been reviewed and approved by the Farmington Police Department.

Mayor Larson asked for any comments from the public. No one in attendance desired to speak at the public hearing. Motion by Bartholomay, second by Pitcher, to close the public hearing. APIF, motion carried.

Motion by Donnelly, second by Craig, to approve an on-sale beer and wine license for Farmington Billiards located at 933 8th Street. APIF, motion carried.

Mr. Wallis introduced himself as the new owner of the Farmington Billiards and shared information about the business, some recent upgrades and hours of operation.

b) Vacate Certain Drainage and Utility Easements within the Executive Estates Plat

Community Development Director Kienberger presented a request to vacate certain drainage and utility easements within the Executive Estates subdivision to allow for the planning and future development of Prairie Pines Park. The drainage and utility easements affected by this vacation are within Lots 1-6, Block 5.

Executive Estates was originally platted in 2005 and lots 1-6, Block 5 were platted for the development of single-family homes. However, these lots were deeded to the city in 2013 as part of a settlement agreement that was executed between the city and Roundbank to satisfy outstanding park dedication requirements for the development.

As the city council is aware, the Parks and Recreation Department is currently in the process of developing a master plan for the Prairie Pines Park. In order to facilitate the programming of the parks the lots must be combined and interior easements vacated. All the interior easements are being proposed to be vacated with the exception of easements along the interior lot lines of Lots 2, 3, 4 and 5, Block 5. This is due to the location of an existing catch basin and storm sewer line. Once the vacations are approved, staff will complete and submit to Dakota County the necessary documents to have Lots 1-6, Block 5 Executive Estates combined into one parcel identification number.

Mayor Larson asked for any comments from the public. No one in attendance desired to speak at the public hearing. Motion by Bartholomay, second by Pitcher, to close the public hearing. APIF, motion carried.

Motion by Donnelly, second by Craig, to adopt resolution R11-2017 vacating the drainage and utility easements depicted in exhibit A and described in exhibit B contingent upon the following:

1. The city clerk filing a certified copy of the resolution with the county auditor and county recorder of Dakota County.

9. Award of Contract

None

10. Petitions, Requests and Communications

None

11. Unfinished Business

None

12. New Business

a) Fourth Quarter 2016 and Year End New Construction Report and Population Estimate

Community Development Director Kienberger shared information on the 2016 development activity in the city. Last year the city had 65 new single family and one multi-family unit built. In addition, city staff performed 3,590 inspections in a variety of areas. All of these numbers are up from 2015. City staff estimates the city population at the end of each quarter. The year end 2016 city population is 22,781.

13. City Council Roundtable

Bartholomay-Thanked the Fire Relief Association for the annual banquet.

Hanson-The new utility billing system roll out continues.

Kienberger-Staff attended a ribbon cutting at the new TJ Larson State Farm Insurance and thanked everyone involved in another successful Community Expo.

Wendlandt-Shared with the city council that the city has been awarded a Davy Award for the new city website.

Larson-Thanked everyone involved in another successful Community Expo and encouraged everyone to shop local.

Adjourn

Motion by Bartholomay, second by Pitcher, to adjourn the meeting at 7:29 p.m. APIF, motion carried.

Respectfully Submitted

_____
David McKnight, City Administrator

City of Farmington

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www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: David McKnight, City Administrator

SUBJECT: Approve Minutes of the February 6, 2017 City Council Work Session-Administration

DATE: February 21, 2017

INTRODUCTION

Attached for your review are the minutes from the February 6, 2017 city council work session.

DISCUSSION

NA

BUDGET IMPACT

NA

ACTION REQUESTED

Approve the minutes of the February 6, 2017 city council work session.

ATTACHMENTS:

	Type	Description
	Backup Material	February 6, 2017 Work Session Minutes

CITY OF FARMINGTON
CITY COUNCIL MINUTES
WORK SESSION
FEBRUARY 6, 2017

Mayor Larson called the work session to order at 5:45 p.m.

Roll Call

Present-Larson, Donnelly, Bartholomay, Craig, and Pitcher

Agenda

Mayor Larson declared the agenda to be approved.

Board and Commission Interviews

The city council interviewed candidates for open board and commission seats

City Administrator Update

Administrator McKnight, Police Chief Lindquist and Community Development Director Kienberger reviewed a code enforcement issue that city staff and the city council have been involved with recently. The city council asked the mayor to respond to this resident sharing their concerns.

Adjourn

Mayor Larson adjourned the meeting at 6:45 p.m.

Respectfully Submitted

_____
David McKnight, City Administrator

City of Farmington

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TO: Mayor, Councilmembers and City Administrator

FROM: David McKnight, City Administrator

SUBJECT: Approve Minutes of the February 13, 2017 City Council Work Session-Administration

DATE: February 21, 2017

INTRODUCTION

Attached for your review are the minutes from the February 13, 2017 city council work session.

DISCUSSION

NA

BUDGET IMPACT

NA

ACTION REQUESTED

Approve the minutes of the February 13, 2017 city council work session.

ATTACHMENTS:

	Type	Description
	Backup Material	February 13, 2017 Work Session Minutes

CITY OF FARMINGTON
CITY COUNCIL MINUTES
WORK SESSION
FEBRUARY 13, 2017

Mayor Larson called the work session to order at 6:30 p.m.

Roll Call

Present-Larson, Donnelly, Bartholomay, Craig, and Pitcher
Staff Present-Administrator McKnight, Police Chief Lindquist, Community Development Director Kienberger and Civil Engineer Schmeling

Agenda

Motion by Bartholomay, second by Pitcher, to approve the agenda. APIF, motion carried.

McGrath Consulting Group Police Department Study

Chief Lindquist and McGrath Consulting Group Project Manager/Senior Police Consultant Ron Moser presented the results of the staffing study for the police department.

Near the end of 2016 the city council approved the study that focused on four major areas related to staffing. The four areas included:

1. Is the current level of staffing appropriate?
2. Is additional administrative staff needed?
3. What are the future staffing concerns based on projections for population, business activity and other trends in the city?
4. A review of retention and turnover of employees of the police department.

Moser presented the findings of the report and answered questions on a variety of issues. The consultants included nine recommendations as a result of their work. These recommendations include:

1. Increase the current authorized number of patrol officers by two and place them in the patrol function.
2. Reduce the number of officers assigned to collateral duties with the Multi Agency Assistance Group (MAAG).
3. Expend department overtime codes to include, at a minimum, shift coverage and late calls to better understand and track overtime use.
4. Approve the position of captain.
5. Adopt one of the proposed revised organizational charts.

6. Direct the captain position to improve internal communication through regular operational meetings with Sergeants.
7. Direct the captain to create and implement a regular daily roll call briefing document for patrol.
8. Add four additional patrol officers to the department over the next two to three years; this includes the two recommended in number one. This should be phased in as residential and businesses growth occurs.
9. Prior to adding new officers to the department, prepare an updated field training program by sending officers to a field training officer course.

The city council asked a number of questions of Moser and Lindquist on all of the recommendations.

Lindquist updated the city council on the status of our current K-9 Bosco, potential future retirements and resignations and upcoming parental leaves in the department. Lindquist shared his desire would be to start the recruitment process immediately to create a list for potential patrol vacancies, hire a replacement this summer for a potential sergeant retirement later this year, hire a captain in early 2018 and an additional officer in mid-2018.

After much discussion the city council consensus was to move forward with a replacement K-9 dog and training for the dog and officer starting in March 2017. In addition, move forward on creating a hiring list for patrol that may be needed in mid-2018. The requests for additional positions will be discussed in the near future looking at all potential department requests.

Moser thanked the city council and police department for their work on the study.

2017 Drainage Improvement Projects Update

Civil Engineer Schmeling updated the city council on two drainage improvement projects the Engineering Department is ready to put out to bid.

In 2015/2016 residents of Embry Avenue notified staff of significant ice buildup occurring on the street. Staff investigated this issue and determined that the ice was being caused by a combination of discharge of upstream sump pumps and ground seepage coming out of the hill on the west side of Embry Avenue. The existing drain tile is damaged in many locations and not functioning.

City staff estimates that this project will cost about $80,000 and will be funded through the Storm Water Utility Fund.

In 2016 Bible Baptist Church notified staff of significant water flow from Akin Road over and through the church parking lot contributing to erosion downstream. The church also notified staff of an erosion problem occurring where the swale adjacent to the road drains to a downstream storm basin. Staff investigated these concerns and found them to be valid.

To mitigate the issues an extension of curb on Akin Road on the east side is proposed along with a storm sewer system upgrade in the area. City staff will continue to work with the church on obtaining an easement to complete the Akin Road drainage improvements. City staff estimates this project will cost about $160,000 and will be funded through the Storm Water Utility Fund.

The timeline for the two projects is tentatively set for bid in March 2017.

The consensus of the city council was to move forward on both projects.

Rambling River Center Plaza Discussion

Community Development Director Kienberger reviewed the Rambling River Center Plaza master plan issue. The Downtown Redevelopment Plan was completed in April 2016. One of the action items for the plan includes designing and building a Rambling River Center Plaza. Over the course of 2016 the city council discussed this issue and eventually decided to not approve a contract for services for master planning this project in November 2016.

The city council discussed a variety of issues related to the proposal including location, cost, neighboring business concerns, current condition of the parking lot and more.

The consensus of the city council was to move forward with the master planning process. Staff will inquire with the consultant on the cost of the work.

Building Inspector Position Classification Request

Community Development Director Kienberger discussed the current status of our building inspection staff. Currently the city has one full time building official, one full time building inspector and one part time building inspector.

Kienberger requested to make the part time building inspector full time to handle an increasing level of development activity in the city. Proactively changing the position to full time will allow for additional duties to be performed by the building official, shorter processing and inspection service times for both residential and commercial development projects, employee retention and ultimately department stability and succession.

It is estimated that this staffing increase would cost approximately $30,000. These funds would be paid for through a combination of permit revenue, fund balance and other unspent General Fund dollars.

The consensus of the city council was to move forward with this request.

Heritage Preservation Commission City Code Discussion

This item was tabled until the March 2017 work session.

Adjourn

Motion by Bartholomay, second by Donnelly, to adjourn the meeting at 9:07 p.m.

Respectfully Submitted

_____
David McKnight, City Administrator

City of Farmington

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TO: Mayor, Councilmembers and City Administrator

FROM: David McKnight, City Administrator

SUBJECT: Approve Lease Agreement Between City of Farmington and The Legacy of Farmington-Administration

DATE: February 21, 2017

INTRODUCTION

Recently the city was approach by representatives from The Legacy of Farmington about temporarily renting some space at city hall to be used as a leasing office for their project that is currently under construction in Farmington.

DISCUSSION

The Legacy of Farmington, a 70 unit assisted living facility, is currently under construction and located at 22300 Denmark Avenue in Farmington. The city council is well aware of this project and approved a tax increment finance district in 2016 to assist in the project development.

Earlier this year representatives from the project were directed to me by a local realtor looking for short term office space to use as a leasing office for the project. Representatives from the Legacy toured city hall and found the expansion space on the second floor of city hall attractive. They were looking for space for one to three work spaces and some space to display information about the units they will be leasing.

The attached draft lease was developed by the city attorney for the use of approximately 1,200 square feet (area defined on the attached floor plan), from March 1, 2017 through approximately August 31, 2017. The actual amount of time/space needed in August will be determined based upon the project completion date. The rent is set at $500 per month. As a comparison we charged the Dakota County Library $800 per month for the use of 5,000 square feet. Representatives have asked if they could use the entire expansion space for a few open houses on the project and city staff is comfortable with this request as well.

This space is available to rent to a private business based on the refinancing of the bonds used to build this space that you approved in late 2016. City staff considers the Legacy project a partner in our continued development with the city's participation in the tax increment finance district last year and was very willing to work with this group to provide them with space to help move their project to the next stage.

BUDGET IMPACT

The revenue received from this lease will be placed in rental income line of the annual General Fund budget.

ACTION REQUESTED

Review the draft lease and ask any questions you may have. Once your questions are answered a motion should be made to approve the lease agreement between the City of Farmington and The Legacy of Farmington for the lease of space at city hall.

ATTACHMENTS:

	Type	Description
🗋	Contract	Draft Lease

LEASE AGREEMENT

THIS LEASE AGREEMENT (the "Lease") made and entered into this 8th day of February, 2017, by and between the **CITY OF FARMINGTON**, a Minnesota municipal corporation ("City") and **THE LEGACY OF FARMINGTON**, a Minnesota Residential Building, whose address is 22300 Denmark Ave., Farmington, Minnesota 55024 ("Lessee").

WHEREAS, the City is the owner of certain real property located at 430 Third Street, Farmington, Minnesota 55024 ("Property") and the office building located thereon ("City Hall"); and

WHEREAS, the Lessee desires to lease from the City approximately 1,200 square feet within a portion of the second floor of the City Hall, as shown on the attached Exhibit "A" ("Leased Premises") pursuant to the terms, covenants and conditions of this Lease; and

WHEREAS, the City and Lessee desire to enter into this Lease Agreement setting forth the terms of Lessee's use of the Leased Premises.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein, it is hereby mutually agreed by the parties as follows:

1. **Leased Premises**. The City, in consideration of the Rent (as hereinafter defined) and the covenants, terms and conditions of this Lease, does hereby demise, lease and let unto the Lessee, and the Lessee does hereby rent, lease, hire and take from the City, subject to the terms, covenants and conditions of this Lease, the area identified as "Leased Premises" on Exhibit "A".

2. **Terms and Use**. The Lessee takes and rents the Leased Premises from the City "as is" and "where is" without any liability or obligation on the part of the City to make any alterations, improvements or repairs of any kind or nature, on or about said Leased Premises for the term of six (6) months, commencing on March 1, 2017 to approximately August 30, 2017 ("Term").

3. **Rent**. Lessee shall pay the City as "Rent" for the Leased Premises, the sum of Five Hundred Dollars ($500.00) per month, which Rent shall be due and payable beginning on March 1, 2017 and continuing on the 1st day of each month thereafter until the end of the Lease Term.

4. **Use**. The Lessee shall use the Leased Premises solely for its business and shall not permit the Leased Premises to be used for any other purpose. Lessee shall not use and shall not permit the Lease Premises to be used in any way that would cause a cancellation, restriction or increase in premium of the City's insurance. Lessee shall abide by and conform to all statutes, ordinances, rules and regulations relating to the use and occupancy of the Leased Premises. Lessee shall comply with all City policies related to use of City Hall.

5. **Assignment and Subletting**. Lessee may not assign this Lease without the prior written consent of the City, which consent may be granted or withheld in City's sole discretion.

6. **Utilities**. Lessee will not be charged for any utilities including, but not limited to, gas, water, sewer, electric and telephone, used during the Term of this Lease.

7. **Maintenance and Repair**. Lessee agrees to keep, repair and maintain at its sole cost and expense the Leased Premises at all times during the Term of this Lease, and will quit and deliver up the Leased Premises to the City, peacefully and quietly at the end of the Term, or upon other termination, in as good of repair and condition, as the Leased Premises was at the commencement of this Lease, reasonable use and wear thereof accepted. The Lessee will further keep the Leased Premises in a neat, clean and respectable condition at the Lessee's sole cost and expense. The Lessee will not make or suffer any waste thereon or thereof, and will not use the Leased Premises or any part thereof for any purpose called extra hazardous by insurance companies, and will comply in all respects with all present and future environmental laws, rules and regulations.

8. **Insurance**. The Lessee shall at its own cost and expense keep all of its personal property and equipment located on the Leased Premises insured with "all risk" insurance.
[OPTIONAL PARAGRAPH:]
Lessee further agrees to carry liability insurance in the amount of One Million Dollars ($1,000,000.00). The City shall be named as an additional insured on the policy on a primary and noncontributory basis, and the Lessee shall file with the City a certificate evidencing coverage upon execution of this Lease Agreement or request by the City. The Lessee will endeavor to include on the certificate that the City must be given ten (10) days advance written notice of the cancellation of the insurance.

9. **Limitation of Liability/Indemnification**. The Lessee agrees that the said City shall not be liable for any loss or damage directly or indirectly or otherwise which may be sustained by the Lessee or others by the reason of water damage which may result from freezing, bursting, overflowing or defect of any kind including water, sewer, gas, pipes, closets, toilets, sinks or leaks from the roof, in or about the Leased Premises including but not limited to losses or damage by the reason of the present or future condition of repair of said Leased Premises or for loss or damage arising or omissions of Lessee.

Lessee hereby agrees to indemnify and hold harmless City and City's officials, agents, employees guests and invitees, from and against any and all claims, demands, causes of action, suits, proceedings, liabilities, damages, losses, costs, and expenses, including reasonable attorneys' fees, caused by, incurred, or resulting from Lessee's (i) occupancy, use or operation of the Leased Premises, or (ii) from any default under or failure to perform any term or provision of this Lease by Lessee or (iii) negligence or willful acts of the Lessee. This indemnity does not cover matters arising out of the gross negligence or willful misconduct of City or its officials, employees, agents, guests and invitees. It is expressly understood that Lessee's obligations under this Section shall survive the expiration or earlier termination of this Lease for any reason. In case any action or proceeding is brought against City or its officials, agents, employees, guests

or invitees by reason of any such claim, Lessee, upon notice, will defend such action or proceeding by responsible counsel selected by Lessee and reasonably acceptable to City.

10. **Inspection of Leased Premises**. The City, its employees, agents and contractors may enter the Leased Premises for a reasonable business purpose. The City must first make a good faith effort to give reasonable notice to the Lessee of the intent to enter, except in the event of an emergency, when no notice is required.

11. **Default Remedies**. If the Rent payments, whether the same be demanded or not, are not paid when due; or if the Leased Premises shall be used for any other purpose or use other than as specified herein; or if any damage shall occur and not be repaired as required herein; or this Lease shall be assigned or sublet without the written consent of the City; or if the Lessee fails to comply with any of the terms, conditions or covenants of this Lease or if Lessee makes an assignment for benefit of creditors or Lessee files a petition in bankruptcy or is adjudicated bankrupt it shall be a "default" under the terms of this Lease.

The Lessee does hereby authorize and fully empower the City after there has been a default under the terms of this Lease to terminate this Lease upon ten (10) days written notice to Lessee and to re-enter and take possession of the Leased Premises immediately, as allowed by law, and to remove all persons and their property without notice of intention to re-enter except as provided herein or by applicable law, and to use such force and assistance in effecting and perfecting such removal as the City may deem advisable, and as allowed by law, and to recover at once full and exclusive possession of the Leased Premises, whether in possession of the Lessee or of third persons, or vacant. The City may at its option at any time after a default or violation of condition or covenant, re-enter and take possession of the Leased Premises, without such re-entering working a forfeiture of the Rents to be paid and the covenants to be kept by the Lessee for the term of this Lease.

12. **Damage or Destruction**. If the Leased Premises is damaged or destroyed by fire or other casualty to the extent that the Lessee's enjoyment of the Leased Premises is substantially impaired, Lessee may (a) immediately vacate the Leased Premises and notify City in writing within ten (10) business days of Lessee's intention to terminate this Lease, in which case the Lease shall terminate as of the date of the Lessee vacating the Leased Premises; or (b) if continued occupancy is lawful, vacate a part of the Leased Premises rendered unusable by the fire or other casualty, in which case Lessee's liability for Rent is reduced in proportion to the diminution in the fair rental value of the Leased Premises. Notwithstanding the foregoing, if the Lease is not terminated by the Lessee as provided herein, and the Leased Premises cannot reasonably be repaired within thirty (30) days from the date of such damage, or if the City elects in its sole discretion not to repair such damage, the City may give the Lessee written notice that it is not going to repair the damage to the Leased Premises and that the City is terminating the Lease and the Lease shall there upon be terminated effective as of the date of the damage and the Lessee shall remove all of its property and/or equipment from the Leased Premises.

13. **Holding Over**. Lessee will, at the expiration of this Lease Agreement, whether by lapse of time or termination, give up immediate possession to the City. If Lessee fails to give up possession the City may, at its option, serve written notice upon Lessee that such holdover

constitutes a creation of a tenancy at sufferance. If the City does not give said notice, Lessee's holdover shall create a tenancy at sufferance. In any such event the tenancy shall be upon the terms and conditions of this Lease Agreement, except that Lessee shall be obligated to pay to the City rent in the amount of $500.00 per month on the 1st day of each month, (which rent shall be prorated on the basis of a 365 day year for each day Lessee remains in possession); excepting further that no notices shall be required prior to commencement of any legal action to gain repossession of the Premises. Lessee shall also pay to the City all damages sustained by the City resulting from retention of possession by Lessee. The provisions of this paragraph shall not constitute a waiver by the City of any right of reentry as otherwise available to the City; nor shall receipt of any rent or any other act consistent with continued tenancy operate as a waiver of the right to terminate this Lease Agreement for a breach by Lessee hereof.

14. **Notice**. All notices, demands, requests, consents, approvals, or other instruments required or permitted to be given by either party pursuant to this Lease shall be in writing and sent to the other part at the following addresses:

To City:	City of Farmington 430 Third Street Farmington, Minnesota 55024
To Lessee:	The Legacy of Farmington Attention: Casteele Miller 22300 Denmark Avenue Farmington, Minnesota 55024

All notices to Lessee shall be effective if given to Lessee at the address set forth herein. All notices shall be deemed received when delivered, if hand-delivered, or three business days after deposit with the United State Postal Service, postage prepaid and sent by certified mail, return receipt requested, or one business day after deposit with a nationally recognized overnight commercial courier service, air bill prepaid. Notices by telefax or e-mail along are not sufficient. The addresses for notices may be changed by the parties from time to time by delivery of written notice to the other party as provided herein.

15. **Waiver and Amendment**. No provision of this Lease shall be deemed waived or amended except by a written instrument unambiguously setting forth the matter waived or amended and signed by the party against which enforcement of such waiver or amendment is sought. Waiver of any matter shall not be deemed a waiver of the same or any other matter on any future occasion.

16. **Binding Effect**. All the covenants, terms and conditions of this Lease shall extend, apply to and firmly bind the hairs, executors, administrators, successors and assigns of the respective party hereto as fully as the respective party are themselves bound, but this provision shall not authorize the assignment or underletting of this Lease contrary to the provisions hereinbefore contained.

17. **Severability**. If any of the terms or provisions contained herein shall be declared to be invalid or unenforceable by a court of competent jurisdiction, then the remaining provisions and conditions of this Lease, or the application of such to persons or circumstances other than those to which it is declared invalid or unenforceable, shall not be affected thereby and shall remain in full force and effect and shall be valid and enforceable to the fullest extent permitted by law.

18. **Applicable Law and Venue**. This Lease shall be governed by and construed in accordance with the laws of the state of Minnesota. Any action to declare or enforce any rights or obligations under this Lease may be commenced by any part in Dakota County District Court. City and Lessee hereby consent to the jurisdiction of such court for such purposes and agree that any notice, complaint or other legal process delivered to City or Lessee shall constitute adequate notice and service of process for all purposes and shall subject City and Lessee to the jurisdiction of such court for purposes of adjudicating any matter related to this Lease.

19. **Attorney's Fees**. In the event of any litigation between City and Lessee to enforce any of the provisions of this Lease or any right of either party hereto, the unsuccessful party to such litigation agrees to pay to the successful part all costs and expenses, including all reasonable attorney fees, court costs and all other costs and expenses incurred therein by the successful party, all of which shall be included in and as a part of the judgment rendered in such litigation.

20. **Captions**. The captions of the Sections and subsections of this Lease are for convenience only, and are intended and shall not be deemed for any purpose whatever to modify, explain or place any construction upon any of the provisions of this Lease

21. **Interpretation**. The language in all parts of this Lease shall be construed simply according to its fair meaning and not strictly for or against City or Lessee. Any reference to any Section herein shall be deemed to include all subsections thereof unless otherwise specified or reasonably required from context.

22. **City/Lessee Relationship**. Nothing contained in this Lease shall be deemed or construed to create the relationship of principal and agent or that of partnership or of joint venture or of any association between City and Lessee, and neither the method of computation of rent, nor any other provisions contained in this Lease, nor any acts of the parties hereto shall be deemed to create any relationship between City and Lessee other than the relationship of City/Lessee.

23. **Waiver of Default**. No waiver by City of any provision of this Lease shall be deemed to be a waiver of any other provision hereof or of any subsequent breach by Lessee of the same or any other provision. No delay on the part of City in exercising any of its right hereunder shall operate as a waiver of such rights or of any other right of City, nor shall any delay, omission or waiver on any one occasion be deemed a bar to or a waiver of the same or any other right on any other occasion. Neither City's failure to bill Lessee for any rent or additional sum as it becomes due hereunder nor its error in such billing or failure to provide any other documentation in connection therewith shall operate as a waiver of City's right to collect any

such rent or additional sum which may at any time become due hereunder in the full amount to which City is entitled pursuant to the terms and provisions hereof. City's consent to or approval of any act by Lessee requiring City's consent or approval shall not be deemed to render unnecessary the obtaining of City's consent to or approval of any subsequent act of Lessee whether or not similar to the act so consented to or approved.

24. **Entire Agreement; Amendments.** This Lease constitutes the entire agreement between the parties hereto with respect to the subject matter hereof, and no prior written or oral agreement or any contemporaneous oral or written understanding pertaining to any such matter shall be effective for any purpose. No provision of this Lease may be amended or supplemented except by an agreement in writing signed by the party or parties to be bound thereby.

25. **Provisions Severable.** No provision of this Lease which proves to be invalid, void or illegal shall in any way affect, impair or invalidate any other provision hereof and the remaining provisions hereof shall nevertheless remain in full force and effect.

26. **Recording of Agreement.** Lessee shall not record this Agreement on the Public Records of any public office. In the event that Lessee shall record this Agreement, this Agreement shall, at City's option, terminate immediately and the City shall be entitled to all rights and remedies that it has at law or in equity.

IN WITNESS WHEREOF, the parties have hereunto set their hands effective the day and year first above written.

CITY OF FARMINGTON

By:_____
Todd Larson, Mayor

By:_____
David J. McKnight, City Administrator

LESSEE:
THE LEGACY OF FARMINGTON

By: Casteele Miller
Casteele Miller
Title: Executive Director

191140v1

STATE OF MINNESOTA)
)ss.
COUNTY OF DAKOTA)

The foregoing instrument was acknowledged before me this _____ day of February, 2017, by Todd Larson and David J. McKnight, the Mayor and City Administrator, respectively, of the City of Farmington, a Minnesota municipal corporation, on behalf of the corporation and pursuant to the authority granted by its City Council.

_____
Notary Public

STATE OF MINNESOTA)
)ss.
COUNTY OF DAKOTA)

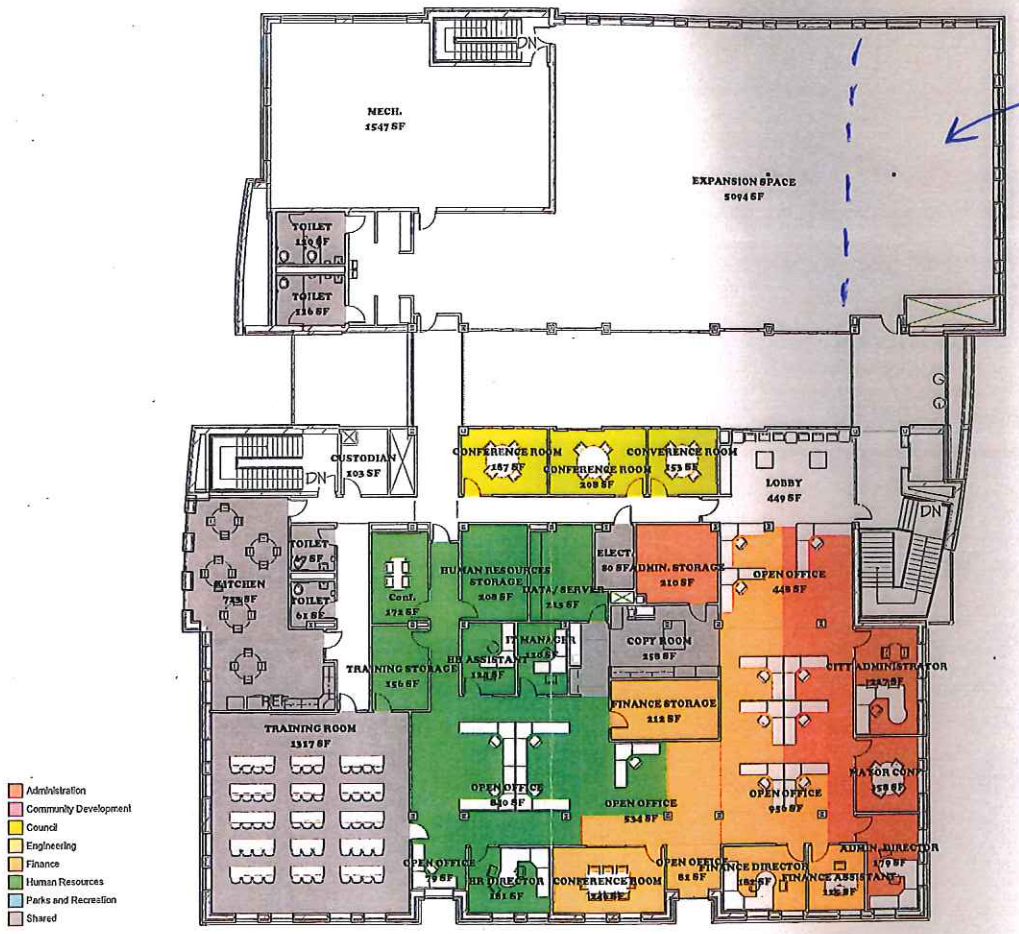
The foregoing instrument was acknowledged before me this 8th day of February, 2017, by Casteele Miller, the Executive Director of The Legacy of Farmington.

Laurie Honza
Notary Public

LAURIE LYNN HONZA
Notary Public
Minnesota
My Comm. Expires
Jan 31, 2020

THIS INSTRUMENT WAS DRAFTED BY:
CAMPBELL KNUTSON, P.A.
860 Blue Gentian Road, Suite 290
Eagan, Minnesota 55121
651-452-5000
[JJJ]

Floor Plan



The Legacy of Farmington leased space.

Upper Level
1" = 20'-0"

Page 10

NORTH

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Cynthia Muller, Administrative Assistant

SUBJECT: Approve Appointments to Parks and Recreation Commission-City Council

DATE: February 21, 2017

INTRODUCTION

There are two vacant seats on the Parks and Recreation Commission.

DISCUSSION

The city council interviewed two candidates for vacant seats on the Parks and Recreation Commission. The city council is recommending appointing Hannah Simmons and Laurie Suchanek to this commission. The terms of these seats are through January 31, 2020.

BUDGET IMPACT

Board members are paid a stipend of $20 per meeting attended which is included in the 2017 budget.

ACTION REQUESTED

Approve the appointments of Hannah Simmons and Laurie Suchanek to the Parks and Recreation Commission for the above stated term.

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Jennifer Dullum, Natural Resource Specialist

SUBJECT: Approve Clean Water Minnesota-Metro WaterShed Partners Membership-Engineering

DATE: February 21, 2017

INTRODUCTION

Metro WaterShed Partners is a coalition of over 60 public, private and non-profit organizations in the Twin Cities. The WaterShed Partners believe that by working together and pooling resources, they can reach more people with information about the importance of clean water and what to do to keep it clean. Clean Water Minnesota is a collaborative outreach project of the Metro Watershed Partners.

DISCUSSION

In 2016 the Metro WaterShed Partners kicked off the first year of a three-year project to produce the very best clean water educational messages and programs, based on the latest research in social science, for their members to use in outreach and communications. A new website was launched at cleanwatermn.org, with new photography, blog stories, and downloadable informational resources. The Metro WaterShed Partners created and implemented a system to track engagement with these resources, which measures the impact of the campaign overall, and in each member's service area.

With continued support in 2017 the Metro WaterShed Partners will produce twelve new, seasonally appropriate blog stories about community members in the metro area taking action to protect lakes and rivers, along with new photographs and informational resources for members to use in their education and outreach work. They will continue to build their following on social media, and help members build theirs. Metro WaterShed Partners will host trainings and meetings to help members use Clean Water MN resources, and build new audiences for clean water messages. In addition, they will begin to build the foundation and framework for a metro-wide Adopt-a-Drain program, with promotional resources and activities, including a toolkit to support community clean-up events with a neighborhood focus, aimed to inspire residents to sweep up, rake up, and pick up streets and sidewalks in the metro area.

BUDGET IMPACT

The total cost of this work will be $120,000 per year. For Farmington, an MPCA permitted city, our membership contribution helps us meet our MS4 public education requirements. The contribution requested for a city with a population between 20,000 – 29,999 is $1,000.00 - $1,499.00. Funding does exist in the current programming expense budget in the stormwater fund.

ACTION REQUESTED

Approve the expenditure of $1,000.00 to support the Metro WaterShed Partners and the Clean Water Minnesota campaign.

ATTACHMENTS:

Type	Description
Backup Material	membership invoice

MINNESOTA WATER
LET'S KEEP IT CLEAN

Membership
INVOICE

FROM

Staff Contact: .....
City Name: .....
Address: .....
City and Zip: .....
Telephone: .....
E-mail: .....

TO

Metro Watershed Partners and its Clean Water MN Media Campaign

MEMBERSHIP AMOUNT

$.....

Note: *(see attached table with requested levels of funding)*

FISCAL AGENT

Hamline University
1536 Hewitt Ave. MS-A1760
St. Paul, MN 55104
Tel: 651-523-2812 Email: jlarson25@hamline.edu

DESCRIPTION OF SERVICE

2017 membership support for the Metro WaterShed Partners and its Clean Water MN Media Campaign, a stormwater pollution prevention education campaign. Services include:

- Create timely, consistent messages that will encourage behaviors that improve water quality.
- Technology trainings for partners to use these tools effectively.
- Development and implementation of clean water exhibits at the Minnesota State Fair in the DNR and Eco-experience buildings.
- Monthly meetings with information on partner activities, presentations by informative speakers, and updates on WSP activities.
- Maintenance of the Watershed Partners listserv.
- Administration of media outreach and partner events and activities.
- Evaluate, maintain and improve the Clean Water MN materials and website.
- Begin to develop the framework for a metro wide adopt-a-drain program, which incorporates community clean-up events.

DURATION OF SERVICE

January 1, 2017 to December 31, 2017
$120,000 is needed to fully implement year 2 activities. We will initiate phased implementation of the campaign upon receiving a minimum of $70,000 in contributions. Funds unspent in 2017 will carry over to 2018 to continue project implementation.

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Jim Larsen, Fire Chief

SUBJECT: Adopt Resolution Declaring Surplus Property-Fire

DATE: February 21, 2017

INTRODUCTION

Farmington Fire Department (FFD) staff recommends declaring surplus property in the department.

DISCUSSION

Firefighter Ken Kelly retired from active service with the FFD on January 22, 2017 after ten (10) years of service. A request has been made to present his firefighting helmet to him as a gift in recognition of his years of service.

Pursuant to city policy adopted last year, the helmet must be declared as surplus property before it can be purchased by the interested party.

BUDGET IMPACT

The old helmet will be purchased for $240.00 which is the cost to the city to purchase a new helmet. The adopted policy is budget neutral to the FFD and the city.

ACTION REQUESTED

Adopt a resolution declaring one firefighting helmet as surplus property in the Farmington Fire Department.

ATTACHMENTS:

Type	Description
Cover Memo	A Resolution Declaring Surplus Property of the FFD

RESOLUTION NO. R__-2017

A RESOLUTION DECLARING SURPLUS PROPERTY IN THE FARMINGTON FIRE DEPARTMENT

Pursuant to due call and notice thereof, a regular meeting of the City Council of the City of Farmington was held at the Farmington City Hall on the 21st day of February 2017 at 7:00 p.m.

Members Present:
Members Absent:

Member _____ introduced and Member _____ seconded the following:

WHEREAS, the Mayor and City Council of the City of Farmington have previously adopted a policy for the purchase of firefighting helmets by retired firefighters; and

WHEREAS, Firefighter Ken Kelly retired on January 22, 2017 after ten (10) years of service;

NOW THEREFORE BE IT RESOLVED that, after due consideration, the Mayor and City Council of the City of Farmington, Minnesota, hereby declare his Black, 2009 Bullard UST Firefighting Helmet as surplus property and authorize the City Administrator or his designee to arrange for the sale and replacement of said equipment.

This resolution was adopted by recorded vote of the Farmington City Council in open session on the 21st day of February 2017.

_____
Todd Larson, Mayor

Attested to on the 21st day of February 2017.

_____
David McKnight, City Administrator

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Brenda Wendlandt, Human Resources Director

SUBJECT: Approve Building Inspector Position Change from Part Time to Full Time-Human Resources

DATE: February 21, 2017

INTRODUCTION

The purpose of this memorandum is to request increasing the part-time building inspector position to a full-time benefit eligible position; and to promote the part-time Building Inspector, Lonell Johnson, into the full-time position.

DISCUSSION

Staff is requesting that the part-time Building Inspector position become full-time to handle an increasing level of development activity in the city and reflect the recommended staffing minimum for the department. Mr. Johnson has been employed by the city since July of 2016 and has had a positive impact on the department and building community. Moving Mr. Johnson to full-time will allow for additional duties to be performed by the Building Official, shorter processing and inspection service times for both residential and commercial development projects, employee retention, and ultimately department stability and succession.

BUDGET IMPACT

The Building Inspections Department is self-funded by revenues from permit and inspection fees. The projected cost to increase the position from part-time to full-time with benefits is approximately $30,000. This is currently unbudgeted, but would be accommodated within the 2017 budget through a combination of anticipated increased inspections revenue, fund balance, or other unspent general fund dollars. In 2018 and ahead, this would be budgeted as we typically do for all positions within a department.
Please note that Mr. Johnson's current hourly rate is $30.16 per hour which is step one of the salary range for this position (salary range: $30.16 - $37.70 per hour). This salary range would not change due to this transition.

ACTION REQUESTED

The action requested is:

1) Approve the request to change the part-time building inspector position to a full-time benefit eligible position; and
2) Promote Mr. Lonell Johnson from part-time to full- time effective February 27, 2017.

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Brenda Wendlandt, Human Resources Director

SUBJECT: Appointment Recommendation Parks and Recreation - Human Resources

DATE: February 21, 2017

INTRODUCTION

The recruitment and selection process for the appointment of a full-time Recreation Supervisor, to fill a vacant position, has been completed.

DISCUSSION

After a thorough review by the Parks and Recreation and Human Resources Departments, a contingent offer of employment has been made to Ryan Hayes, subject to passing the background check, pre-employment drug test and ratification by the city council.

Mr. Hayes has experience supervising recreation programs and he meets the qualifications for this position.

BUDGET IMPACT

Mr. Hayes's starting salary will be $62,731 per year which is step 1 of the salary range for this position (salary range: $62,731-$78,413).

Funding for this position is provided for in the 2017 budget.

ACTION REQUESTED

Approve the appointment of Ryan Hayes as Recreation Supervisor effective on March 6, 2017.

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Brenda Wendlandt, Human Resources Director

SUBJECT: Approve Seasonal Hiring-Human Resouces

DATE: February 21, 2017

INTRODUCTION

The recruitment and selection process for the appointment of the attached list of seasonal staff has been completed.

DISCUSSION

After a thorough review by the Parks and Recreation Department and the Human Resources Department, offers of employment have been made to the individuals show on the attached spreadsheet, subject to ratification by city council.

BUDGET IMPACT

These positions are included in various departmental budgets.

ACTION REQUESTED

By motion approve the attached seasonal employment recommendations.

ATTACHMENTS:

Type	Description
Backup Material	Seasonal Staff Listing

2017 Arena Seasonal Staff

Name	2016-17 Pay Rate	Position/Step
Amy Berglund	$ 14.46	Head Skating Instructor - Step 1

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Cynthia Muller, Administrative Assistant

SUBJECT: Adopt Resolution Approving Gambling Event Permit Farmington Travel Baseball-Community Development

DATE: February 21, 2017

INTRODUCTION

Farmington Travel Baseball is requesting a gambling event permit for a raffle fundraiser.

DISCUSSION

Per State Statute 349.166 and pertinent city code, a gambling event permit must be issued by the city for this type of event. An application has been received, along with the appropriate fees. The city attorney has reviewed the application and the attached resolution approving the request.

BUDGET IMPACT

Gambling fees are included in the revenue portion of the 2017 budget.

ACTION REQUESTED

Consider the attached resolution granting a gambling event permit to Farmington Travel Baseball to be held at Celt's Pub & Grill, 200 Third Street, on March 18, 2017.

ATTACHMENTS:

	Type	Description
	Resolution	Resolution

RESOLUTION NO. R -17

APPROVING A MINNESOTA LAWFUL GAMBLING EVENT PERMIT APPLICATION FOR FARMINGTON TRAVEL BASEBALL

Pursuant to due call and notice thereof, a regular meeting of the City Council of the City of Farmington, Minnesota, was held in the Council Chambers of said City on the 21st day of February 2017 at 7:00 p.m.

Members Present:
Members Absent:

Member introduced and Member seconded the following:

WHEREAS, pursuant to M.S. 349.166, the State of Minnesota Gambling Board may not issue or renew a Gambling Event Permit unless the City Council adopts a resolution approving said permit; and,

WHEREAS, Farmington Travel Baseball has submitted an application for a Gambling Event Permit to be conducted at 200 Third Street, on March 18, 2017, for Council consideration.

NOW, THEREFORE, BE IT RESOLVED by the Farmington City Council that the Gambling Event Permit for Farmington Travel Baseball, to be held at 200 Third Street, is hereby approved.

This resolution adopted by recorded vote of the Farmington City Council in open session on the 21st day of February 2017.

_____
Mayor

Attested to the _____ day of February 2017.

_____
City Administrator

SEAL

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Robin Hanson, Finance Director

SUBJECT: Approve Bills-Finance

DATE: February 21, 2017

INTRODUCTION

Attached are the February 1, 2017 through February 15, 2017 check payments for your consideration.

DISCUSSION

NA

BUDGET IMPACT

NA

ACTION REQUESTED

Approve the attached payments.

ATTACHMENTS:

Type	Description
Backup Material	Council Register February 1 - 15, 2017

2/1/2017 -- 2/15/2017

Check #	Date	Amount	Supplier / Explanation	PO #	Doc No	Inv No	Account No	Subledger	Account Description	Business Unit
138774	**2/3/2017**		**114552 ALL AMERICAN TITLE CO**							
		321.65	REFUND OVRPYMT ON UTILITY ACCT		132963	5128 LOW 183RD ST	6200.1310.3		REFUND CIS	SEWER OPERATIONS
			Supplier 113711 ALL AMERICAN TITLE CO, INC							
		321.65								
138775	**2/3/2017**		**113236 ALLINA HEALTH**							
		1,290.00	PRE-EMPLOYMENT TESTING		153110	70001654 DEC'16	1011.6401		PROFESSIONAL SERVICES	HUMAN RESOURCES
		98.50	PRE-EMPLOYMENT TESTING		153111	70006256 DEC'16	1011.6401		PROFESSIONAL SERVICES	HUMAN RESOURCES
		1,388.50								
138776	**2/3/2017**		**108782 ALLINA HOSPITALS & CLINICS**							
		8,250.00	NEW FD AED'S		153138	II10021572	4301.6250		OTHER SUPPLIES & PARTS	FIRE CAPITAL PROJECTS
		8,250.00								
138777	**2/3/2017**		**100704 AMERICAN WATER WORKS ASSOCIATION**							
		79.00	AWWA MEMBERSHIP DUES		153211	MEMBERSHIP DUES	6502.6460		SUBSCRIPTIONS & DUES	WATER UTILITY EXPENSE
		79.00								
138778	**2/3/2017**		**115438 AMERITAS LIFE INSURANCE CORP**							
		10,400.48	FEB'17 DENTAL INSURANCE		153113	02012017 FEB	7000.6158		EMPLOYEE BENEFITS	EMPLOYEE EXPENSE FUND
		10,400.48								
138779	**2/3/2017**		**100193 APPLE VALLEY, CITY OF**							
		72.43	CABLE SUPPLIES		153272	5800	4005.6250		OTHER SUPPLIES & PARTS	CABLE/COMMUNICATIONS PROJECTS
		72.43								
138780	**2/3/2017**		**113303 ARTISAN BEER COMPANY**							
		334.00	BEER ORDER		153057	3153725	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		334.00								
138781	**2/3/2017**		**108446 ASPEN MILLS**							
		122.70	FD UNIFORM - FISCHER		153106	190360 FISCHER	1060.6290		UNIFORMS & CLOTHING	FIRE SERVICES
		200.00	FD UNIFORM - WALKER		153107	190361 WALKER	1060.6290		UNIFORMS & CLOTHING	FIRE SERVICES
		197.88	FD UNIFORM - FISCHER		153220	192164 R. FISCHER	1060.6290		UNIFORMS & CLOTHING	FIRE SERVICES
		520.58								
138782	**2/3/2017**		**110262 BAAR, SONDRA**							
		21.06	8/17 MILEAGE REIM, CJIN MTG		149475	08172016 EXP REIMB	1050.6485		MILEAGE REIMBURSEMENT	POLICE ADMINISTRATION

2/1/2017 -- 2/15/2017

Check #	Date	Amount	Supplier / Explanation	PO #	Doc No	Inv No	Account No	Subledger	Account Description	Business Unit
138782	**2/3/2017**		**110262 BAAR, SONDRA**						**Continued...**	
		21.06								
138783	**2/3/2017**		**115444 BAYERKOHLER, APRIL**							
		55.03	REF UTIL CR @ 18254 EMERAL TRL		153209	18254 EMERALD TRL	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		55.03								
138784	**2/3/2017**		**100493 BELLBOY CORPORATION**							
		95.78	LIQ SPIRITS & MIXES		153032	95287200	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		238.40	LIQ, SPIRITS ORDER		153033	57335800	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		292.90	LIQ, SPIRITS ORDER		153066	57335900	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		161.03	LIQ, SPIRITS ORDER		153067	95287300	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		788.11								
138785	**2/3/2017**		**111280 BERNICK'S WINE**							
		48.00	LIQ SUPPLIES & MIXES		153027	341284	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		53.25	LIQ SUPPLIES & MIXES		153028	341285	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		101.25								
138786	**2/3/2017**		**115469 BIG BOY TOYZ**							
		32.60	GOVDEALS.COM SHIPPING REIMB		153244	SHIPPING REIMB	1050.6445		POSTAGE	POLICE ADMINISTRATION
		32.60								
138787	**2/3/2017**		**100508 BOYER TRUCKS**							
		276.56	FENDER BRACES FOR GARBAGE TRK		153198	100873SAV	1073.6230		VEHICLE SUPPLIES & PARTS	SNOW REMOVAL SERVICES
		276.56								
138788	**2/3/2017**		**114472 BREAKTHRU BEVERAGE MN BEER, LLC**							
		42.00-	COORS LIGHT CREDIT		153063	2090231667 CR	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		2,014.85	BEER ORDER		153064	1090665503	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		1,972.85								
138789	**2/3/2017**		**114471 BREAKTHRU BEVERAGE MN WINE & SPIRITS**							
		77.24-	LIQ SPIRITS CREDIT		153035	2080164131 CR	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		58.90-	WINDORS CANADIAN CREDIT		153060	2080164139 CR	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		97.45	WINE ORDER		153061	1080586489	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		2,541.68	WINE ORDER		153062	1080586488	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		2,502.99								
138790	**2/3/2017**		**100253 CAMPBELL KNUTSON**							

2/1/2017 -- 2/15/2017

Check #	Date	Amount	Supplier / Explanation	PO #	Doc No	Inv No	Account No	Subledger	Account Description	Business Unit
138790	**2/3/2017**		**100253 CAMPBELL KNUTSON**						**Continued...**	
		798.00	DEC'16 LEGAL BILL		153251	1852-000G DEC'16	1005.6403		LEGAL	LEGISLATIVE CONTROL
		397.42	DEC'16 LEGAL BILL		153251	1852-000G DEC'16	1010.6403		LEGAL	ADMINISTRATION
		276.00	DEC'16 LEGAL BILL		153251	1852-000G DEC'16	1060.6403		LEGAL	FIRE SERVICES
		5,920.61	DEC'16 LEGAL BILL		153251	1852-000G DEC'16	1050.6403		LEGAL	POLICE ADMINISTRATION
		156.00	DEC'16 LEGAL BILL		153251	1852-000G DEC'16	1030.6403		LEGAL	PLANNING & ZONING
		78.00	DEC'16 LEGAL BILL		153251	1852-000G DEC'16	1021.6403		LEGAL	GENERAL ACCOUNTING
		78.00	DEC'16 LEGAL BILL		153251	1852-000G DEC'16	2000.6403		LEGAL	HRA/ECONOMIC DEVELOPMENT
		7,704.03								
138791	**2/3/2017**		**111050 CASTLE ROCK KENNELS INC**							
		115.00	12/31-1/12 BOSCO BOARDING		152911	22459	1050.6401		PROFESSIONAL SERVICES	POLICE ADMINISTRATION
		115.00								
138792	**2/3/2017**		**110511 CHARTER COMMUNICATIONS**							
		15.00	POOL PHONE SEASONAL SUSPEND		153171	0290159 JAN-FEB'17	1097.6411		TELEPHONE	SWIMMING POOL OPERATIONS
		15.00								
138793	**2/3/2017**		**100025 CINTAS CORP LOC 754**							
		27.40	CMF UNIFORM CLEANING		153091	754681215	1072.6290		UNIFORMS & CLOTHING	STREET MAINTENANCE
		30.95	CMF UNIFORM CLEANING		153091	754681215	1090.6290		UNIFORMS & CLOTHING	PARK MAINTENANCE
		21.91	CMF UNIFORM CLEANING		153091	754681215	6202.6290		UNIFORMS & CLOTHING	SEWER OPERATIONS EXPENSE
		43.83	CMF UNIFORM CLEANING		153091	754681215	6302.6290		UNIFORMS & CLOTHING	SOLID WASTE OPERATIONS
		21.91	CMF UNIFORM CLEANING		153091	754681215	6402.6290		UNIFORMS & CLOTHING	STORM WATER UTILITY OPERATIONS
		21.91	CMF UNIFORM CLEANING		153091	754681215	6502.6290		UNIFORMS & CLOTHING	WATER UTILITY EXPENSE
		29.18	WEEKLY UNIFORM CLEANING CMF		153129	754686502	1072.6290		UNIFORMS & CLOTHING	STREET MAINTENANCE
		32.98	WEEKLY UNIFORM CLEANING CMF		153129	754686502	1090.6290		UNIFORMS & CLOTHING	PARK MAINTENANCE
		23.35	WEEKLY UNIFORM CLEANING CMF		153129	754686502	6202.6290		UNIFORMS & CLOTHING	SEWER OPERATIONS EXPENSE
		46.70	WEEKLY UNIFORM CLEANING CMF		153129	754686502	6302.6290		UNIFORMS & CLOTHING	SOLID WASTE OPERATIONS
		23.35	WEEKLY UNIFORM CLEANING CMF		153129	754686502	6402.6290		UNIFORMS & CLOTHING	STORM WATER UTILITY OPERATIONS
		23.35	WEEKLY UNIFORM CLEANING CMF		153129	754686502	6502.6290		UNIFORMS & CLOTHING	WATER UTILITY EXPENSE
		27.40	WEEKLY UNIFORM CLEANING CMF		153176	754683809	1072.6290		UNIFORMS & CLOTHING	STREET MAINTENANCE
		30.95	WEEKLY UNIFORM CLEANING CMF		153176	754683809	1090.6290		UNIFORMS & CLOTHING	PARK MAINTENANCE

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		21.91	WEEKLY UNIFORM CLEANING CMF		153176	754683809	6202.6290		UNIFORMS & CLOTHING	SEWER OPERATIONS EXPENSE
		43.83	WEEKLY UNIFORM CLEANING CMF		153176	754683809	6302.6290		UNIFORMS & CLOTHING	SOLID WASTE OPERATIONS
		21.91	WEEKLY UNIFORM CLEANING CMF		153176	754683809	6402.6290		UNIFORMS & CLOTHING	STORM WATER UTILITY OPERATIONS
		21.91	WEEKLY UNIFORM CLEANING CMF		153176	754683809	6502.6290		UNIFORMS & CLOTHING	WATER UTILITY EXPENSE
		514.73								
138794	**2/3/2017**		**100071 COLLEGE CITY BEVERAGE INC**							
		7,078.15	BEER ORDER		153030	277356	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		181.45-	BEER ORDER CREDIT		153031	21-66 CR	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		13.60	BEER ORDER		153036	21-65	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		32.13-	BEER ORDER CREDIT		153040	21-64 CR	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		2,190.65	BEER ORDER		153041	277357	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		1,080.00	SUMMIT VARIETY ORDER		153042	279689	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		1,170.30-	SUMMIT VARIETY ORDER		153043	279687 CR	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		8,978.52								
138795	**2/3/2017**		**103925 CONSTANTINEAU, JAMES**							
		45.00	ADVANCED GUN TRNG - LUNCH		153068	20170118 - CONSTANTINEAU	1050.6470		TRAINING & SUBSISTANCE	POLICE ADMINISTRATION
		45.00								
138796	**2/3/2017**		**109182 DAKOTA COMMUNICATIONS CENTER**							
		9,266.66	FEB'17 DCC FEES		153119	FA2017-02	1060.6560		CONTRACTUAL SERVICES	FIRE SERVICES
		18,533.34	FEB'17 DCC FEES		153119	FA2017-02	1051.6560		CONTRACTUAL SERVICES	PATROL SERVICES
		27,800.00								
138797	**2/3/2017**		**101248 DAU, TED**							
		30.00	RETURN NSF PD IN ERROR		153258	RETURN NSF PD IN ERROR	1001.5350		MISCELLANEOUS REVENUE	GENERAL FUND REVENUES
		322.44	RETURN NSF PD IN ERROR		153258	RETURN NSF PD IN ERROR	7000.6158		EMPLOYEE BENEFITS	EMPLOYEE EXPENSE FUND
		352.44								
138798	**2/3/2017**		**108967 DICK'S VALLEY SERVICE INC**							
		260.50	DUMP TRUCK TOW SERVICE		153082	176007	1073.6230		VEHICLE SUPPLIES & PARTS	SNOW REMOVAL SERVICES
		157.50	FORFEITURE TOW 13-1085		153260	134401	2100.6250		OTHER SUPPLIES & PARTS	POLICE FORFEITURES
		312.70	FORFEITURE TOW 15-770		153261	157789	2100.6250		OTHER SUPPLIES & PARTS	POLICE FORFEITURES
		172.70	FORFEITURE TOW 15-1347		153262	160850	2100.6250		OTHER SUPPLIES & PARTS	POLICE FORFEITURES
		172.70	FORFEITURE TOW 15-1597		153263	162619	2100.6250		OTHER SUPPLIES & PARTS	POLICE FORFEITURES
		172.70	FORFEITURE TOW 15-296		153264	155213	2100.6250		OTHER SUPPLIES & PARTS	POLICE FORFEITURES

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138798	**2/3/2017**		**108967 DICK'S VALLEY SERVICE INC**						**Continued...**	
		312.70	FORFEITURE TOW 15-1247		153265	160258	2100.6250		OTHER SUPPLIES & PARTS	POLICE FORFEITURES
		172.70	FORFEITURE TOW 16-144		153266	164201	2100.6250		OTHER SUPPLIES & PARTS	POLICE FORFEITURES
		1,734.20								
138799	**2/3/2017**		**107008 DISTAD, RANDY**							
		10.70	MILEAGE FOR JANUARY 2017		153241	20170131 - DISTAD	1090.6485		MILEAGE REIMBURSEMENT	PARK MAINTENANCE
		86.14	MILEAGE FOR JANUARY 2017		153241	20170131 - DISTAD	1094.6485		MILEAGE REIMBURSEMENT	PARK & RECREATION ADMIN
		96.84								
138800	**2/3/2017**		**100254 DUNHAM BROTHERS WOOD RECYCLING**							
		35.00	WOOD RECYCLING FEES		153104	37748	6302.6401		PROFESSIONAL SERVICES	SOLID WASTE OPERATIONS
		35.00								
138801	**2/3/2017**		**100240 DYNAMEX**							
		38.81	JAN'17 H20 SMPL MN DEPT HEALTH		153257	2083606	6502.6401		PROFESSIONAL SERVICES	WATER UTILITY EXPENSE
		38.81								
138802	**2/3/2017**		**109931 FACTORY MOTOR PARTS CO**							
		107.16	TRUCK BATTERY #Q81		153142	1-Z09772	7200.6230		VEHICLE SUPPLIES & PARTS	FLEET OPERATIONS
		107.16								
138803	**2/3/2017**		**100043 FARMINGTON INDEPENDENT TOWN PAGES**							
		47.00	2017 PAPER SUBSCRIPT, CITYHL		152668	177840049 / 2017 CITYHALL	1010.6460		SUBSCRIPTIONS & DUES	ADMINISTRATION
		11.75	2017 PAPER SUBSCRIPT CMF		152669	177841823 / 2017 CMF	6202.6460		SUBSCRIPTIONS & DUES	SEWER OPERATIONS EXPENSE
		11.75	2017 PAPER SUBSCRIPT CMF		152669	177841823 / 2017 CMF	6302.6460		SUBSCRIPTIONS & DUES	SOLID WASTE OPERATIONS
		11.75	2017 PAPER SUBSCRIPT CMF		152669	177841823 / 2017 CMF	6402.6460		SUBSCRIPTIONS & DUES	STORM WATER UTILITY OPERATIONS
		11.75	2017 PAPER SUBSCRIPT CMF		152669	177841823 / 2017 CMF	6502.6460		SUBSCRIPTIONS & DUES	WATER UTILITY EXPENSE
		94.00								
138804	**2/3/2017**		**100022 FARMINGTON PRINTING INC**							
		284.00	8 CASES PAPER		153150	11870	1050.6250		OTHER SUPPLIES & PARTS	POLICE ADMINISTRATION
		284.00								

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138805	**2/3/2017**		**112904 FLEETPRIDE TRUCK & TRAILER PARTS**						**Continued...**	
		748.11	3213 HYD PUMP REBUILD		153081	82173653	6302.6230		VEHICLE SUPPLIES & PARTS	SOLID WASTE OPERATIONS
		48.12-			153081	82173653	9999.2415		MN SALES TAX DUE	CASH COMPANY
		699.99								
138806	**2/3/2017**		**110436 GLOWING HEARTH & HOME**							
		60.00	DUP FP PRMT 5925 188TH ST W		153085	DUP FP PRMT 5925 188TH ST	1001.4315		PLUMBING & HEATING PERMITS	GENERAL FUND REVENUES
		1.00	DUP FP PRMT 5925 188TH ST W		153085	DUP FP PRMT 5925 188TH ST	1000.2420		BUILDING PERMIT SURCHARGE	GENERAL FUND BALANCE SHEET
		61.00								
138807	**2/3/2017**		**112942 GMS INDUSTRIAL SUPPLIES, INC**							
		50.20	LARGE HEAD CAP SCREWS		153103	026993B	7200.6230		VEHICLE SUPPLIES & PARTS	FLEET OPERATIONS
		50.20								
138808	**2/3/2017**		**111457 GOODHUE COUNTY ABSTRACT CO**							
		94.54	REF UTIL CR@18514 EVEREST PATH		153204	18514 EVEREST PATH	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		94.54								
138809	**2/3/2017**		**100044 GRAINGER INC**							
		143.92	SLIP PLATE FOR PLOW		153084	9326243095	1073.6230		VEHICLE SUPPLIES & PARTS	SNOW REMOVAL SERVICES
		268.60	KEY BOX AND TAGS		153084	9326243095	7200.6230		VEHICLE SUPPLIES & PARTS	FLEET OPERATIONS
		412.52								
138810	**2/3/2017**		**115467 HC REVOLUTIONS, INC.**							
		12,000.00	509 WILLOW DEMO ESCR REL		153245	509 WILLOW DEMO ESCR REL	7500.2255		DEPOSITS PAYABLE	ESCROW FUND
		12,000.00								
138811	**2/3/2017**		**100074 HOHENSTEINS INC**							
		860.43	BEER ORDER		153044	873056	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		860.43								
138812	**2/3/2017**		**100395 HOISINGTON KOEGLER GROUP INC**							
		2,006.58	PARK MASTER PLAN SERVICES		153079	016-069 DEC	2329.6401		PROFESSIONAL SERVICES	PRAIRIE PINES PARK
		2,006.58								
138813	**2/3/2017**		**112000 HOWIES HOCKEY, INC**							
		2,416.46	TAPE,LACES, MOUTHGUARDS		153141	27358	2502.5502		COST OF GOODS SOLD	ICE ARENA OPERATIONS EXPENSE

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138813	**2/3/2017**		**112000 HOWIES HOCKEY, INC**						**Continued...**	
		2,416.46								
138814	**2/3/2017**		**113417 INDEED BREWING COMPANY**							
		187.90	BEER ORDER		153059	47350	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		187.90								
138815	**2/3/2017**		**115430 INSTRUMART**							
		264.00	WELL 3 METER CHARTS		153144	IN523264	6502.6220		EQUIP SUPPLIES & PARTS	WATER UTILITY EXPENSE
		264.00								
138816	**2/3/2017**		**109846 J J TAYLOR DISTRIBUTING CO OF MN INC**							
		2,299.60	BEER ORDER		153039	2634101	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		2,299.60								
138817	**2/3/2017**		**100033 JOHNSON BROTHERS LIQUOR CO**							
		282.57	LIQ, SPIRITS ORDER		153049	5638344	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		84.51	KARKOV VODKA ORDER		153050	5638345	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		632.40	WINE ORDER		153051	5638346	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		122.51	SVEDKA VODKA		153052	5638347	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		59.66	WOODBRIDGE MOSCATO		153053	5638348	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		81.51	E&J BRANDY		153054	5638349	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		313.36	WINE ORDER		153055	5638350	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		37.51	COCO REAL		153056	5638351	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		1,614.03								
138818	**2/3/2017**		**115468 JOHNSON, MITCHELL S**							
		50.00	ALC COMP CHECK PAYMENT		153227	ALC COMP CHECK PAYMENT	1050.6401		PROFESSIONAL SERVICES	POLICE ADMINISTRATION
		50.00								
138819	**2/3/2017**		**100048 LAKEVILLE, CITY OF**							
		1,716.43	2016 FIRE MARSHAL SERVICES		153217	25490	1060.6401		PROFESSIONAL SERVICES	FIRE SERVICES
		1,716.43								
138820	**2/3/2017**		**100164 LAW ENFORCEMENT LABOR SERVICES**							
		563.50			153236	020217940585	7000.2116		LELS DUES PAYABLE	EMPLOYEE EXPENSE FUND
		563.50								
138821	**2/3/2017**		**100121 LEAGUE OF MINNESOTA CITIES**							
		45.00	2016 LMC REGIONAL MEETINGS		153137	247742	1010.6470		TRAINING & SUBSISTANCE	ADMINISTRATION

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138821	**2/3/2017**		**100121 LEAGUE OF MINNESOTA CITIES**						**Continued...**	
		45.00								
138822	**2/3/2017**		**115466 LIFE INSURANCE COMPANY OF NORTH AMERICA**							
		361.80	FEB'17 ACCID & CRIT ILL INSUR		153243	AI960331 FEB'17	7000.6158		EMPLOYEE BENEFITS	EMPLOYEE EXPENSE FUND
		361.80	JAN'17 ACCID & CRIT ILL INSUR		153246	AI960331 JAN'17	7000.6158		EMPLOYEE BENEFITS	EMPLOYEE EXPENSE FUND
		723.60								
138823	**2/3/2017**		**112212 LINDSTROM RESTORATION**							
		46,982.74	CMF LOCKER ROOM REPAIRS		152856	16455-18	5731.6515	19650	BUILDING REPAIR SERVICE	BUILDING MAINTENANCE
		46,982.74								
138824	**2/3/2017**		**100049 LOCAL GVMT INFO SYSTEMS ASSN.**							
		1,600.00	FIRE MOBILE LICENSES - 2		153267	42972	7400.6960		FURNITURE & OFFICE E	INFORMATION TECHNOLOGY
		361.58	MN IT SRVS-WIDE ARENA NETWORK		153268	42954	7400.6402		DATA PROCESSING	INFORMATION TECHNOLOGY
		982.31	WEBSENSE/WSA SW ALLOCATIONS		153269	42893	7400.6402		DATA PROCESSING	INFORMATION TECHNOLOGY
		165.00	DEC'16 PCI COMPLIANCE		153270	42864	7400.6402	00001	DATA PROCESSING	INFORMATION TECHNOLOGY
		2,420.00	DEC'16 NETWORK SUPPORT		153270	42864	7400.6402		DATA PROCESSING	INFORMATION TECHNOLOGY
		4,427.50	OCT'16 NETWORK SUPPORT		153271	42596	7400.6402		DATA PROCESSING	INFORMATION TECHNOLOGY
		9,956.39								
138825	**2/3/2017**		**114572 MANLEY SOLUTIONS, INC**							
		233.86	DEC'16 ALARM LINES		153114	1/20/2017	7400.6411		TELEPHONE	INFORMATION TECHNOLOGY
		233.86								
138826	**2/3/2017**		**100341 MBPTA**							
		50.00	MBPTA MEMBERSHIP		153210	MBPTA MEMBERSHIP	1031.6460		SUBSCRIPTIONS & DUES	BUILDING INSPECTIONS
		50.00								
138827	**2/3/2017**		**115443 MCGLOTHLIN, NICOLAS**							
		46.66	REF UTILI CR @ 18322 ECHO DR		153208	18322 ECHO DR	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		46.66								
138828	**2/3/2017**		**111035 MEDICINE LAKE TOURS**							
		195.00	2/10/17 RRC COMO TRIP		153247	20170130	1093.6570		PROGRAMMING EXPENSE	SENIOR CITIZEN SERVICES
		195.00								
138829	**2/3/2017**		**100527 METRO ALARM CONTRACTORS INC**							
		272.53	MAR-MAY'17 DT LIQ STR SEC SYST		153253	028702	6110.6401		PROFESSIONAL SERVICES	DOWNTOWN LIQUOR REV & EXP
		336.66	MAR-MAY'17 PK LIQ STR SEC SYST		153254	028703	6115.6401		PROFESSIONAL SERVICES	PILOT KNOB LIQUOR

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138829	**2/3/2017**		**100527 METRO ALARM CONTRACTORS INC**						**Continued...**	
		609.19								
138830	**2/3/2017**		**112216 MIDLAND TITLE CO**							
		37.15	REF UTIL CR @ 19195 EMBERS AVE		153203	19195 EMBERS AVE	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		37.15								
138831	**2/3/2017**		**100163 MINNESOTA AFSCME COUNCIL #5**							
		849.18			153235	020217940584	7000.2115		AFSCME UNION DUES PAYABLE	EMPLOYEE EXPENSE FUND
		849.18								
138832	**2/3/2017**		**100162 MINNESOTA BENEFIT ASSOCIATION**							
		70.84			153234	020217940583	7000.2120		MBA PAYABLE	EMPLOYEE EXPENSE FUND
		70.84								
138833	**2/3/2017**		**110087 MINNESOTA DEPT OF PUBLIC SAFETY**							
		24.00	2017 DECALS - INSPECT PROGRAM		153134	20170125	7200.6460		SUBSCRIPTIONS & DUES	FLEET OPERATIONS
		24.00								
138834	**2/3/2017**		**100208 MN MUNICIPAL UTILITIES ASSOCIATION**							
		431.00	WATER UTILITY MEMBER DUES		153145	48455	6502.6460		SUBSCRIPTIONS & DUES	WATER UTILITY EXPENSE
		431.00								
138835	**2/3/2017**		**107932 MOOD MEDIA**							
		77.24	SERVICES FOR FEB		152960	52977555	6110.6401		PROFESSIONAL SERVICES	DOWNTOWN LIQUOR REV & EXP
		77.24	SERVICES FOR FEB		152960	52977555	6115.6401		PROFESSIONAL SERVICES	PILOT KNOB LIQUOR
		154.48								
138836	**2/3/2017**		**101249 MULLER, CYNTHIA**							
		52.06	MILEAGE TO ELECTION MEETINGS		153273	20170131 - MULLER	1013.6485		MILEAGE REIMBURSEMENT	ELECTIONS
		52.06								
138837	**2/3/2017**		**100070 MVTL- MINN VALLEY TESTING LABS**							
		48.75	COLFORM COLILERT SAMPLE PWORKS		153143	845951	6502.6401		PROFESSIONAL SERVICES	WATER UTILITY EXPENSE
		48.75								
138838	**2/3/2017**		**112030 NAPA AUTO PARTS FARMINGTON**							
		8.19	REAR WIPER BLADE FOR CARAVAN		153199	163325	1051.6230		VEHICLE SUPPLIES & PARTS	PATROL SERVICES
		8.19								

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138838	**2/3/2017**		**112030 NAPA AUTO PARTS FARMINGTON**						**Continued...**	
138839	**2/3/2017**		**110102 NATIONAL FIRE PROTECTION ASSOCIATION**							
		1,305.00	FD NFPA DUES		153127	6786138X 2017	1060.6460		SUBSCRIPTIONS & DUES	FIRE SERVICES
		1,305.00								
138840	**2/3/2017**		**112385 NATIONAL PUBLIC EMPL LABOR RELATIONS**							
		200.00	NPELRA/MPELRA DUES		153112	WENDLANDT 28244 2017	1011.6460		SUBSCRIPTIONS & DUES	HUMAN RESOURCES
		200.00								
138841	**2/3/2017**		**102644 NORTHERN SAFETY TECHNOLOGY**							
		1,273.00	FD ENGINE 1 LED LIGHT UPGRADE		153218	42847	1060.6510.1		OUTSIDE VEHICLE REPAIR	FIRE SERVICES
		982.05	FD LED FLASHLIGHTS & CHARGERS		153219	42827	1060.6250		OTHER SUPPLIES & PARTS	FIRE SERVICES
		2,255.05								
138842	**2/3/2017**		**113621 NOVUSOLUTIONS**							
		6,110.00	NOVUSAGENDA VIDEO STREAMING		153238	24433	7400.6505		EQUIPMENT REPAIR SERVICE	INFORMATION TECHNOLOGY
		6,110.00								
138843	**2/3/2017**		**100093 PELLICCI HARDWARE & RENTAL**							
		15.98	PARTS FOR CHIPPER		153069	K05613	1076.6220		EQUIP SUPPLIES & PARTS	NATURAL RESOURCES
		5.56	GARBAGE BAGS - PK LIQ STORE		153070	K40643	6115.6250		OTHER SUPPLIES & PARTS	PILOT KNOB LIQUOR
		5.56	GARBAGE BAGS - DT LIQ STORE		153070	K40643	6110.6250		OTHER SUPPLIES & PARTS	DOWNTOWN LIQUOR REV & EXP
		33.98	ICE MELT FOR ARENA		153071	K05610	2502.6240		BUILDING SUPPLIES & PARTS	ICE ARENA OPERATIONS EXPENSE
		11.99	THREAD OIL		153072	K05612	6502.6250		OTHER SUPPLIES & PARTS	WATER UTILITY EXPENSE
		167.94	BLACK IRON PIPES		153073	38470 / F	6502.6250		OTHER SUPPLIES & PARTS	WATER UTILITY EXPENSE
		4.99	BATTERY 3V FOR PD		153074	K05675	1051.6250		OTHER SUPPLIES & PARTS	PATROL SERVICES
		33.42	PAINT SUPPLIES FOR MAINT FACIL		153075	K05695	6502.6250		OTHER SUPPLIES & PARTS	WATER UTILITY EXPENSE
		39.99	TAP/DIE SET		153076	K05631	1072.6250		OTHER SUPPLIES & PARTS	STREET MAINTENANCE
		6.42	TOILET PARTS - FLUSH LEVER		153077	K05806	6110.6240		BUILDING SUPPLIES & PARTS	DOWNTOWN LIQUOR REV & EXP
		15.00	TOILET PARTS - REPAIR KIT		153078	K43139	6110.6240		BUILDING SUPPLIES & PARTS	DOWNTOWN LIQUOR REV & EXP
		17.91	SKATE LESSON ROOM KEYS		153086	K05854	2502.6240		BUILDING SUPPLIES & PARTS	ICE ARENA OPERATIONS EXPENSE
		29.98	SIDEWALK SALT FOR ARENA		153087	K05902	2502.6240		BUILDING SUPPLIES & PARTS	ICE ARENA OPERATIONS EXPENSE
		59.94	MOP HEADS FOR ARENA		153088	42173	2502.6240		BUILDING SUPPLIES & PARTS	ICE ARENA OPERATIONS EXPENSE
		2.00	NUTS, BOLTS, NAILS FOR DOOR		153089	K43122	2502.6515		BUILDING REPAIR SERVICE	ICE ARENA OPERATIONS EXPENSE
		18.45	PD EXPO SUPPLIES		153118	K06091	1050.6250		OTHER SUPPLIES & PARTS	POLICE ADMINISTRATION
		39.08	CLEANING SUPPLIES DT LIQ STORE		153123	6028	6110.6250		OTHER SUPPLIES & PARTS	DOWNTOWN LIQUOR REV & EXP
		39.08	CLEANING SUPPLIES PK LIQ STORE		153123	6028	6115.6250		OTHER SUPPLIES & PARTS	PILOT KNOB LIQUOR
		5.96	BOX CUTTERS DT LIQ STORE		153124	K06056	6110.6250		OTHER SUPPLIES & PARTS	DOWNTOWN LIQUOR REV & EXP
		5.95	BOX CUTTERS PK LIQ STORE		153124	K06056	6115.6250		OTHER SUPPLIES & PARTS	PILOT KNOB LIQUOR

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138843	**2/3/2017**		**100093 PELLICCI HARDWARE & RENTAL**						**Continued...**	
		4.81	RAZOR BLADES DT LIQ STORE		153125	K06075	6110.6250		OTHER SUPPLIES & PARTS	DOWNTOWN LIQUOR REV & EXP
		4.82	RAZOR BLADES PK LIQ STORE		153125	K06075	6115.6250		OTHER SUPPLIES & PARTS	PILOT KNOB LIQUOR
		9.99	VACUUM CLEANER EXT CORD		153149	K05848	1050.6250		OTHER SUPPLIES & PARTS	POLICE ADMINISTRATION
		44.81	COAT HOOKS & CLEANING SUPPLY		153172	K45409	2502.6250		OTHER SUPPLIES & PARTS	ICE ARENA OPERATIONS EXPENSE
		17.36	CLEANING SUPPLIES		153173	K05929	2502.6250		OTHER SUPPLIES & PARTS	ICE ARENA OPERATIONS EXPENSE
		23.96	WORKMAN REPAIR SUPPLIES		153174	K05998	1090.6505		EQUIPMENT REPAIR SERVICE	PARK MAINTENANCE
		39.48	SIDEWALK SALT FOR ARENA		153175	K05794	2502.6240		BUILDING SUPPLIES & PARTS	ICE ARENA OPERATIONS EXPENSE
		29.94	CLEANING SUPPLIES FOR PD		153178	K37176	1050.6250		OTHER SUPPLIES & PARTS	POLICE ADMINISTRATION
		23.55	ICE MELT DT LIQ STORE		153201	5788	6110.6250		OTHER SUPPLIES & PARTS	DOWNTOWN LIQUOR REV & EXP
		23.54	ICE MELT PK LIQ STORE		153201	5788	6115.6250		OTHER SUPPLIES & PARTS	PILOT KNOB LIQUOR
		119.98	RIGID REPLACEMENT DIE SETS		153202	42982	6502.6220		EQUIP SUPPLIES & PARTS	WATER UTILITY EXPENSE
		59.95	FD ST #2 PADLOCK & NOZZLE GRIP		153212	K05927	1060.6240		BUILDING SUPPLIES & PARTS	FIRE SERVICES
		14.95	FD LOCK DEICER		153213	K05935	1060.6230		VEHICLE SUPPLIES & PARTS	FIRE SERVICES
		67.98	FD ST #1 SWITCH & GARDEN HOSE		153214	K45404	1060.6240		BUILDING SUPPLIES & PARTS	FIRE SERVICES
		21.98	FD TIDY CAT & CARTON TAPE		153215	K05968	1060.6250		OTHER SUPPLIES & PARTS	FIRE SERVICES
		24.99	FD KEROSENE FOR TRNG		153216	A44153	1060.6470		TRAINING & SUBSISTANCE	FIRE SERVICES
		969.92	FIRE DEPT LADDERS		153250	46596	1060.6240		BUILDING SUPPLIES & PARTS	FIRE SERVICES
		12.58	NUTS/BOLTS FOR PUBLIC WORKS		153256	K06126	1072.6250		OTHER SUPPLIES & PARTS	STREET MAINTENANCE
		2,073.77								
138844	**2/3/2017**		**100034 PHILLIPS WINE AND SPIRITS INC**							
		1,584.58	LIQ, SPIRITS ORDER		153046	2108691	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		303.47	WINE ORDER		153047	2108692	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		1,888.05								
138845	**2/3/2017**		**113039 PIRTEK BURNSVILLE**							
		151.78	DUMP TRUCK FUEL LINE REPAIR		153083	S2416229.001	1073.6230		VEHICLE SUPPLIES & PARTS	SNOW REMOVAL SERVICES
		151.78								
138846	**2/3/2017**		**102250 PROGUARD SPORTS INC**							
		124.03	ARENA PRO SHOP SUPPLIES		153090	344027	2502.5502		COST OF GOODS SOLD	ICE ARENA OPERATIONS EXPENSE
		124.03								
138847	**2/3/2017**		**100135 PUBLIC EMPLOYEES RETIREMENT ASSN.**							
		19,086.05			153232	020217940581	7000.2113		PERA PAYABLE	EMPLOYEE EXPENSE FUND
		25,345.71			153233	020217940582	7000.6154		PERA	EMPLOYEE EXPENSE FUND
		44,431.76								
138848	**2/3/2017**		**100196 QUALITY REFRIGERATION INC**							
		297.41	PK LIQ STORE COOLER CONDENSER		153126	0035459 LESS	6115.6505		EQUIPMENT REPAIR SERVICE	PILOT KNOB LIQUOR

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138848	**2/3/2017**		**100196 QUALITY REFRIGERATION INC**						**Continued...**	
						TAX				
		297.41								
138849	**2/3/2017**		**114619 RED BULL DISTRIBUTION CO INC**							
		284.50	RED BULL ORDER		153230	K-22139856	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		284.50								
138850	**2/3/2017**		**112561 RICOH USA, INC**							
		889.00	COPIER LEASES FEB-MAR		153226	98178780	1010.6555		RENTAL OF EQUIPMENT	ADMINISTRATION
						FEB-MAR				
		889.00								
138851	**2/3/2017**		**112632 RICOH USA, INC**							
		491.05	DEC- JAN COPIER MAINTENANCE		153117	5046653896	1010.6505		EQUIPMENT REPAIR SERVICE	ADMINISTRATION
						JAN'17				
		160.12	JAN'17 COPIER MAINTENANCE		153248	5046683398	1010.6505		EQUIPMENT REPAIR SERVICE	ADMINISTRATION
						JAN'17				
		1,262.26	FEB'17 COPIER MAINTENANCE		153249	5046725581	1010.6505		EQUIPMENT REPAIR SERVICE	ADMINISTRATION
						FEB'17				
		1,913.43								
138852	**2/3/2017**		**109722 RJM DISTRIBUTING INC**							
		109.90	NORTH LAKE LIGHT ORDER		153231	IND012629	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		109.90								
138853	**2/3/2017**		**115441 RUDD, ERIC**							
		97.59	REF UTIL CR @200 WALNUT ST		153206	200 WALNUT ST	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		97.59								
138854	**2/3/2017**		**112051 SOUTHERN GLAZER'S OF MN**							
		1,669.44	LIQ, SPIRITS ORDER		153045	1501080	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		1,669.44								
138855	**2/3/2017**		**103452 SPARTAN PROMOTIONAL GROUP INC**							
		1,732.93	PET WASTE BAG DISPENSERS		153109	548006	6402.6570		PROGRAMMING EXPENSE	STORM WATER UTILITY OPERATIONS
		1,732.93								
138856	**2/3/2017**		**101405 SPRINT**							
		28.18	SOLID WASTE TRACKER		153179	875483313-182	6302.6412		CELLULAR PHONES	SOLID WASTE OPERATIONS
		1.81-			153179	875483313-182	9999.2415		MN SALES TAX DUE	CASH COMPANY

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138856	**2/3/2017**		**101405 SPRINT**						**Continued...**	
		26.37								
138857	**2/3/2017**		**100235 STERLING CODIFIERS INC**							
		500.00	2017 CITY CODE HOSTING FEE		153128	18711	1010.6401		PROFESSIONAL SERVICES	ADMINISTRATION
		500.00								
138858	**2/3/2017**		**108813 STRESE, TOM E**							
		93.38	MJOA CONFRENCE - HOTEL ROOM		153240	20170127 - STRESE	1052.6470		TRAINING & SUBSISTANCE	INVESTIGATION SERVICES
		184.04	MJDA CONF MILEAGE & MEALS		153242	20170125 - STRESE	1052.6485		MILEAGE REIMBURSEMENT	INVESTIGATION SERVICES
		113.65	MJDA CONF MILEAGE & MEALS		153242	20170125 - STRESE	1052.6470		TRAINING & SUBSISTANCE	INVESTIGATION SERVICES
		391.07								
138859	**2/3/2017**		**114206 SUN LIFE FINANCIAL**							
		966.79	FEB'17 LTD INSURANCE		153115	237780 FEB'17	7000.6158		EMPLOYEE BENEFITS	EMPLOYEE EXPENSE FUND
		3,188.70	FEB'17 LIFE INSURANCE		153239	237780 FEB'17	7000.6158		EMPLOYEE BENEFITS	EMPLOYEE EXPENSE FUND
		4,155.49								
138860	**2/3/2017**		**112307 T-MOBILE**							
		6.66	JAN'17 GPS		153259	823329497 JAN'17	6202.6220		EQUIP SUPPLIES & PARTS	SEWER OPERATIONS EXPENSE
		6.67	JAN'17 GPS		153259	823329497 JAN'17	6402.6220		EQUIP SUPPLIES & PARTS	STORM WATER UTILITY OPERATIONS
		6.66	JAN'17 GPS		153259	823329497 JAN'17	6502.6220		EQUIP SUPPLIES & PARTS	WATER UTILITY EXPENSE
		19.99								
138861	**2/3/2017**		**100618 TOLL GAS & WELDING SUPPLY**							
		820.29	CUTTING TORCH & PARTS		153146	10169894	7200.6250		OTHER SUPPLIES & PARTS	FLEET OPERATIONS
		820.29								
138862	**2/3/2017**		**112567 ULTIMATE SAFETY CONCEPTS, INC**							
		39,990.00	FD 2016 SCBA REPLACEMENT		153122	169636	1060.6220.1		SCBA EQUIPMENT	FIRE SERVICES
		39,990.00								
138863	**2/3/2017**		**108808 VINOCOPIA**							
		153.00	WINE ORDER		153065	0172133-IN	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		153.00								

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138863	**2/3/2017**		**108808 VINOCOPIA**						**Continued...**	
138864	**2/3/2017**		**111267 WATER CONSERVATION SERVICE, INC**							
		366.93	WATER LEAK LOCATE @ 1005 SPRUC		153130	7359	6502.6401		PROFESSIONAL SERVICES	WATER UTILITY EXPENSE
		366.93								
138865	**2/3/2017**		**102592 WINE COMPANY, THE**							
		102.20	WINE ORDER		153034	26851	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		102.20								
138866	**2/3/2017**		**100334 WINE MERCHANTS**							
		92.51	WINE ORDER		153058	7118029	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		92.51								
138867	**2/3/2017**		**115442 WRIGHT, JOHN J**							
		47.09	REF UTIL CR @5265 180TH ST W		153207	5265 180TH ST W	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		47.09								
138868	**2/3/2017**		**115440 YAUCH, SUZANNE B**							
		67.73	REF UTIL CR @4346 207TH ST W		153205	4346 207TH ST W	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		67.73								
138869	**2/3/2017**		**100019 ZIEGLER INC**							
		3,597.13	ENGINE FUEL PUMP/INJECTORS		153200	SW060062601	1073.6230		VEHICLE SUPPLIES & PARTS	SNOW REMOVAL SERVICES
		3,597.13	ENGINE FUEL PUMP/INJECTORS		153200	SW060062601	1072.6230		VEHICLE SUPPLIES & PARTS	STREET MAINTENANCE
		7,194.26								
138870	**2/10/2017**		**100192 AGGREGATE INDUSTRIES - MWR, INC**							
		285.85	1005 SPRUCE WATER MAIN REPAIR		153332	706743180	6502.6250		OTHER SUPPLIES & PARTS	WATER UTILITY EXPENSE
		285.85								
138871	**2/10/2017**		**100704 AMERICAN WATER WORKS ASSOCIATION**							
		79.00	4/17-3/18 AWWA MEMBERSHIP DUES		153336	7001296106 2017	6502.6460		SUBSCRIPTIONS & DUES	WATER UTILITY EXPENSE
		79.00								
138872	**2/10/2017**		**114024 APPLE CHEVROLET BUICK, NORTHFIELD**							
		105.87	STEERING SHAFT FOR VEHICL 0563		153335	50064	1051.6230		VEHICLE SUPPLIES & PARTS	PATROL SERVICES
		105.87								
138873	**2/10/2017**		**100193 APPLE VALLEY, CITY OF**							
		14,814.06	JAN-MAR'17 JPA CABLE		153383	5819	4005.6401		PROFESSIONAL SERVICES	CABLE/COMMUNICATIONS PROJECTS

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138873	**2/10/2017**		**100193 APPLE VALLEY, CITY OF**						**Continued...**	
		14,814.06								
138874	**2/10/2017**		**113303 ARTISAN BEER COMPANY**							
		536.25	BEER ORDER		153445	3155137	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		532.00	BEER ORDER		153477	3155235	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		214.00	BEER ORDER		153505	3156609	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		309.00	BEER ORDER		153506	3156724	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		1,591.25								
138875	**2/10/2017**		**102910 ASPEN EQUIPMENT CO.**							
		313.34	MVP CTR FLAP 4 WESTERN V PLOW		153295	10172933	1090.6230		VEHICLE SUPPLIES & PARTS	PARK MAINTENANCE
		313.34								
138876	**2/10/2017**		**102478 ASSOCIATION OF TRNG OFFICIERS OF MN**							
		450.00	2017 PD ATOM MEMBERSHIP		153511	2017 ATOM MEMBERSHIP	1051.6470		TRAINING & SUBSISTANCE	PATROL SERVICES
		450.00								
138877	**2/10/2017**		**113466 BARRIS, JODIE MARIE**							
		152.00	JAN'17 ZUMBA CLASS		153342	20170126 ZUMBA	1095.6570		PROGRAMMING EXPENSE	RECREATION PROGRAM SERVICES
		92.00	JAN'17 TAP CLASS		153343	20170126 TAP	1093.6570		PROGRAMMING EXPENSE	SENIOR CITIZEN SERVICES
		244.00								
138878	**2/10/2017**		**111280 BERNICK'S WINE**							
		14.00	PALLETS		153448	342616	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		118.30	LIQ, SPIRITS ORDER		153449	342617	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		132.30								
138879	**2/10/2017**		**115471 BLOCK, CURTIS**							
		225.51	REF UTIL CR @ 805 3RD ST		153416	805 3RD STREET	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		225.51								
138880	**2/10/2017**		**100508 BOYER TRUCKS**							
		37.93	CENTER BEARING		153395	101152SAV	1072.6230		VEHICLE SUPPLIES & PARTS	STREET MAINTENANCE
		5,481.87	VEHICLE 708 ACCIDENT PARTS		153465	100389SAV	1073.6230		VEHICLE SUPPLIES & PARTS	SNOW REMOVAL SERVICES
		5,519.80								
138881	**2/10/2017**		**114472 BREAKTHRU BEVERAGE MN BEER, LLC**							
		3,733.65	BEER ORDER		153427	1090667793	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		5,075.97	BEER ORDER		153470	1090667792	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS

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138881	**2/10/2017**		**114472 BREAKTHRU BEVERAGE MN BEER, LLC**						**Continued...**	
		8,809.62								
138882	**2/10/2017**		**114471 BREAKTHRU BEVERAGE MN WINE & SPIRITS**							
		4,438.60	WINE ORDER		153428	1080589502	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		27.70	JACK DANIELS - WATERMELON		153429	1080589501	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		591.25	WINE ORDER		153430	1080589503	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		1,342.70	LIQ, SPIRITS ORDER		153472	1080589499	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		138.90	WINE ORDER		153473	1080589500	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		6,539.15								
138883	**2/10/2017**		**110511 CHARTER COMMUNICATIONS**							
		418.77	JAN-FEB ALARM LINES		153347	0001792 FEB'17	7400.6411		TELEPHONE	INFORMATION TECHNOLOGY
		418.77								
138884	**2/10/2017**		**100025 CINTAS CORP LOC 754**							
		29.19	FEB'17 WEEKLY UNIFORM CLEANING		153406	754689171	1072.6290		UNIFORMS & CLOTHING	STREET MAINTENANCE
		32.97	FEB'17 WEEKLY UNIFORM CLEANING		153406	754689171	1090.6290		UNIFORMS & CLOTHING	PARK MAINTENANCE
		23.35	FEB'17 WEEKLY UNIFORM CLEANING		153406	754689171	6202.6290		UNIFORMS & CLOTHING	SEWER OPERATIONS EXPENSE
		49.91	FEB'17 WEEKLY UNIFORM CLEANING		153406	754689171	6302.6290		UNIFORMS & CLOTHING	SOLID WASTE OPERATIONS
		23.35	FEB'17 WEEKLY UNIFORM CLEANING		153406	754689171	6402.6290		UNIFORMS & CLOTHING	STORM WATER UTILITY OPERATIONS
		23.35	FEB'17 WEEKLY UNIFORM CLEANING		153406	754689171	6502.6290		UNIFORMS & CLOTHING	WATER UTILITY EXPENSE
		3.21-			153406	754689171	9999.2415		MN SALES TAX DUE	CASH COMPANY
		178.91								
138885	**2/10/2017**		**113887 CLEANLITES RECYLING, INC MN**							
		191.42	ELECTRONICS RECYCLING		153529	IN0000179	6302.6401		PROFESSIONAL SERVICES	SOLID WASTE OPERATIONS
		12.50	ELECTRONICS RECYCLING		153530	IN0000188	6302.6401		PROFESSIONAL SERVICES	SOLID WASTE OPERATIONS
		203.92								
138886	**2/10/2017**		**100071 COLLEGE CITY BEVERAGE INC**							
		57.78-	BEER ORDER CREDIT		153423	21-77 CR	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		13,420.20	BEER ORDER		153424	280084	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		9,300.45	BEER ORDER		153468	280083	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		60.49-	BEER ORDER CREDIT		153469	21-78 CR	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		22,602.38								
138887	**2/10/2017**		**103300 CROWN RENTAL**							
		235.33	TABLE AND LINEN RENTAL		153412	238184-2	1050.6250		OTHER SUPPLIES & PARTS	POLICE ADMINISTRATION
		235.33								

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138888	**2/10/2017**		**109866 CUMMINS, INC.**						**Continued...**	
		761.89	AIR COMPRESSOR HEAD		153277	100-48874	6302.6230		VEHICLE SUPPLIES & PARTS	SOLID WASTE OPERATIONS
		761.89								
138889	**2/10/2017**		**109182 DAKOTA COMMUNICATIONS CENTER**							
		9,266.66	MAR'17 DCC FEES		153450	FA2017-03	1060.6560		CONTRACTUAL SERVICES	FIRE SERVICES
		18,533.34	MAR'17 DCC FEES		153450	FA2017-03	1051.6560		CONTRACTUAL SERVICES	PATROL SERVICES
		27,800.00								
138890	**2/10/2017**		**105738 DAKOTA COUNTY CHIEF'S ASSOCIATION**							
		75.00	FIRE CHIEF ASSOC 2017 DUES		153377	20170106 DUES	1060.6460		SUBSCRIPTIONS & DUES	FIRE SERVICES
		75.00								
138891	**2/10/2017**		**110844 DAKOTA COUNTY FINANCIAL SRVS**							
		161.21	4TH QTR'16 UTILITIES		153367	00023787	6602.6422		ELECTRIC	STREETLIGHT UTILITY EXPENSE
		42.40	OCT'16 DIESEL FUEL		153389	00023869	1090.6272		FUEL	PARK MAINTENANCE
		424.69	OCT'16 DIESEL FUEL		153389	00023869	1072.6272		FUEL	STREET MAINTENANCE
		355.39	OCT'16 DIESEL FUEL		153389	00023869	1060.6272		FUEL	FIRE SERVICES
		2,696.24	OCT'16 DIESEL FUEL		153389	00023869	6302.6272		FUEL	SOLID WASTE OPERATIONS
		136.64	NOV'16 DIESEL FUEL		153390	00023870	1090.6272		FUEL	PARK MAINTENANCE
		949.82	NOV'16 DIESEL FUEL		153390	00023870	1073.6272		FUEL	SNOW REMOVAL SERVICES
		297.65	NOV'16 DIESEL FUEL		153390	00023870	1060.6272		FUEL	FIRE SERVICES
		2,851.72	NOV'16 DIESEL FUEL		153390	00023870	6302.6272		FUEL	SOLID WASTE OPERATIONS
		65.23	NOV'16 DIESEL FUEL		153390	00023870	6402.6272		FUEL	STORM WATER UTILITY OPERATIONS
		2,825.93	DEC'16 DIESEL FUEL		153391	00023871	1073.6272		FUEL	SNOW REMOVAL SERVICES
		313.78	DEC'16 DIESEL FUEL		153391	00023871	1060.6272		FUEL	FIRE SERVICES
		43.98	DEC'16 DIESEL FUEL		153391	00023871	1076.6272		FUEL	NATURAL RESOURCES
		2,917.51	DEC'16 DIESEL FUEL		153391	00023871	6302.6272		FUEL	SOLID WASTE OPERATIONS
		14,082.19								
138892	**2/10/2017**		**102730 DARTS**							
		243.42	OCT-DEC'16 DARTS MONTH MINIMUM		153314	1324	1093.6401		PROFESSIONAL SERVICES	SENIOR CITIZEN SERVICES
		243.42								
138893	**2/10/2017**		**100057 DICK'S SANITATION INC**							
		799.86	JAN'17 RECYCLING SCHOOLS		153371	1682937/32751 JAN'17	6302.6401		PROFESSIONAL SERVICES	SOLID WASTE OPERATIONS
		5,586.96	JAN'17 RECYCLING COMMERCIAL		153372	1693352/48419 JAN'17	6302.6401		PROFESSIONAL SERVICES	SOLID WASTE OPERATIONS
		22,883.84	JAN'17 RECYCLING CITY RESIDENT		153373	1693353/48420 JAN'17	6302.6401		PROFESSIONAL SERVICES	SOLID WASTE OPERATIONS

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138893	**2/10/2017**		**100057 DICK'S SANITATION INC**						**Continued...**	
		29,270.66								
138894	**2/10/2017**		**108967 DICK'S VALLEY SERVICE INC**							
		172.70	15000397 FORFEITURE TOW		153451	155235	2100.6250		OTHER SUPPLIES & PARTS	POLICE FORFEITURES
		172.70	15001569 TOW CHARGE		153452	163532	1050.6401		PROFESSIONAL SERVICES	POLICE ADMINISTRATION
		172.70	16003847 FORFEITURE TOW CHARGE		153453	174314	2100.6250		OTHER SUPPLIES & PARTS	POLICE FORFEITURES
		172.70	15000607 FORFEITURE TOW CHARGE		153455	154579	2100.6250		OTHER SUPPLIES & PARTS	POLICE FORFEITURES
		690.80								
138895	**2/10/2017**		**113454 FARMINGTON PETTY CASH ACCT**							
		7.00	PETTY CASH REIMB 2016		153509	PETTY CASH REIMB 2016	1021.6210		OFFICE SUPPLIES	GENERAL ACCOUNTING
		7.81	PETTY CASH REIMB 2016		153509	PETTY CASH REIMB 2016	1051.6470		TRAINING & SUBSISTANCE	PATROL SERVICES
		23.00	PETTY CASH REIMB 2016		153509	PETTY CASH REIMB 2016	4005.6220		EQUIP SUPPLIES & PARTS	CABLE/COMMUNICATIONS PROJECTS
		14.75	PETTY CASH REIMB 2017		153510	PETTY CASH REIMB 2017	1093.6570		PROGRAMMING EXPENSE	SENIOR CITIZEN SERVICES
		9.85	PETTY CASH REIMB 2017		153510	PETTY CASH REIMB 2017	1031.6470		TRAINING & SUBSISTANCE	BUILDING INSPECTIONS
		62.41								
138896	**2/10/2017**		**100737 FARMINGTON PLUMBING & HEATING INC**							
		1,975.00	FD STAT #2 WATER HEATER REPLAC		153378	WATER HEATER	1060.6515		BUILDING REPAIR SERVICE	FIRE SERVICES
		1,975.00								
138897	**2/10/2017**		**100022 FARMINGTON PRINTING INC**							
		495.00	#10 REGULAR ENVELOPES		153284	11879	1010.6210		OFFICE SUPPLIES	ADMINISTRATION
		495.00								
138898	**2/10/2017**		**100077 FRONTIER COMMUNICATIONS**							
		84.41	FEB'17 ARENA ALARM LINE		153324	6514633016 FEB'17	2502.6411		TELEPHONE	ICE ARENA OPERATIONS EXPENSE
		84.41								
138899	**2/10/2017**		**100027 GREAT LAKES COCA-COLA DISTRIBUTION, LLC**							
		366.56	POP ORDER		153029	3616201847	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		378.88	POP ORDER		153037	3616201849	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		745.44								

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138900	**2/10/2017**		**101371 H&L MESABI**						**Continued...**	
		774.00	SNOW PLOW BLADES		153281	H97540	1073.6230		VEHICLE SUPPLIES & PARTS	SNOW REMOVAL SERVICES
		774.00								
138901	**2/10/2017**		**100007 HAWKINS INC**							
		27,582.52	WELL CHEMICALS - PUBLIC WORKS		153280	4011239	6502.6260		CHEMICALS	WATER UTILITY EXPENSE
		27,582.52								
138902	**2/10/2017**		**109232 HELM ELECTRIC INC**							
		113.71	PANIC BUTTON WIRING		153382	12329B	1015.6515		BUILDING REPAIR SERVICE	CITY HALL
		113.71								
138903	**2/10/2017**		**100074 HOHENSTEINS INC**							
		589.50	BEER ORDER		153422	874476	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		470.00	BEER ORDER		153474	874475	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		414.50	BEER ORDER		153504	875730	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		1,474.00								
138904	**2/10/2017**		**103229 HOLTZ INDUSTRIES INC**							
		478.80	TARPS & STRAPS 4 GARBAGE TRUCK		153282	477955	6302.6250		OTHER SUPPLIES & PARTS	SOLID WASTE OPERATIONS
		30.80-			153282	477955	9999.2415		MN SALES TAX DUE	CASH COMPANY
		448.00								
138905	**2/10/2017**		**110520 HOME TITLE, INC**							
		27.19	REF UTIL CR @ 18793 DUPONT WAY		153397	18793 DUPONT WAY	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		27.19								
138906	**2/10/2017**		**112669 HYDRAULIC COMPONENT REPAIR**							
		443.14	SANITATION CYLINDER REPAIR		153291	8574	6302.6230		VEHICLE SUPPLIES & PARTS	SOLID WASTE OPERATIONS
		443.14								
138907	**2/10/2017**		**111773 INNOVATIVE OFFICE SOLUTIONS, LLC**							
		388.41	OFFICE SUPPLIES FOR CITY HALL		153283	IN1465134	1010.6210		OFFICE SUPPLIES	ADMINISTRATION
		58.40-	OFFICE SUPPLIES CREDIT		153319	SCN-055766 CR	1010.6210		OFFICE SUPPLIES	ADMINISTRATION
		330.01								
138908	**2/10/2017**		**109846 J J TAYLOR DISTRIBUTING CO OF MN INC**							
		5,181.99	BEER ORDER		153425	2634135	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		485.10	BEER ORDER		153426	2611137	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		63.55-	BEER ORDER CREDIT		153475	2598780 CR	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS

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138908	**2/10/2017**		**109846 J J TAYLOR DISTRIBUTING CO OF MN INC**						**Continued...**	
		3,340.65	BEER ORDER		153476	2634136	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		6,170.80	BEER ORDER		153503	2634169	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		15,114.99								
138909	**2/10/2017**		**107414 JEFFERSON FIRE & SAFETY INC**							
		177.13	FD NEW TRAFFIC SAFETY CONES		153352	233902	1060.6250		OTHER SUPPLIES & PARTS	FIRE SERVICES
		177.13								
138910	**2/10/2017**		**100033 JOHNSON BROTHERS LIQUOR CO**							
		2,364.36	WINE ORDER		153434	5643286	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		500.45	LIQ, SPIRITS ORDER		153435	5643285	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		51.01	CUERVO MIX MARG		153436	5643284	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		1,059.79	WINE ORDER		153437	5643283	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		3,154.91	LIQ, SPIRITS ORDER		153438	5643282	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		951.69	LIQ, SPIRITS ORDER		153439	5643280	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		1.51	FREIGHT CHARGE		153440	5643281	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		2,536.98	WINE ORDER		153441	5643278	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		122.51	SVEDKA VODKA RASPBERRY		153442	5643277	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		438.10	WINE ORDER		153480	5643370	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		105.51	E&J BRANDY ORDER		153481	5643369	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		45.88	BLOODY MARY MIXES		153482	5643368	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		905.74	WINE ORDER		153483	5643367	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		3,309.43	LIQ, SPIRITS ORDER		153484	5643366	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		3,171.77	LIQ, SPIRITS ORDER		153485	5643365	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		2,594.82	WINE ORDER		153486	5643364	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		101.51	SVEDKA VODKA ORDER		153487	5643363	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		3.02	MONDAVI CABERNET		153488	5643279	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		420.71	WINE ORDER		153492	5648838	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		320.93	LIQ, SPIRITS ORDER		153493	5648837	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		1,361.43	LIQ, SPIRITS ORDER		153494	5648836	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		391.63	WINE ORDER		153495	5648835	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		255.02	LIQ, SPIRITS ORDER		153496	5648834	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		647.26	WINE ORDER		153497	5648833	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		784.33	WINE ORDER		153498	5648832	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		25,600.30								
138911	**2/10/2017**		**100080 KEEPRS INC**							
		978.00	PD BODY ARMOR - SIEM		153461	324809	1051.6290		UNIFORMS & CLOTHING	PATROL SERVICES
		978.00								

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138912	**2/10/2017**		**114584 KULLY SUPPLY INC**						**Continued...**	
		7.06	URINAL PARTS - CMF		153177	397841	1072.6515		BUILDING REPAIR SERVICE	STREET MAINTENANCE
		7.06	URINAL PARTS - CMF		153177	397841	1090.6515		BUILDING REPAIR SERVICE	PARK MAINTENANCE
		23.99	URINAL PARTS - CMF		153177	397841	6202.6515		BUILDING REPAIR SERVICE	SEWER OPERATIONS EXPENSE
		35.28	URINAL PARTS - CMF		153177	397841	6302.6515		BUILDING REPAIR SERVICE	SOLID WASTE OPERATIONS
		10.58	URINAL PARTS - CMF		153177	397841	6402.6515		BUILDING REPAIR SERVICE	STORM WATER UTILITY OPERATIONS
		23.28	URINAL PARTS - CMF		153177	397841	6502.6515		BUILDING REPAIR SERVICE	WATER UTILITY EXPENSE
		107.25								
138913	**2/10/2017**		**113287 LLOYD SECURITY, INC**							
		119.70	MAR-AUG'17 SERVICE CONTRACT		153380	73847	1090.6401		PROFESSIONAL SERVICES	PARK MAINTENANCE
		119.70								
138914	**2/10/2017**		**100049 LOCAL GVMT INFO SYSTEMS ASSN.**							
		687.50	JULY'16 NETWORK SUPPORT		153384	42238	7400.6402		DATA PROCESSING	INFORMATION TECHNOLOGY
		2,805.00	DEC'16 NETWORK SUPPORT		153385	42922	7400.6401		PROFESSIONAL SERVICES	INFORMATION TECHNOLOGY
		371.43	CJDN QTRLY		153386	42627	1050.6411		TELEPHONE	POLICE ADMINISTRATION
		986.96	KNOWB4 TRNG & WAN		153386	42627	7400.6402		DATA PROCESSING	INFORMATION TECHNOLOGY
		715.00	PCI COMPLIANCE		153387	42206	7400.6402	00001	DATA PROCESSING	INFORMATION TECHNOLOGY
		220.00	JULY'17 NETWORK SUPPORT		153387	42206	7400.6402		DATA PROCESSING	INFORMATION TECHNOLOGY
		5,785.89								
138915	**2/10/2017**		**113199 LUBE-TECH & PARTNERS, LLC**							
		4,202.46	OIL AND COOLANT		153294	883745	7200.6274		LUBRICANTS & ADDITIVES	FLEET OPERATIONS
		4,202.46								
138916	**2/10/2017**		**111035 MEDICINE LAKE TOURS**							
		427.00	DEC'16 RRC MERRY MANKATO TOUR		153532	20161216 RCC TOUR	1095.6570		PROGRAMMING EXPENSE	RECREATION PROGRAM SERVICES
		427.00								
138917	**2/10/2017**		**100030 MINNESOTA PIPE AND EQUIPMENT**							
		294.81	1005 SPRUCE ST/WATER REPAIR		153279	0372899	6502.6220		EQUIP SUPPLIES & PARTS	WATER UTILITY EXPENSE
		294.81								
138918	**2/10/2017**		**113833 MMKR CERTIFIED PUBLIC ACCOUNTANTS**							
		2,900.00	INTERIM FOR 2017 AUDIT		153278	41175	1021.6401		PROFESSIONAL SERVICES	GENERAL ACCOUNTING
		2,900.00								
138919	**2/10/2017**		**109380 MN ASSOC OF GOV COMMUNICATORS**							
		85.00	POSTAGE SPRING '17 NEWS & REC		153276	300000045	1014.6460		SUBSCRIPTIONS & DUES	COMMUNICATIONS

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138919	**2/10/2017**		**109380 MN ASSOC OF GOV COMMUNICATORS**						**Continued...**	
		30.00	MAGC PLAIN LANGUAGE WORKSHOP		153466	200000021	1093.6470		TRAINING & SUBSISTANCE	SENIOR CITIZEN SERVICES
		32.06	MAGC PLAIN LANGUAGE WORKSHOP		153466	200000021	6302.6470		TRAINING & SUBSISTANCE	SOLID WASTE OPERATIONS
		32.06-	MAGC PLAIN LANGUAGE WORKSHOP		153466	200000021	6302.6470		TRAINING & SUBSISTANCE	SOLID WASTE OPERATIONS
		30.00	MAGC PLAIN LANGUAGE WORKSHOP		153466	200000021	6302.6470		TRAINING & SUBSISTANCE	SOLID WASTE OPERATIONS
		2.06-			153466	200000021	9999.2415		MN SALES TAX DUE	CASH COMPANY
		2.06			153466	200000021	9999.2415		MN SALES TAX DUE	CASH COMPANY
		145.00								
138920	**2/10/2017**		**109426 MN FIAM BOOK SALES**							
		300.00	FD FIRE & LIFE SAFETY BOOKS		153351	2363	1060.6470		TRAINING & SUBSISTANCE	FIRE SERVICES
		300.00								
138921	**2/10/2017**		**110272 NORTHERN CONCEPTS**							
		1,029.52	POSTAGE SPRING 2017 CNRG		153388	1851092 SPRING'17	1094.6445		POSTAGE	PARK & RECREATION ADMIN
		257.38	POSTAGE SPRING 2017 CNRG		153388	1851092 SPRING'17	6202.6445		POSTAGE	SEWER OPERATIONS EXPENSE
		257.38	POSTAGE SPRING 2017 CNRG		153388	1851092 SPRING'17	6302.6445		POSTAGE	SOLID WASTE OPERATIONS
		257.38	POSTAGE SPRING 2017 CNRG		153388	1851092 SPRING'17	6402.6445		POSTAGE	STORM WATER UTILITY OPERATIONS
		257.38	POSTAGE SPRING 2017 CNRG		153388	1851092 SPRING'17	6502.6445		POSTAGE	WATER UTILITY EXPENSE
		2,059.04								
138922	**2/10/2017**		**102644 NORTHERN SAFETY TECHNOLOGY**							
		150.15	REPLACEMENT ENDCAP/AMBER		153300	42891	1073.6230		VEHICLE SUPPLIES & PARTS	SNOW REMOVAL SERVICES
		166.00	FD TENDER 1 LED LIGHT UPGRADE		153309	42854	1060.6510.1		OUTSIDE VEHICLE REPAIR	FIRE SERVICES
		316.15								
138923	**2/10/2017**		**114604 OPG-3**							
		3,528.00	NEW SCANNER FOR LASERFICHE		153414	1647	7400.6960		FURNITURE & OFFICE E	INFORMATION TECHNOLOGY
		3,528.00								
138924	**2/10/2017**		**101254 ORKIN EXTERMINATING**							
		80.00	2017 QUARTERLY EXTERMINATOR PD		153344	152127148/28594962	1050.6401		PROFESSIONAL SERVICES	POLICE ADMINISTRATION
		102.43	FEB'17 ORKIN		153362	153208524/28454299	6502.6401		PROFESSIONAL SERVICES	WATER UTILITY EXPENSE
		1.61	FEB'17 PEST CONTROL		153401	153209047/28367	1072.6401		PROFESSIONAL SERVICES	STREET MAINTENANCE

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138924	**2/10/2017**		**101254 ORKIN EXTERMINATING**						**Continued...**	
						911				
		2.15	FEB'17 PEST CONTROL		153401	153209047/28367	1090.6401		PROFESSIONAL SERVICES	PARK MAINTENANCE
						911				
		.02	FEB'17 PEST CONTROL		153401	153209047/28367	6202.6401		PROFESSIONAL SERVICES	SEWER OPERATIONS EXPENSE
						911				
		93.80	FEB'17 PEST CONTROL		153401	153209047/28367	6302.6401		PROFESSIONAL SERVICES	SOLID WASTE OPERATIONS
						911				
		10.77	FEB'17 PEST CONTROL		153401	153209047/28367	6402.6401		PROFESSIONAL SERVICES	STORM WATER UTILITY OPERATIONS
						911				
		17.23	FEB'17 PEST CONTROL		153401	153209047/28367	6502.6401		PROFESSIONAL SERVICES	WATER UTILITY EXPENSE
						911				
		6.03-			153401	153209047/28367	9999.2415		MN SALES TAX DUE	CASH COMPANY
						911				
		103.44	FEB'17 PEST CONTROL		153402	153209557/28379	1015.6401		PROFESSIONAL SERVICES	CITY HALL
						954				
		405.42								
138925	**2/10/2017**		**100290 PAUSTIS & SONS WINE COMPANY**							
		578.75	WINE ORDER		153431	8578593-IN	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		101.25	MATEUS ROSE ORDER		153471	8578602-IN	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		680.00								
138926	**2/10/2017**		**100093 PELLICCI HARDWARE & RENTAL**							
		27.74	FIRE DEPT STATION PAINT		153353	K06156	1060.6515		BUILDING REPAIR SERVICE	FIRE SERVICES
		11.89	ZIP TIES		153365	K06175	1072.6250		OTHER SUPPLIES & PARTS	STREET MAINTENANCE
		66.66	PAINT FOR WATER DAMAGE		153379	K06130	1060.6240		BUILDING SUPPLIES & PARTS	FIRE SERVICES
		21.99	LEATHER GLOVES		153381	K48196	1090.6250		OTHER SUPPLIES & PARTS	PARK MAINTENANCE
		7.47	CEMENT/PRIMER PVC		153392	K06194	6302.6250		OTHER SUPPLIES & PARTS	SOLID WASTE OPERATIONS
		.48-			153392	K06194	9999.2415		MN SALES TAX DUE	CASH COMPANY
		11.97	PAINT BRUSHES		153393	K06207	6502.6250		OTHER SUPPLIES & PARTS	WATER UTILITY EXPENSE
		8.99	TOLIET REPAIR VALVE		153410	K06251	1097.6515		BUILDING REPAIR SERVICE	SWIMMING POOL OPERATIONS
		.53	HAND TOOLS - WRENCHES		153410	K06251	1015.6220		EQUIP SUPPLIES & PARTS	CITY HALL
		.32	HAND TOOLS - WRENCHES		153410	K06251	1050.6220		EQUIP SUPPLIES & PARTS	POLICE ADMINISTRATION
		5.27	HAND TOOLS - WRENCHES		153410	K06251	1060.6220		EQUIP SUPPLIES & PARTS	FIRE SERVICES
		.11	HAND TOOLS - WRENCHES		153410	K06251	1072.6220		EQUIP SUPPLIES & PARTS	STREET MAINTENANCE
		1.36	HAND TOOLS - WRENCHES		153410	K06251	1090.6220		EQUIP SUPPLIES & PARTS	PARK MAINTENANCE
		.97	HAND TOOLS - WRENCHES		153410	K06251	1093.6220		EQUIP SUPPLIES & PARTS	SENIOR CITIZEN SERVICES
		1.08	HAND TOOLS - WRENCHES		153410	K06251	2502.6220		EQUIP SUPPLIES & PARTS	ICE ARENA OPERATIONS EXPENSE
		.97	HAND TOOLS - WRENCHES		153410	K06251	6202.6220		EQUIP SUPPLIES & PARTS	SEWER OPERATIONS EXPENSE
		.32	HAND TOOLS - WRENCHES		153410	K06251	6302.6220		EQUIP SUPPLIES & PARTS	SOLID WASTE OPERATIONS

2/1/2017 -- 2/15/2017

Check #	Date	Amount	Supplier / Explanation	PO #	Doc No	Inv No	Account No	Subledger	Account Description	Business Unit
138926	**2/10/2017**		**100093 PELLICCI HARDWARE & RENTAL**						**Continued...**	
		.22	HAND TOOLS - WRENCHES		153410	K06251	6402.6220		EQUIP SUPPLIES & PARTS	STORM WATER UTILITY OPERATIONS
		11.83	HAND TOOLS - WRENCHES		153410	K06251	6502.6220		EQUIP SUPPLIES & PARTS	WATER UTILITY EXPENSE
		1.99	WARMING HOUSE KEY		153411	K06279	1090.6250		OTHER SUPPLIES & PARTS	PARK MAINTENANCE
		.50	PAD FELT		153411	K06279	1072.6220		EQUIP SUPPLIES & PARTS	STREET MAINTENANCE
		4.99	PAD FELT		153411	K06279	1090.6220		EQUIP SUPPLIES & PARTS	PARK MAINTENANCE
		1.38	PAD FELT		153411	K06279	6202.6220		EQUIP SUPPLIES & PARTS	SEWER OPERATIONS EXPENSE
		1.43	PAD FELT		153411	K06279	6302.6220		EQUIP SUPPLIES & PARTS	SOLID WASTE OPERATIONS
		.39	PAD FELT		153411	K06279	6402.6220		EQUIP SUPPLIES & PARTS	STORM WATER UTILITY OPERATIONS
		1.38	PAD FELT		153411	K06279	6502.6220		EQUIP SUPPLIES & PARTS	WATER UTILITY EXPENSE
		.09-			153411	K06279	9999.2415		MN SALES TAX DUE	CASH COMPANY
		3.98	PAINT BRUSHS		153518	K06229	6502.6250		OTHER SUPPLIES & PARTS	WATER UTILITY EXPENSE
		195.16								
138927	**2/10/2017**		**100032 PEPSI COLA COMPANY**							
		117.80	POP ORDER		153421	30260959	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		150.40	POP ORDER		153467	30260958	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		268.20								
138928	**2/10/2017**		**113797 PERFORMANCE PLUS LLC**							
		10,800.00	2016 FD CARDIAC STRESS TESTS		153308	4569 LF	1060.6401		PROFESSIONAL SERVICES	FIRE SERVICES
		10,800.00								
138929	**2/10/2017**		**100034 PHILLIPS WINE AND SPIRITS INC**							
		875.66	WINE ORDER		153443	2112077	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		1,009.67	LIQ, SPIRITS ORDER		153444	2112076	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		355.52	WINE ORDER		153489	2112120	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		1,936.52	LIQ, SPIRITS ORDER		153490	2112119	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		369.32	WINE ORDER		153499	2115751	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		1,009.63	LIQ, SPIRITS ORDER		153500	2115750	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		1.51	PHILLIPS VODKA		153501	2115618	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		5,557.83								
138930	**2/10/2017**		**113039 PIRTEK BURNSVILLE**							
		445.64	HYDRAULIC HOSE GRADER		153290	S2420463.001	1073.6230		VEHICLE SUPPLIES & PARTS	SNOW REMOVAL SERVICES
		445.64								
138931	**2/10/2017**		**110373 PITNEY BOWES INC**							
		87.54	POSTAGE METER INK		153318	1003068474	1010.6445		POSTAGE	ADMINISTRATION
		87.54								

2/1/2017 -- 2/15/2017

Check #	Date	Amount	Supplier / Explanation	PO #	Doc No	Inv No	Account No	Subledger	Account Description	Business Unit
138932	**2/10/2017**		**100125 R&R SPECIALTIES OF WISCONSIN INC**						**Continued...**	
		54.00	ZAMBONI BLADE SHARPENING		153287	0061529-IN	2502.6401		PROFESSIONAL SERVICES	ICE ARENA OPERATIONS EXPENSE
		54.00								
138933	**2/10/2017**		**115472 REYNOLDS, LAURIE M**							
		159.79	REF UTIL CR@ 20643 CYPRESS D		153417	20643 CYPRESS DR	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		159.79								
138934	**2/10/2017**		**112561 RICOH USA, INC**							
		963.43	FEB-MAR COPIER LEASES		153413	98216248	1010.6555		RENTAL OF EQUIPMENT	ADMINISTRATION
		963.43								
138935	**2/10/2017**		**100357 RIVERTOWN NEWSPAPER GROUP**							
		6.60	JAN DT LIQ STR NEWSPAPER SALES		153507	57074	6110.5502		COST OF GOODS SOLD	DOWNTOWN LIQUOR REV & EXP
		34.32	JAN PK LIQ STR NEWSPAPER SALES		153508	57067	6115.5502		COST OF GOODS SOLD	PILOT KNOB LIQUOR
		40.92								
138936	**2/10/2017**		**109722 RJM DISTRIBUTING INC**							
		109.90	NORTH LAKE BEER ORDER		153433	IND012630	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		109.90								
138937	**2/10/2017**		**110990 SCHINDLER ELEVATOR CORPORATION**							
		587.55	FEB-APR'17 ELEVATOR CONTRACT		153403	8104457511	1015.6401		PROFESSIONAL SERVICES	CITY HALL
		587.55								
138938	**2/10/2017**		**113375 SEECLICKFIX**							
		5,000.00	2/17 - 1/18 SEECLICKFIX		153415	2016-990	7400.6505		EQUIPMENT REPAIR SERVICE	INFORMATION TECHNOLOGY
		5,000.00								
138939	**2/10/2017**		**107018 SHAMROCK GROUP**							
		80.40	ICE CUBES		152795	2080748	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		80.40								
138940	**2/10/2017**		**112051 SOUTHERN GLAZER'S OF MN**							
		4,166.07	LIQ, SPIRITS ORDER		153432	1503641	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		5.12	CAVIT PINOT GRIGIO		153478	1503636	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		4,634.94	LIQ, SPIRITS ORDER		153479	1503635	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		1,023.17	ABSOLUTE VODKA ORDER		153502	1506087	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		9,829.30								

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138941	**2/10/2017**		**103452 SPARTAN PROMOTIONAL GROUP INC**						**Continued...**	
		2,070.48	MAGNET CLIPS		153368	534197	6502.6570		PROGRAMMING EXPENSE	WATER UTILITY EXPENSE
		2,070.48								
138942	**2/10/2017**		**100100 STREICHER'S**							
		7,684.00	PD FIREARMS SUPPRESSORS		153313	I1246407	5602.6950.50		MACHINERY & EQUIPMENT-POLICE	GEN CAPITAL EQUIP FUND EXPENSE
		7,684.00								
138943	**2/10/2017**		**102071 THE GOODYEAR TIRE & RUBBER COMPANY**							
		3,290.42	TIRE, BALANCE & DISPOSAL		153288	124-1083312	7200.6232		VEHICLE TIRES	FLEET OPERATIONS
		289.58	TIRES FOR TRUCK #4798		153292	124-1083299	7200.6232		VEHICLE TIRES	FLEET OPERATIONS
		289.58-	RETURN - WRONG TIRES		153293	124-1083323	7200.6232		VEHICLE TIRES	FLEET OPERATIONS
		3,290.42								
138944	**2/10/2017**		**100336 TOM'S MOBILE LOCK SERVICE**							
		75.00	WARMING HOUSE LOCK REPAIR		153325	20170130	1090.6515		BUILDING REPAIR SERVICE	PARK MAINTENANCE
		75.00								
138945	**2/10/2017**		**109522 TRI-STATE BOBCAT INC**							
		895.03	TOOLCAT GAUGE PANEL		153374	P69922	1090.6230		VEHICLE SUPPLIES & PARTS	PARK MAINTENANCE
		353.11	VALEO STARTER		153376	P69827	1090.6230		VEHICLE SUPPLIES & PARTS	PARK MAINTENANCE
		1,248.14								
138946	**2/10/2017**		**100598 TROPHY HOUSE INC, THE**							
		376.00	FD AWARDS BANQUET PLAQUES		153310	62849	4302.6470		TRAINING & SUBSISTANCE	FIRE RELIEF
		376.00								
138947	**2/10/2017**		**111799 UNIVERSITY OF MINNESOTA**							
		200.00	MAR'17 SHADE TREE SHORT COURSE		153285	CF0583 LARSON	1090.6470		TRAINING & SUBSISTANCE	PARK MAINTENANCE
		200.00	MAR'17 SHADE TREE SHORT COURSE		153286	CF0583 PROVOST	1090.6470		TRAINING & SUBSISTANCE	PARK MAINTENANCE
		200.00	MAR'17 SHADE TREE SHORT COURSE		153297	CF0583 DULLUM	1076.6470		TRAINING & SUBSISTANCE	NATURAL RESOURCES
		200.00	MAR'17 SHADE TREE SHORT COURSE		153305	CF0583 WALTMAN	1076.6470		TRAINING & SUBSISTANCE	NATURAL RESOURCES
		200.00	MAR'17 SHADE TREE SHORT COURSE		153306	CF0583 OLSON	1076.6470		TRAINING & SUBSISTANCE	NATURAL RESOURCES
		1,000.00								
138948	**2/10/2017**		**100140 US BANK TRUST N A**							
		450.00	2017 TRUSTEE FEES		153418	4535315	3098.7130		FISCAL AGENT FEES	2010B GO UTIL REV RFNDING BD
		425.00	2017 TRUSTEE FEES		153419	4529129	3091.7140		LEGAL & FISCAL FEES	2013A GO IMP REFUNDING BONDS
		450.00	2017 TRUSTEE FEES		153420	4535314	3097.7130		FISCAL AGENT FEES	2010A PBLC PROJECT REFUND BD
		1,325.00								

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Check #	Date	Amount	Supplier / Explanation	PO #	Doc No	Inv No	Account No	Subledger	Account Description	Business Unit
138949	**2/10/2017**		**113413 VERIZON WIRELESS**						**Continued...**	
		124.53	DEC'16 VERIZON BILL		153454	9777862055	1031.6412		CELLULAR PHONES	BUILDING INSPECTIONS
		119.60	DEC'16 VERIZON BILL		153454	9777862055	1070.6412		CELLULAR PHONES	ENGINEERING SERVICES
		120.64	DEC'16 VERIZON BILL		153454	9777862055	1060.6412		CELLULAR PHONES	FIRE SERVICES
		1,241.78	DEC'16 VERIZON BILL		153454	9777862055	1051.6412		CELLULAR PHONES	PATROL SERVICES
		330.99	DEC'16 VERIZON BILL		153454	9777862055	1090.6412		CELLULAR PHONES	PARK MAINTENANCE
		86.86	DEC'16 VERIZON BILL		153454	9777862055	1094.6412		CELLULAR PHONES	PARK & RECREATION ADMIN
		19.89	DEC'16 VERIZON BILL		153454	9777862055	1011.6412		CELLULAR PHONES	HUMAN RESOURCES
		90.88	DEC'16 VERIZON BILL		153454	9777862055	6202.6412		CELLULAR PHONES	SEWER OPERATIONS EXPENSE
		119.34	DEC'16 VERIZON BILL		153454	9777862055	6302.6412		CELLULAR PHONES	SOLID WASTE OPERATIONS
		90.88	DEC'16 VERIZON BILL		153454	9777862055	6502.6412		CELLULAR PHONES	WATER UTILITY EXPENSE
		39.78	DEC'16 VERIZON BILL		153454	9777862055	7200.6412		CELLULAR PHONES	FLEET OPERATIONS
		50.66	DEC'16 VERIZON BILL		153454	9777862055	7400.6412		CELLULAR PHONES	INFORMATION TECHNOLOGY
		2,435.83								
138950	**2/10/2017**		**108808 VINOCOPIA**							
		132.00	BEER ORDER		153447	0172614-IN	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		132.00								
138951	**2/10/2017**		**113123 WATERMARK TITLE AGENCY, LLC**							
		130.56	REF UTIL CR @ 19248 ENGLISH AV		153398	19248 ENGLISH AVE	6200.1310.3		REFUND CIS	SEWER OPERATIONS
		130.56								
138952	**2/10/2017**		**100334 WINE MERCHANTS**							
		74.00	LIQ, SPIRITS ORDER		153446	7118822	6100.1405.15		INVENTORY- PILOT KNOB	LIQUOR OPERATIONS
		185.02	WINE ORDER		153491	7119494	6100.1405.10		INVENTORY- DOWNTOWN	LIQUOR OPERATIONS
		259.02								
138953	**2/10/2017**		**115011 WOOTON, GINA**							
		20.16	MILEAGE FOR CJN MEETING		153533	20170120 - WOOTON	1050.6485		MILEAGE REIMBURSEMENT	POLICE ADMINISTRATION
		20.16								
138954	**2/10/2017**		**110868 ZEROREZ - MPLS**							
		368.51	FD STAT #2 CARPET CLEANING		153400	341876	1060.6401		PROFESSIONAL SERVICES	FIRE SERVICES
		368.51								
		568,271.43	Grand Total							

Payment Instrument Totals

Checks	568,271.43

2/1/2017 -- 2/15/2017

Check #	Date	Amount	Supplier / Explanation	PO #	Doc No	Inv No	Account No	Subledger	Account Description	Business Unit
		568,271.43	Grand Total							

Payment Instrument Totals

Checks	568,271.43
Total Payments	568,271.43

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Tony Wippler, Planning Manager

SUBJECT: Seed/Genstar Final AUAR and Mitigation Plan Update - Fairhill

DATE: February 21, 2017

INTRODUCTION

The city of Farmington and Stantec have recently completed the 2016 Seed/Genstar Final AUAR and Mitigation Plan Update and are requesting the city council review and approve the document.

DISCUSSION

An Alternative Urban Areawide Review (AUAR) is a planning tool that local governments can use to understand how different development scenarios will affect the environment of their community before the development occurs. The process is designed to look at the cumulative impacts of anticipated development scenarios within a given geographical area. The environmental analysis and information from an AUAR can be used to inform local planning and zoning decisions.

The original AUAR for the Seed/Genstar property was approved on January 20, 2004 with an update completed on August 21, 2006. A second update was approved by the city council on August 15, 2011. Section 4410.3610 of the EQB Rules states a review of the AUAR must be updated every 5 years until all development in the area has been approved. Due to this requirement a third update to the original AUAR has been completed and is ready for review and approval by the city council.

An update need not start "from scratch," but rather needs to only revise information in the original documents to the extent necessary to reflect changes that have occurred since the previous updates. The revisions required in the 2016 AUAR update are shown in bold throughout the document.

The following is a general synopsis of the major revisions included in the 2016 Update:

- Sections were included in the 2016 Update to address the EQB's 2013 EAW Guidelines that recommend analysis of additional topics that were not included in the previous updates. These topics include evaluating the proposed development scenario for consistency with nearby existing uses, nearby zoning, and relevant land use plans.
- The Fish, Wildlife and Sensitive Resources section was updated to include information on known occurrences of rare species and natural communities within 1 mile of the study area and updated the mitigation plan in accordance.
- The Solid Wastes; Hazardous Wastes; Storage Tanks section was updated to include current statistics for solid waste generation within the community. This section was also updated to include information on on-site or nearby potential sources of contamination or environmental hazards.

- Updates to the Traffic section include analyzing traffic forecasts for the year 2036 and amending the text as appropriate.
- The Vehicle-Related Air Emissions section was updated to reflect changes to the air quality analysis that have occurred since the 2011 update.
- The Nearby Resources section was updated to include language regarding the Dakota County Poor Farm, an archaeological site (21DK0076) that was found along the ridge line towards the center of the property, Jim Bell Park and Preserve, and the North Creek Greenway Master Plan.

A draft of the attached document was provided to the EQB and reviewing agencies for a 10-day comment period. Comments were received from the following agencies:

- Minnesota Department of Administration State Archaeologist
- Minnesota Historical Society
- Minnesota Department of Natural Resources
- Dakota County
- Minnesota Department of Transportation

No objections to the AUAR were filed and all comments received were acknowledged and included in the document where appropriate.

BUDGET IMPACT

NA

ACTION REQUESTED

1. Review the 2016 Seed/Genstar Final AUAR and Mitigation Plan Update.
2. Ask questions and/or seek clarification (if needed).
3. Adopt the attached resolution recommending that the city council approve the 2016 Seed/Genstar Final AUAR and Mitigation Plan Update.

ATTACHMENTS:

Type	Description
Backup Material	2016 Seed/Genstar AUAR and Mitigation Plan Update
Resolution	AUAR Resolution

Farmington Seed/Genstar Alternative Urban Areawide Review (AUAR) Update

City of Farmington
February 2017

Prepared by:

Stantec

193803747

Farmington Seed/Genstar AUAR
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(corresponding to EAW Form) *Page No.*

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Farmington Seed/Genstar Alternative Urban Areawide Review (AUAR) Update

Note to Reviewers *This is an Update to the Seed/Genstar AUAR. The Final Seed/Genstar AUAR was adopted in January 2004. An update to this document was approved July 17, 2006 to address changes in land use and transportation networks. A subsequent five-year update was adopted by the City of Farmington on August 15th, 2011.*

This update meets the mandatory update requirements of Minnesota Rule 4410.3610, Subpart 7. **Analysis that has been updated since the 2011 Update is indicated in bold Century Gothic type throughout the document.**

Comments on this Alternative Urban Areawide Review (AUAR) Update should be submitted to the City of Farmington (See Item 3) during the 10-day Objection Period following receipt of the AUAR Update document. *A copy of any letter of objection must be filed with the EQB staff as well. An objection may be filed only if the agency filing the objection has evidence that the revised document contains inaccurate or incomplete information relevant to the identification and mitigation of potentially significant environmental impacts or that the proposed plan for mitigation will be inadequate to prevent potentially significant environmental impacts from occurring (Minnesota Rule 4410.3610, Subpart 5D.)*

1. *Project Title*

Farmington Seed/Genstar AUAR Update

2. *Proposer*

Proposer	*City of Farmington*
Contact Person	Adam Kienberger, Community Development Dept.
Address	430 Third Street Farmington, MN 55024
Phone	(651) 280-6820
Fax	(651) 280-6839
Email address	akienberger@ci.farmington.mn.us

3. *RGU*

RGU	City of Farmington
Contact Person	Adam Kienberger, Community Development Dept.
Address	430 Third Street Farmington, MN 55024
Phone	(651) 280-6820
Fax	(651) 280-6839
Email address	akienberger@ci.farmington.mn.us

4. *Reason for EAW Preparation*

(technically not applicable to an AUAR)

5. *Project Location*

Sections (all or portion):	Sections 7, 18 and 19 of T. 114N, R. 20W
County:	Dakota
City/Township:	Farmington. (The AUAR Study Area was annexed by Farmington from Empire Township in two stages in 2006 and 2007. Farmington has acted as the RGU since the original AUAR was produced in 2004.)

Attach copies of each of the following to the EAW/AUAR:

- ***a.*** *Copy(ies) of USGS 7.5 minute, 1:24:000 scale map (photocopy is OK) indicating the project boundaries;*
- ***b.*** *Maps of the following:*
  1) *a map clearly depicting the boundaries of the AUAR and any subdistricts used in the AUAR analysis*
  2) *land use and planning and zoning maps as required in conjunction with items 9 and 28; and*
  3) *a cover type map as required by item 10.*

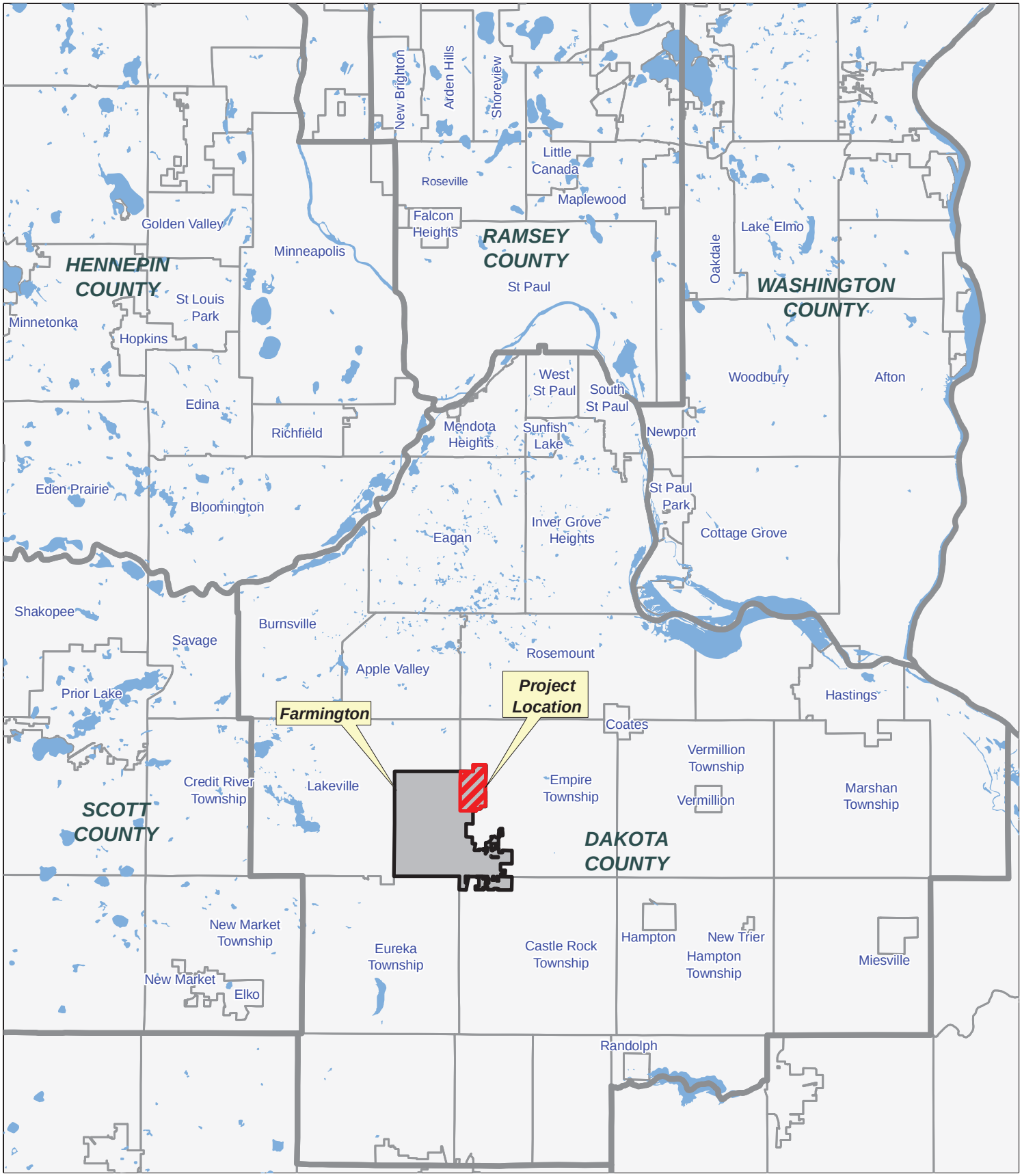
Additional maps may be included throughout the document wherever maps are useful for displaying the relevant information.

The maps listed below are included on the pages that follow:

- Figure 5-1. Project Location: A map indicating the project location and its regional context.
- Figure 5-2. Project Boundaries**:** A map depicting the project boundary of the Farmington Seed/Genstar AUAR Update.
- **Figure 5-3.** Existing Zoning**:** A map showing current zoning in and around the AUAR Study Area.
- **Figure 5-4.** Existing Land Use**:** A map showing current land use in and around the AUAR Study Area.

- Figure 5-5. Proposed Land Use, Seed Genstar AUAR—January, 2004**:** A map showing proposed land use in and around the AUAR Study Area in the original AUAR.
- Figure 5-6. Proposed Land Use, 2030 Comprehensive Plan-2008 Update.

Additional maps are provided throughout the document as needed to display relevant information for each issue.



Bonestroo

Miles

5 0 5

City of Farmington

Seed-Genstar

AUAR-Update

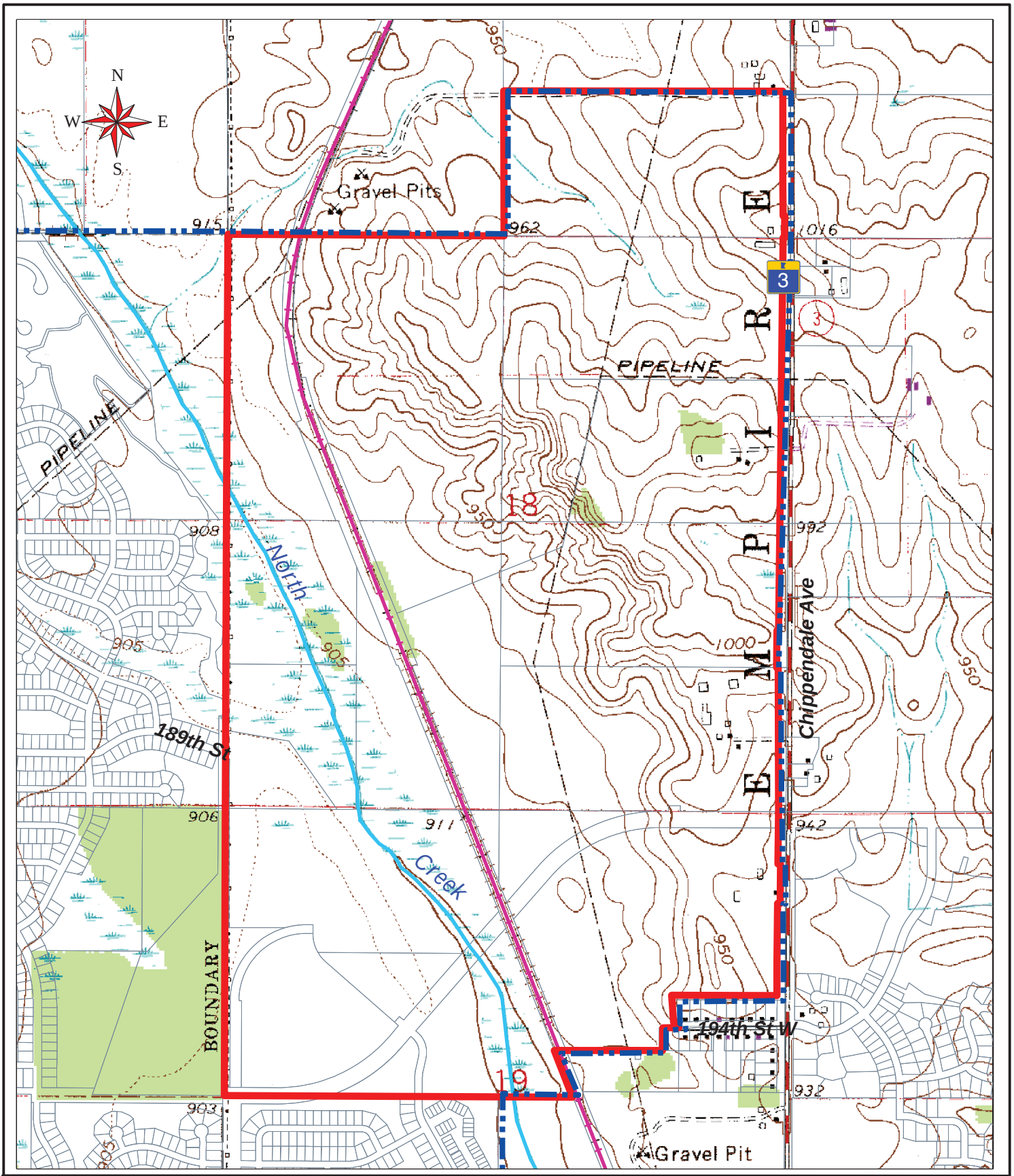
PROJECT LOCATION

Figure 5-1

Study Area Boundary
City of Farmington
County Boundary

June 2011

K:\141\141113330\GIS\Projects\Fig 5-1 Project Location.mxd



Bonestroo

Feet

1,200 0 1,200

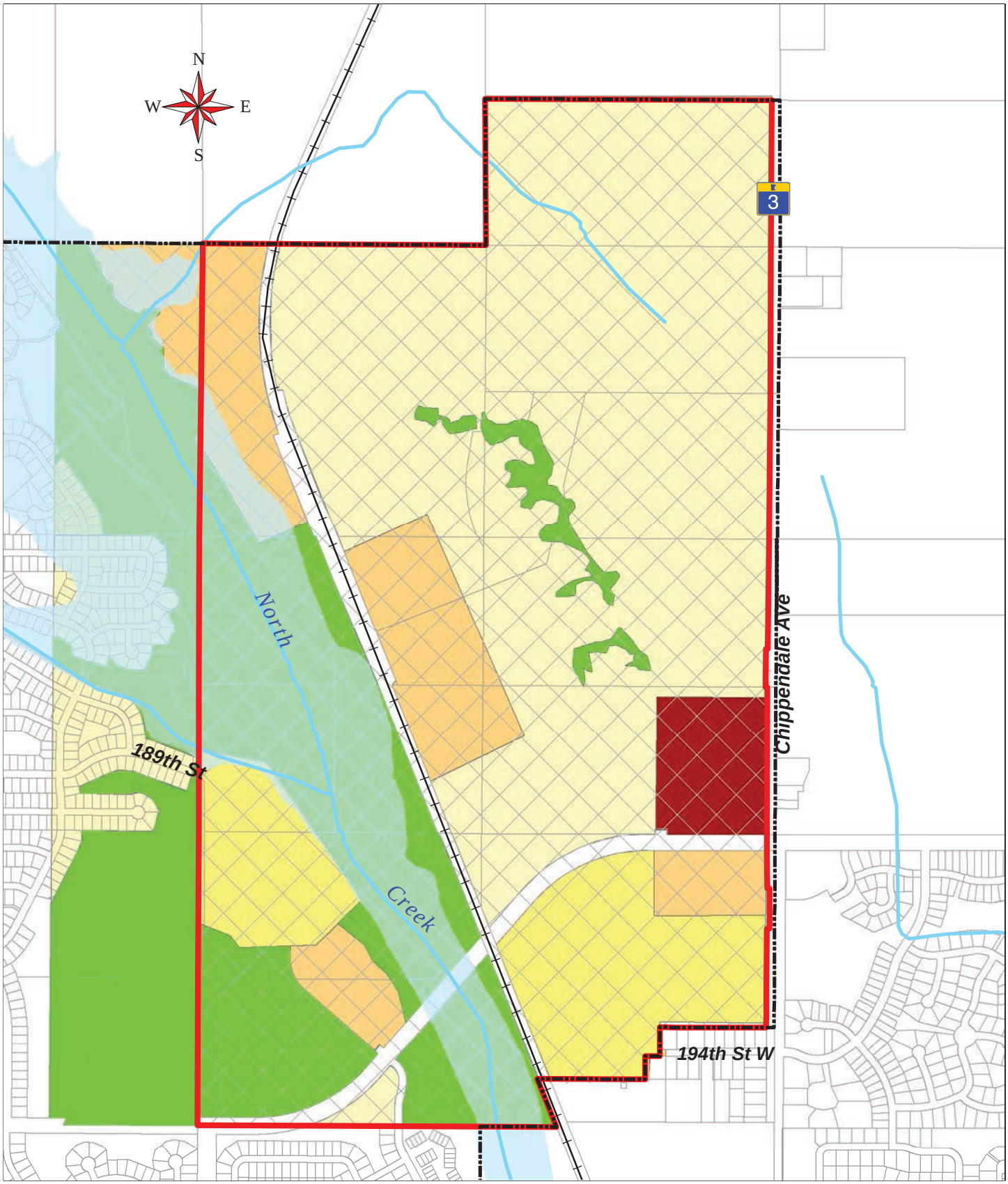
City of Farmington
Seed-Genstar
AUAR-Update

Project Boundary with USGS

Figure 5-2

Study Area Boundary
City Boundary
Railroad
Parcel Base Map

June 2011
K:\141\141113330\GIS\Projects\Fig 5-2 Project Boundary.mxd



Stantec

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

AUAR-Update

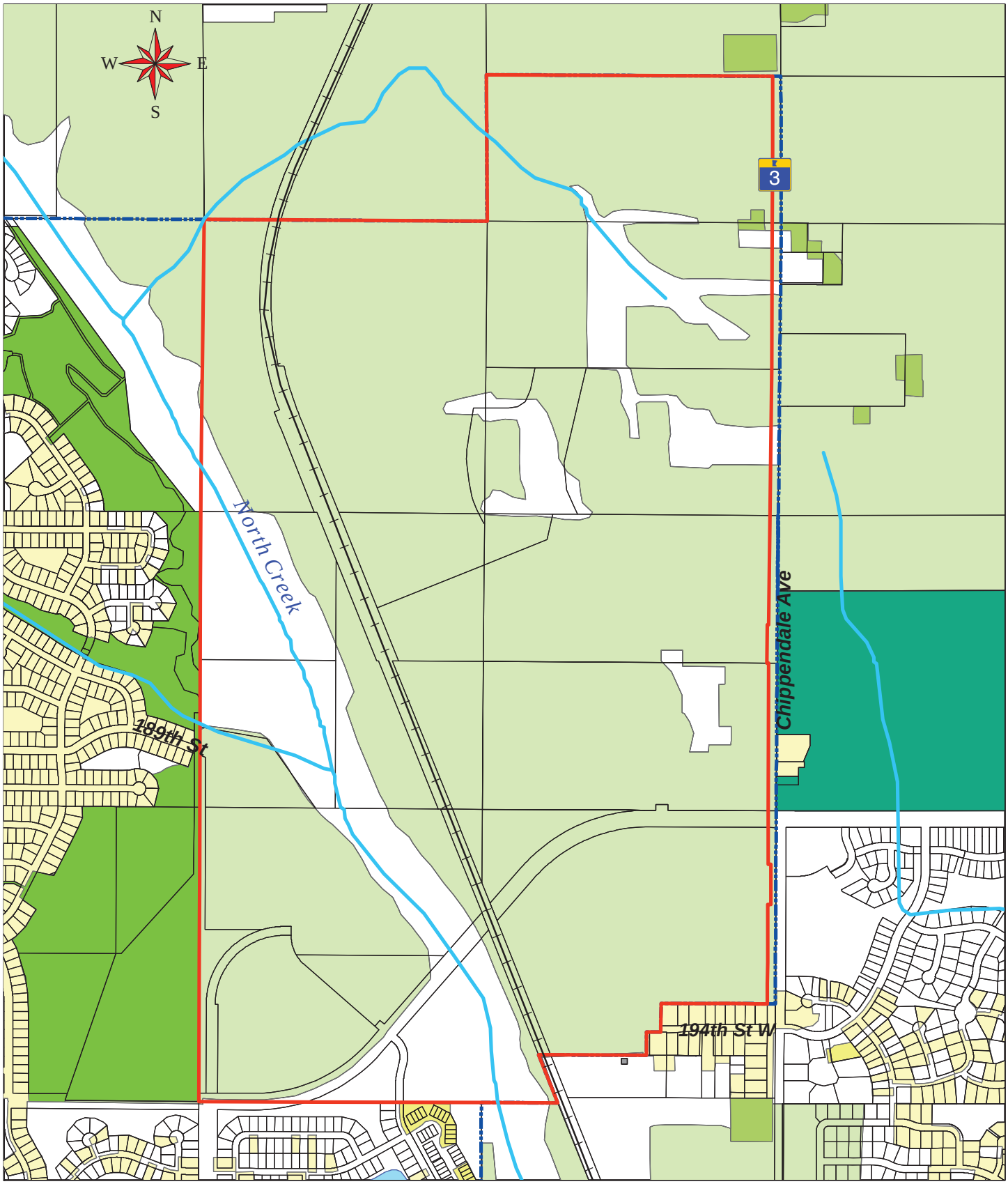
Existing Zoning

Figure 5-3

- R-1, Low Density Residential
- R-2, Low/Medium Density Residential
- R-3, Medium Density Residential
- Mixed Use (Commercial/Residential)
- P/OS, Park/Open Space
- Planned Unit Development (PUD)
- 100-Year Floodplain
- Study Area Boundary
- City Boundary
- Railroad
- Parcel Base Map

November 2016

V:\1938\active\193803747\GIS\Projects\Fig 5-3 Zoning.mxd



Stantec

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

AUAR-Update 2016

Existing Land Use

Figure 5-4

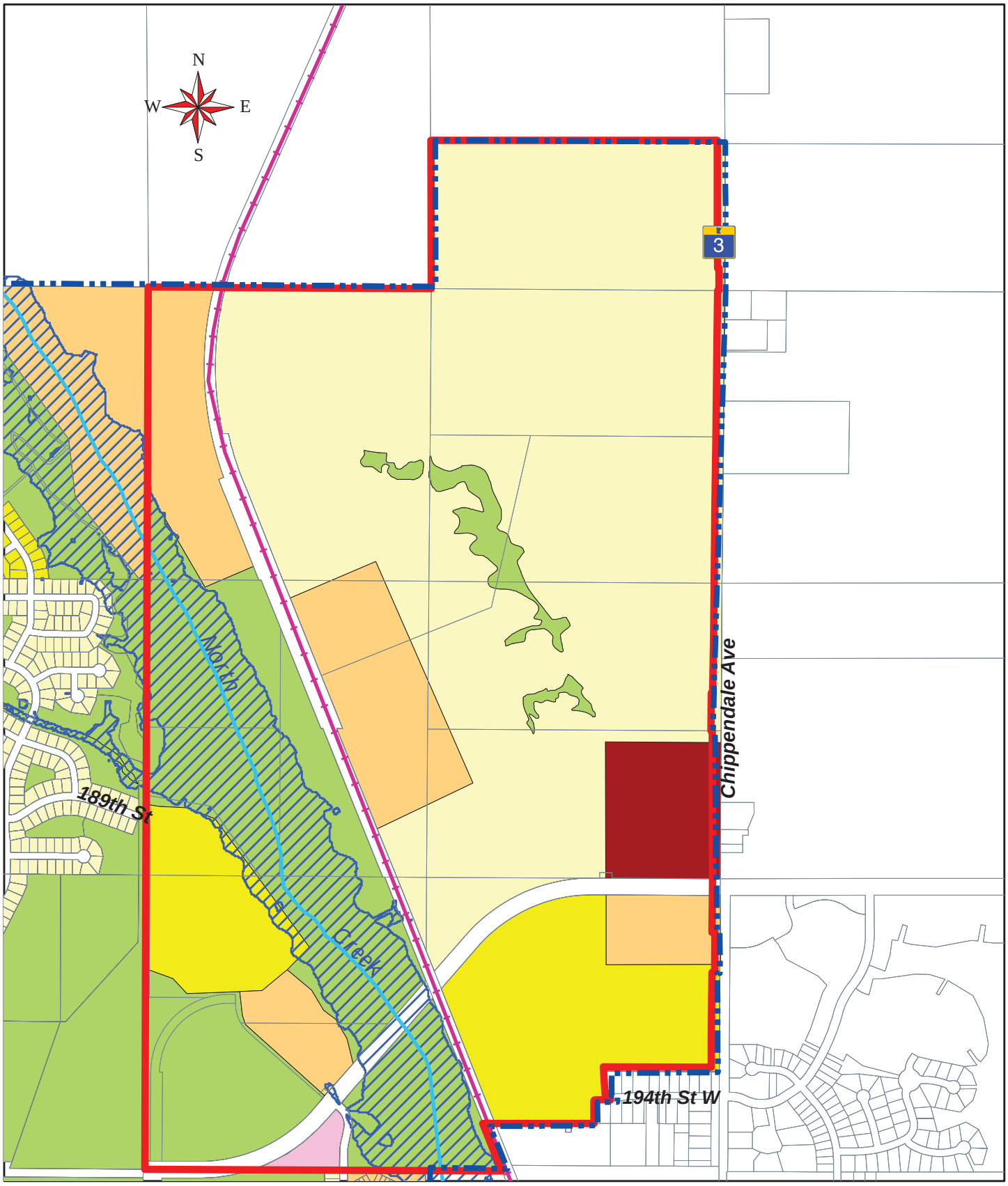
AUAR Area
City Boundary
Parcels

Land Use

Agricultural
Farmstead
Golf Course
Industrial and Utility
Mixed Use Industrial
Open Water
Park, Recreational, or Preserve
Single Family Attached
Single Family Detached
Undeveloped

November 2016

V:\1938\active\193803747\GIS\Projects\Fig 5-4 ExistingLandUse.mxd



Bonestroo

Feet

1,200 0 1,200

City of Farmington
Seed-Genstar
AUAR-Update

Proposed Land Use Updated

Figure 5-6

- Low Density (1.0-3.5 du/ac)
- Low/Medium (3.5-6.0 du/ac)
- Medium Density (6.0-12.0 du/ac)
- Mixed Use (Commercial/Residential)
- Park/Open Space
- Public/Semi-Public
- 100-Year Floodplain
- Study Area Boundary
- City Boundary
- Railroad
- Parcel Base Map

June 2011

K:\141\141113330\GIS\Projects\Fig 5-6 Proposed Land Use Updated.mxd

6. *Description*

AUAR replaces the EAW format with a description of:

- *The anticipated types and intensity (density) of residential and non-residential development throughout the AUAR area.*
- *Infrastructure planned to serve development (roads, sewers, water, stormwater system, etc.) Roadways intended primarily to serve as adjoining land uses within an AUAR are normally expected to be reviewed as part of an AUAR. More "arterial" types of roadways that would cross an AUAR area are an optional inclusion in the AUAR analysis; if they are included, a more intensive level of review, generally including an analysis of alternative routes, is necessary.*
  Information about the staging of various developments, to the extent known, and of the infrastructure, and how the infrastructure staging will influence the development schedule.

a. *Anticipated types and intensity (density of residential, commercial/warehouse and light industrial development) throughout the AUAR area:*

Introduction

The Seed/Genstar Alternative Urban Areawide Review (AUAR) encompasses approximately 965 acres in the northeast corner of the City of Farmington. The area is mostly undeveloped farmland with North Creek bisecting the property from the northwest to the southeast. The topography is relatively flat in the western portion of the property along the North Creek floodplain and provides rolling topography towards the east. The landowner for the property is Seed Family Trust and Finnegan.

The development scenario analyzed in this AUAR consists of mostly single-family residential land use with interspersed pockets of multi-family residential and a small mixed-use commercial/residential area at the northwest corner of 195th and TH3.

The State of Minnesota Municipal Board approved an orderly annexation agreement between Farmington and Empire Township in May of 1999. In 2006, 520.22 acres of this property were approved for annexation. On February 15, 2007, the remaining 445 acres, including the CP railroad were annexed. The property was in agricultural preserve until the designation expired in 2001. The property was granted MUSA status during the City's MUSA allocation process.

The current zoning and land use classifications for the AUAR study area and surrounding neighborhoods are shown on Figures 5-3 and **5-4** respectively.

Figure 5-5 identifies the proposed land use for the site that was used for the AUAR analysis in 2003-4. Figure 5-6 identifies the revised land use plan analyzed **in both the 2011 Update and this 2016 Update**, matching the 2030 Comprehensive Plan. The acres of each proposed

land use type remained approximately the same between the 2004 Final AUAR and the 2030 Comprehensive Plan. Changes included in the comprehensive plan are the following:

- Medium-density residential and commercial designations remain the same in size, but some areas were shifted in location to the south, to the area along the completed 195th Street.
- The extension of 195th Street has been completed. This was a collaborative project by the developer/property owner, City and Dakota County, to provide the east/west connection for 195th Street to TH 3. The Comprehensive Plan also discusses a potential extension of Diamond Path Road through the AUAR area. While Diamond Path is included in the AUAR, City Staff will continue to review the feasibility of the road as this project moves forward.
- The developer has dedicated 42 acres for a youth athletic complex proposed at the southwest corner of the property.

Mixed-Use Commercial/Residential area is proposed at the northwest corner of 195th Street and TH 3 because of the accessibility potential in this area. The mixed-use commercial/residential area is intended to include neighborhood commercial uses that support the area residents and can be easily accessible by walking or through short vehicle trips, **should such uses prove feasible**.

The final land use proposed for the study area is the natural open space that consists of the North Creek and its floodplain. This use is unchanged from the original AUAR. This use will assist in buffering the low and medium-density residential areas from the rail line, will preserve important natural resources and habitat connections, will provide natural areas for walking trails and passive recreation, **and may be used for sustained agricultural purposes.**

The Planned Acres for each land use type have not changed since the original AUAR—only the location of these uses shifted after the City adopted its 2030 Comprehensive Plan. The following table indicates existing land use and future planned land use by land area for the AUAR Study Area according to the 2030 Comprehensive Plan:

Land Use Category	**Existing Acres**	**Planned Acres**
Rural Residential	55	0
Agriculture or Vacant (including natural areas and wetlands*)	880	122
Low and Low/Medium Density Residential	0	558
Medium Density Residential	0	120
Mixed Use/Commercial	0	29
Parks**/Rail/ROW	30	136
TOTAL AREA	**965**	**965**

*Includes herbaceous, scrub-shrub and woody wetlands
**Parkland will likely have a combination of cover types, but is included in developed land since it is currently proposed.

The following residential land use designations explain the housing choices for the AUAR Study Area.

- *Low-Density Residential* is established to provide for low-density development with full public utilities in a sequence that will prevent the occurrence of premature scattered urban development. The designation provides for a residential density range is 1.0 to 3.5 units per acre in this designation.

- *Low/Medium Density Residential* will provide for attached and detached townhomes with a density range of 3.5 to 6.0 units per acre.

- *Medium-Density Residential* designates areas for development of townhomes in areas with access to employment, services, public facilities, and transportation corridors and that are served with full public utilities. The designation provides for a residential density range of 6.0 to 12.0.

- *Mixed Use Commercial/Residential* contemplates a comprehensively designed neighborhood development with a multi-family component.

b. *Infrastructure planned to serve the development (roads, sewers, water, stormwater system, etc.) Roadways intended primarily to serve the adjoining land uses within an AUAR area are normally expected to be a part of an AUAR. More "arterial" types of roadways that would cross an AUAR area are an optional inclusion in the AUAR analysis; if they are to be included, a more intensive level of review, generally including an analysis of alternative routes, is necessary;)*

Roadway Network

The 2004 Seed/Genstar AUAR Update identified the need for an east-west connection through the AUAR Study Area to State Highway 3. The location and design of the connection were conceptual at that time. In January, 2006 the City completed a Feasibility Study that recommended a route and design for the 195th Street extension, and the potential environmental impacts and mitigation.

The City has since completed the extension of 195th Street from its current easterly terminus at Diamond Path Road westerly to Trunk Highway 3. The 195th Street extension connection was completed and open to traffic on September 23rd, 2009. The roadway includes a bridge over North Creek and the Canadian Pacific Railway as a key component of the project. The bridge will minimize environmental impacts to the creek and wetland when compared with other design alternatives for the roadway.

Full buildout of the AUAR study area will increase the traffic volumes on roadways within the site vicinity. The original AUAR traffic analysis indicated the improvements and mitigation strategies that will be needed to accommodate the increased traffic.

Improvements **that may be needed based upon the implications of full buildout** would include widening TH3 to a four-lane section in the area, signalization or roundabout control for several intersections that are currently stop-controlled, and additional lanes or turn lanes on other roadways in the area.

The 2006 Update and the City's Comprehensive Plan includes the potential extension of Diamond Path Road through the AUAR area. While Diamond Path is included in the AUAR, City Staff will continue to review the feasibility of the road as this project moves forward.

Since no development has occurred on the Seed/Genstar property since the 2011 AUAR Update, this 2016 AUAR Update presents analysis of background traffic growth in the year 2036 but assumes the same trip generation from the development as in previous AUAR updates.

Sanitary Sewer System

The study area is not currently served by sanitary sewer. An addendum to the City of Farmington's May 1996 Comprehensive Sewer Policy Plan was prepared in early 2002 that incorporates trunk sewer service to the study area. The proposed trunk sewer system is shown in **Figure 18-1**. It consists primarily of gravity trunk sewers with one lift station and force main.

Metropolitan sewer service will be provided to the study area by the Metropolitan Council Environmental Services (MCES) existing 48-inch Apple Valley Interceptor. This interceptor currently bisects the AUAR study area, which is fully within current MUSA staging areas for the City of Farmington. However, no connecting lines within the AUAR study area have yet been constructed. This interceptor will convey the wastewater to the Empire Wastewater Treatment Plant.

Municipal Water System

The City of Farmington currently has **eight** municipal wells, designed to meet the City's water demands until at least the year **2020**. Water supply trunk lines will be added in the AUAR study area to connect the area to the City's current water supply system. These trunks will range in diameter from 16 to 20 inches. A 5.0-million gallon ground storage water reservoir is proposed within the AUAR study area. This ground storage system is primarily intended to expand the City's water storage capacity to accommodate for peak demand as the community grows. Ultimately, the size of this future storage facility may be adjusted based on actual community growth.

The source of water for the area will be the City of Farmington's current municipal wells completed in the Prairie du Chien-Jordan aquifer. Development of the area will likely require additional pumping of the City's current wells to meet proposed demand, and the water supply system was designed to meet this projected demand.

Stormwater System

Stormwater from the majority of the AUAR study area will drain to North Creek, a tributary of the Vermillion River. Two smaller subwatersheds within the AUAR area drain directly to the Vermillion River. Development in the AUAR study area will be required to meet the most recent permit standards as contained in the NPDES Construction Stormwater General Permit and the city's NPDES MS4 General Permit.

Meeting these standards for the AUAR study area is expected to provide adequate protection to North Creek regarding runoff volume, thermal loads, and other runoff-driven pollutants. Meeting the standards will reduce runoff volume and pollutant loads below those generated by the existing conditions on the site.

Compliance with the MPCA standard requires stormwater best management practices to control run-off volume and associated pollutant loads for the development intensity proposed. These approaches and the stormwater management system for the AUAR area are detailed in Section 17 and the Mitigation Plan.

c. Information about the anticipated staging of various developments, to the extent known, and of the infrastructure, and how the infrastructure staging will influence the development schedule.

The AUAR Study Area has been fully annexed into the City of Farmington and granted MUSA status. The AUAR Study Area is included in a proposed Growth Area identified in the City of Farmington Comprehensive Plan.

The area is expected to be developed as a cohesive Planned Unit Development, however no formal development proposals has been submitted to the City for formal review. Development is expected to be staged over **several** years and will depend on market conditions.

Since the 2011 AUAR Update, no development has occurred in the AUAR area and no development proposals have been submitted to the City for formal review. In 2016, a developer shared concept plans with City staff and indicated his intent to submit formal plans for development within the 90 acres in the southeast corner of the AUAR area currently zoned for a PUD. The concept plan primarily depicts residential uses with a small commercial space and open space used for urban agriculture. The concept plan identifies potential uses within the area as follows:

Concept Plan	
Lots/units	45 acres/ 173-203 units
Open space	26 acres
R/W	17 acres
Commercial	2 acres
Total	±90 acres

The intensity of uses proposed in this concept plan are well below the project magnitudes identified in Section 7. For this reason, and because no formal development plans have

been submitted to the City of Farmington, this concept plan will not be analyzed separately in this AUAR Update.

> ***Note:*** *the RGU must assure that the development described complies with the requirements of 4410.3610, subpart 3, and that it properly orders the AUAR and sets the description in that order as required by that section.*

The City of Farmington has an approved comprehensive plan as required by the referenced rules. The City adopted the Comprehensive Plan in May, 2000. The Metropolitan Council approved the plan in March, 2000. The Farmington City Council adopted an official resolution ordering the AUAR as required on July 15, 2002. The City Council adopted the Final Seed/Genstar AUAR in January, 2004. **In 2009, the City adopted its 2030 Comprehensive Plan, which is the current land use plan guiding growth of the City.**

Consistency with Farmington's Comprehensive Plan

The proposed development is consistent with the Farmington 2030 Comprehensive Plan, and will assist the City to meet the following goals:

1) Provide for low and medium density residential development.
2) Provide for quality controlled growth in stages where major infrastructure improvements are provided to developable areas.
3) Preserve the natural open space as a passive recreational area and extend the City trail system into this area.
4) Maximize preservation of the district's rolling topography and other natural amenities through new subdivision standards that require environmental conservation measures.
5) Design a future commercial center to be pedestrian and neighborhood-oriented in scale and character.
6) Promote only neighborhood-serving commercial uses in well-designed and pedestrian friendly commercial districts along Trunk Highway 3. No commercial strip developments will be permitted.

The following sections are added to this 2016 Update to address the Minnesota Environmental Quality Board's 2013 EAW Guidelines, which recommend analysis of additional topics not included in the 2003/4 AUAR or the 2006 and 2011 Updates. These topics include evaluating the proposed development scenario for consistency with nearby existing uses, nearby zoning, and relevant land use plans.

<u>Consistency with Nearby Land Use</u>

Currently, land surrounding the AUAR study area is used primarily for low density residential uses, park and open space, and agricultural uses. The majority of the AUAR study area is proposed for low and medium density residential uses that are consistent with nearby housing developments. A small portion of the AUAR study area near 195th Street and Chippendale Avenue (TH 3) is proposed for mixed use or commercial development. This is intended to serve nearby residences. A mixed use commercial residential development is proposed in the AUAR study area along TH 3, intended to provide commercial opportunities serving new and existing residential neighborhoods.

The Jim Bell Park and Preserve is located on the western border of the AUAR area and the City intends to expand this park eastward into the AUAR area in the future. Compatibility with this resource is discussed further in Section 25.

Consistency with Nearby Zoning

Currently, land around the AUAR study area is zoned for low and medium density residential uses as well as park and open space. The proposal of additional low and medium density residential units to the AUAR study area is consistent with zoning surrounding the site. Proposed development of the AUAR study area also includes a mixed use commercial/residential district. Mixed use commercial/residential districts are intended to provide high quality, comprehensively designed commercial neighborhood development with a multi-family component. The inclusion of this land use in the AUAR study area allows for a mix of housing types and uses that will support community residents.

The AUAR area is also included in a Planned Unit Development (PUD) overlay. This PUD was submitted by Newland Communities and approved in 2008 by the City of Farmington. The PUD incorporates a mix of single family and multifamily residential, mixed uses and park and open space. Since approval of the PUD, no development has occurred on the site.

All zoning districts, including the PUD overlay are illustrated in Figure 5-3 Zoning.

Consistency with the Jim Bell Park and Preserve Master Plan

A master plan for the southwestern most corner of the AUAR area has been developed as an expansion of the Jim Bell Park and Preserve (see Figure 6-1). The master plan calls for new recreational fields, a warming house, and an integrated trail network. Proposed development in the AUAR area for low and medium density residential development and associated park space are consistent with this master plan. The planned park expansion would serve new and existing neighborhood residents.

Provide a 50 or fewer word abstract for EQB Monitor notice:

The Farmington Seed/Genstar AUAR study area is located on approximately 965 acres in the City of Farmington, in Dakota County, Minnesota. The City will act as the RGU for the AUAR Update. This document updates the AUAR adopted in January 2004, with subsequent updates in 2006 and 2011, and includes an updated Mitigation Plan.

City of Farmington

Seed-Genstar

AUAR-Update 2016

Jim Bell Park and Preserve Master Plan

Figure 6-1

November 2016

7. Project Magnitude Data

The cumulative totals of the parameters called for should be given for each major development scenario.

One development scenario is proposed for this AUAR. The cumulative totals for the proposed development are as follows:

Cumulative Development Totals –

The following table represents projected cumulative development totals for the AUAR Study Area. These totals are based on policies and standards as established within the City of Farmington Comprehensive Plan and Zoning Ordinance.

TOTAL PROJECT ACREAGE	**965 Acres**	
Number of Residential Units (3,896 total units max.)	1,666 Attached (maximum)	2,230 Detached (maximum)
Maximum Units Per Building	Varies	
Mixed Use Commercial Building Area (Retail)	254,000 square feet	
Maximum Building Height	Residential: 35’ (3 stories) Commercial: 45’ (4 stories)	

8. *Permits and Approvals Required*

List all known local, state and federal permits, approvals, and funding required. A list of major approvals likely to be required by the anticipated types of development projects should be given. This list will help orient reviewers to the idea that the AUAR process is only one piece of the regulatory framework that will protect environmental resources. The list can also serve as a starting point for the development of the implementation aspects of the mitigation plan to be developed as part of the AUAR.

TABLE 8-1 REQUIRED PERMITS

Unit of Government	*Type of Application*
City of Farmington	Preliminary Plat Approval, Final Plat Approval Planned Unit Development (PUD) Permit, Grading Permits, Water Connection Permits, Building Permits, Wetland Conservation Act Permits and Approvals
Dakota County	County Roadway Access Permits Contiguous Plat Review **Private Well Construction and Sealing Permits**
Metropolitan Council/Envir. Services	Tier 2 Sewer Plan, Sanitary Sewer Extension Permit
Minnesota Pollution Control Agency	Air Emission Facility Permits Indirect Source Permit (ISP), 401 Grading Permit, 401 Water Quality Permit, NPDES Permit, Storm Water Permit, Sanitary Sewer Permit, Wastewater Permit
Minnesota Department of Health	Water Main Plan Review Water main construction permit Wellhead Protection Plan **Municipal Well Permitting**
Minnesota Dept. of Natural Resources	Protected Waters Permit Water Appropriation Permit[1] Dewatering permit and utilities permit
Minnesota Dept. of Transportation	State Highway Access Permits U.S. Army Corps of Engineers Individual 404 Permit, Letter of Permission for Wetland Impacts
Vermillion River Watershed JPO	Grading and Stormwater Permits Review

[1] The following is a list of activities that may occur in the AUAR area requiring a water appropriation permit: building, utility, or water main construction dewatering; irrigation; or stormwater reuse of greater than 10,000 gallons/day or 1,000,000 gallons/year.

9. *Land Use*

Describe the current and recent past land use and development on the site and on adjacent lands. Discuss the compatibility of the project with adjacent and nearby land uses; indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazard due to past land uses, such as soil contamination or abandoned storage tanks.

Item 9 is covered by items 5, 6, 20 and 28. See items 5, 6, 20 and 28.

10. Cover Types

The following information should be provided:

a. *a cover type map, at least at the scale of a USGS topographic map, depicting:*

- *wetlands – identified by type (Circular 39)*
- *watercourses—rivers, streams, creeks, ditches*
- *lakes—identify protected water status and shoreland management classification*
- *woodlands—identify native and old field*
- *cropland*
- *current development*

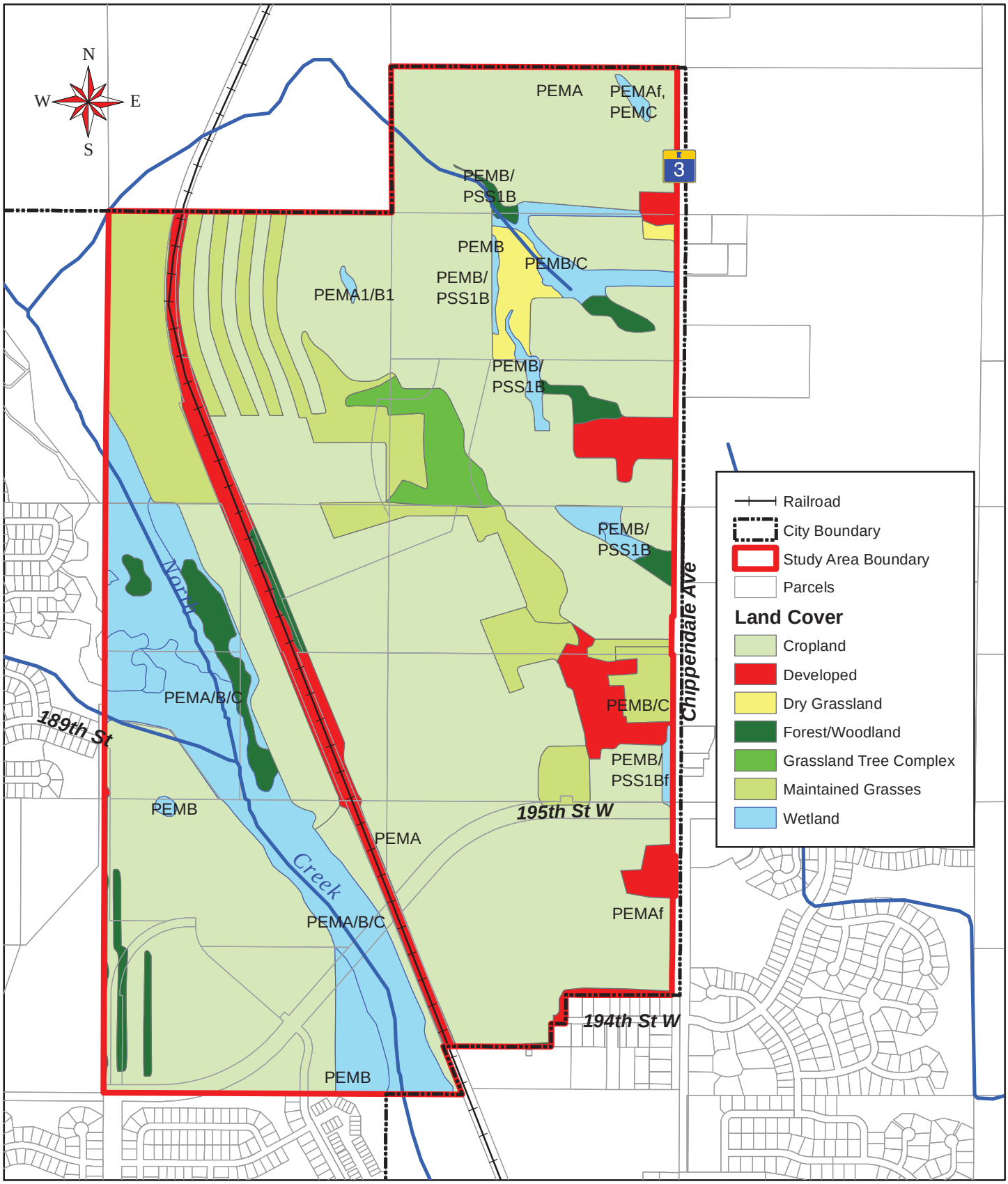
b. *an "overlay" map showing anticipated development in relation to the cover types; this map should also depict any "protection areas", existing or proposed, that will preserve sensitive cover types. Separate maps for each major development scenario should generally be provided.*

The generalized breakdown of cover types before and after development is shown on the chart that follows. The location of cover types is shown in **Figure 10-1**.

COVER TYPES

Cover Type	Acres	
	Before	**After**
Wetlands*	118	118
Forest/Woodland	23	4
Dry Grassland	10	0
Grassland Tree Complex	14	0
Maintained Grasses	105	0
Cropland	640	0
Developed:	55	843
Rural Residential	*25*	*0*
Urban Residential	*0*	*678*
Mixed Use/Commercial	*0*	*29*
*Parks**/Rail/ROW*	*30*	*136*
TOTAL AREA	**965**	**965**

*Includes herbaceous, scrub-shrub and woody wetlands. **Parkland will likely have a combination of cover types, but is included in developed land since it is currently proposed.



Stantec

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

AUAR-Update

Land Cover

Figure 10-1

December 2016

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Fig 10-1 Land Cover.mxd

Cover Types

Major cover types in the AUAR Study Area currently include cropland, pasture/grassland, wetland and floodplain, and right of way for railroad and State Highway 3. The area also includes small isolated wood lots and farmsteads. Cropland is the most abundant cover type.

The change in land cover that is expected to occur as a result of development of the area is a conversion of cropland and pasture to urban residential and commercial uses. Existing acreages of wetland, floodplain, and existing right-of-way cover types are expected to remain as the area is developed.

Upland Communities: Grassland/Pasture Communities and Woodlots—No additional impacts to Upland Communities are expected with the changes proposed to land use since the 2004 Final AUAR. The amount and type of upland communities that will be impacted by these uses are the same as those anticipated in the original AUAR.

A field evaluation of the site indicated that the pasture areas consist of common exotic pasture and meadow plant species. The grassland and cropland are of low native diversity.

Small isolated woodlands also exist within the study area. These are woodlots associated with the farmsteads in the area. The woodlands are highly disturbed and invaded by exotic species. They are of low ecological quality.

No upland natural areas of high quality were identified in the study area by the Minnesota County Biological Survey or the *Dakota County Farmland and Natural Area Protection Plan (2002).*

Wetlands and Floodplain

In 2009 the two-lane segment of 195th was completed providing the necessary east/west connection to TH 3. The selected alignment was chosen by the City in part because it minimizes impacts to wetlands and the floodplain in comparison to other potential alignments. Wetland mitigation measures were completed with the roadway construction as shown in Figure 10-3. Construction efforts followed mitigation strategies to minimize any impacts from the new roadway.

Figure 10-3 displays the area of wetland and floodplain mitigation completed for the construction of 195th Street. A single wetland mitigation area of over six (6) acres was constructed at the same time as 195th Street rather than multiple smaller mitigation sites. This single site exceeds the total mitigation area needed for the 195th St. project. The City did not initiate a wetland banking process for the excess wetland and the 195th St. project did not result in any wetland credits available for use elsewhere.

The 2004 AURA and the City's Comprehensive Plan also proposed a potential extension of Diamond Path Road through the AUAR area. While Diamond Path is included in the

AUAR, City Staff will continue to review the feasibility of the road as this project moves forward.

Figure 10-1 identifies the wetlands in the AUAR study area and their types. **Figure 17-1** indicates the classification assigned to wetlands based on the City's wetland inventory and management plan.

The City completed a wetland inventory and functions and values assessment of all wetlands in the City as a part of its Surface Water Management Plan. Wetlands were classified in 4 classes based on their plant community characteristics and susceptibility to stormwater impacts. The highest quality wetlands (Protect classification) receive the highest protection, while lower classes (Manage 1, Manage 2, and Utilize) receive lower protection. The City subsequently adopted a Wetland Ordinance that establishes the protection requirements for each wetland class, including buffers.

The wetlands in the AUAR study area were delineated by Westwood Professional Services, Inc., in early 2002. The data gathered by Westwood was field verified by Bonestroo staff, who then classified the wetlands in the study area based on the system used in the rest of the City in its Surface Water Plan to the AUAR study area. Classifications shown on **Figure 17-1** are consistent with the City's plan, and City policies and ordinances will be applied in the AUAR area as development occurs.

The highest concentration of wetlands in the AUAR study area is along the North Creek corridor. These wetlands have been classified as Manage 2 wetlands in the City's Wetland Management Plan, but may be reclassified as "Protect" wetlands due to their adjacency to North Creek, a tributary to North Creek, a designated trout stream. Several smaller wetland areas are scattered throughout the site. Two of these wetlands are classified as "Protect", and another wetland is classified as "Manage 1". These are the highest quality wetlands remaining within the study area, and are given the highest level of protection by the City's plans and ordinances. The remaining wetland areas are classified in the "Utilize" category.

North Creek

North Creek runs through the AUAR study area from north to south along the western half of the area. North Creek is a tributary to the Vermillion River, a designated trout stream, and North Creek is also protected as a tributary of the trout stream.

Channel realignment was completed as part of the 195th Street Project. The existing North Creek channel was relocated slightly east of its current location. The relocation was part of a larger channel rehabilitation project designed to improve the ecology of the Creek, and mitigate for the impacts to the Creek from the roadway project. The conversion of the existing straight channel (due to agricultural ditching) into a meandering channel with varying geomorphologic habitat (i.e. pools, runs, etc.) was completed as a part of the roadway project (Figure 10-4). The meandering channel is located under the bridge with the longest span (110 feet) to allow for creek to freely meander. These upgrades are a positive improvement to the overall ecology of the Creek.

North Creek and its floodplain wetland have been previously identified as a greenway corridor through the City in the City's Surface Water Management Plan **and the North Creek Greenway Master Plan approved by the Metropolitan Council in 2012**. The City plans to preserve the creek's 100-year floodplain, protect associated wetlands, and promote channel stability to protect the stream and associated natural resources. Ordinances and policies included in the City's Comprehensive Plan, Surface Water Management Plan, Wetland Management Plan and Ordinance, and Shoreline Ordinance will be used to assure protection of this Corridor.

Updated Mitigation Plan—Cover Types

The goals and strategies that follow are proposed to protect the quality of the natural communities that remain on the Seed/Genstar property as development occurs in the future.

Goal 1:Protect the natural communities and habitat connections within the North Creek Greenway Corridor.

Protection Strategies:

1. Implement provisions of the City's Comprehensive Plan, Surface Water Management Plan, Wetland Ordinance, and Shoreline Ordinance to protect the natural areas in the North Creek Corridor by prohibiting development within the corridor and floodplain areas, and requiring vegetated buffers along the creek and wetlands in the corridor.

   Responsible Parties: City of Farmington and private developer.

   Regulatory Program: Enforcement of City Ordinances and policies. The City may also apply to non-regulatory programs such as DNR's Metro Greenways and Conservation Partners programs to seek funding assistance for protection and restoration of natural communities.

   Implementation Time Frame: Enforcement of Ordinances and policies will occur with development.

2. The City will support efforts to remove exotic species and restore native vegetation in the buffer areas along North Creek to improve water quality and habitat.

   Responsible parties: City of Farmington, Natural Resource Agencies, volunteer groups

   Regulatory program: None.

   Implementation Time Frame: As grant programs, volunteers, or other resources are available for these efforts.

3. The City will implement the alignment option for the 195th Street Extension recommended in the Feasibility Report for the project (January, 2006), and shown

in Figure 10-3, including the wetland and floodplain mitigation and banking proposed in the Feasibility Report for the project (January, 2006) to minimize and mitigate for potential impacts to wetlands and floodplains in the project area.

Responsible parties: City of Farmington, Natural Resource Agencies, developer and contractors

Regulatory program: Minnesota Wetland Conservation Act, state and federal floodplain regulations, City Wetland, Floodplain and Stormwater ordinances, NPDES permit.

Implementation Time Frame: **Mitigation was completed with construction of 195th Street.**

4. The City will implement the North Creek Channel Rehabilitation included in the Feasibility Report for the 195th Street Extension project (January, 2006), and shown in Figure 10-3 to minimize and mitigate for potential impacts to North Creek and its habitat from the extension of 195th Street.

   Responsible parties: City of Farmington, Natural Resource Agencies, developer and contractors

   Regulatory program: DNR permits, City Wetland, Floodplain and Stormwater ordinances, NPDES permit.

   Implementation Time Frame: **Mitigation was completed with construction of 195th Street.**

<u>Goal 2:Protect healthy individual trees and groves of trees within existing woodland areas, and mitigate for any loss of trees through replanting.</u>

Protection Strategies:

1. Implement the vegetation preservation and protection plan and tree preservation requirements of the City's Subdivision Ordinance and Zoning Ordinance.

   Responsible Parties: City of Farmington and private developers.

   Regulatory Program: City Subdivision and Zoning Ordinances.

   Implementation Time Frame: Tree protection plans should be developed along with grading plans for the development. Protection and replacement should occur as the development plan is implemented.

<u>Goal 3: Protect wetland resources in the project area to assure no net loss of these resources by avoiding and minimizing wetland impacts when feasible, and mitigating for unavoidable impacts.</u>

Protection Strategies:

1. The developer will follow the requirements of the Farmington Surface Water Management Plan and Wetland Ordinance, and applicable state and federal regulations to avoid, minimize and/or mitigate for impacts to wetlands that result from development.

   Responsible Parties: Private developers, City of Farmington, and regulatory agencies.

   Regulatory Program: Farmington Surface Water Management Plan, Wetland Ordinance, Shoreland Ordinance, Minnesota Wetland Conservation Act, Sections 401 and 404 of the Clean Water Act, and Minnesota DNR Protected Waters Program.

   Implementation Time Frame: Complete analysis of wetland impacts and mitigation needs as final plat and grading plan are completed. Implement efforts to avoid or mitigate for impacts as development occurs.

2. The City will implement the alignment option for the 195th Street Extension recommended in the Feasibility Report for the project (January, 2006), and shown in Figure 10-3, including the wetland and floodplain mitigation and banking proposed in the Feasibility Report for the project (January, 2006) to minimize and mitigate for potential impacts to wetlands and floodplains in the project area.

   Responsible parties: City of Farmington, Natural Resource Agencies, developer and contractors

   Regulatory program: Minnesota Wetland Conservation Act, state and federal floodplain regulations, City Wetland, Floodplain and Stormwater ordinances, NPDES permit.

   Implementation Time Frame: Mitigation was completed with construction of 195th Street.

3. Site plans will indicate methods that will be used to avoid impacts to wetlands and meet the requirements of the wetland regulations. Required buffers around wetlands will be clearly delineated with permanent monumentation acceptable to the City. In residential subdivisions, a monument is required for each lot. In other situations, a monument is required for each 300 feet of wetland edge.

   Responsible Parties: Private developer and City of Farmington.

   Regulatory Program: Same as 1 above.

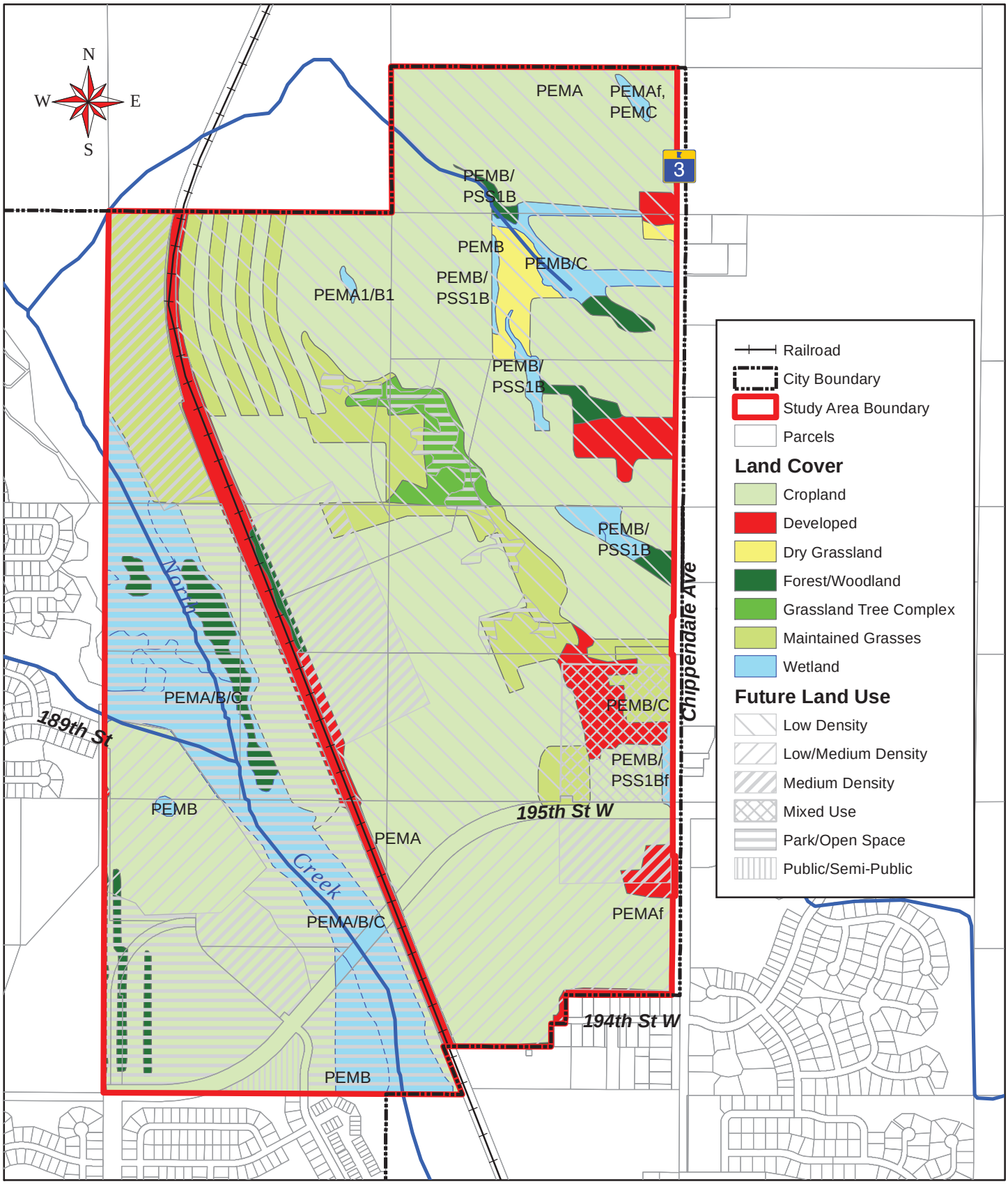
   Implementation Time Frame: Wetlands were delineated prior to development. Monuments will be placed as development occurs.

4. Require the use, management and enforcement of Best Management Practices (BMP's) to control erosion and sedimentation and provide pretreatment of water discharged to wetlands during and after construction, as specified in the City's Surface Water Management Plan.

   Responsible Parties: City of Farmington.

   Regulatory Program: City's Zoning and Subdivision Ordinances, Wetland Ordinance, Excavation and Grading Ordinance and Grading Plan Requirements, and NPDES Stormwater Management Program.

   Implementation Time Frame: Specify BMP's to be used in grading plans, and implement BMP's as development occurs.



Stantec

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

AUAR-Update

Land Cover and Proposed Land Use

Figure 10-2

December 2016

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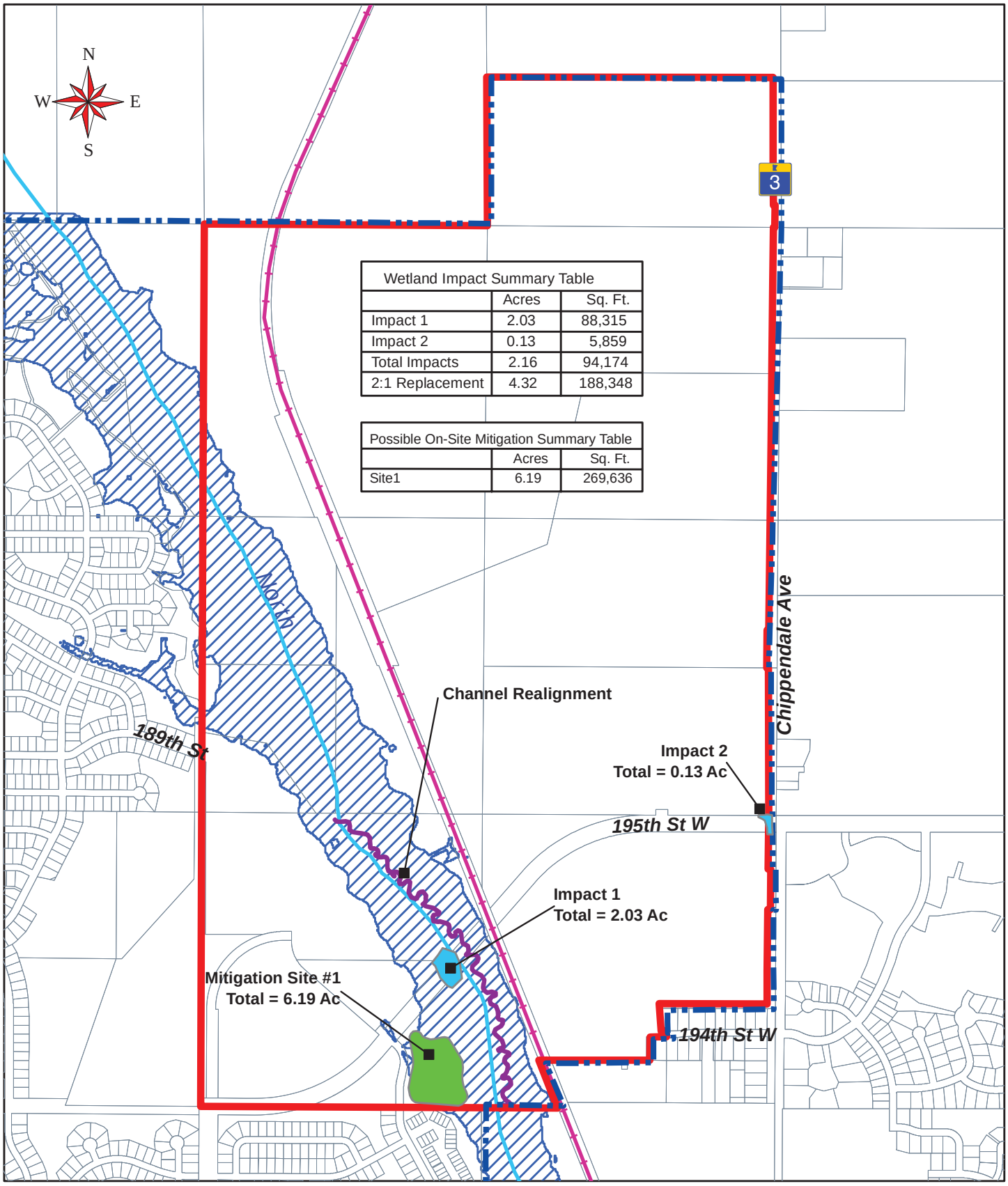
Fig 10-2 Land Cover - Proposed Land Use.mxd



Wetland Impact Summary Table		
	Acres	Sq. Ft.
Impact 1	2.03	88,315
Impact 2	0.13	5,859
Total Impacts	2.16	94,174
2:1 Replacement	4.32	188,348

Possible On-Site Mitigation Summary Table		
	Acres	Sq. Ft.
Site1	6.19	269,636

Bonestroo

Feet

1,200 0 1,200

City of Farmington
Seed-Genstar
AUAR-Update
195th Street Wetland Impacts and Mitigation
Figure 10-3

Original Channel
Realigned Channel
100-Year Floodplain
Proposed Wetland Impacts
Proposed Mitigation Areas
Study Area Boundary
City Boundary
Railroad
Parcel Base Map

June 2011

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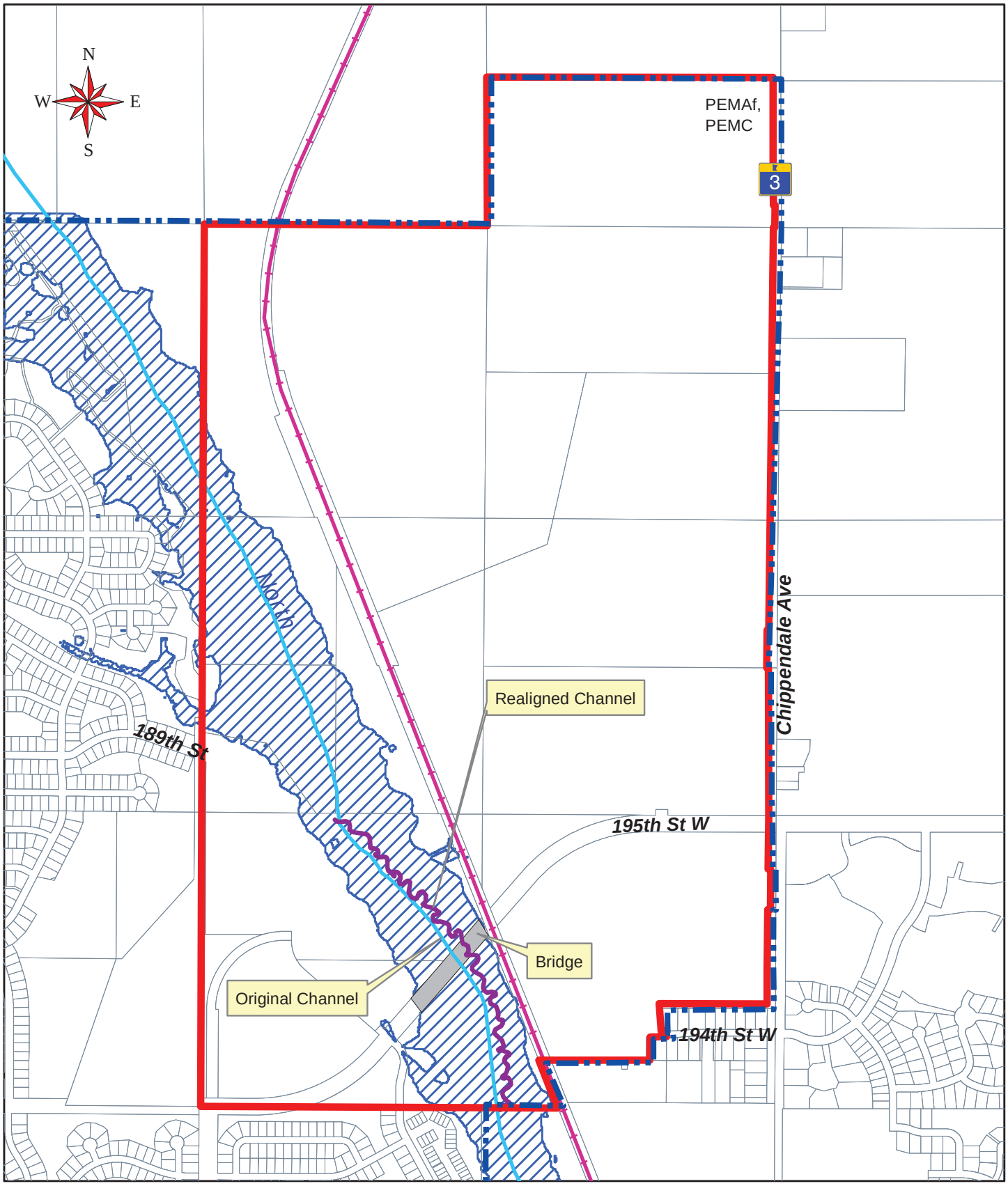
Fig 10-3 Wetland Impacts-Mitigation Plan.mxd



Bonestroo

Feet

1,200 0 1,200

City of Farmington
Seed-Genstar
AUAR-Update
Completed
Channel Rehabilitation
Figure 10-4

Original Channel
Realigned Channel
100-Year Floodplain
Bridge
Study Area Boundary
City Boundary
Railroad
Parcel Base Map

June 2011

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Fig 10-4 Channel Rehabilitation.mxd

11. Fish, Wildlife and Sensitive Resources

a. Describe fish and wildlife resources on or near the site and discuss how they would be affected by the project. Describe any measures to be taken to minimize or avoid adverse impacts. The description of wildlife and fish resources should be related to the habitat types depicted on the cover type maps (of item 10). Any differences in impacts between development scenarios should be highlighted in the discussion.

Fish Resources

The Vermillion River and its tributary, North Creek, are the most significant fishery resources in the study area. Most of the study area drains to North Creek. The Minnesota Department of Natural Resources (MDNR) has designated part of the Vermillion River and its tributaries, including a portion of North Creek at the south end of the AUAR area, as trout waters.

Channel realignment was completed as a part of the 195th Street project. This relocation has been part of a larger channel rehabilitation project designed to improve the ecology of the Creek, and mitigate for the impacts to the Creek. The conversion of the existing straight channel (due to agricultural ditching) into a meandering channel with varying geomorphologic habitat (i.e. pools, runs, etc.) was completed as a part of the roadway project (Figure 10-4). The meandering channel is located under bridge with the longest span (110 feet) to allow for creek to freely meander.

The final mitigation for 195th Street should result in improvement to the fishery habitat of North Creek compared to its current condition.

The 2004 AUAR and the City's Comprehensive Plan proposes a potential extension of Diamond Path Road through the AUAR area. While Diamond Path is included in the AUAR, City Staff will continue to review the feasibility of the road as this project moves forward.

Wildlife Resources

Wildlife habitat value is dependent on the composition, quality and connectivity of natural communities including woodlands, wetlands and grasslands. The City and Dakota County have identified the North Creek Corridor as an important greenway/habitat corridor within the study area. The corridor is noted in the City's Wetland Management Plan and in the County's *Farmland and Natural Area Protection Plan.* The Surface Water Management Plan, Wetland Ordinance, and Shoreline Ordinance include policies to protect the corridor and its resources. The completed alignment of 195th Street extension improves connectivity within the North Creek Corridor, in comparison to use of culvert-type crossings.

Most of the native habitat and connectivity in the study area east of the North Creek Corridor and Canadian Pacific Railroad tracks has been lost due to agricultural and rural

residential development. As noted in the "Cover Types" section, above, several isolated areas of degraded natural communities (woodlands and wetlands) remain in the eastern half of the study area.

The North Creek Corridor and its connection to the Vermillion River are the most significant habitat areas and connections for the AUAR study area. The County Natural Areas plan indicates that the University of Minnesota (U of M) Rosemount Research Center area is several miles to the northeast of the site. No clear habitat connections are available between the AUAR area and this site, and Highway 3 and intervening land uses pose significant barriers to wildlife movement between the North Creek Corridor and the Rosemount Research Center. The proposed development will have no identifiable impacts on the U of M site or other Natural Areas identified in the County's plan.

The City's Surface Water Management Plan, Wetland Buffers Ordinance, and Shoreline Ordinance contain requirements for protection of natural communities within the North Creek Corridor, maintenance and restoration of corridor connections, and requirements for wetland and stream buffers to protect the connectivity of the corridor and its role in providing wildlife habitat.

b. Are there any state-listed endangered, threatened, or special-concern species; rare plant communities; colonial waterbird nesting colonies; native prairie or other rare habitats; or other sensitive ecological resources on or near the site? ***_X__Yes – Near the site.***

The Minnesota County Biological Survey identified no rare or threatened species in the AUAR study area during their countywide inventory**. Based upon a review of the MDNR Natural Heritage Information System (NHIS database) under license agreement LA-760, there are no known records of state-listed species within the AUAR study area. However, the review indicated there are three known occurrences of rare species and natural communities within one mile of the AUAR study area. These include:**

- **Loggerhead shrikes (*Lanius ludovicianus*) were observed northeast of the AUAR area as recently as 2012.**
- **Wet meadow natural community on North Creek, upstream of the AUAR area**
- **Areas to the west of the AUAR area have been designated by the MDNR as the lowest designation (i.e., "Below") of Site of Biodiversity Significance.**

In addition, a previously state-listed plant species, Cowbane (Oxypolis rigidior) was observed in 1992 near North Creek, upstream of the AUAR area.

Loggerhead shrikes live in areas of upland grasslands and sometimes in agricultural areas, where short grass vegetation and perching sites such as hedgerows, shrubs, and small trees are found. They occur in both native and non-native grasslands, including native prairie, pastures, old fields, shelterbelts, farmyards, and cemeteries. Based on the land cover present, the AUAR area may contain suitable habitat for this species.

The information provided by the MDNR on shrike habitat will be provided to the developer. The development will include some large infiltration basins with native grass and shrub habitat (See analysis and Mitigation Plan items in Section 17), and these will maintain potential shrub habitat in the area as development occurs. The wetland/wet

meadow resources identified are upstream of the AUAR area, and unlikely to be affected by development within the area.

Federally Listed Threatened and Endangered Species

Per a review of the U.S. Fish and Wildlife Service's (USFWS's) Endangered Species website[2], there are three federally listed species with a geographic range including Dakota County:

- **Higgins eye pearlymussel (*Lampsilis higginsii*) – Endangered**
- **Northern long-eared bat *(Myotis septentrionalis*) – Threatened**
- **Prairie bush clover (*Lespedeza leptostachya*) – Threatened**

The Higgins eye pearlymussel is known to occur within the Mississippi River in Minnesota. The Mississippi River is not located in or near the AUAR study area, and therefore no impacts to this species or its habitat will occur.

Prairie bush clover was listed as threatened by the USFWS in February 1988 and is known to occur in dry to mesic prairies with gravelly soil. Given the predominance of agriculture in the AUAR study area and that prairie bush clover require undisturbed, high-quality prairie or wetland habitat, it is unlikely that the AUAR study area provides suitable habitat for this species.

In the winter, northern long-eared bat (NLEB) hibernate in large caves and mines that have large passages and entrances, constant temperatures, and high humidity with no air currents. No caves or structures are present within the AUAR study area that would provide suitable winter habitat for this species.

In the spring, summer and fall, NLEB use a wide variety of forested habitats for roosting, foraging and traveling, and may also utilize some adjacent and interspersed non-forested habitat such as emergent wetlands and edges of fields. This species has also been found roosting in structures like barns and sheds (particularly when suitable tree roosts are unavailable; USFWS 2016b).

Roosting habitat includes forested areas with live trees and/or snags with a diameter at breast height (dbh) of at least three inches with exfoliating bark, cracks, crevices and/or other cavities. Trees are considered suitable roost trees if they meet those requirements and are located within 1,000 feet of another suitable roost tree, woodlot, or wooded fencerow (USFWS 2016b). Maternity habitat is defined as suitable summer habitat that is used by juveniles and reproductive females. After hibernation ends in late March or early April, most NLEB migrate to summer roosts. The NLEB active season is the period between emergence and hibernation from April 1 – October 31 (USFWS 2016b).

Woodland in and near the AUAR study area was assessed for bat summer habitat suitability (i.e., non-winter) using published literature on home range size (Owen et al. 2003[3], Carter and Feldhamer 2005[4], Lacki et al. 2009[5]) and USFWS guidance on the NLEB (USFWS 2016b).

[2] United States Fish and Wildlife Service (USFWS). 2016a. County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species. http://www.fws.gov/midwest/endangered/lists/minnesot-cty.html. Website accessed November 4, 2016.

[3] Owen, S.F., M.A. Menzel, W.M. Ford, B.R Chapman, K.V. Miller, J.W. Edwards, and P.B. Wood. 2003. Home-range size and habitat used by the Northern Myotis (Myotis septentrionalis). American Midland Naturalist. 150: 352-359.

[4] Carter, T.C., and G.A. Feldhamer. 2005. Roost tree use by maternity colonies of Indiana bats and northern long-eared bats in southern Illinois. Forest Ecology and Management 219:259-268.

[5] Lacki, M.J., D.R. Cox, and M.B. Dickinson. 2009. Meta-analysis of summer roosting characteristics of two species of Myotis bats. American Midland Naturalist 162:318-326.

The wooded riparian corridor along North Creek may provide suitable summer habitat for the NLEB (i.e., >15 acres of trees with <1,000 feet connectivity).

In addition, little is known about the migration patterns of bats, specifically how they disperse across the landscape during migration. Therefore, it is not possible to accurately predict an individual bat's route during migration. Based on this, NLEB have the potential to exist anywhere within the species' geographic range, including the trees within the AUAR study area.

Direct mortality from collision with construction equipment for future development is unlikely given that construction activities will occur during daylight hours when bats would not be active. However, tree clearing within the AUAR study area may indirectly affect the NLEB. Per a review of the USFWS's White-Nose Syndrome (WNS) Zone map dated August 31, 2016[6], Dakota County, Minnesota is located within 150 miles of a location where WNS has been detected. Therefore, the AUAR study area falls within the WNS buffer zone per the Final 4(d) Rule under the Endangered Species Act (ESA).

For areas within the WNS buffer zone, the incidental take (e.g., the harm, harassment or killing of a bat as a side effect of otherwise lawful actions, like tree clearing) from tree removal activities is not prohibited unless 1) it results in removing a known occupied maternity roost tree, 2) if tree removal activities occur within 150 feet of a known occupied maternity roost tree from June 1 through July 31, or 3) tree removal activities occur within 0.25 mile of a hibernaculum at any time. Tree removal activities may then proceed without a permit and there is no need to contact the USFWS.

Due diligence is generally required to determine if a maternity roost tree or a hibernaculum is on the property; however, per the Final 4(d) Rule, private landowners are not required to conduct surveys on their lands. In Minnesota, the MDNR maintains records of maternity roost trees or a hibernaculum within its NHIS database.

Based upon a guidance document issued by the MNDNR and the USFWS on April 1, 2016[7], there are two known NLEB records from Dakota County; however, these records are not located in the same Township as the AUAR study area (i.e., Township 114 North, Range 19 West, Sections 7, 18 and 19). As there are no records of NLEB maternity roost trees or a hibernaculum within the AUAR study area or a 0.25-mile buffer, incidental take of NLEB as a result of tree removal activities is not prohibited under the Final 4(d) Rule under the ESA.

<u>Migratory Birds</u>

Construction activities and development within the AUAR study area have the potential to impact birds protected under the Migratory Bird Treaty Act (MBTA). The MBTA makes it illegal for anyone to take (i.e., to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations.

Under the MBTA, construction activities in grassland, roadsides, wetland, riparian (stream), shrubland, or woodland habitats that would otherwise result in the taking of migratory birds,

[6] USFWS. 2016c. White-Nose Syndrome Zone Around WNS/Pd Positive Counties/Districts. http://www.fws.gov/Midwest/endangered/mammals/nleb/pdf/WNSZone.pdf. August 31, 2016.

[7] MDNR and USFWS. 2016. Townships Containing Northern Long-eared Bat Roost Trees and/or Hibernacula. http://files.dnr.state.mn.us/eco/ereview/minnesota_nleb_township_list_and_map_20150604.pdf. April 1, 2016.

eggs, young and/or active nests should be avoided. Although the provisions of the MBTA are applicable throughout the entire year, most migratory bird nesting activity in Minnesota occurs approximately from mid-March to August 15, per the MDNR[8].

According to the USFWS Information for Planning and Conservation (IPaC) Database[9], there are 20 migratory birds of concern with the potential to occur within the AUAR study area.

Updated Mitigation Plan

Goal 1. Protect the natural areas and habitat connections in the North Creek Greenway and the water quality and habitat in North Creek as development occurs in the AUAR area, through the strategies identified in Section 10 above and Section 17. **Avoiding or minimizing impacts to these areas will help mitigate impacts on wildlife species and migratory birds.**

Goal 2. Minimize impacts to unmaintained grassland areas within the AUAR area as much as possible to limit impacts to loggerheads shrikes and their habitat. The information provided by the MDNR on shrike habitat will be provided to the developer.

Goal 3. Construction activities in grasslands, roadsides, shrublands, wetlands, or woodlands (natural habitats) within the AUAR study area may result in the taking of migratory birds, eggs, young and/or active nests. If rare or state-listed species are determined to be present in a field study conducted within the year prior to development, removal of vegetation in natural habitat will occur outside of the anticipated migratory bird nesting window in Minnesota (i.e., mid-March to August 15) to minimize the potential take of migratory birds.

Goal 4. Best management practices during construction activities and operation within the AUAR study area will be implemented to minimize the introduction or spread of noxious weeds and invasive species at the site, especially along the North Creek Greenway.

[8] MDNR. 2014. Best Practices for Meeting DNR GP 2004-0001 (version 4, October 2014). http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/gp_2004_0001_chapter1.pdf.

[9] USFWS. 2016d. Information for Planning and Conservation Database. https://ecos.fws.gov/ipac/project/VVSUSHDPSRH3VEFQEIW25OV7L4/resources. Website accessed November 4, 2016.

12. Physical Impacts on Water Resources

Will the project involve the physical or hydrologic alteration (dredging, filling, stream diversion, outfall structure, diking, impoundment) of any surface water (lake, pond, wetland, stream, drainage ditch)?

_X_ Yes ___ No

If yes, identify the water resource to be affected and describe: the alteration, including the construction process; volumes of dredged or fill material; area affected; length of stream diversion; water surface area affected; timing and extent of fluctuations in water surface elevations; spoil disposal sites; and proposed mitigation to minimize impacts.

Water resources in the AUAR study area include North Creek and a variety of wetland types. It is anticipated that construction, creation of impervious surfaces and development of utilities and infrastructure will impact some of the wetlands in the study area.

Potential Wetland Impacts—2016 AUAR Update

No changes in potential impacts identified for the 2016 AUAR Update compared to the 2011 AUAR Update. As the AUAR area develops, wetlands will be protected in accordance with the wetland classifications and management plan in the City's 2008 Local Surface Water Management Plan as well as watershed and State requirements.

Potential Wetland Impacts—2011 AUAR Update

Since the 2006 Update the two-lane segment of 195th Street was completed in 2009 providing the necessary east/west connection to TH3. The selected alignment was chosen by the City in part because it minimizes impacts to wetlands and the floodplain in comparison to other potential alignments. Wetland mitigation measures have been completed with the roadway construction as shown in Figure 10-3.

Figure 10-3 displays the area of wetland and floodplain mitigation completed for the construction of 195th Street. A single wetland mitigation area of over six (6) acres was constructed at the same time as 195th Street rather than multiple smaller mitigation sites. This single site exceeds the total mitigation area needed for this project.

The 2004 AUAR and the City's Comprehensive Plan proposes a potential extension of Diamond Path Road through the AUAR area. While Diamond Path is included in the AUAR, City Staff will continue to review the feasibility of the road as this project moves forward.

Potential Wetland Impacts—2006 AUAR Update

The City completed a wetland inventory and functions and values assessment of all wetlands in the City as a part of its Surface Water Management Plan. Wetlands were classified in 4 classes based on their plan community characteristics and susceptibility to

stormwater impacts. The highest quality wetlands (Protect classification) receive the highest protection, while lower classes (Manage 1, Manage 2, and Utilize) receive lower protection. The City subsequently adopted a Wetland Ordinance that establishes the protection requirements for each wetland class, including buffers.

Classifications shown on **Figure 17-1** are consistent with the City's plan, and City policies and ordinances will be applied in the AUAR area as development occurs.

The highest concentration of wetland in the AUAR study area is along the North Creek corridor. These wetlands have been classified as Manage 2 wetlands in the City's Wetland Management Plan. Several smaller wetland areas are scattered throughout the site. Two wetlands are classified as "Protect" and another wetland is classified as "Manage 1." The remaining wetland areas are classified in the manage 2 and Utilize categories. Wetland buffer requirements for the wetlands in the City include the following:

Table 12.1 Farmington Wetland Buffer Requirements

Wetland Type:	*Protect*	*Manage 1*	*Manage 2*	*Utilize*
Average Buffer Width	75 ft.	50.ft.	25ft.	0 ft.
	100 ft.—"protect" wetlands in a designated trout stream corridor—applies to all wetlands in the AUAR area			
Structure Setback from Outer Edge Of Buffer	10 ft.	10 ft.	10 ft.	0 ft.

The City requires pretreatment of runoff before it enters wetlands, and requires management of stormwater "bounce" to protect wetland vegetation and habitat. The degree of wetland protection is based on wetland quality, as identified in the functions and values assessment and wetland classification completed by the City. The City's Surface Water Management Plan and Ordinances will be implemented in the AUAR area to avoid, minimize and mitigate for impacts to wetlands anticipated from the proposed development.

North Creek

North Creek runs through the AUAR study area from north to south along the western half of the area. North Creek is a tributary to the Vermillion River, a designated trout stream, and North Creek is also protected as a tributary of the trout stream.

Potential North Creek Impacts—2016 AUAR Update

No changes in potential impacts identified for the 2016 AUAR Update compared to the 2011 AUAR Update. As the AUAR area develops, water resources will be managed in accordance with the City's 2008 Local Surface Water Management Plan as well as watershed and State requirements.

2011 AUAR Update. Channel realignment has been completed as part of the 195th Street Project. The existing North Creek channel has been relocated slightly east of its current location. The relocation was part of a larger channel rehabilitation project designed to improve the ecology of the Creek, and mitigate for the impacts to the Creek. The conversion of the existing straight channel (due to agricultural ditching) into a meandering channel with varying geomorphologic habitat (i.e. pools, runs, etc.) was completed as a part of the roadway project (Figure 10-4). The meandering channel is located under bridge with the longest span (110 feet) to allow for creek to freely meander. These upgrades are a positive improvement to the overall ecology of the Creek.

Protection Strategies under Sections 10, 11, 16 and 17 will be implemented to avoid, minimize, or mitigate impacts on the Water Resources in the study area.

The 2004 AUAR and the City's Comprehensive Plan also proposes a potential extension of Diamond Path Road through the AUAR area. While Diamond Path is included in the AUAR, City Staff will continue to review the feasibility of the road as this project moves forward.

Section 17 of this Draft AUAR provides an analysis of potential stormwater impacts to North Creek due to development proposed in the AUAR study area, and identifies standards and protection strategies to avoid, minimize and/or mitigate for these potential impacts

Mitigation Plan—2016 AUAR Update

No changes in mitigation plan strategies for the 2016 AUAR Update compared to the 2011 AUAR Update. As the AUAR area develops, wetlands and water resources will be protected and managed in accordance with the City's 2008 Local Surface Water Management Plan as well as watershed and State requirements. Stormwater BMPs will be implemented to satisfy City, watershed, and State requirements. BMPs will be designed in accordance with the recently-adopted NOAA Atlas 14 rainfall amounts and distributions. Such BMPs could include stormwater storage for rate control; infiltration, filtration, bioretention or stormwater reuse for volume control and water quality treatment; and temporary erosion and sediment control features such as vegetative restoration, storm drain inlet protection, construction entrance protection, and silt fence.

Mitigation Plan

Protection Strategies under Sections 10, 11, 16 and 17 will be implemented to avoid, minimize, or mitigate impacts on the Water Resources in the study area. These include the wetland mitigation described in Sections 10 and 12 of this AUAR Update.

The Vermillion River Watershed Management Plan notes that North Creek is fed by shallow ground water flows. The infiltration and wetland protection strategies proposed in Sections 10, 11 and 17 should help to maintain shallow ground water resources in the AUAR area. In addition, the following strategies are included:

Goal 1. Protect ground water resources that support flows in North Creek.

Protection Strategies:

1. Avoid construction of utilities in close proximity to North Creek when feasible. When utility construction near the creek is necessary, require use of trench dams or other barriers, and backfilling of utility trenches with native material to prevent drainage of shallow groundwater in the area.

2. The City will consider the use of directional boring techniques in the construction of water distribution and sanitary sewer collection lines that are proposed to cross under North Creek.

   Responsible parties: City of Farmington

   Regulatory program: MPCA Best Management Practices

   Implementation time frame: Implement as utilities are constructed in the AUAR area.

13. Water Use

a. *Will the project involve the installation or abandonment of any wells?* **X** *Yes* __ *No*

For abandoned wells, give the location and unique well number. For new wells, or other
Previously unpermitted wells, give the location and purpose of the well and the Unique Well Number (if known).

With respect to b and c, below, if the area requires new water supply wells, specific information about that appropriation and its potential impacts on groundwater levels should be given; if groundwater levels would be affected, any impacts resulting on other resources should be addressed. With respect to possible individual appropriations by future projects, a general assessment of the likely need for such should be indicated, and if there is potential for major appropriations or environmental issues resulting from individual appropriations, a more detailed assessment of those should be included along with a discussion of mitigation for potential problems.

b. *Will the project require an appropriation of ground or surface water (including dewatering)?* **X** *Yes* __ *No*

If yes, indicate the source, quantity, duration, purpose of the appropriation, and DNR water appropriation permit number of any existing appropriation. Discuss the impact of the appropriation on ground water levels.

2016 AUAR Update—Changes reflect updated projections on municipal water use and wells needed to accommodate that use, and closure of active wells since the 2011 Update.

The City of Farmington currently has **eight** municipal wells (**seven** active and one standby) designed to meet the City's **existing water supply demands**. Two active and one standby well are located in the older portion of Farmington, near the Main Street area. **Five** wells are located west-southwest of the AUAR study area, all within 0.3 miles of Pilot Knob Road.

For the AUAR study area, water supply trunks will be added to connect the project area to the current water supply system. These trunks will range in diameter from 16 inches to 20 inches. A 5.0 million gallon ground storage water reservoir is also planned near the high elevation point in the SW1/4 of the NE1/4 of Section 18 (Township 114N, Range 19W). This ground storage reservoir is primarily intended to expand the City's water storage capacity to accommodate for peak demand as the community grows. Ultimately, the size of this future storage facility may be adjusted based on actual community growth. **Figure 13-1** shows the proposed layout of the future water supply trunks and the ground storage reservoir.

Development of the AUAR study area will require an appropriation of groundwater, chiefly for potable water supply. The source of the supply will be the City of Farmington's current municipal wells completed in the Prairie du Chien-Jordan Aquifer. The DNR water appropriations permit number for Farmington is 1959-0725. Currently, the City's wells are each capable of yields averaging 1,000-1,500 gallons per minute (gpm). While each well may yield at least 1000 gpm, the use of each well is not constant, so the average daily discharge for each well is considerably less. Currently, the wells are used on a rotation schedule since the water demand rarely requires that all wells be activated simultaneously.

Development of the AUAR study area will likely require additional pumping of the City's current wells to meet increased demand, with new wells to be added periodically to accommodate overall growth of the City. These planned system modifications will be capable of meeting the anticipated changes in demand. In the year 2015, the City pumped 645 million gallons. Projected demands for the year 2020 are 1002 million gallons, while projected demands for the year 2025 are 1104 million gallons. Actual water usage will depend on actual rate of growth, along with other factors that influence demand, such the fluctuations in precipitation and the effectiveness of water conservation measures. In order to maintain firm capacity to meet expected water demands, the City expects to add Well 9 in the year 2020 and Well 10 in the year 2025.

The effect of pumping generally results in lower groundwater levels in the Prairie du Chien-Jordan Aquifer while the wells are operating. The performance of the City's current wells indicates that the aquifer is highly permeable and able to handle the additional pumping. Therefore, while the City's current wells will experience a gradual increase in pumping over the coming years, the aquifer is able to provide the additional withdrawals for the City wells. An aquifer-pumping test at the Farmington Well 7 site demonstrated that the potentiometric level of the aquifer dropped 23 feet after pumping the well 1600gpm over a 24-hour period. After pumping ceased, the water level in the well returned to with 95% of its static level in approximately 3 hours. An observed well influence (drawdown) of 3 feet was measured at a distance of 2000 feet from Well 7 (at Well 6).

While most domestic wells in this part of the county are completed in the Prairie du Chien-Jordan aquifer, it is unlikely that pumping from the current City wells will have a significant impact on domestic wells in or around the project area due to the low levels of drawdown observed at these wells.

A search of the Minnesota Geological Survey's County Well Index for Dakota County indicates no well records for active wells within the boundary of the project area. **Two sealed wells were identified within the AUAR study area, but those wells no longer pose a threat to development or to the aquifer(s) that served those wells. Since the County Well Index only identifies wells that have been assigned a unique identification number, it is possible that some of the properties currently within the AUAR study area could still have unsealed wells that haven't been located or identified. The previous AUAR identified four potential properties on the west side of State Highway 3 that could potentially contain wells. Three of these properties have since had the homes and buildings removed. Two wells were sealed at the**

time, with unique numbers 270116 and 270304. One former farmstead on the north end of the project area has had a home removed, but two farm buildings still remain. It is unknown whether a well exists at this property. Figure 13-2 shows these four properties that had sealed wells or may have existing or abandoned wells that are not yet sealed.

Since this area has historically been used for farming and rural residences, it is possible that other wells are located in this area that are not accounted for. The possibility exists that unsealed, abandoned wells may be encountered after construction begins. In that event, those wells will have to be properly sealed and abandoned to meet codes required by Dakota County.

Mitigation Plan

Goal 1. Protect the quality of ground water in the AUAR area.

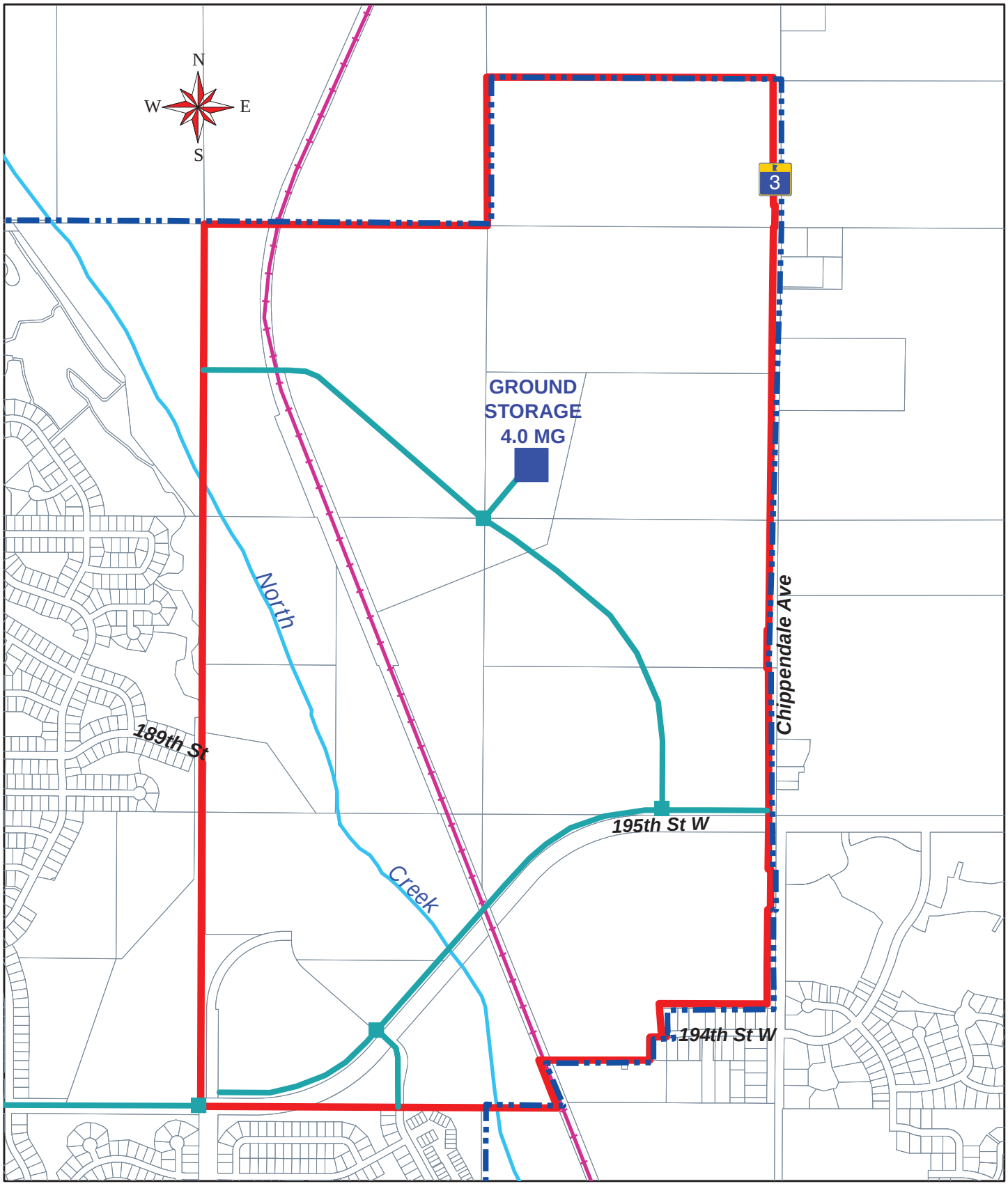
Protection Strategies

1. Require that unsealed, abandoned wells are properly sealed and abandoned to meet codes required by Dakota County.

Responsible parties: City of Farmington, private developer and property owners

Regulatory program: Dakota County

Implementation time frame: As development occurs.



Bonestroo

Feet

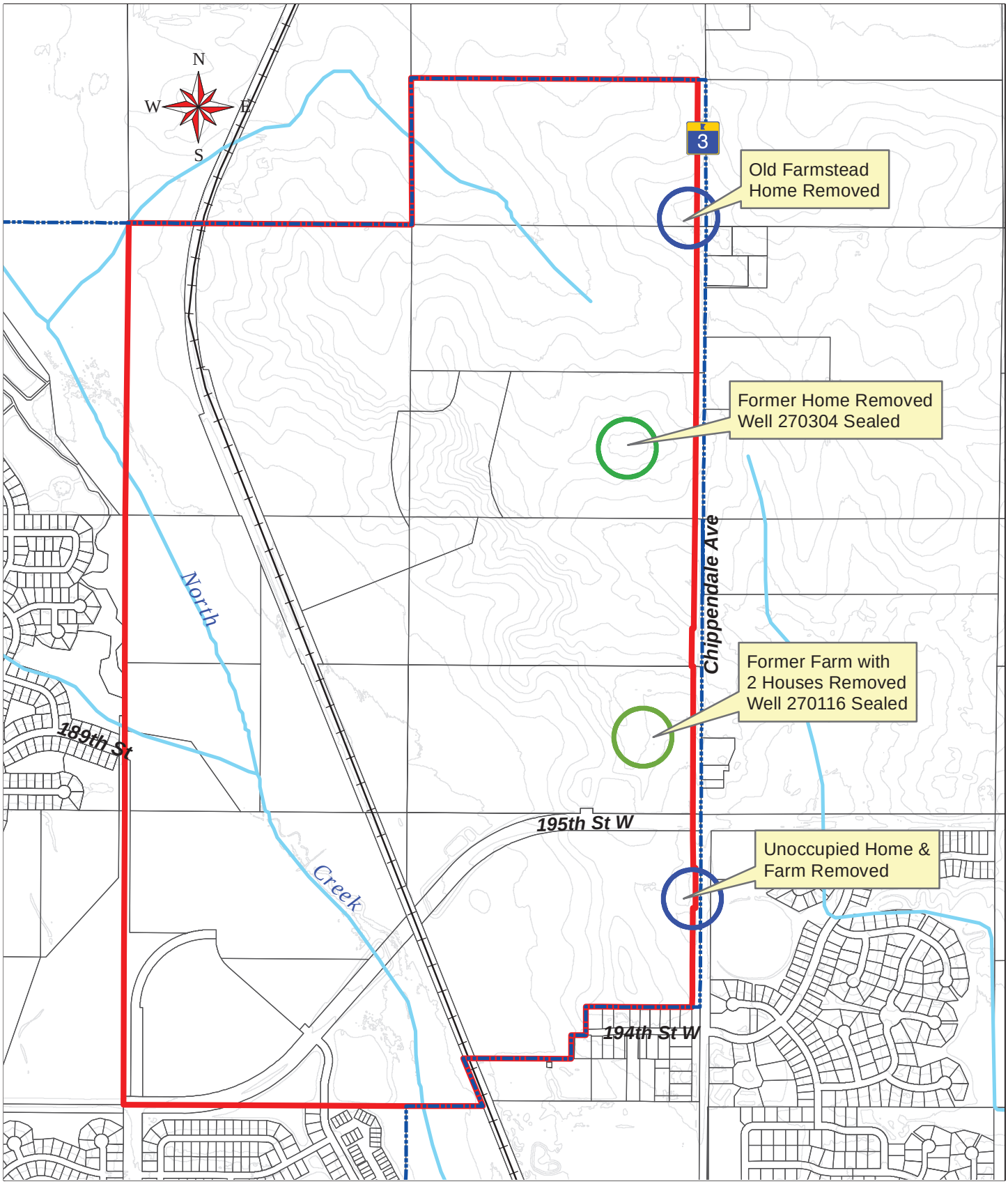
1,200 0 1,200

City of Farmington
Seed-Genstar
AUAR-Update
Trunk Water System

Figure 13-1

- Proposed Water Storage Reservoir
- Proposed Water Main
- Study Area Boundary
- City Boundary
- Railroad
- Parcel Base Map

June 2011
K:\141\141113330\GIS\Projects\Fig 13-1 Trunk Water System.mxd



Stantec

CITY OF FARMINGTON

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

AUAR-Update 2016

Possible Well Locations

Figure 13-2

Possible Well Location
Historic Well Location
Study Area Boundary
City Boundary
Railroad
Parcel Base Map
10 foot Contour

November 2016

V:\1938\active\193803747\GIS\Projects\Fig 13-2 Possible Well Locations.mxd

14. *Water-Related Land Use Management Districts*

Does any part of the project site involve a shoreland zoning district, a delineated 100-year flood plain, or a state and federally designated wild and scenic river land use district?

_X_ Yes ___No

If yes, identify the district and discuss the compatibility of the project with the land use restrictions of the district. Such districts should be delineated on appropriate maps and the land use restrictions applicable in those districts should be described. If any variances or deviations from these restrictions within the AUAR are envisioned, this should be discussed.

The project area includes a shoreland zoning district and 100-year flood plain along North Creek. The City adopted a Shoreland Ordinance on July 15, 2002 that is consistent with the DNR's Model Ordinance, and has adopted regulations related to floodplain management. The City's floodplain regulations require 2 feet of freeboard, floodway protection, compensatory storage for any fill within the floodplain, and easements. The City's Shoreland Ordinance and Floodplain regulations will be applied within the designated shoreland and floodplain areas along North Creek.

Flood Plain and Shoreland Zoning District—2016 AUAR Update

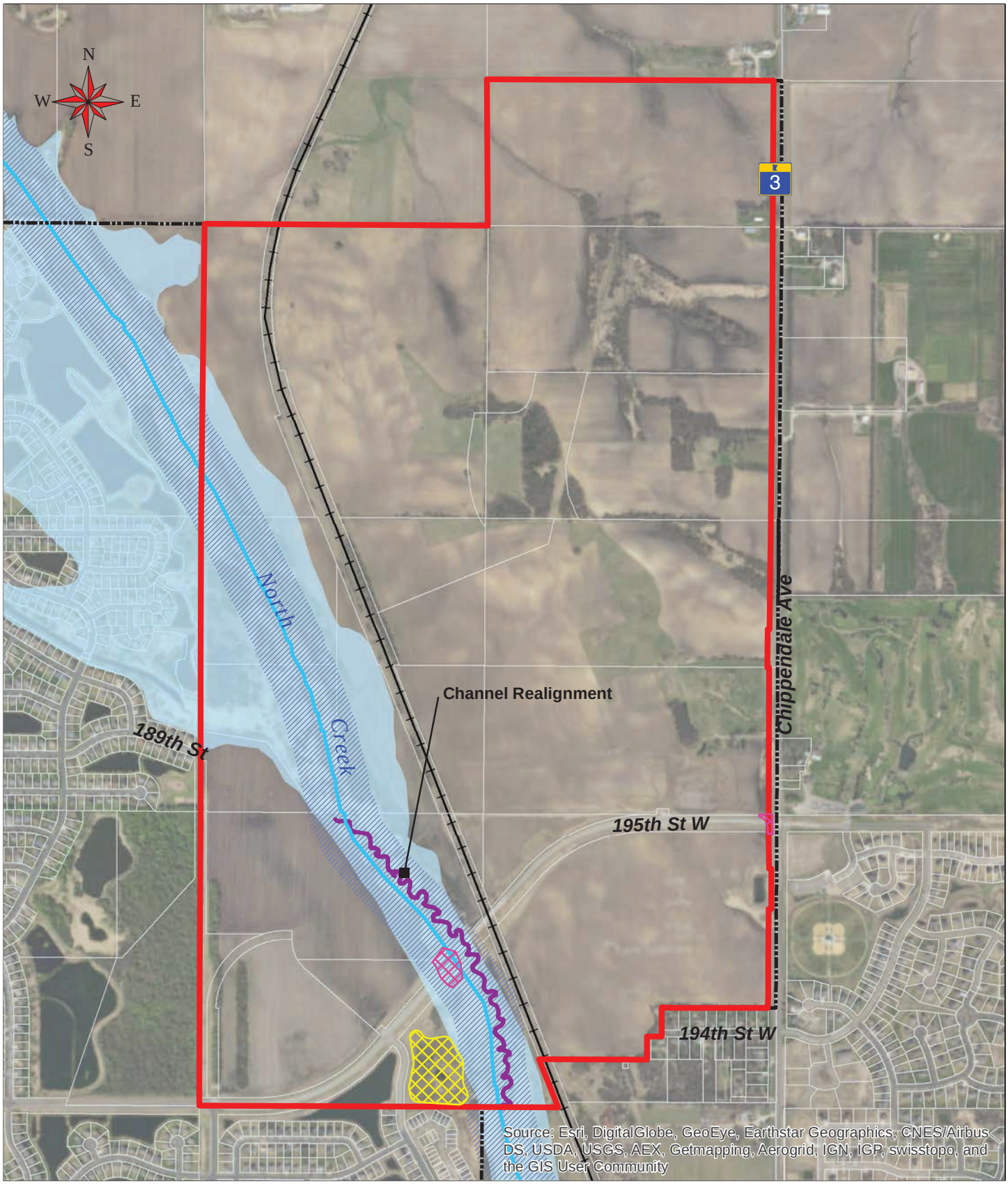
No changes in project compatibility with flood plain and shoreland zoning district for the 2016 AUAR Update compared to the 2011 AUAR Update.

2011 AUAR Update--Floodplain

Since the 2006 Update the two-lane segment of 195th Street was completed in 2009 providing the necessary east/west connection to TH 3. The selected alignment was chosen by the City in part because it minimizes impacts to wetlands and the floodplain in comparison to other potential alignments. Mitigation measure have been completed with the roadway construction as shown in Figure 10-3.

Figure 10-3 displays the area of wetland and floodplain mitigation completed for the construction of 195th Street. A single wetland mitigation area of over six (6) acres was constructed at the same time as 195th Street rather than multiple smaller mitigation sites. This single site exceeds the total mitigation area needed for this project.

The 2004 AUAR and the City's Comprehensive Plan proposes a potential extension of Diamond Path Road through the AUAR area. While Diamond Path is included in the AUAR, City Staff will continue to review the feasibility of the road as this project moves forward.



Stantec

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

AUAR-Update

Floodplain Areas

Figure 14-1

- Original Channel
- Realigned Channel
- 100-Year Floodplain
- Proposed Wetland Impacts
- Proposed Mitigation Areas
- Shoreland District
- Study Area Boundary
- City Boundary
- Railroad
- Parcel Base Map

January 2017

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Fig 14-1 Floodplain Areas.mxd

15. Water Surface Use

Will the project change the number or type of watercraft on any water body.
___Yes _X_ No

If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other users or fish and wildlife resources. This item need only be addressed if the AUAR area would include or adjoin recreational water bodies.

No changes in water surface use since the 2011 AUAR Update.

16. Erosion and Sedimentation

a. *Describe any steep slopes or highly erodable soils and identify them on the site map. Describe the erosion and sedimentation measures to be used during and after construction of the project. The number of acres to be graded and number of cubic yards of soil to be moved need not be given; instead, a general discussion of the likely earthmoving needs for development of the area should be given, with an emphasis on unusual or problem areas. In discussing mitigation measures, both the standard requirements of local ordinances and any special measures that would be added for AUAR purposes should be included.*

Erosion and Sedimentation—2016 AUAR Update

No changes in erosion and sedimentation issues for the AUAR study area compared to the 2011 AUAR Update. As the AUAR study area develops, temporary erosion and sediment control features will be implemented to satisfy City, watershed, and State requirements. Such features could include vegetative restoration, storm drain inlet protection, construction entrance protection, and silt fence.

Map 16-1 indicates that an area of steep slopes is present through the middle portion of the AUAR study area. City standards and requirements for erosion control, as well as those of other permitting organizations, will be enforced in the AUAR area.

Mitigation Plan

Goal 1. Minimize erosion and sedimentation and impacts on surface waters as development occurs.

Protection strategies:

1. Identify and protect areas of existing native vegetation, and minimize soil exposure during development.

2. Use created storm water ponds as sediment basins during construction.

3. Implement the City's Erosion Control and Turf Establishment Ordinance. Work with the grading contractor to ensure that these practices are implemented, and that contractors follow the City's erosion and sediment control requirements.

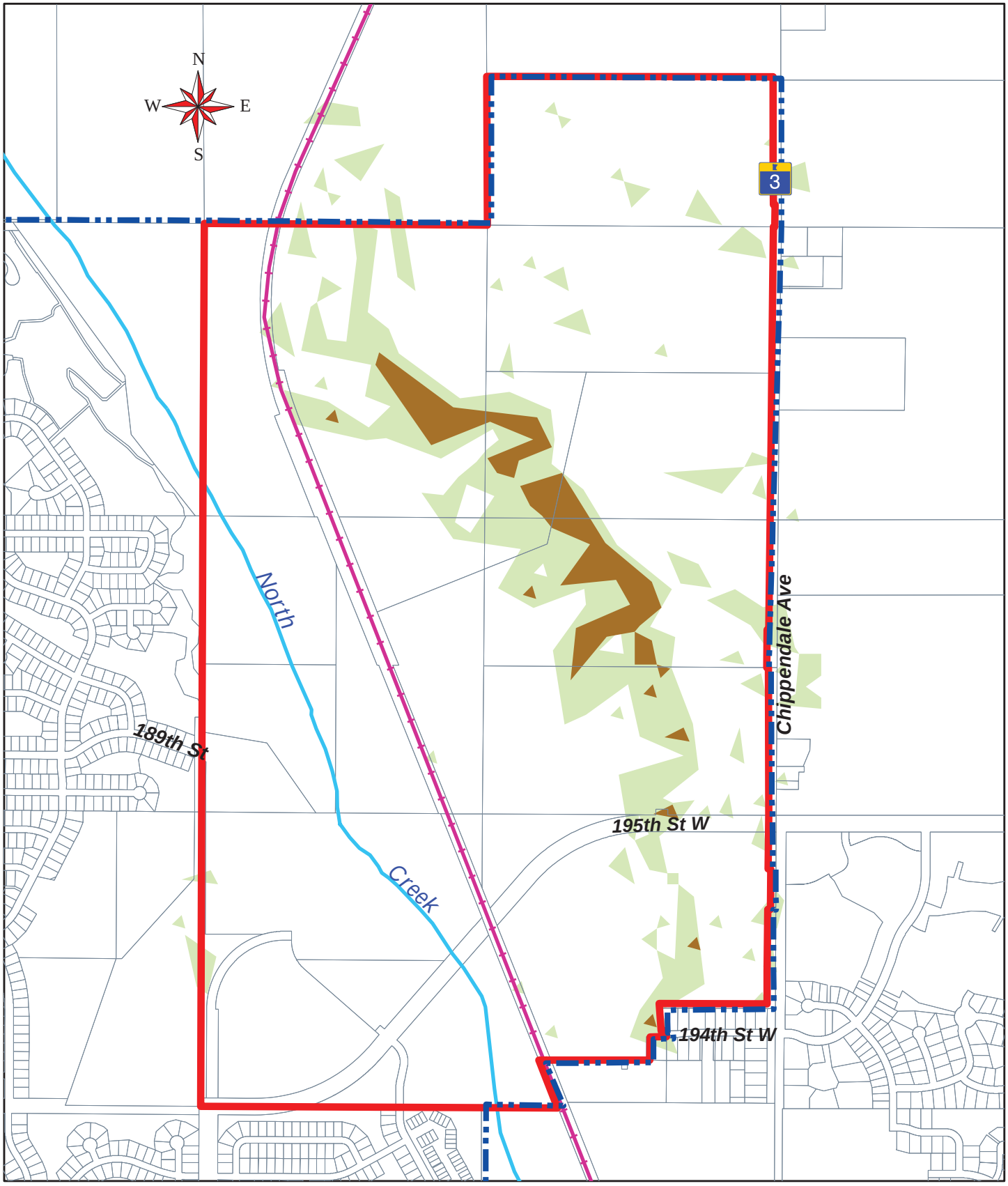
4. Implement the Additional BMP's included in the MPCA's NPDES Permit for Special Waters (August, 2003).

5. Employ inspectors on site to ensure that Best Management Practices and City Ordinances are implemented.

   Responsible Parties: City of Farmington, private developers.

   Regulatory Program: City Ordinances, and Grading Plan Requirements.

   Implementation Time Frame: Developer approach and use of BMP's should be specified in grading plan. Adoption and enforcement of BMP's should occur throughout the development process.



Bonestroo

Feet

1,200 0 1,200

City of Farmington
Seed-Genstar
AUAR-Update
Steep Slopes

Figure 16-1

Slopes 12% - 20%
Slopes 20%+
Proposed Water Main
Study Area Boundary
City Boundary
Railroad
Parcel Base Map

June 2011
K:\141\141113330\GIS\Projects\Fig 16-1 Steep Slopes.mxd

17. Water Quality – Surface Water Runoff

It is expected that the AUAR will have a detailed analysis of stormwater issues. A map of the proposed stormwater management system and of the water bodies that will receive stormwater should be provided;
The description of the stormwater system should identify on-site and "regional" detention ponding and also indicate whether the various ponds will be new water bodies or converted existing ponds or wetlands. Where on-site ponds will be used but have not yet been designed, the discussion should indicate the design standards that will be followed.
The following types of water bodies must be given special analysis:

Lakes: within the Twin Cities metro area a nutrient budget analysis must be prepared for any "priority lake" identified by the Metropolitan Council. Outside of the metro area, lakes needing a nutrient budget analysis must be determined by consultation with the MPCA and DNR staffs;

Trout Streams: if storm water discharges will enter or affect a trout stream an evaluation of the impacts on the chemical composition and temperature regime of the stream and the consequent impacts on the trout population (and other species of concern) must be included;

Surface Water Runoff Impacts—**No changes in surface water runoff impacts identified for the 2016 AUAR Update compared to the 2011 AUAR Update. As the AUAR area develops, surface water runoff will be managed in accordance with the City's 2008 Local Surface Water Management Plan as well as watershed and State requirements. Figure 17-1 has been updated to reflect the 2008 Plan; the narrative below regarding subwatersheds has been updated accordingly. Stormwater BMPs will be implemented to satisfy City, watershed, and State requirements. BMPs will be designed in accordance with the recently-adopted NOAA Atlas 14 rainfall amounts and distributions. Such BMPs could include stormwater storage for rate control; infiltration, filtration, bioretention, or stormwater reuse for volume control and water quality treatment; and temporary erosion and sediment control features such as vegetative restoration, storm drain inlet protection, construction entrance protection, and silt fence.**

The project area is located within the watershed of the Vermillion River and directly adjacent to North Creek, a tributary that joins the mainstem of the Vermillion River approximately one mile downstream of the project area in the City of Farmington. Both the Vermillion River and North Creek have been designated as trout waters under State Rules. This portion of the North Creek drainage lies entirely within Planning Unit 1 designated in the Vermillion River Watershed Management Plan preliminary draft (August 1999).

Summarized data for both North Creek and that portion of the Vermillion River where North Creek joins it are presented in Table 17-1.

Table 17-1

River/Creek	Watershed Area	Mean Discharge	Period of Record
North Creek[1]			
Vermillion River[2]	82,500 acres	67.5 cfs	1974 – 2000

[1] Monitoring location is _____
[2] Monitoring location is near Empire, MN

Assessment Objectives

The objective of this analysis was to provide guidance on the mitigation measures necessary to protect North Creek from increases in runoff volume as well as chemical and thermal loads.

At the time that the stormwater analysis was first completed for this AUAR (Fall, 2002), the agencies involved in the AUAR process supported application of a proposed standard by the Minnesota PCA that is proposed for areas tributary to that portion of the Vermillion River mainstem to which the Empire wastewater treatment plant discharges. This standard is expected to be adopted in March 2003. The standard that guided the stormwater analysis for this AUAR is as follows:

> *To keep the runoff volume under ultimate development conditions from exceeding the event runoff volume under pre-development (existing land cover) conditions for design rainfall event s up to the 10-year 24-hour event.*

Meeting this standard for the AUAR study area is expected to provide adequate protection to North Creek regarding runoff volume, thermal loads, and other runoff-driven pollutants.

In August, 2003, the MPCA Board adopted a different standard for stormwater management that will be applied in the AUAR study area. The new requirements are described in the General Permit Authorization to Discharge Storm Water Associated with Construction Activity under the National Pollution Discharge Elimination System/State Disposal System Permit Program. The standard applies to discharges to all Special Waters of the state, and includes the following requirements:

- The water quality volume that must be treated by the project's permanent storm water management system shall be one (1) inch of runoff from the new impervious surfaces created by the project.
- An undisturbed buffer zone of not less than 100linear feet from the special water (not including tributaries) shall be maintained at all times. This is the same buffer requirement as the Farmington Surface Water Management Plan requires for trout streams and trout stream wetlands.
- The permanent storm water management system must be designed such that the pre and post project runoff rate and volume from the 1 and 2-year 24-hour precipitation events remains the same.

- Projects that discharge to trout streams must minimize the impact of increase in temperature using one or more of the following measures, or a combination of measures, in order of preference:
    - Minimize new impervious surfaces
    - Minimize the discharge from connected impervious surfaces by discharging to vegetated areas or grass swales, and through the use of other non-structural controls
    - Infiltration or evapotranspiration of runoff in excess of pre-project conditions (up to the 2-year, 24-hour precipitation event)
    - If ponding is used, the design must include an appropriate combination of measures such as shading, filtered bottom withdrawal, vegetated swale discharges or constructed wetland treatment cells that will limit temperature increase. The pond should be designed to draw down in 24 hours or less
    - Other methods that will minimize any increase in the temperature of the trout stream

The infiltration areas proposed for the AUAR study area to meet the draft standard (Fall 2002) more than met the standard actually adopted in August 2003, as the adopted standard would require a smaller area of infiltration than the draft standard. However, the project developer has indicated that since the site is able to meet the higher standard, the higher standard will be utilized in design of the development and its storm water facilities.

Therefore the methodology used in the surface water analysis and proposed surface water runoff mitigation strategies that follow are based on the higher draft MPCA standard (Fall 2002), and will more than meet the adopted standard. (August 2003).

Water Quality/Surface Runoff Analysis – Methodology

The boundaries of the sub-watersheds draining the project area are shown in **Figure 17-1.** The major sub-watershed boundaries **are updated to reflect the City's 2008 Local Surface Water Management Plan.**

A summary of the significance of each subwatershed is presented below.

- Subwatersheds 1 and 2 generate runoff that crosses the eastern boundary of the AUAR project area under Highway 3. This runoff flows through a series of ditches and depressions and eventually reaches the mainstem of the Vermillion River about 3 miles to the southeast. These subwatersheds are not tributary to North Creek.
- Subwatersheds 3 and 4 lie along the northern boundary of the AUAR project area. These sub-watersheds generate runoff that flows through a series of overland drainageways to North Creek outside the study area to the northwest.
- Subwatersheds 5, 6, 7, 8, and 9 **(2016 AUAR Update: Subwatersheds 5, 6, 8, and 9)** generate runoff that reaches North Creek within the project area from the east. Sub-watersheds 5, 8, and 9 encompass the higher ground east of the railroad tracks that bisect the AUAR project area. **(2016 AUAR Update: Subwatershed 6**

lies) between the railroad tracks and the Creek itself and contain portions of the designated FEMA floodplain and/or fringe wetlands associated with North Creek.

- **(2016 AUAR Update: Subwatershed 10 lies)** largely west of North Creek and generate runoff that also discharges to North Creek within the project area.
- **2016 AUAR Update: Subwatersheds 7 and 11 straddle North Creek and generate runoff that flows to the creek from both the east and the west.**
- Subwatershed 12 contains a small amount of developable area within the AUAR project area that is tributary to North Creek. This subwatershed also receives inflow from a large area to the west of the AUAR project area that flows to North Creek.

Compliance with the MPCA standard requires wide-spread application of infiltration approaches to control runoff volume and associated pollutant loads for the development intensity proposed. In order to assess the suitability of soils within the AUAR study area to support infiltration, the detailed soil survey was used. The dominant soil units within the project area are shown in Figure 17-2. In general, soils that fall into SCS Hydrologic Group A or B are recommended as being suitable to support infiltration, while those in Hydrologic Group C and D are not recommended for infiltration facilities. As the figure shows, the bulk of the surficial soil units that lie east of the railroad tracks as well as soils in the far northwestern corner of the AUAR project area are Hydrologic Group B soils. The native soils lying along North Creek as well as in the southwestern portion of the site are dominated by Hydrologic Group D soils and are therefore considered unacceptable for infiltration techniques.

SCS TR20 methods were used to calculate runoff volumes for each sub-watershed under existing and proposed land use conditions for various storm events up to the 10-yr 24 – hour. The 10-year 24-hour rainfall event produced the largest absolute difference in runoff volumes between the two development scenarios, so it was used as the basis to estimate infiltration requirements and size infiltration facilities. Once it was determined what runoff volume had to be infiltrated to meet the MPCA criteria in each subwatershed, a methodology used by the Rice Creek Watershed District was used to estimate the size (area) of the infiltration facility to meet that objective. As per this methodology, a drawdown time of 72 hours was used for the design storm and an infiltration rate of .25”/hr. was used to characterize Hydrologic Group B soils. The RCWD methodology is included in the Appendix.

For the purpose of the analyses, it was assumed that pre-treatment of stormwater runoff in each subwatershed would be provided by a detention basin with dead storage sufficient to contain the runoff volume from a 2.5” rainfall event. Properly designed ponds sized according to this criteria usually provide 60-65% removal of total phosphorus and about 85% of total suspended solids for urban runoff. This level of performance equals or exceeds generally accepted recommendations for pre-treatment of runoff introduced to an infiltration facility.

The PondNet model was used as a generalized watershed loading function to calculate average annual phosphorus loads generated in each of the subwatersheds. The model was also used to rout this load through the detention basins to determine their effect in

attenuating the load. In order to estimate the impact on phosphorus load reduction of the infiltration facilities, a methodology was employed that relates the design precipitation depth on which the infiltration facility size is based to the phosphorus load attenuation. The same methodology was used to estimate the impact of the infiltration features in reducing average annual water loads. That methodology is explained in the Appendix.

The various runoff coefficients, curve numbers, impervious coverage figures, and runoff phosphorus concentrations representing each land use accounted for in the analysis is summarized in Table 2.

Table 2

Land Cover	**Impervious %**	**Rc[1]**	**CN**	**Runoff [TP] (ppb)**	**TP Load (lbs./yr.)**
Woodlands	N/A	.08	62	200	.10
Open Undeveloped	N/A	.12	65	200	.16
Non-ponded wetlands	N/A	.08	62	200	.10
Agricultural cropland (HG B soils)	N/A	.21	72	450	.62
Agricultural cropland (HG D soils undrained)	N/A	.38	81	450	1.13
Rural Residential	<5%	.12	65	300	.22
Very low density residential (2 ac./ unit on HG D soils)	12%	.38	81	450	1.13
Low density residential (3.5units/ac.)	38%	.26	75	450	.75
Medium density residential (8 units/ac.)	65%	.47	85	500	1.55
Commercial	78%	.61	90	400	1.61

[1] Based on average annual precipitation of 29.2 inches per year (Vermillion River Watershed Management Plan Draft – 1999).

Results and Mitigation Guidance

As mentioned above, the detailed soil survey for this area indicates that those subwatersheds east of the railroad ROW (subwatersheds 1-5, 8, and 9) as well as subwatershed 6 (located in the northwest portion of the project area) have large areas of soils that appear suitable for infiltration. Subwatershed 7 appears to have a very small area of suitable soils that is confined to the northern portion of this unit. Subwatersheds 10, 11, and 12 in the southwestern portion of the project area are dominated by soils that appear incapable of supporting infiltration facilities.

Modeling and analysis results for subwatersheds with suitable soils for regional infiltration facilities (subwatersheds 1-6, 8, and 9) are summarized in Table 17-2. The table summarizes results for the following scenarios:

1. **Existing conditions.** The annual water and phosphorus loads are based on current land cover conditions, which are dominated by row crop agriculture. It is intended to be used as a benchmark reference.
2. **Future development conditions without mitigation.** This scenario assumes land uses reflective of the development proposal for these

subwatersheds, but with no water quality treatment or infiltration features. It is intended for reference only.

3. **Future development conditions with water quality ponding mitigation only.** This scenario assumes land uses reflective of the development proposal, and includes the effect of detention basins constructed according to the City of Farmington's design standards. Again, it does not account for the effect of any infiltration features.
4. **Future conditions with both water quality ponding and infiltration.** This is similar to Scenario 3 above, except that the effect of infiltration features sufficient to meet the MPCA's proposed infiltration standard are shown.

Based on Table 17-2, the average annual post-development runoff-driven phosphorus and runoff water loads delivered to North Creek from the identified sub-watersheds will be reduced by 78% and 40%, respectively, from those estimated for the existing conditions if both the City's treatment pond standards and the MPCA's proposed runoff volume control standards are applied. The effect would be similar in subwatersheds 1 and 2 draining across the eastern boundary of the site. Altogether, these subwatersheds comprise over 80% of the AUAR project area.

The remaining subwatersheds within the site (7 and 10-12) constitute about 12% of the developable area (i.e. area that is outside designated floodplain and jurisdictional wetlands) within the AUAR project area. Virtually all of these areas are underlain by much tighter soils that – in their undrained state – fall into hydrologic group D. While these soils are likely drained to support the current agricultural operations, the soils in their natural state are too impermeable for infiltration to be a recommended stormwater management technique at the proposed development densities.

Mitigation Plan—2016 AUAR Update

No changes in mitigation plan strategies for the 2016 AUAR Update compared to the 2011 AUAR Update. As the AUAR area develops, surface water runoff will be managed in accordance with the City's 2008 Local Surface Water Management Plan as well as watershed and State requirements. Stormwater BMPs will be implemented to satisfy City, watershed, and State requirements. BMPs will be designed in accordance with the recently-adopted NOAA Atlas 14 rainfall amounts and distributions. Such BMPs could include stormwater storage for rate control; infiltration, filtration, bioretention, or stormwater reuse for volume control and water quality treatment; and temporary erosion and sediment control features such as vegetative restoration, storm drain inlet protection, construction entrance protection, and silt fence.

Mitigation Plan

Goal 1. Protect the water and habitat quality of North Creek to meet or exceed applicable MPCA water quality standards.

Protection Strategies:

1. The City of Farmington will work with the developer to identify and consider strategies to infiltrate and detain stormwater to reduce runoff to protect North Creek. Infiltration strategies will be considered in areas where Hydrologic Soil Groups A and B have been identified by the Dakota County Detailed Soil Survey. The City's P.U.D. ordinance allows for modifications through its design review process to accommodate a variety of strategies to infiltrate or detain stormwater and meet the identified performance standard. The following strategies will be considered for use where feasible in the AUAR area:
    - Reduce residential street widths to reduce impervious surface coverage
    - Use vegetated islands within cul de sacs designed to hold stormwater
    - Provide small scale infiltration areas such as "rainwater gardens" and /or larger regional infiltration basins
    - Use cluster development that maintains open space, minimizes impervious surfaces, and protects soils with high infiltration rates, so that drainage may be directed to these areas
    - Encourage homeowners to direct downspouts from roofs over yards or other vegetated areas or into rain barrels, and away from driveways or paved surfaces
    - Encourage plantings of native vegetation on public and private properties to slow and capture runoff and encourage infiltration
    - Infiltration strategies will also help to maintain the quantity and quality of shallow ground water flows that sustain North Creek
    - In planning areas where shallow ground water prevents the use of infiltration as a stormwater management strategy, consider use of shaded swales or other strategies to control the temperature of runoff before it reaches North Creek.

    Responsible Parties: City of Farmington, private developers, MPCA.

    Regulatory Program: MPCA Water Quality Standards.

    Implementation Time Frame: Identify strategies to implement these plans as a part of the final plat and grading plan; implement strategies as development occurs.

2. In areas where Hydrologic Soil Groups C and D have been identified by the Dakota County Detailed Soil Survey, infiltration is not an effective strategy for managing surface water runoff volumes. (These soil types are concentrated in the southwest portion of the AUAR study area; see Figure 17-2.) In these areas, the following strategies will be considered to manage surface water runoff and protect the quality and water temperature of North Creek:

    - Filtration strategies such as swales and "rainwater gardens" may be used to protect water quality
    - Where ponds are required to manage water quality and quantity, and protect the creek from high flows, water will be discharged where

possible through shaded swales, channels or pipes to cool the water temperature before it reaches the creek.

Responsible Parties: City of Farmington, private developers, MPCA.

Regulatory Program: MPCA Water Quality Standards.

Implementation Time Frame: Identify strategies to implement these plans as a part of the final plat and grading plan; implement strategies as development occurs.

3. Implement provisions of the City's Comprehensive Plan, Surface Water Management Plan, Wetland Ordinance, and Shoreline Ordinance to protect the natural areas in the North Creek Corridor by restricting development within the corridor and floodplain areas, and requiring vegetated buffers along the creek and wetlands in the corridor.

   Responsible Parties: City of Farmington and private developer.

   Regulatory Program: Enforcement of City Ordinances. The City may also apply to non-regulatory programs such as DNR's Metro Greenways and Conservation Partners programs to seek funding assistance for protection and restoration of natural communities.

   Implementation Time Frame: Enforcement of Ordinances will occur with development. Restoration activities may be completed as resources are available.

4. The developer will follow the requirements of the Farmington Surface Water Management Plan and Wetland Ordinance, and applicable state and federal regulations, to avoid, minimize and/or mitigate for impacts to wetlands that result from development.

   Responsible Parties: Private developer, City of Farmington, and regulatory agencies

   Regulatory Program: Farmington Surface Water Management Plan, Wetland Ordinance, Shoreland Ordinance, Minnesota Wetland Conservation Act, Sections 401 and 404 of the Clean Water Act, and Minnesota DNR Protected Waters Program.

   Implementation Time Frame: Complete analysis of wetland impacts and mitigation needs as final plat and grading plan are completed. Implement efforts to avoid or mitigate for impacts as development occurs.

5. Require the use, management and enforcement of Best Management Practices (BMP's) to control erosion and sedimentation and provide pretreatment of

water discharged to wetlands during and after construction, as specified in the City's Surface Water Management Plan.

Responsible Parties: City of Farmington

Regulatory Program: City's Zoning and Subdivision Ordinances, Wetland Ordinance, Excavation and Grading Ordinance and Grading Plan Requirements, and NPDES Phase II Stormwater Management Program.

Implementation Time Frame: Specify BMP's to be used in grading plans, and implement BMP's as development occurs.

6. The Minnesota DNR and Vermillion River Watershed JPO should continue monitoring efforts on North Creek and the Vermillion River, including biomonitoring through the River Watch program, flow monitoring, and electro-fishing and stream temperature studies to identify any significant changes as development occurs in the AUAR area.

Responsible Parties: Minnesota DNR and VRWD

Regulatory Program: Vermillion River Watershed Management Plan

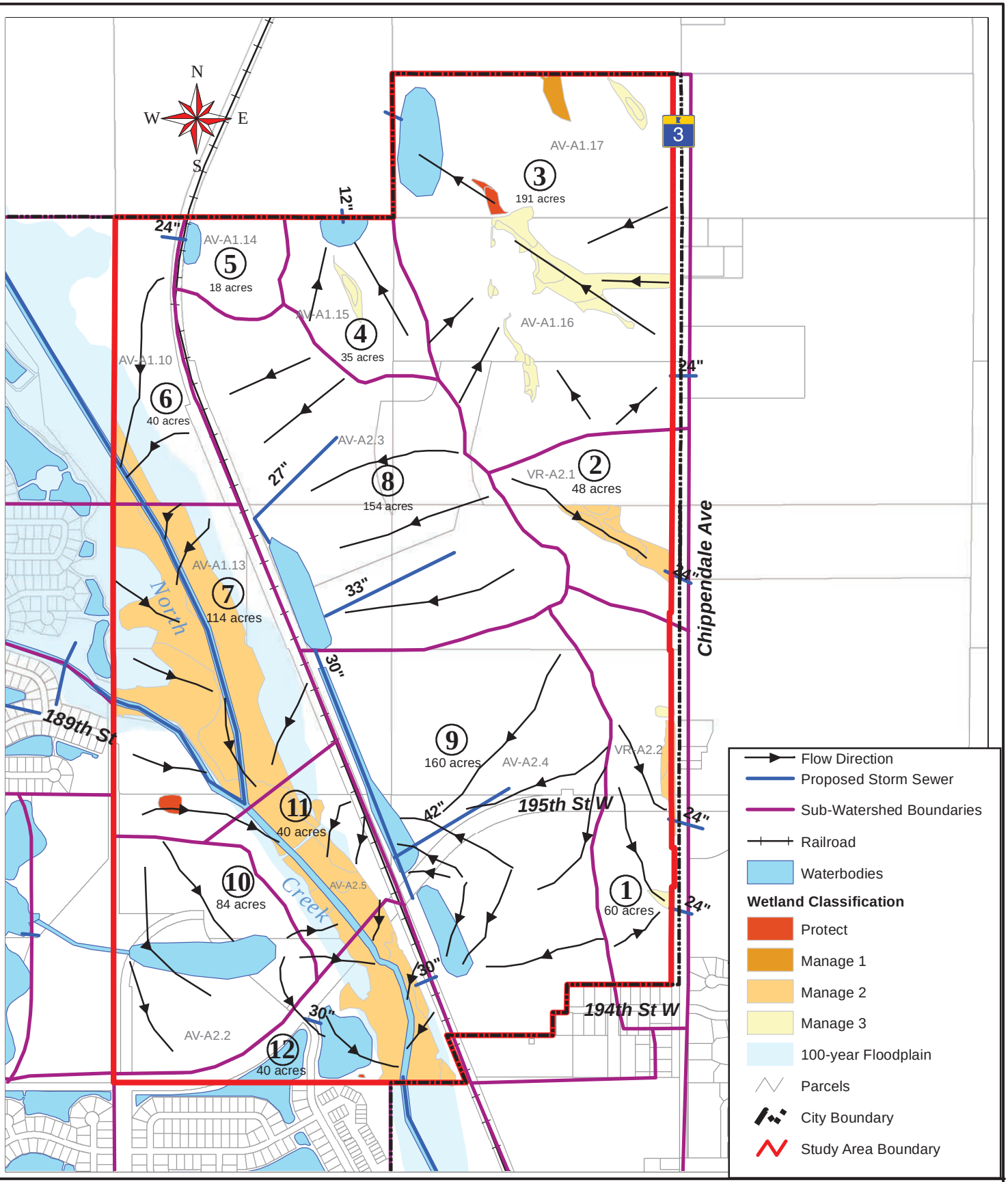
Implementation Time Frame: Existing monitoring should be continued.

Table 17-2

Table 17-2 - Summarized Results for Future Development/Mitigation Scenarios in Subwatersheds Suitable for Infiltration (Subwatersheds 1-6, 8, and 9)

Subwatershed (Node)	Area (acres)	Existing Conditions		Future Development Conditions					
				No NURP ponds or infiltration features		NURP ponds only		NURP ponds and infiltration features	
		TP Load (lbs.)	Water Load (AF)	TP Load (lbs.)	Water Load (AF)	TP Load (lbs.)	Water Load (AF)	TP Load (lbs.)	Water Load (AF)
1	65	29	28	53	44	19	44	7	15
2	51	24	23	37	32	14	32	5	11
Subtotal[1]	**116**	**53**	**51**	**90**	**76**	**33**	**76**	**12**	**26**
3	198	92	88	214	206	77	206	27	72
4	36	11	13	26	22	8	22	3	7
5	19	12	10	14	12	5	12	2	5
6	40	25	21	50	38	17	38	6	13
8	154	87	76	116	95	38	95	15	38
9	168	106	87	127	104	49	104	19	42
Subtotal[2]	**615**	**333**	**295**	**547**	**477**	**194**	**477**	**72**	**177**

Total area of project site is about 890 acres. Table above covers 731 acres (approximately 82% of total)
All loadings based on average annual precipitation of 29.3 inches/yr
[1] Subtotals for those portions of the site draining east toward the Vermillion River
[2] Subtotals for areas draining to North Creek.



Stantec

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

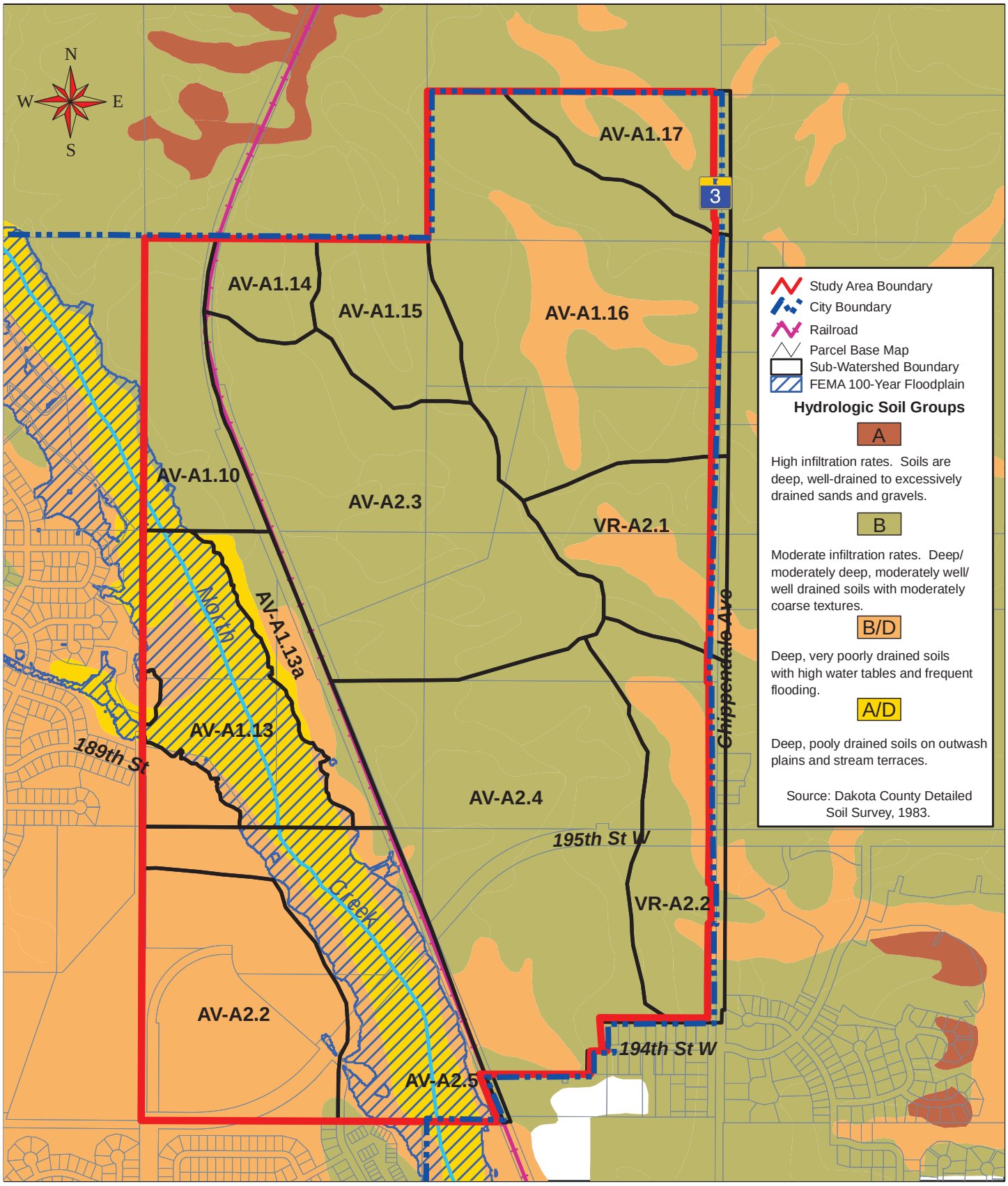
AUAR-Update 2016

Area Sub-Watersheds

Figure 17-1

December 2016

V:\1938\active\193803747\GIS\Projects\Fig 17-1 AreaSubWatersheds.mxd



Bonestroo

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

AUAR-Update

Hydrologic Group Soils

Figure 17-2

June 2011

K:\141\141113330\GIS\Projects\Fig 17-2 Hydric Soils.mxd

18. *Water Quality – Wastewaters*

No changes in wastewater impacts identified for the 2016 AUAR Update compared to the 2011 AUAR Update. As the AUAR area develops, sanitary sewer infrastructure will be implemented in accordance with the City's 2008 Comprehensive Sewer Policy Plan. Figure 18-1 has been updated to reflect the 2008 Plan.

a. *Describe sources, quantities, and composition (except for normal domestic sewage) of all sanitary and industrial wastewaters produced or treated at the site.*

Areas within the AUAR study area include mostly low density and medium density residential with a small pocket of commercial area. The land uses within the study area will generate typical quantities of wastewater. Unit wastewater flow rates for each land use type are presented in the City of Farmington's May 1996 Comprehensive Sewer Policy Plan.

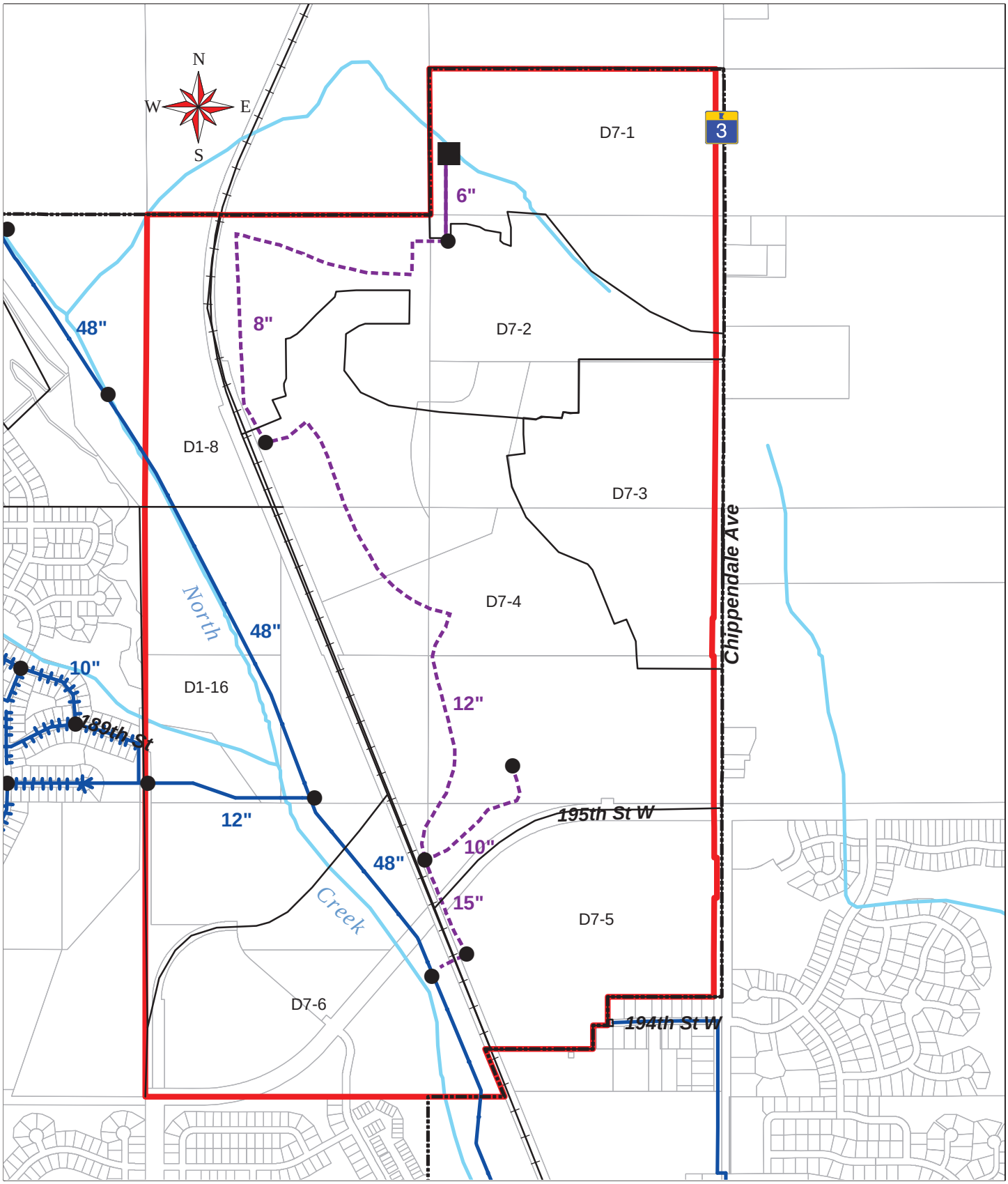
b. *Describe any waste treatment methods to be used and give estimates of composition after treatment, or if the project involves on-site sewage systems, discuss the suitability of the site conditions for such systems. Identify receiving waters (including ground water) and estimate the impact of the discharge on the quality of the receiving waters. (If discharge may affect a lake consult "EAW Guidelines" about whether a nutrient budget analysis is needed.)*

All development within the AUAR study area will be routed into the proposed trunk sewer via lateral service lines. The proposed trunk lines will be routed into the existing MCES Apple Valley Interceptor and conveyed to the Empire Wastewater Treatment Facility. No on-site sewage systems currently exist within the study area.

c. *If wastes will be discharged into a sewer system or pretreatment system, identify the system and discuss the ability of the system to accept the volume and composition of the wastes. Identify any improvements, which will be necessary.*

Two proposed trunk sewer lines will service the majority of the AUAR study area and will convey wastewater to the existing 48-inch Apple Valley Interceptor (see **Figure 18-1**). One line will service the southwest portion of the study area, and one will service the east side. The area in the northwest corner of the study area will be routed via lateral sewers directly into the Apple Valley Interceptor. It is not necessary to service this area with a trunk line.

The trunk sewers are described in a 2002 addendum to the City's May 1996 Comprehensive Sewer Policy Plan. They are sized for prospective sewage flows from the AUAR study area. These trunks will discharge into the existing 48" Apple Valley Interceptor. The point of connection into the existing interceptor will be at Manhole #17, as designated in the MCES (then Metropolitan Waste Control Commission) as-built plans for the interceptor. This manhole is located in the southern portion of the study area on the west side of the railroad tracks. The interceptor will convey sewage to the Empire Wastewater Treatment Facility located in Empire Township. This facility is designed to accommodate the sewage flows generated by the AUAR study area.



Stantec

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

AUAR-Update 2016

Trunk Sanitary Sewer System

Figure 18-1

Nodes
Proposed Lift Station
Proposed Trunk Sewer
Proposed Forcemain
Existing Trunk Sewer
Railroad
Parcels
Sewer District Boundary
City Boundary
Study Area Boundary

December 2016

V:\1938\active\193803747\GIS\Projects\Fig 18-1Trunk Sanitary Sewer.mxd

19. *Geologic Hazards and Soil Conditions*

a. Approximate depth (in feet) to ground water: __0__ minimum _50__ average
To bedrock: __<50___ minimum __100__ average

Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

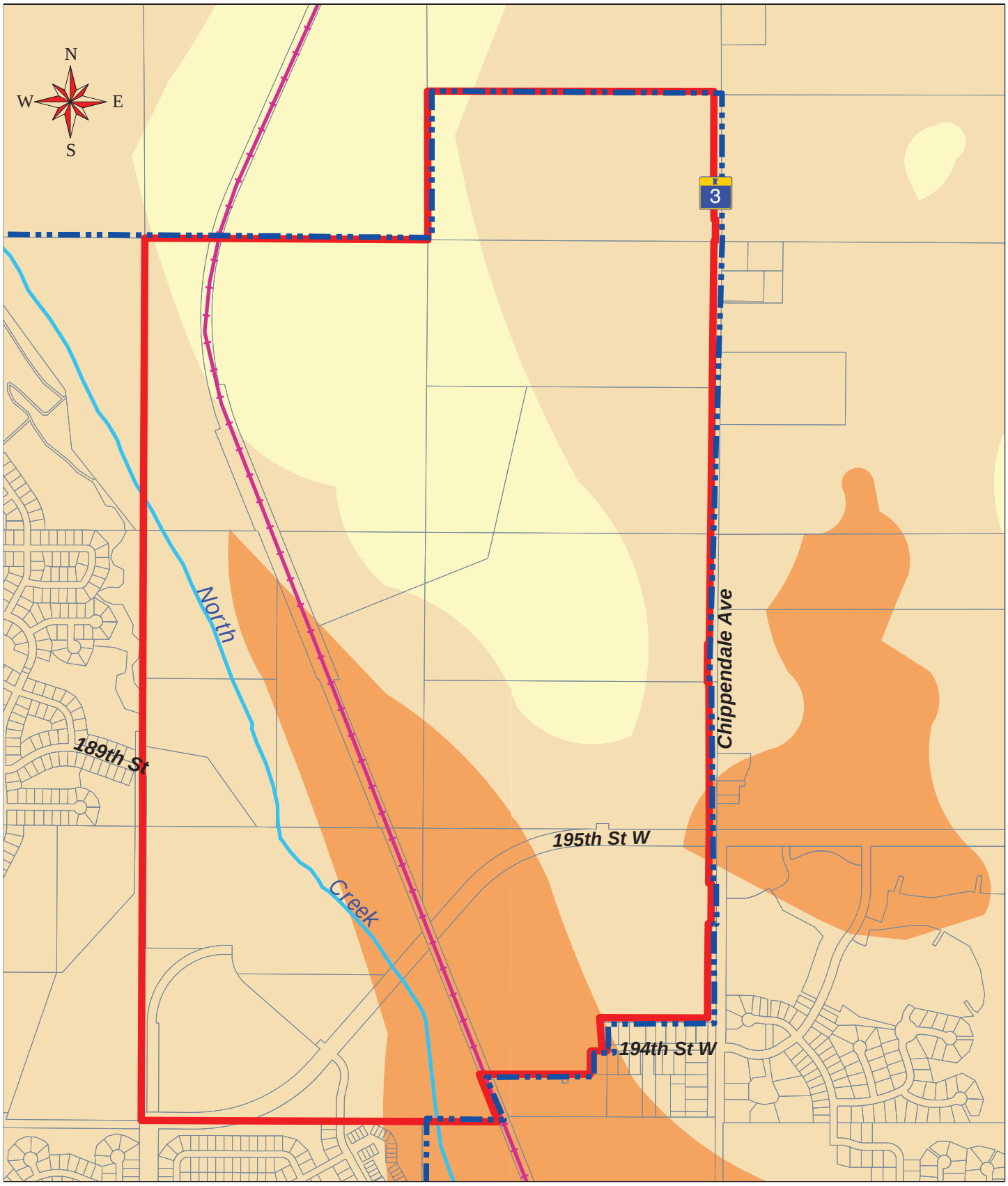
Information from the Dakota County Geologic Atlas and well logs from the County Well Index were used to determine depth to bedrock and depth groundwater. Since no wells logs could be located within the project area, well logs from wells immediately outside the perimeter of the project area were analyzed.

A depth to bedrock map is presented in the Dakota County Geologic Atlas and is shown in Figure 19-1. The north central portion of the project area exhibits depth to bedrock less than 50 feet, which generally corresponds the presence of the Platteville-Glenwood bedrock group. See **Figure 19-2** for the **current** bedrock map from the Dakota County Geologic Atlas. The rest of the project area exhibits bedrock depth between 50-100 feet, with a buried bedrock valley in the south central portion of the project area showing depths to bedrock between 100-150 feet. Well logs from just outside the western perimeter of the project area show bedrock depths ranging between 65 and 140 feet.

The minimum depth to groundwater occurs in the west, southwest portion of the project area, in the general area of the North Creek. This creek is likely fed by groundwater and, as such, groundwater is often less than 5 feet from the surface in the area of the creek. Depth to groundwater in the remaining project area varies somewhat, depending on topography, overlying units of bedrock, and the aquifer in which a measurement is taken.

The average depth presented was derived using information obtained from the Dakota County Geologic Atlas (Minnesota Geological Survey, 1990). The water table elevation in the general project area (approximately 900 feet above sea level) was subtracted from the land elevations (900-1000 feet above sea level) as found on the USGS 7.5’ Topographic Quadrangle. Range of depth to water varies from 0 to 100 feet, with the average being 50 feet. The lack of wells logs from within the project area makes it difficult to define the groundwater levels with greater detail.

Based on maps from the Dakota County Geology Atlas, no known sinkholes or karst conditions are present within the project area. The Platteville Limestone is present at less than 50 feet from the land surface in the northern portion of the project area, but does not appear to be exposed within the project area.



Bonestroo

Feet

1,200 0 1,200

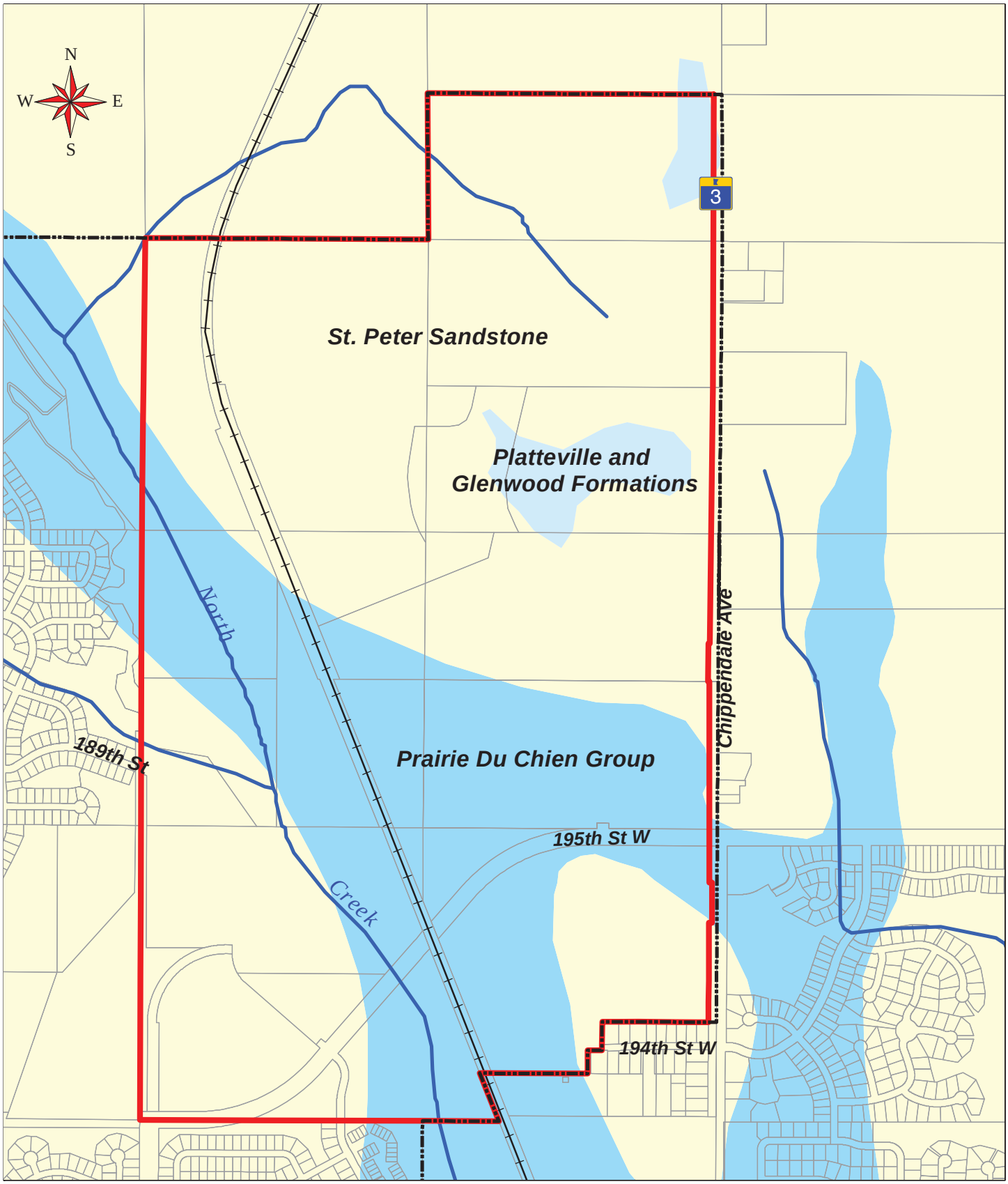
City of Farmington
Seed-Genstar
AUAR-Update

Depth to Bedrock

Figure 19-1

Depth to Bedrock	
Less than 50 feet	Study Area Boundary
51 to 100 feet	City Boundary
101 to 150 feet	Railroad
	Parcel Base Map

June 2011
K:\141\141113330\GIS\Projects\
Fig 19-1 Depth to Bedrock.mxd



Stantec

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

AUAR-Update

Bedrock Geology

Figure 19-2

Bedrock Types
- St. Peter Sandstone
- Prairie Du Chien Group
- Platteville & Glenwood Formations
- Study Area Boundary
- City Boundary
- Railroad
- Parcel Base Map

December 2016

V:\1938\active\193803747\GIS\Projects\Fig 19-2 Bedrock Geology.mxd

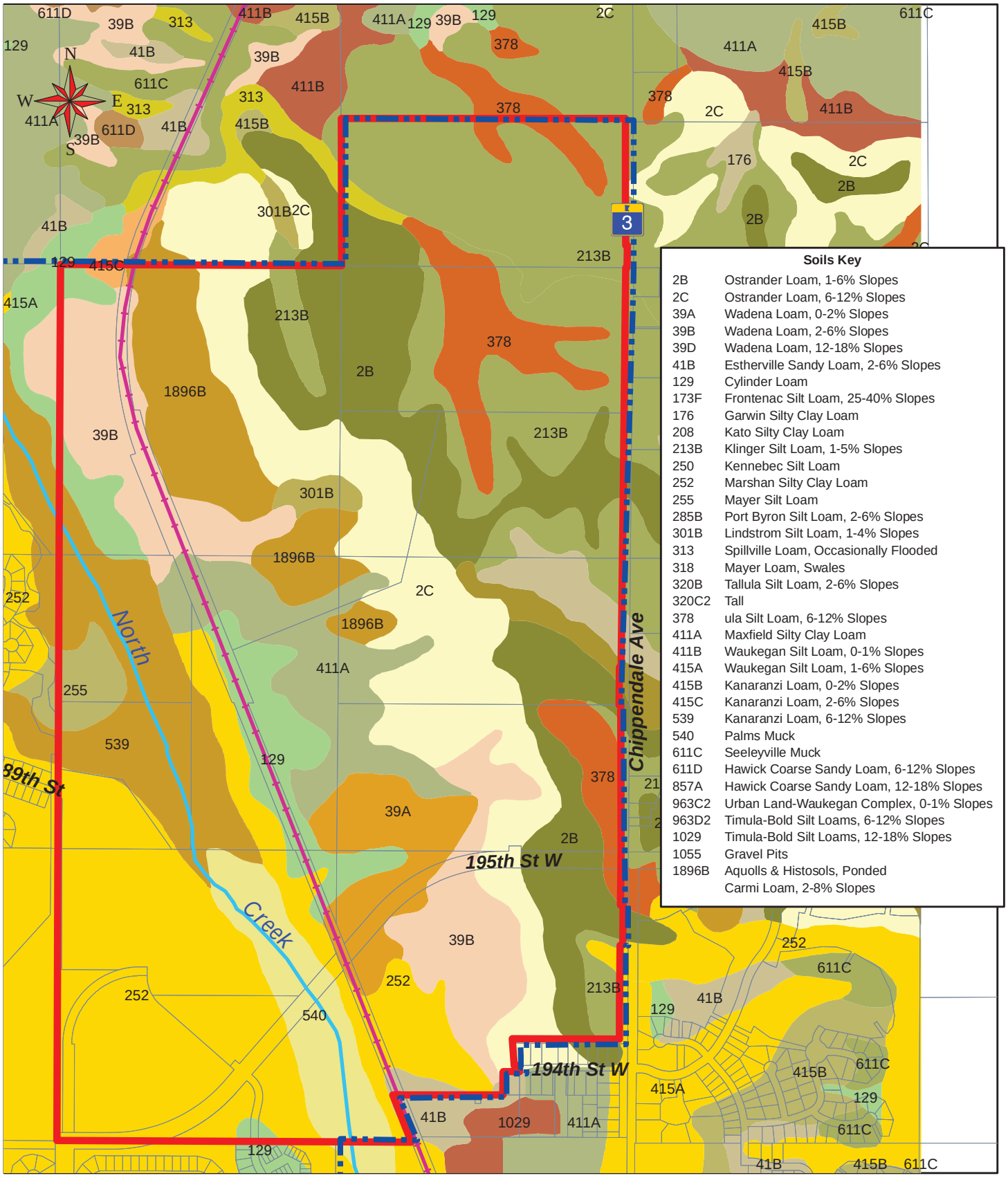
b. Describe the soils on the site, giving SCS classifications, if known. Discuss soil granularity and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.

Figure 19-3 shows the soil classifications within the AUAR study area. A band of loam and sand soils extends through the center of the site, with silt and muck soils concentrated to the east and west of this band. Soils in the center of the site have a moderate to good potential for infiltration, while those to the east and west have limited capacity.

The geologic atlas indicates that surficial deposits of glacial till, outwash, and organic deposits mainly cover the site. Figure 19-4 shows the surficial deposits for the project area, as showing in the atlas. The "Old Gray" till is a pre-late Wisconsinan deposit. It is calcareous and consists of two tills. The lower till, most commonly seen in the mapped areas, is a firm loam to clay loam. A small area of River Falls Formation Drift is located near the center of the project area. This formation consists of undivided till, outwash, and ice-contact stratified drift. It usually thin and overlays other tills, such as the Old Gray till. The outwash in the southwestern portion of the project area is a Des Moines lobe deposit consisting of sand, loamy sand, and gravel. These materials generally allow much higher infiltration rates than till and translates into a higher sensitivity of the underlying aquifer. In a linear orientation along the North Creek, the organic deposits can be found. These deposits consist of people and organic-rich silt and clay.

A plate located in the geologic atlas indicates the Prairie Du Chien-Jordan Aquifer's overall sensitivity to pollution. This is the aquifer from which the City of Farmington obtains its water supply for municipal use. Additionally, most domestic wells in the area utilize this aquifer for drinking water. The map indicating the aquifer's sensitivity is based on several assumptions, including soils, surficial geology, and bedrock geology. The map is used as a general gauge of the aquifer's overall susceptibility to pollution based on the travel time of pollutants from a surface source to the aquifer itself. A shorter anticipated time of travel translates into a higher sensitivity rating for aquifer. Figure 19-5 shows the project boundaries projected onto this plate from the geologic atlas.

The west-southwest portion of the project area is rated as "High" in sensitivity. This means that a pollutant would likely have to travel weeks to years before it reached the aquifer. The remaining project area ranges from "High-Moderate" to "Low-Moderate" to "Low". Pollutant travel times range from years to a decade for "High-Moderate" areas, several decades for "Low Moderate" areas, and several decades to a century for "Low" areas. The lowest areas of sensitivity in the project area occur where Platteville formation is present, as the Glenwood Shale at the bottom of the Platteville formation acts as a confining unit to the lower St. Peter aquifer. This area also exhibits the Old Gray till deposits that further impede infiltration rates. The "High" sensitivity area not only shows a lack of the Platteville formation, but the dominant surficial deposits are the Des Moines lobe outwash, which allow for higher infiltration rates.



Bonestroo

Feet

1,200 0 1,200

City of Farmington
Seed-Genstar
AUAR-Update

Soils

Figure 19-3

Study Area Boundary
City Boundary
Railroad
Parcel Base Map

June 2011
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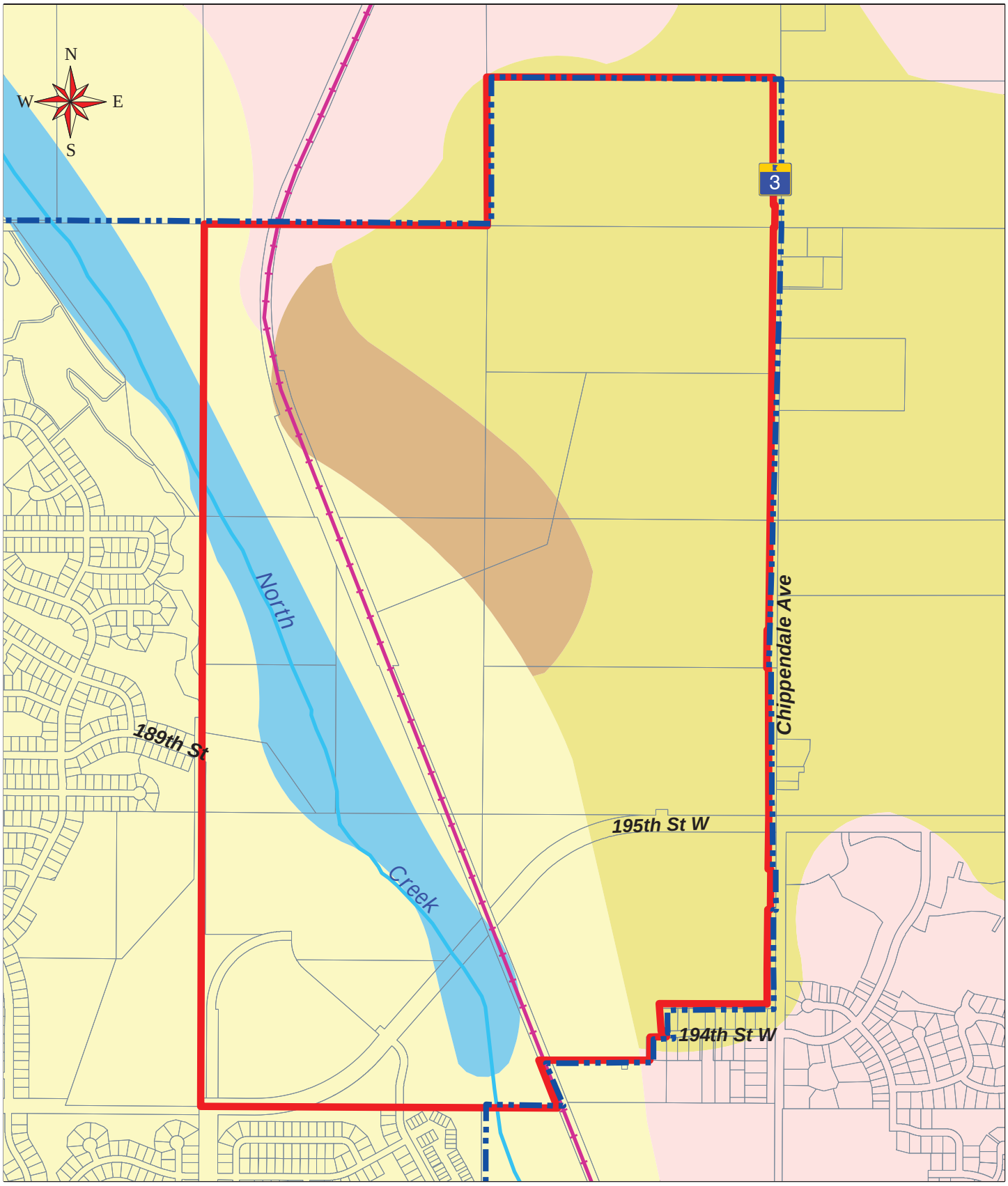
Fig 19-3 Soils.mxd



Bonestroo

Feet

1,200 0 1,200

City of Farmington
Seed-Genstar
AUAR-Update

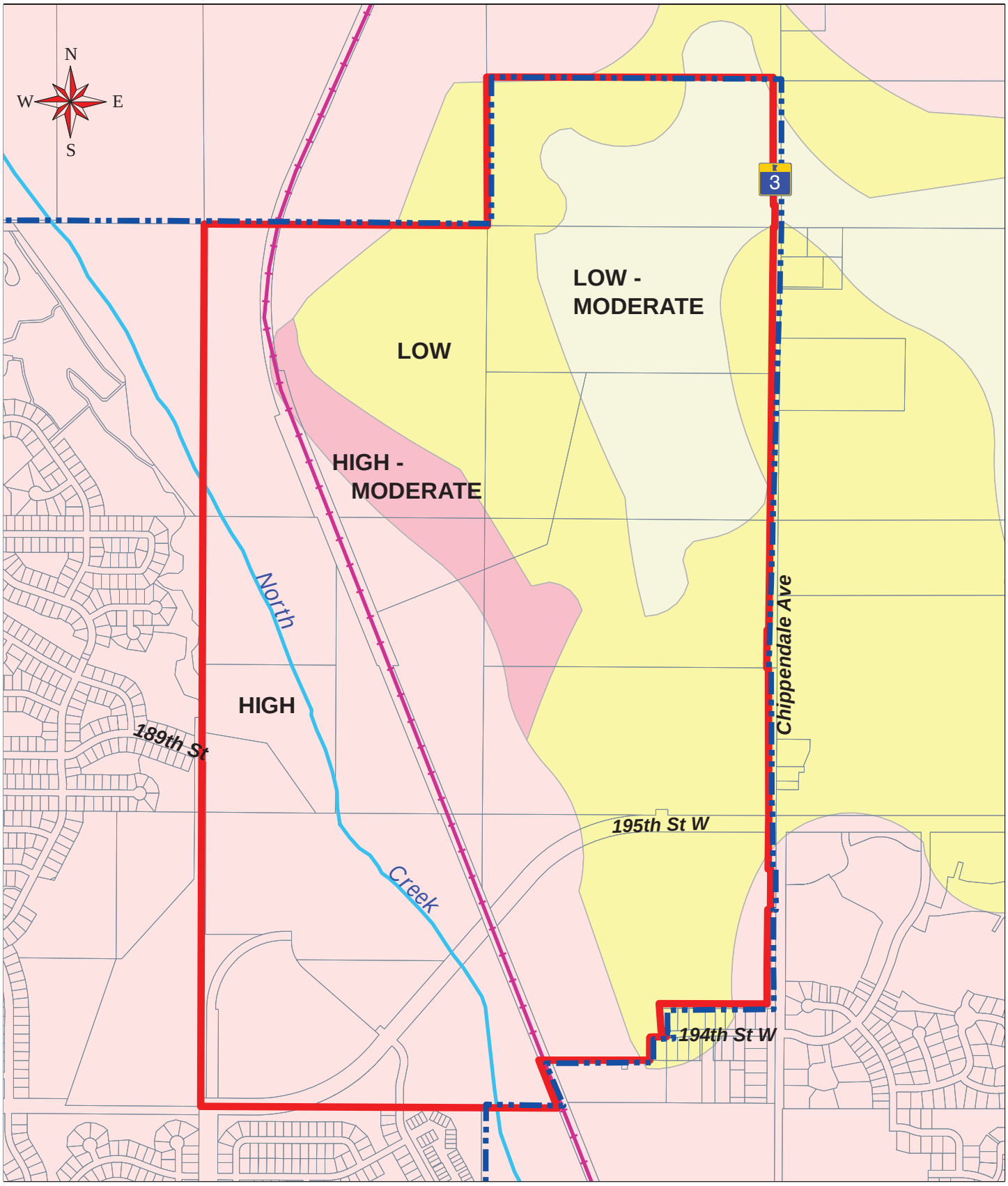
Surficial Geology

Figure 19-4

Surficial Geology
- o Organic Deposits
- pkt Old Gray Till
- psd Pre-Late Wisconsin Deposits
- so Outwash
- dso Outwash

- Study Area Boundary
- City Boundary
- Railroad
- Parcel Base Map

June 2011
K:\141\141113330\GIS\Projects\
Fig 19-4 Surficial Geology.mxd



Bonestroo

Feet

1,200 0 1,200

City of Farmington
Seed-Genstar
AUAR-Update

Sensitivity to Aquifer

Figure 19-5

Sensitivity Ratings
- High - Hours to Months
- High/Moderate - Years to a Decade
- Low/Moderate - Several Decades
- Low - Several Decades to a Century
- Study Area Boundary
- City Boundary
- Railroad
- Parcel Base Map

June 2011
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Fig 19-5 Sensitivity to Aquifer.mxd

20. Solid Wastes; Hazardous Wastes; Storage Tanks

a. *Describe the types, amounts, and compositions of solid or hazardous wastes to be generated, including animal manure, sludge and ashes. Identify the method and location of disposal. For projects generating municipal solid waste indicate if there will be a source separation plan; list type(s) and how the project will be modified to allow recycling.*

This 2016 AUAR Update reflects changes in the total number of households currently present in the AUAR study area since 2011.

Waste to be generated by the proposed development is anticipated to consist primarily of household waste. As is currently the case in Farmington, solid waste will be collected weekly by a licensed hauler and disposed of at a licensed landfill. Curbside collection of materials for recycling will also be available in the study area, as will collection of yard waste. Using statistical information collected by the City of Farmington, and the development scenario proposed for the study area, an estimate of total municipal solid waste generated under existing conditions and at build-out was prepared (see Table 21.1). In addition, volumes of existing and predicted recycling/source separation programs were calculated.

Existing land use in the AUAR study area is mainly agricultural, with some undeveloped areas. Some residential development is present along 194th Street (adjacent to the study area); scattered residences or farmsteads are present along Chippendale/Highway 3. Because the bulk of the property is undeveloped or has been used agriculturally, current waste generation is minimal. For the purposes of generating an estimate of current waste produced in the study area, **one household is assumed to be present, based on 2015 aerial photography for the area.** Future land uses designated for the study area include primarily low density residential, with some medium density residential and a small amount of business development in the northeast portion of the study area. Some areas of the site are not considered developable, due to the presence of North Creek and its floodplain (124.5 acres), designated railroad and street right-of-ways (52.67 acres), or other conditions.

According to development plans for the study area, 29 acres of the study area are proposed for mixed-use commercial/residential development, 558 developable acres are proposed as low and low/medium density residential, and 120 developable acres are proposed as medium density residential. Low density residential allows 1 to 3.5 units per acre; low/medium density allows for 3.5 to 6.0 units per acre; medium density residential allows 6.0 to 12.0 units per acre. Although not likely for the whole area of residential development, the maximum number of units is assumed for the post-development scenario presented in the tables below. Thus it is assumed that low density residential will contain 3.5 units per acre, low/medium density will contain 6 units per acre, and medium density residential will contain 12 units per acre. For the purposes of calculating waste generation estimates, it is also assumed that 1 unit represents 1 household.

The following statistics were obtained or derived from City of Farmington **2015** records. The non-residential statistics apply to areas of commercial and multi-family development.

Persons per household:	**2.95** persons/household
Waste generation per household:	**.71** tons/household/year
Residential recycling:	**1.53** tons/household/year
Yard waste, composted:	**0.14** tons/household/year
Non-Residential Waste Generation:	**2.31** tons/acre/year
Non-Residential Recycling	**10.47** tons/acre/year

Calculations were completed using the above statistical information and the development scenario proposed for the study area. Comparisons of current and predicted potential waste generation quantities are presented in the table below. Estimates related to recycling and yard waste composting are presented in the text following the table.

Table 21.1
Solid Waste Generation

Source	Existing Units	Under Existing Land Use	Potential Units (at maximum development)	Under Proposed Development Scenario
Residential	**1** households	**.71 tons/year**	3,896 households	**2,766 tons/year**
Non-Residential	0 acres	0 tons/year	29 acres	**67 tons/year**
Total Waste Generated		**.71 tons/year**		**2,833 tons/year**

Solid waste generated in the city of Farmington is collected on a weekly basis by **the City or a customer selected hauler**. The waste is taken to a landfill licensed to accept such waste for disposal. DSI collects materials for recycling and composting. It is assumed that this company will continue to provide collection service to the AUAR study area after development.

According to City of Farmington records, approximately **twice** as much waste is recycled as is sent to the landfill. Under current conditions, it is estimated that approximately **.71** tons of solid waste is recycled via curbside pick-up per year in the study area, and approximately **1.53** tons is recycled. After development, it is estimated that approximately **5,960** tons/year of solid waste would be recycled. The amount of recycling in the area associated with the proposed business development is estimated to be approximately **303** tons per year.

City records indicate approximately 0.14 tons of yard waste per household is composted each year. Under current conditions, yard waste composting is estimated to be **.14** tons/year for the study area. Under potential development conditions, approximately **545** tons of yard waste from the study area would be composted per year.

b. *Identify any toxic or hazardous materials to be used or present on the project site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.*

2016 Update: The following databases were reviewed to evaluate on-site or nearby potential sources of contamination or environmental hazards: the Minnesota Pollution Control Agency (MPCA) "What's in My Neighborhood" (WIMN), the Minnesota Department of Agriculture (MDA) "County Spill Records" and the MPCA Petroleum Remediation Program (PRP) online maps.

The Fairhill Development site is located in the study area and was identified in the WIMN database as a Leak Site (Leak #00016818), a Petroleum Brownfield Site (3727) and a Voluntary Investigation & Cleanup Site (VP24310). The identified products released were diesel fuel, fuel oil 1 & 2, gasoline and motor oil and was reported to the MPCA on May 5, 2007. Based on available records, all three MPCA program release numbers are related to the same release. On October 7, 2008, MPCA staff determined that the investigation and/or cleanup had adequately addressed the petroleum tank release and issued a Petroleum Tank Release Site File Closure letter.

Southern Hills Golf Club and Course is located east of the study area and Chippendale Road/Highway 3. ***It is identified in the WIMN database as a small to minimal quantity hazardous waste generator (SQG) and a MDA Spill site. It appears that the spill listing is in regard to a June 2, 1992 spill event.*** The spill reportedly involved the release of an herbicide product. Given the location of the spill (off-site), the length of time that has passed since the release occurred, and the small amount of product released (reported as 7.0 gallons of diluted herbicide and as 3.0 ounces of Lesco 3-Way (a broadleaf herbicide)), it appears unlikely that this release would have significant potential to impact the study area.

GEES, Inc., Brad Schmitz and Al's Auto Body are located adjacent to southeast portion of the study area. The sites were identified in the WIMN database as small to minimal SQGs. It appears unlikely that these sites have significant potential for impacts to the study area.

The Toro Company located at 18010 Chippendale Avenue W (adjacent site to the east), was identified as Tank Site 126252 for three tanks installed in 2014 and 2015. Based on the distance to the study area, it is unlikely that the site would have significant potential to impact the study area.

The National Pipeline Mapping System identified three pipelines crossing the study area – a hazardous liquid pipeline in the northwest corner of the study area, a hazardous liquid pipeline trending east-west through the central portion of the

study area and a gas pipeline trending north-south through the central portion of the study area. **The energy company associated with each pipeline is responsible for the operation and maintenance of the pipelines, and remediation activities should a release occur.**

Due to the past and current agricultural use of property within the study area, a variety of pesticides have likely been used and stored within the study area. Small storage tanks for petroleum products are also likely to have been, or remain present at the current and former farmsteads within the study area. In addition, residual contamination related to the tank release may be present. If contamination is discovered during the course of development, the developer or other responsible party will be required to address the situation, according to MPCA rules.

The temporary and potential future use of hazardous materials and petroleum products within the study area is addressed below in part c.

c. *Indicate the number, location, size, and use of any above or below ground tanks to be used for storage of petroleum products or other materials (except water). Describe any emergency response containment plans.*

During construction activities, it is likely that portable storage tanks of fuel for construction vehicles and machinery may be temporarily located in various areas of the study area. For the purpose of minimizing impact due to potential spills, the re-fueling of vehicles and machinery will be conducted away from North Creek, wetlands, and other sensitive areas.

Approximately 29 acres of mixed-use commercial/residential development is proposed at the northwest corner of 195th Street and TH3. This mixed-use commercial/residential area is intended to support smaller neighborhood business uses. This includes typical convenience-type goods and services **which may have above or below ground petroleum tanks.**

Mitigation Plan

Goal 1. Protect future site occupants and the natural environment from the presence of past contamination.

Protection Strategies:

1. **If soil contamination is discovered through due diligence testing or during the course of development, the developer or other responsible party will be required to appropriately mitigate the contaminants according to the type of development planned and in compliance with MPCA rules and Dakota County ordinance.**

2. **Location of future storage tanks and businesses that produce, store, or use hazardous materials and/or petroleum products will consider the sensitivity of the area geology and avoid locations where sensitivity is**

high, depth to bedrock or groundwater is shallow, or the area overlaps with the City of Farmington's Drinking Water Supply Management Area.

Responsible Parties: City of Farmington, private developers, MPCA.

Regulatory Program: MPCA guidelines and Dakota County Ordinance 110.

Implementation Time Frame: Implement strategies as development occurs.

21. Traffic

This section summarizes a traffic study that was prepared for the 2011 AUAR Update. Since no development has occurred in the AUAR study area since 2011, the 2011 traffic study was updated to reflect projected changes in background traffic growth in the year 2036. Recommended mitigation items proposed in the 2011 AUAR Update are compared against forecasted traffic volumes in 2036. Changes to the analysis since the 2011 AUAR Update are noted in bold.

The proposed development consists of mostly single-family residential land use with small areas of multi-family residential interspersed within. A small commercial area and community center area are also proposed to provide services to the surrounding residential development and community. According to the most recent site plan from 2004, the development would have three accesses to TH 3, and two on 190th Street West.

Since development of the 2004 site plan, Dakota County completed the East West Corridor Study and MnDOT prepared a draft access management plan for TH 3. The MnDOT draft access management plan authorizes two primary and one secondary access to TH 3 between 170th St. and 190th St. The northernmost primary access, on an approximate 175th St. alignment, is dedicated for the future Dakota County east-west corridor. The future east-west corridor is north of Farmington city limits. The remaining primary and secondary access allowed in the MnDOT draft access management plan are available for direct connection to the AUAR area off of TH 3.

The study area included the following intersections:

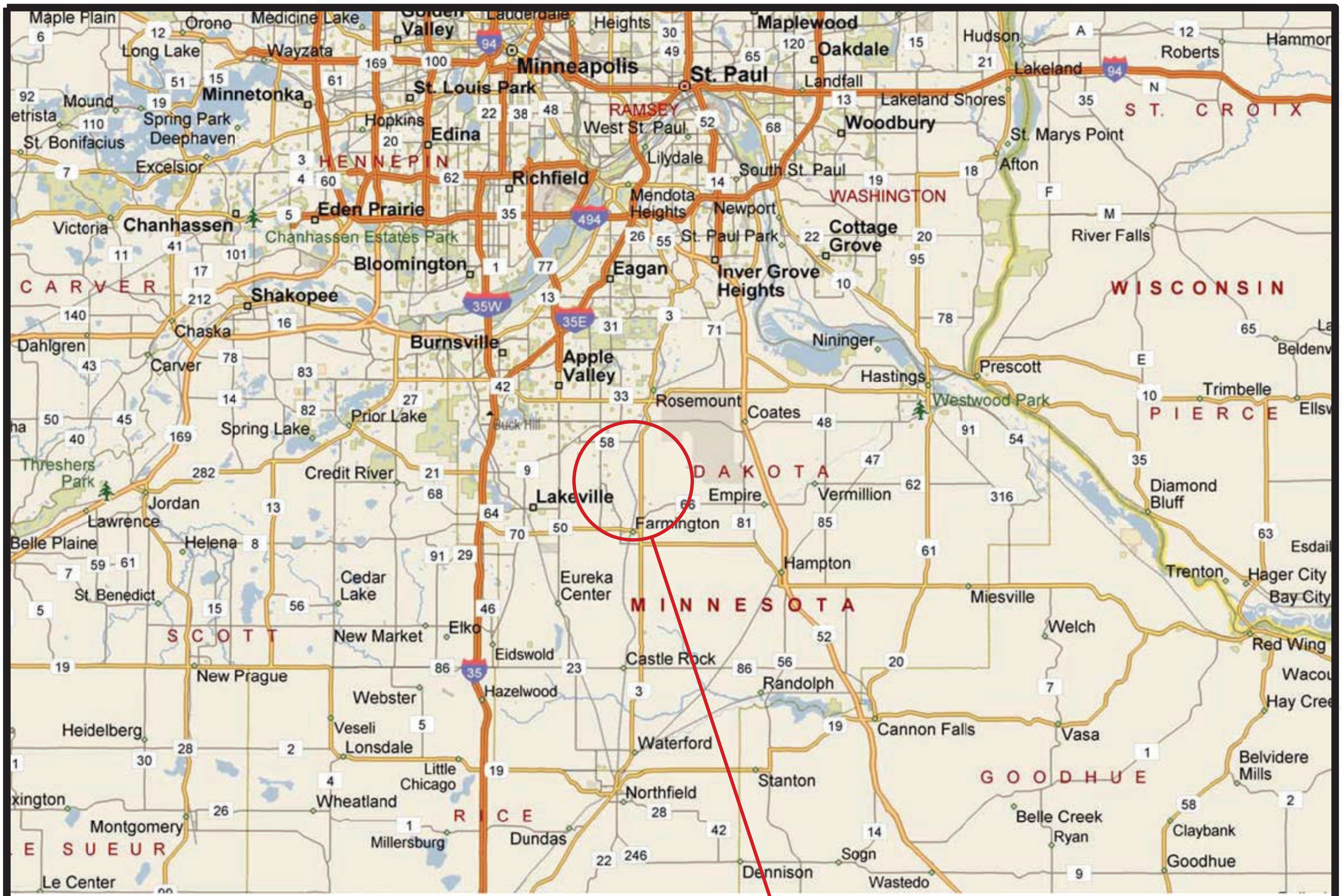
- TH 3 (South Robert Trail) & 160th Street West (CSAH 46)
- TH 3 (Chippendale Avenue) & 170th Street West (CSAH 58)
- TH 3 (Chippendale Avenue) & 190th Street West
- TH 3 (Chippendale Avenue) & CSAH 66 (Vermillion River Trail)
- TH 3 (Chippendale Avenue) & Elm Street (CSAH 50)
- Akin Road & 195th Street West (CSAH 64)
- TH 3 and site accesses A, B, and C
- 190th Street West and site accesses D and E

The study analyzed the following scenarios:

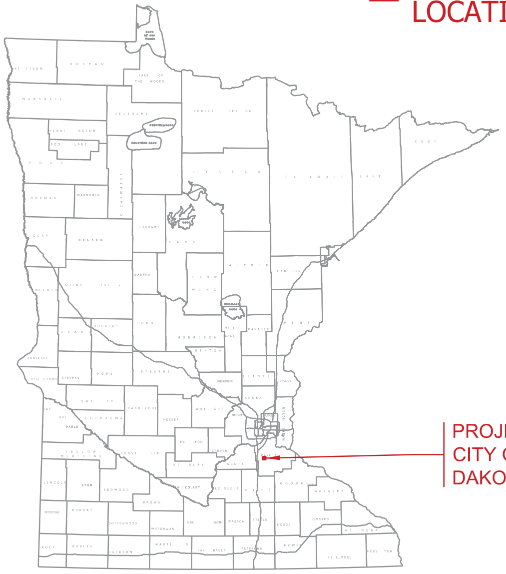
- 2011 Existing Conditions
- Future No Build Conditions
- Future Build Conditions **(2036)**

The analysis year for this project is 2031 (twenty-year build-out). The AM and PM peaks were analyzed. **For the 2016 update, traffic forecasts for the year 2036 were analyzed to ensure that conditions remain similar to the 2031 analysis.**

Figure 21-1 shows the location map. Figure 21-2 shows the most recent site plan.



STUDY LOCATION



PROJECT LOCATION
CITY OF FARMINGTON
DAKOTA COUNTY

N

NOT TO SCALE

LOCATION MAP

FIGURE 21-1

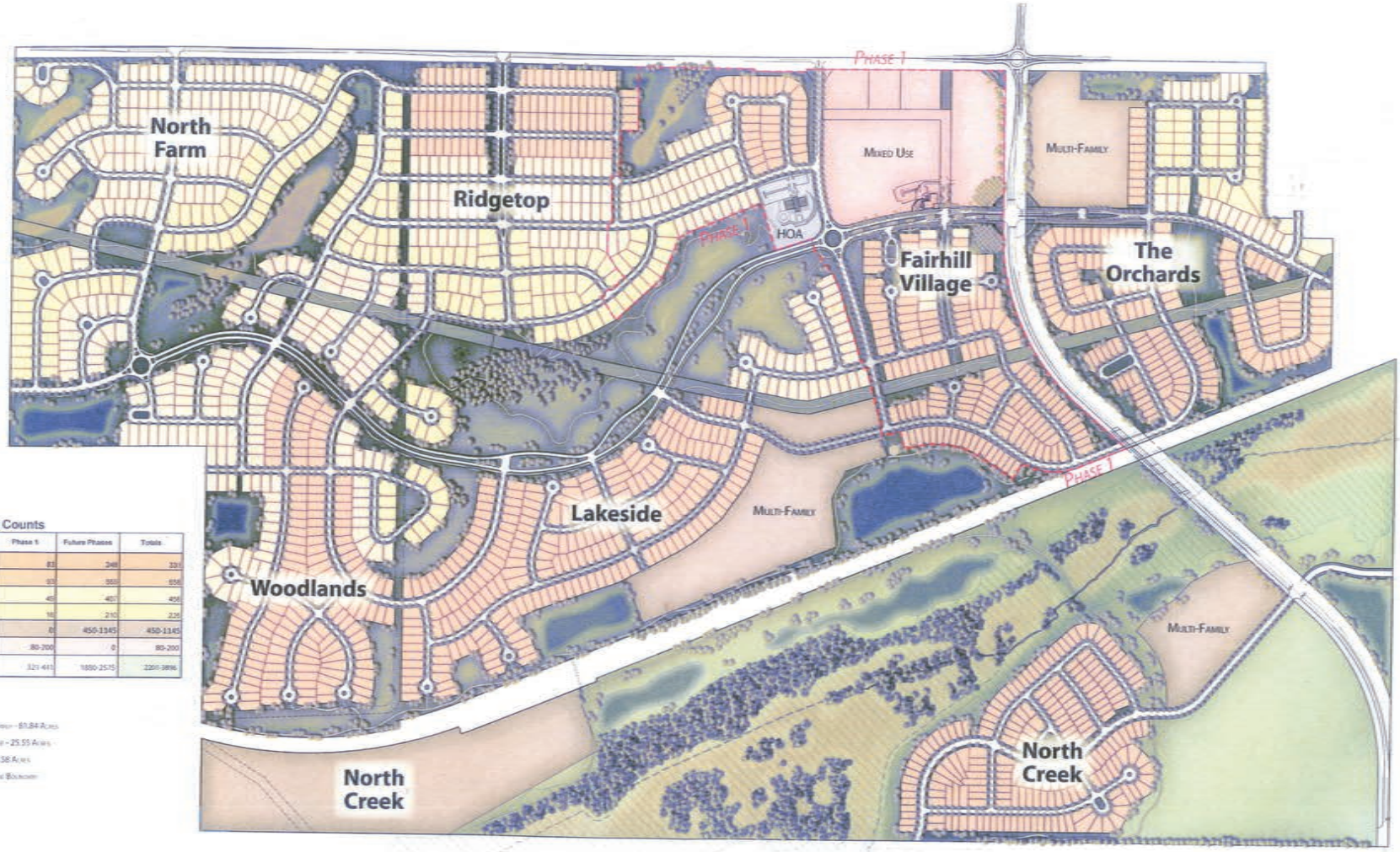
SEED/GENSTAR AUAR UPDATE

CITY OF FARMINGTON

Project 000141-11333

DATE: 24 JUNE 2011

Bonestroo



Plan Unit Counts

	Phase 1	Future Phases	Totals
40'	83	248	331
55'	93	563	656
65'	49	407	456
75'	16	210	226
Multi-Family	0	450-1145	450-1145
Mixed Use	80-200	0	80-200
Totals	321-441	1880-2575	2201-3016

LEGEND

- Multi-Family - 61.84 Acres
- Mixed Use - 25.55 Acres
- HOA - 3.58 Acres
- Phase One Boundary

Graphics and plans are for illustrative purposes only and are subject to change. Please see final plans for actual details and specifications.

EXISTING ROADWAY CONDITIONS

Table 21.01 presents a summary of the existing roadway conditions in the study area **with updated AADT.** Figure 21-3 shows the roadways in the study area.

TABLE 21.01 – EXISTING ROADWAYS

STREET NAME	FUNCTIONAL CLASS	TYPICAL SECTION	POSTED SPEED	AADT
T.H. 3	A Minor Arterial (connector)	two-lane undivided to four-lane divided	45-55 mph	**9,700 to 12,700**
160th Street West (CSAH 46)	A Minor Arterial (expander)	four-lane divided urban	55 mph	**14,200 to 17,000**
170th Street West (CSAH 58)	Collector (major)	two-lane undivided rural	55 mph	**3,450**
195th Street West/ 190th Street West	A Minor Arterial (expander)	two-lane undivided	40-55 mph	**5,300 to 8,200**
CSAH 66 (Vermillion River Trail)	B Minor Arterial	two-lane undivided rural	55 mph	**3,450**
Elm Street (CSAH 50)	B Minor Arterial	two-lane undivided urban	30 mph	**11,300**
Akin Road	Collector (major)	two-lane undivided urban	45 mph	**3,950**

While the Diamond Path Road Extension is included in the AUAR, City staff will continue to review the feasibility of the road as this project moves forward. Diamond Path Road currently intersects 190th Street West approximately 3,700 feet east of Akin Road as a T-intersection. It is expected that daily traffic volumes on the Diamond Path extension could reach 7,000 to 8,000 vehicles per day within 20 years.

HOURLY TURNING MOVEMENT VOLUMES

Multiple sources were used for intersection turning movement peak hour volumes for this study: the Minnesota Department of Transportation traffic counting program; the University of Minnesota UMore traffic impact study; and turning movement counts performed for this study. Figure 3 displays existing traffic volumes. These volumes can be found in the appendix.

Average Annual Daily Traffic (AADT) volumes were retrieved from the Minnesota Department of Transportation's Office of Transportation Data and Analysis.

EXISTING INTERSECTION GEOMETRY

TH 3 & Elm Street (CSAH 50) is a signalized intersection with protected permissive phasing through flashing yellow arrow signal configuration for northbound and southbound left-turn phases. The eastbound right-turn movement is overlapped with the northbound left-turn phase. TH 3 & 160th Street (CSAH 46) is signalized with protected left-turns for all approaches. Both signalized intersections are actuated and run free.

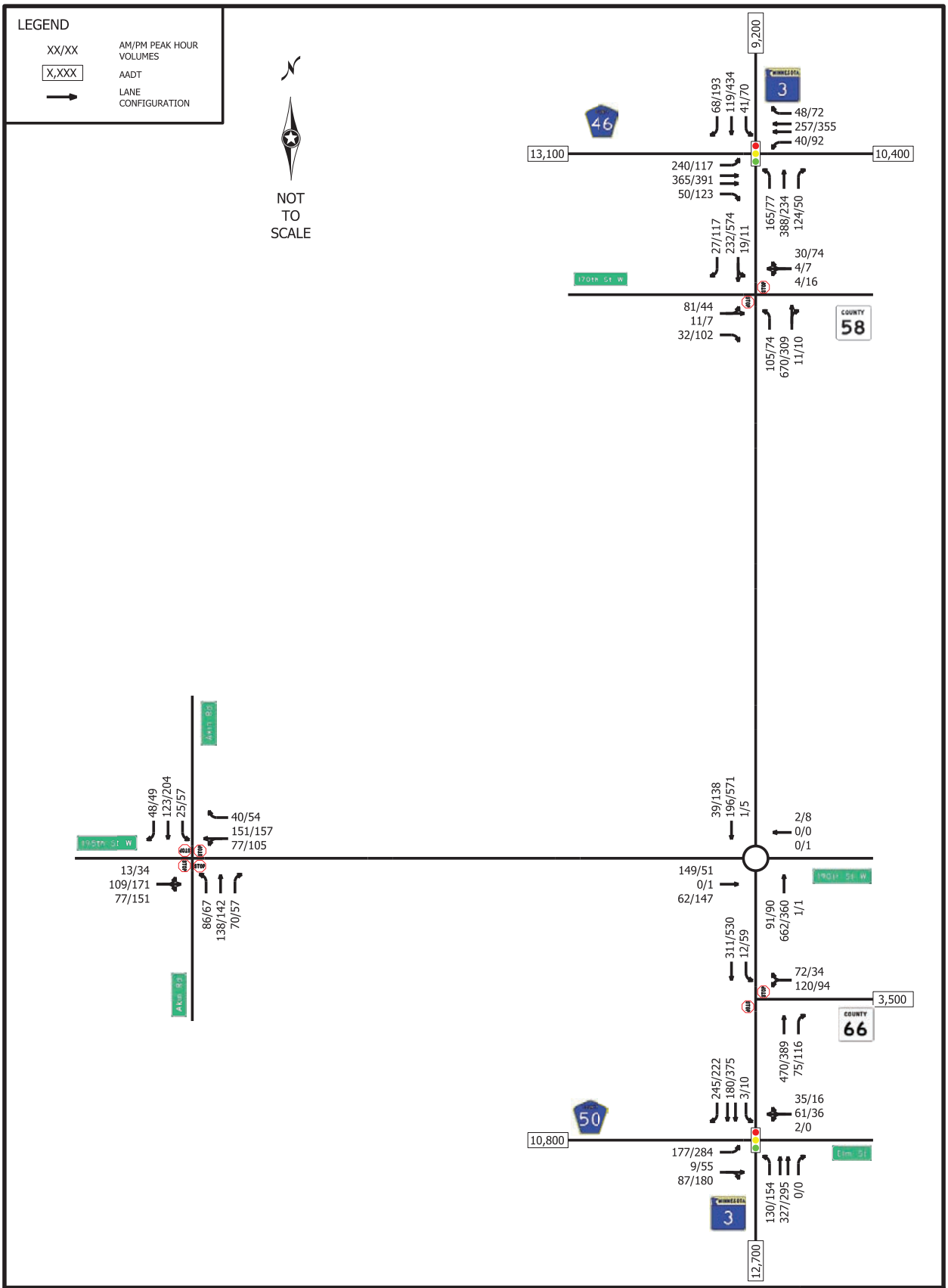
TH 3 & 190th Street, **and Akin Road & 195th Street are single-lane roundabouts. All other intersections are stop controlled.**

The geometric configuration of all intersections are shown in Figure 21-3**, with the exception of Akin Road & 195th Street, which was recently reconstructed as a roundabout.**

OTHER TRIPS

The Traffic Impact Study for the UMore Park Sand and Gravel Resources Project was completed in September 2010 and examined the impacts of sand and gravel mining operations on several intersections, including TH 3 & 160th Street West. The estimated trips generated by that development affecting the intersection in year 2030 are included for the no-build and build scenarios in this study.

Other properties in the study area include the Providence and Hometown developments. Providence is located on the corner of TH 3 & 190th Street West and will consist of 120 single-family homes. Hometown is located east of TH 3 and south of CSAH 66 and contains 27 single-family lots. Peak hour trips for those developments were estimated and applied to year 2031 volumes.



EXISTING VOLUMES AND LANE GEOMETRY

FIGURE 21-3

SEED/GENSTAR AUAR UPDATE

CITY OF FARMINGTON

Project 000141-11333 DATE: 24 JUNE 2011

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BASE ASSUMPTIONS

Intersection capacity analysis was conducted using Synchro/SimTraffic v7.0 for stop-controlled and signalized intersections. Roundabout intersections were analyzed using RODEL software. Trip generation was calculated using the latest edition of the Institute of Traffic Engineers (ITE) Trip Generation Manual. Existing signal timing and phasing data was provided by MnDOT.

2016 updates used Synchro/SimTraffic v9 stop-controlled and signalized intersections.

BACKGROUND GROWTH

According to the revised AUAR, non-site traffic volumes are assumed to increase by 2 percent per year to account for other regional growth in the area. **For the 2036 analysis, a 4% increase was applied to all movements. This is based off the latest MnDOT county projection factors.**

As mentioned previously, estimated trips from other sites (UMore sand and gravel mining trips, and the Providence and Hometown developments) are also included in year 2031 volumes.

Future No-build volumes are shown in Figure 21-4.

TRIP GENERATION

The proposed development is expected to consist of single-family and multi-family residential, and a mix of commercial and office land uses.

According to the proposed land use table, Low Density Residential (1.0 to 3.0 units per acre) will be the predominant land use for the project and consist of 513.2 acres. The Low-Medium Density Residential designates 3.0 to 5.5 units per acre and will occupy 45 acres. Medium Density Residential (5.5 to 14.0 units per acre) will have 120 acres. The development will also contain 254,000 square feet of retail and office space.

The Institute of Transportation Engineers (ITE) Trip generation software was used to develop the projected trips by this development. Table 21.02 contains the summary of the land uses and sizes used for trip generation.

TABLE 21.02 - ITE TRIP GENERATION							
AVERAGE WEEKDAY DRIVEWAY VOLUMES				AM PEAK HOUR		PM PEAK HOUR	
Land Use	ITE Land Code	Size		Enter	Exit	Enter	Exit
Single Family Detached Housing	210	1026	units	195	575	657	380
Residential Condo/Townhome	230	1380	units	97	511	483	235
General Office Building	710	40,000	SF	54	8	10	50
General Office Building	710	40,000	SF	54	8	10	50
General Office Building	710	67,000	SF	84	12	16	77
Hardware/Paint Store	816	15,000	SF	0	0	34	39
Automobile Parts Store	843	15,000	SF	0	0	44	46
Convenience Market with Gasoline Pumps	853	4	Fueling stations	33	33	38	38
Arts and Crafts Store	879	15,000	SF	0	0	43	50
Pharmacy/Drugstore with Drive-Thru	881	11,000	SF	17	13	57	57
Furniture Store	890	21,000	SF	3	1	5	5
Drive-in Bank	912	13,000	SF	90	71	168	168
Hair Salon	918	2,000	SF	0	0	1	2
Quality Restaurant	931	10,000	SF	0	0	50	25
Fast-Food Restaurant with Drive-Thru	934	3,000	SF	76	73	53	49
Coffee/Donut Shop with Drive-Thru	937	2,000	SF	113	109	43	43
Unadjusted Weekday Trips				**816**	**1414**	**1712**	**1314**
Internal Capture Reduction	*See Worksheet*			*-86*	*-86*	*-138*	*-138*
Total Driveway Volumes				**730**	**1328**	**1574**	**1176**
Pass-By Trip Reduction	*From ITE Manual*			*-58*	*-57*	*-212*	*-201*
Total New Peak Hour Trips to Adjacent Network				**672**	**1271**	**1362**	**975**

This mixed-use development generates "internal capture" trips summarized in the table above. Internal capture trip reduction is a method to estimate interaction between different land use types within the same development. While each land use in a mixed-use development generates vehicle trips, some individuals will visit more than one land use within the development. This phenomenon of multiple land uses adjacent to each other ultimately results in less vehicle trips to the external road network, and less impact, than free-standing retail, office, or residential areas. This reduction was calculated in accordance with the manual and the worksheet is included in the Appendix.

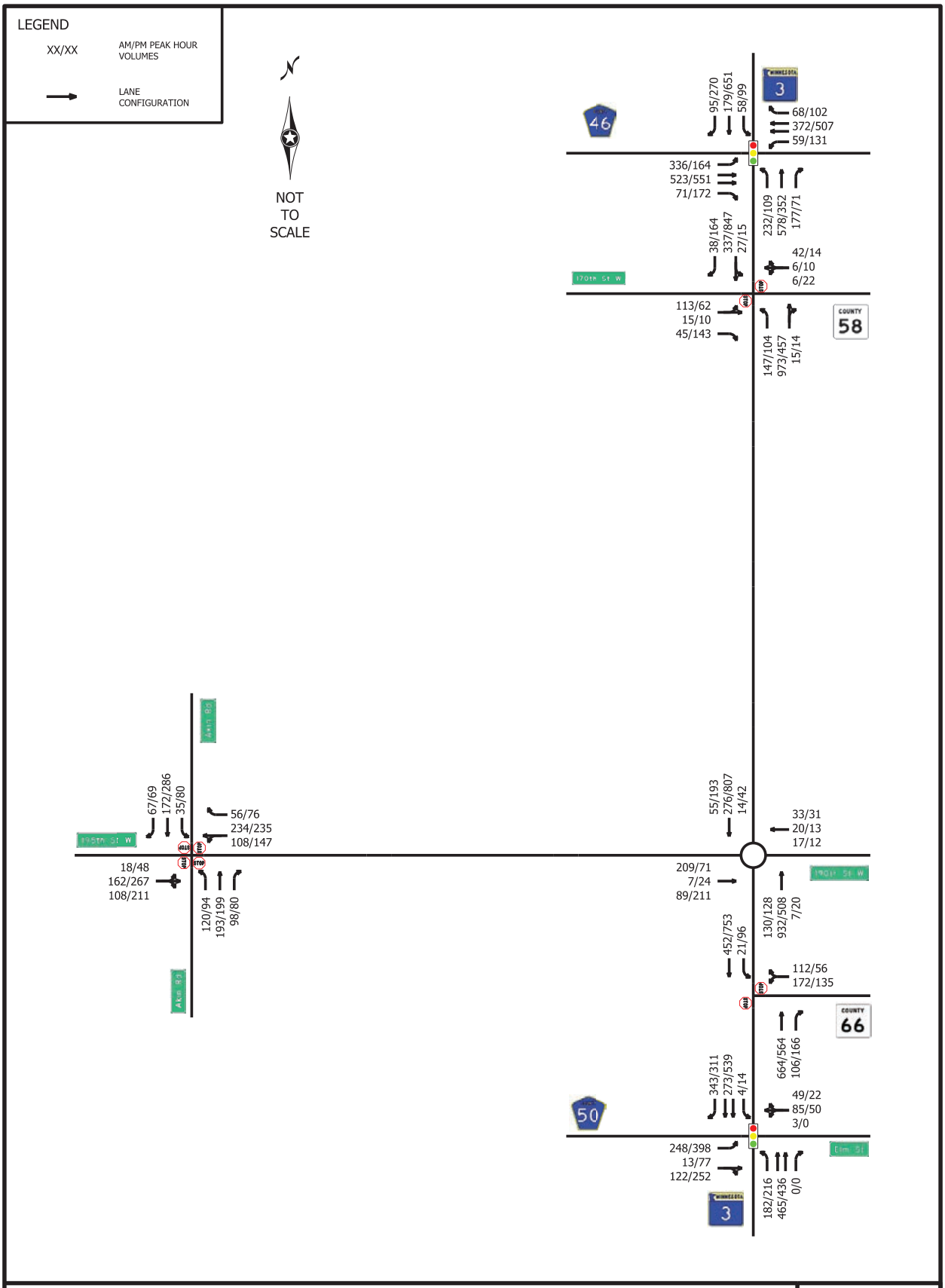
Pass-by reductions are included to account for the phenomenon where land uses such as convenience stores or other similar uses attract vehicles whose ultimate destination is elsewhere. These driveway turning movement trips replace what would otherwise be "through" movements, but do not contribute to "new trips" on the roadway network.

The proposed development generates 31,163 trips daily.

TRIP DISTRIBUTION

Trips for this proposed development were assigned to the surrounding roadway network based on the trip distribution determined as part of the Revised AUAR. The proposed trip distribution for this project can be found in Figure 21-5. Pass-by trips are shown in Figure 21-6, the projected site trips are shown in Figure 21-7.

The previous AUAR developed traffic projections based on a fully constructed Diamond Path Road extension. Year 2021 forecasts for the study area are shown in Figure 21-7A as a comparison to this study's forecasts. Year 2031 full build traffic volumes without the Diamond Path Road extension are shown in Figure 21-8.



FUTURE NO-BUILD VOLUMES

FIGURE 21-4

SEED/GENSTAR AUAR UPDATE

CITY OF FARMINGTON

Project 000141-11333 DATE: 24 JUNE 2011

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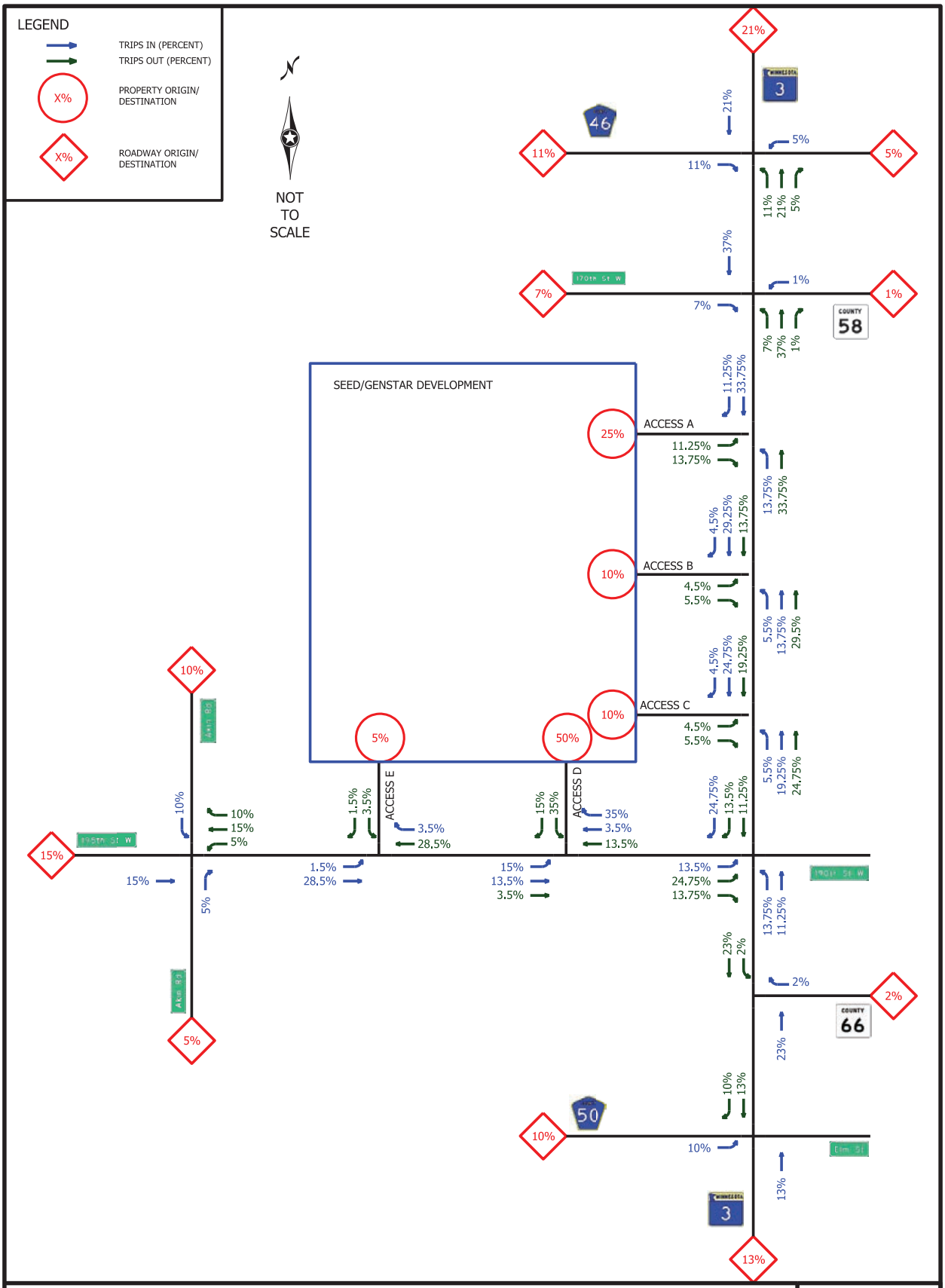

TRIP DISTRIBUTION

FIGURE 21-5

SEED/GENSTAR AUAR UPDATE

CITY OF FARMINGTON

Project 000141-11333 DATE: 24 JUNE 2011

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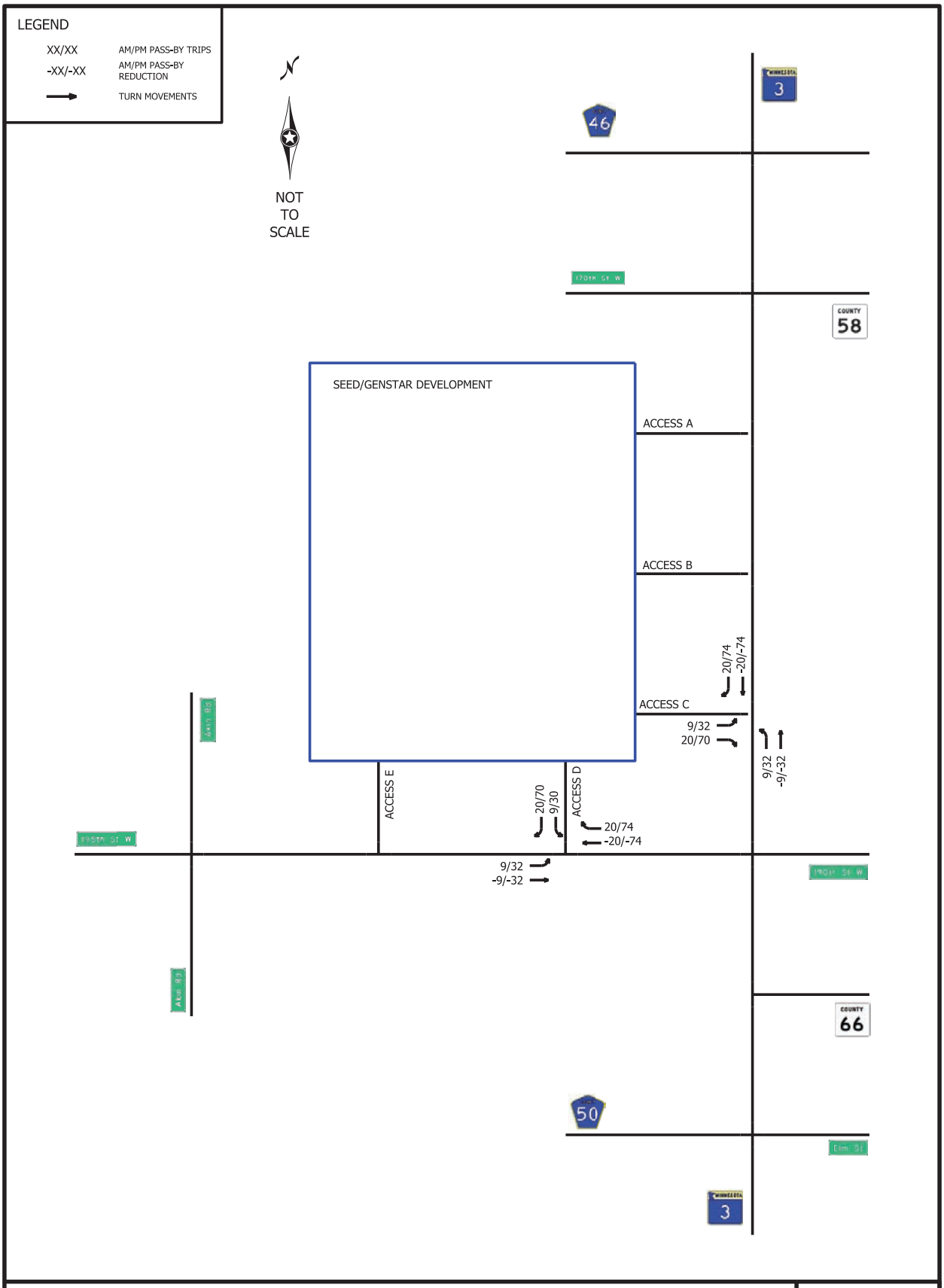

PASS-BY TRIPS

FIGURE 21-6

SEED/GENSTAR AUAR UPDATE

CITY OF FARMINGTON

Project 000141-11333 DATE: 24 JUNE 2011

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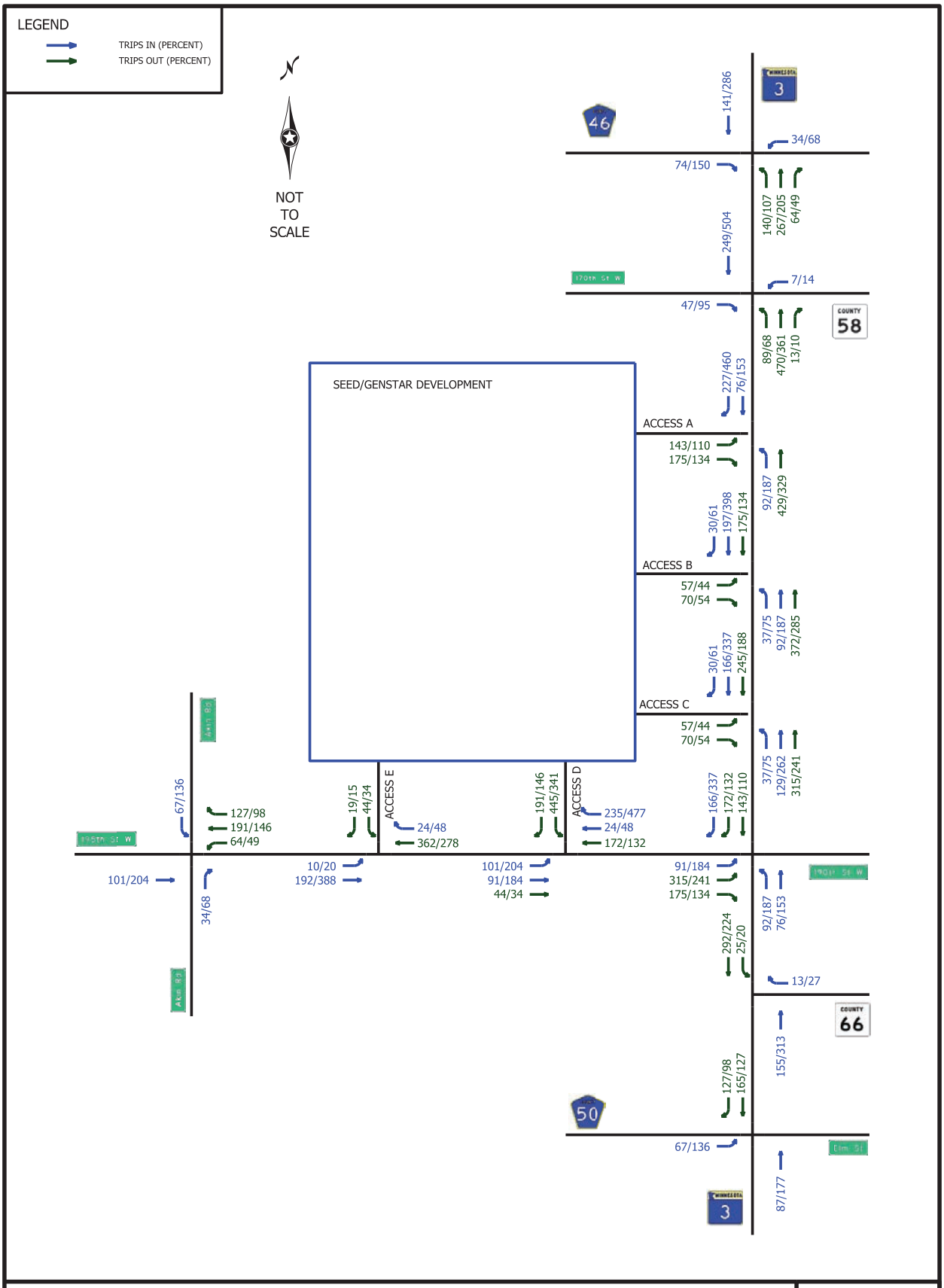

SITE TRIPS

FIGURE 21-7

SEED/GENSTAR AUAR UPDATE

CITY OF FARMINGTON

Project 000141-11333 DATE: 24 JUNE 2011

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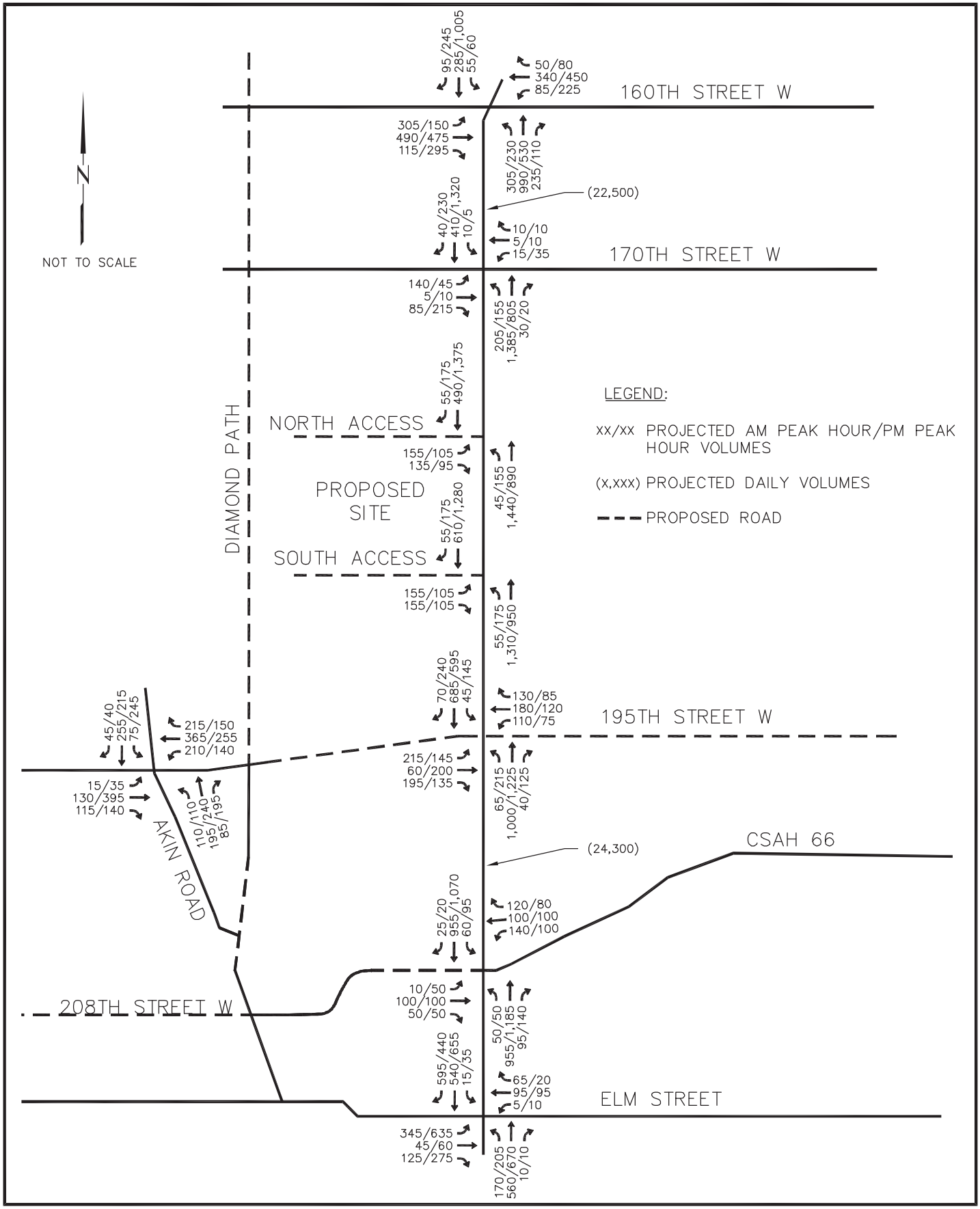

FIGURE 21–7A

PROPOSED 2021 TRAFFIC VOLUMES

FARMINGTON AUAR/GENSTAR

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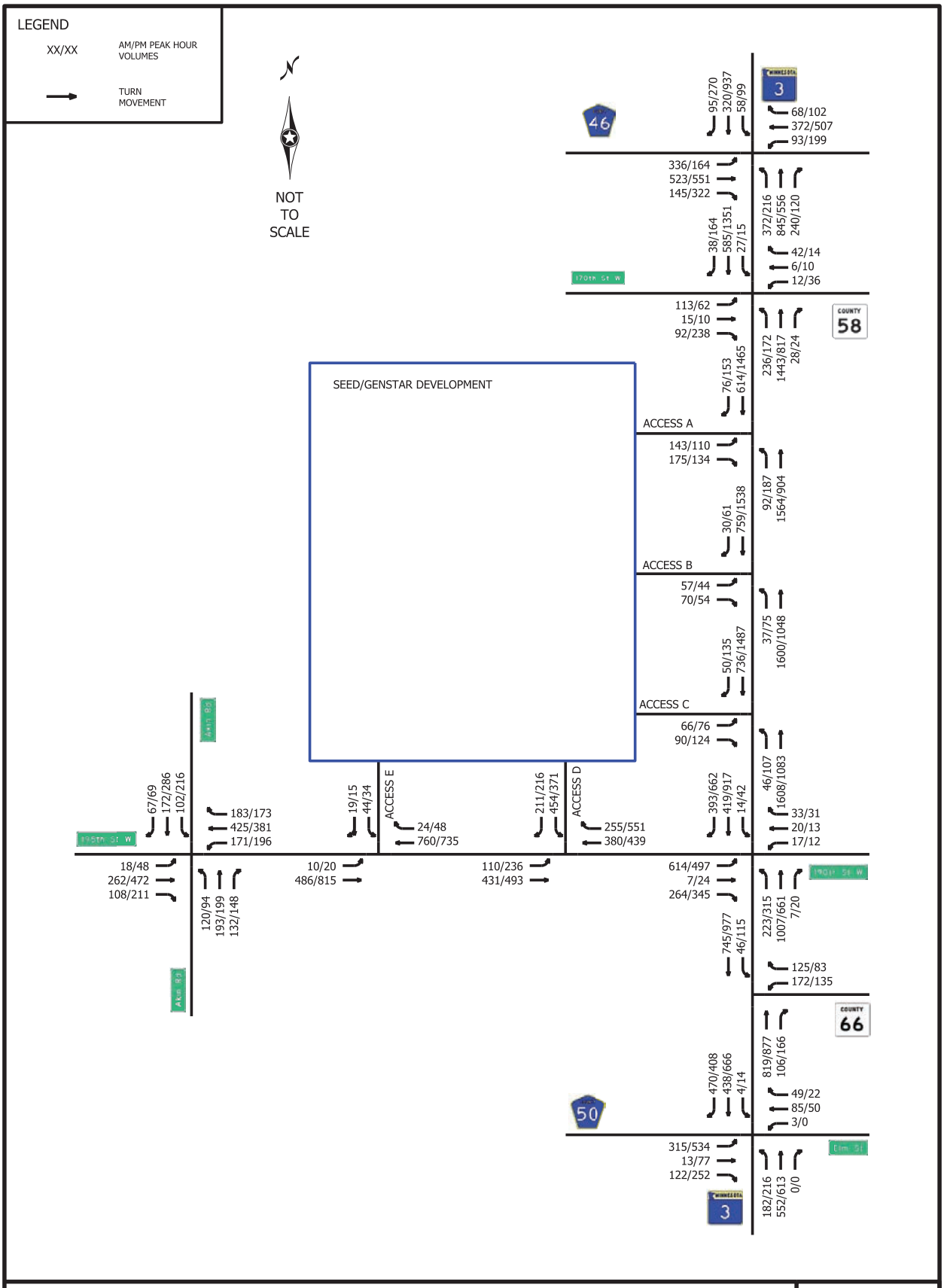
Bonestroo Rosene Anderlik & Associates
Engineers & Architects



FULL BUILD VOLUMES

FIGURE 21-8

SEED/GENSTAR AUAR UPDATE

CITY OF FARMINGTON

Project 000141-11333 DATE: 24 JUNE 2011

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LEVEL OF SERVICE SUMMARY

The Transportation Research Board's Highway Capacity Manual (HCM) utilizes a term "level of service" to measure how traffic operates in intersections. There are currently six levels of service ranging from A to F. Level of service "A" represents the best conditions and Level of Service "F" represents the worst. Synchro software was used to determine the level of service for studied intersections. All worksheet reports from the analyses can be found in the Appendix.

TABLE 21.03 –HIGHWAY CAPACITY MANUAL LEVELS OF SERVICE AND CONTROL DELAY

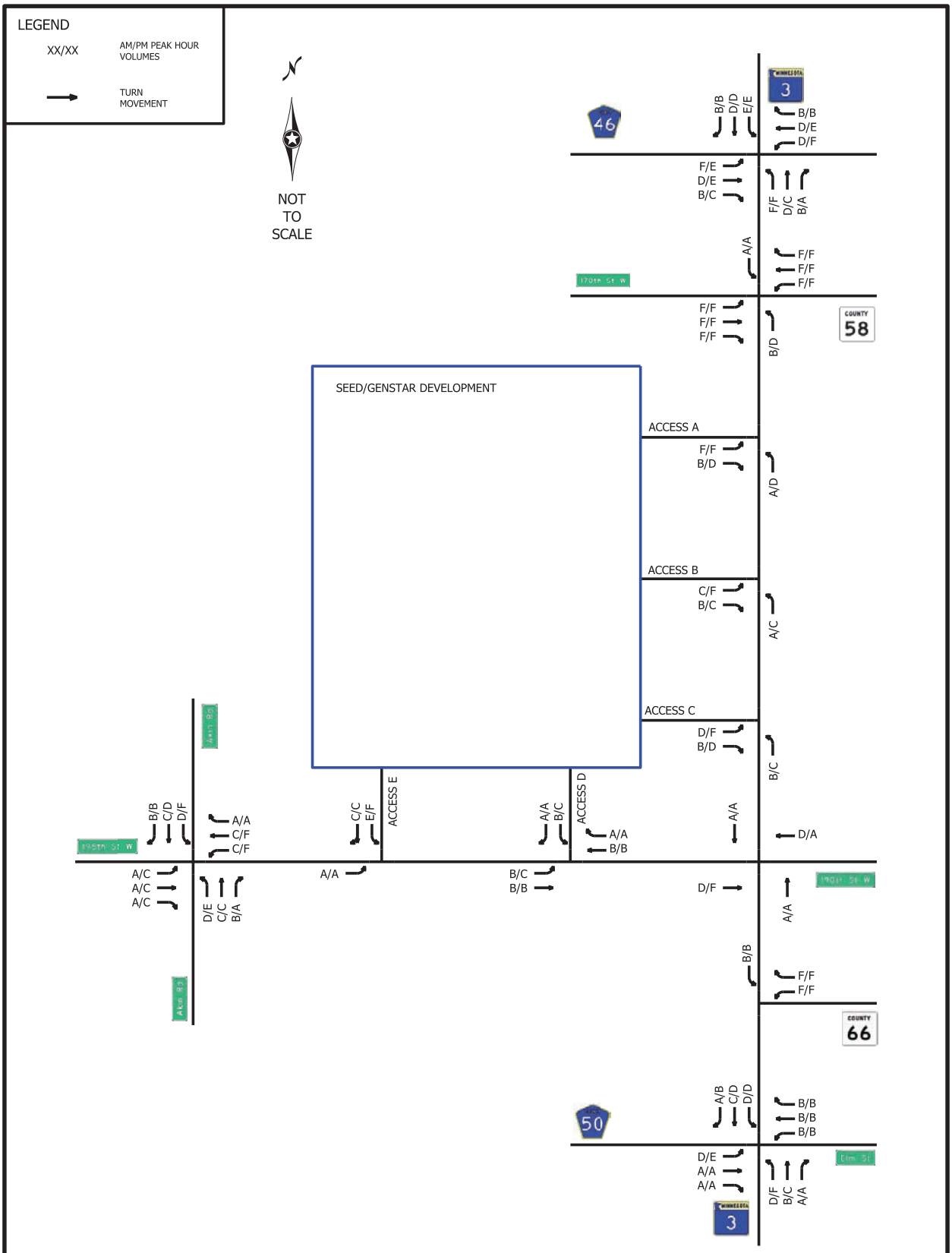
SIGNALIZED INTERSECTION		UNSIGNALIZED INTERSECTION	
Level of Service	Control Delay per Vehicle (sec)	Level of Service	Control Delay per Vehicle (sec)
A	≤ 10	A	≤ 10
B	> 10 and ≤ 20	B	> 10 and ≤ 15
C	> 20 and ≤ 35	C	> 15 and ≤ 25
D	> 35 and ≤ 55	D	> 25 and ≤ 35
E	> 55 and ≤ 80	E	> 35 and ≤ 50
F	> 80	F	> 50

Table 21.04 represents the summary of the overall intersection level of service analysis for this project.

TABLE 21.04 – OVERALL LEVEL OF SERVICE (DELAY PER VEHICLE)						
INTERSECTIONS	EXISTING CONDITIONS		YEAR 2031 NO-BUILD		YEAR 2031 FULL BUILD	
	AM	PM	AM	PM	AM	PM
TH 3 & 160th Street (CSAH 46)	D (38.3)	C (34.8)	D (42.1)	D (38.4)	D (49.1)	D (50.7)
TH 3 & 170th Street (CSAH 58) (unsignalized)	F (154.7) (EB left-turn)	D (31.2) (WB approach)	F (101.0) (WB approach)	C (22.7) (WB approach)	F (---)	F (---)
TH 3 & 190th Street	A (6.6)	A (5.9)	A (3.3)	A (3.4)	B (11.8)	F (90.3)
TH 3 & CSAH 66 (Vermillion River Trail) (unsignalized – WB approach)	D (29.1)	E (46.0)	D (28.5)	D (26.0)	F (58.8)	F (62.1)
TH 3 & Elm Street (CSAH 50)	B (14.3)	B (19.9)	B (18.0)	C (26.8)	C (20.5)	C (34.6)
Akin Road & 195th Street (CSAH 64)	B (10.2)	C (15.1)	B (11.9)	B (18.1)	C (20.5)	E (57.9)
TH 3 & Access A (unsignalized – WB left turn)					F (52.5)	F (274)
TH 3 & Access B (unsignalized – WB left turn)					C (25.0)	F (55.2)
TH 3 & Access C (unsignalized – WB left turn)					D (26.6)	F (88.7)
TH 3 & Access D (signalized)					B (14.8)	B (14.3)
TH 3 & Access E (unsignalized – SB left turn)					E (39.8)	F (72.0)

Analysis shows that background growth in the study area require capacity improvements to the roadway network. To account for future growth as part of this study, TH 3 is analyzed as a divided four-lane highway. Also, analysis shows that the Akin Road & 195th Street intersection fails as an all-way stop during the PM peak hour by year 2031.

The above LOS for the future scenarios (No-Build and Full Build) include the above improvements. Figure 9 displays LOS by movement for the Full Build scenario.



FULL BUILD LOS

FIGURE 21-9

SEED/GENSTAR AUAR UPDATE

CITY OF FARMINGTON

Project 000141-11333 DATE: 24 JUNE 2011

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TH 3 (SOUTH ROBERT TRAIL) & 160TH STREET WEST (CSAH 46)

TABLE 21.05 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE

DIRECTION	MOVEMENT	2011 EXISTING		2031 NO-BUILD		2031 FULL BUILD	
		AM	PM	AM	PM	AM	PM
Eastbound	LT	E/ 56.2/ 457’	D/ 54.7/ 256’	E/ 62.4/ 673’	E/ 57.8/ 339’	F/ 85.8/ 789’	E/ 69.1/ 318’
	TH	D/ 35.9/ 324’	D/ 37.7/ 350’	D/ 40.8/ 426’	D/ 43.4/ 474’	D/ 50.0/ 428’	E/ 69.1/ 580’
	RT	B/ 11.1/ 57’	A/ 9.0/ 90’	B/ 10.6/ 68’	B/ 13.9/ 153’	B/ 11.7/ 115’	C/ 24.1/ 312’
Westbound	LT	D/ 39.9/ 101’	D/ 52.9/ 214’	D/ 42.8/ 141’	E/ 56.3/ 285’	D/ 50.2/ 218’	F/ 86.0/ 502’
	TH	D/ 41.0/ 243’	D/ 40.0/ 328’	D/ 49.6/ 344’	D/ 44.5/ 448’	D/ 54.1/ 347’	E/ 59.3/ 488’
	RT	B/ 12.5/ 58’	B/ 10.8/ 70’	B/ 11.3/ 69’	B/ 14.2/ 104’	B/ 11.4/ 70’	B/ 16.1/ 112’
Northbound	LT	E/ 57.0/ 337’	D/ 54.9/ 188’	E/ 65.4/ 492’	E/ 60.6/ 248’	F/ 80.7/ 831’	F/ 86.5/ 540’
	TH	D/ 37.4/ 656’	C/ 27.9/ 331’	D/ 36.9/ 462’	C/ 33.0/ 278’	D/ 38.4/ 708’	C/ 31.0/ 408’
	RT	B/ 13.0/ 122’	A/ 6.6/ 42’	B/ 11.2/ 141’	A/ 8.0/ 59’	B/ 15.2/ 229’	A/ 7.8/ 86’
Southbound	LT	E/ 56.3/ 119’	E/ 55.3/ 175’	E/ 65.0/ 152’	E/ 57.9/ 226’	E/ 68.3/ 153’	E/ 65.1/ 226’
	TH	D/ 38.5/ 230’	D/ 40.5/ 675’	D/ 43.1/ 173’	D/ 40.5/ 529’	D/ 50.6/ 298’	D/ 53.8/ 856’
	RT	A/ 9.7/ 64’	B/ 12.0/ 154’	B/ 10.3/ 79’	B/ 14.8/ 228’	B/ 10.4/ 80’	B/ 19.5/ 287’

TH 3 & 160th Street is a signalized intersection with protected left-turn phasing on all approaches. The eastbound and westbound approaches both consist of an exclusive left-turn lane, two through lanes, and a right-turn lane. The northbound and southbound approaches both have a left-turn lane, one through lane, and a right-turn lane.

The intersection currently functions at an overall LOS D in the AM peak, and a LOS C in the PM peak.

In the no-build scenario, the intersection would fail without intersection improvements. With a widened TH 3, including two through lanes both northbound and southbound, the intersection would function at overall LOS D in the AM peak, with the eastbound and northbound left-turn movements experiencing LOS E. In the PM peak hour, the intersection is also expected to see LOS D overall. Analysis shows that the EB approach would require dual left-turn lanes in the no-build scenario.

In the full build scenario, the intersection would see LOS D in the AM peak, but is expected to fail in the PM peak with the increased traffic from development. Analysis shows that the intersection would benefit from EB dual left-turn lanes, but would also require NB dual left-turn lanes in the full build scenario. **These results are consistent with 2036 traffic forecasts.**

Recommended improvements

- TH 3 widening, including two through lanes in the NB and SB approach (No-Build),
- EB dual left-turn lanes (No-Build)
- NB dual left-turn lanes (Full Build)

TH 3 (CHIPPENDALE AVENUE) & 170TH STREET WEST (CSAH 58)

TABLE 21.06 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE

DIRECTION	MOVEMENT	2011 EXISTING		2031 NO-BUILD		2031 FULL BUILD	
		AM	PM	AM	PM	AM	PM
Eastbound	LT	F/ 154.7/ 312’	C/ 21.8/ 56’	F/ 101.0/ 329’	C/ 18.1/ 54’	**F/ ----**	**F/ 317.8/ 900’**
	TH						
	RT	F/ 154.7/ 312’	C/ 21.8/ 56’	F/ 101.0/ 329’	C/ 18.1/ 54’	**F/ ----**	**F/ 317.8/ 900’**
Westbound	LT	C/ 21.9/ 24’	D/ 31.2/ 29’	C/ 21.1/ 33’	C/ 22.7/ 28’	**F/ 136.5/ 169’**	**F/ ----**
	TH						
	RT						
Northbound	LT	A/ 8.2/ --	A/ 9.5/ --	A/ 8.8/ --	B/ 11.7/ 24’	B/ 11.0/ 54’	D/ 28.1/ 135’
	TH	Free					
	RT						
Southbound	LT	A/ 1.0/ --	A/ 0.3/ --	A/ 2.7/ --	A/ 0.2/ --	A/ 1.6/ --	A/ 0.7/ --
	TH	Free					
	RT						

TH 3 & 170th Street is a two-way stop controlled intersection with 170th Street under stop control. The eastbound approach has an exclusive right-turn lane, and a shared through-left lane. The westbound approach consists of one lane. Northbound TH 3 has a left-turn lane, and southbound TH 3 has a right-turn lane.

Analysis of existing conditions shows that the EB left-turn lane has difficulty finding gaps in traffic during the AM peak hour, and the WB approach experiences LOS D in the PM peak.

In the no-build scenario, turning traffic from 170th Street would fail without intersection improvements. With a widened TH 3, including two through lanes both northbound and southbound, eastbound left-turning traffic would have difficulty finding gaps in traffic during the AM peak. The intersection would function acceptably during the PM peak hour.

In the full build scenario, the increased traffic from full development would have greater impacts on 170th Street traffic, as well as northbound left-turning vehicles in the PM peak. It is reasonable to expect that signalization or roundabout control would be warranted with full build traffic volumes. **These results are consistent with 2036 traffic forecasts. Empire Township is tentatively planning to install a single lane roundabout at this intersection. It is anticipated that this roundabout will be installed prior to full buildout of the AUAR area. Dedicated turn lanes for NB and SB with a protected phase for left-turning vehicles will need to be considered if the intersection is signalized.**

Recommended improvements

- TH 3 widening, including two through lanes in the NB and SB approach (No-Build)
- Signalize/roundabout when warranted (Build)
- **Dedicated left-turn lanes for NB and SB when warranted**

TH 3 (CHIPPENDALE AVENUE) & 190TH STREET WEST

TABLE 21.07 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE

DIRECTION	MOVEMENT	2011 EXISTING		2031 NO-BUILD		2031 FULL BUILD	
		AM	PM	AM	PM	AM	PM
Eastbound	LT	A/ 3.6/ --	A/ 4.8/ --	A/ 4.2/ --	A/ 7.8/ 20’	D/ 28.2/ 220’	**F/ ----**
	TH						
	RT						
Westbound	LT	A/ 4.8/ --	A/ 3.6/ --	A/ 7.2/ --	A/ 4.2/ --	D/ 25.2/ 20’	A/ 8.4/ --
	TH						
	RT						
Northbound	LT	A/ 8.4/ 40’	A/ 4.8/ 20’	A/ 3.0/ 20’	A/ 2.4/ --	A/ 5.4/ 40’	A/ 3.6/ 20’
	TH						
	RT						
Southbound	LT	A/ 3.6/ --	A/ 7.2/ 40’	A/ 1.8/ --	A/ 3.0/ 20’	A/ 2.4/ 20’	A/ 7.8/ 100’
	TH						
	RT						

TH 3 & 190th Street West is a single lane roundabout.

Analysis of existing conditions shows that the intersection functions at LOS A overall in both peak hours. All individual approaches experience LOS A.

In the no-build scenario, the intersection would fail without intersection improvements. With a widened TH 3, including a two-lane approach both northbound and southbound that continues through the roundabout, the intersection would see LOS A in both peaks, with all approaches expected to function at LOS A.

In the full build scenario, the increased traffic from full development results in lower LOS in the AM peak, and failure for eastbound traffic in the PM peak. A two-lane approach in the eastbound direction will be required.

The analysis of 2036 traffic forecasts also shows that a dual left-turn will be needed for the EB approach. A two lane approach for the WB will also be required.

Recommended improvements

- TH 3 widening, including two lane approaches in the NB and SB approach (No-Build)
- Improvement to a multi-lane roundabout with 2 lanes for NB and SB movements (No-Build)
- **A free right turn for the SB approach when warranted**
- **Two-lane EB approach with dual left turns when warranted (Full Build)**
- **Two-lane WB approach when warranted**

TH 3 (CHIPPENDALE AVENUE) & CSAH 66 (VERMILLION RIVER TRAIL)

TABLE 21.08 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE

DIRECTION	MOVEMENT	2011 EXISTING		2031 NO-BUILD		2031 FULL BUILD	
		AM	PM	AM	PM	AM	PM
Westbound	LT	D/ 29.1/ 141'	E/ 46.0/ 149'	D/ 28.5/ 196'	D/ 26.0/ 128'	**F/ 58.8/ 346'**	**F/ 62.1/ 279'**
	TH						
	RT						
Northbound	LT						
	TH	Free					
	RT						
Southbound	LT	A/ 8.6/ --	A/ 8.7/ --	A/ 9.6/--	A/ 10.0/ --	B/ 10.5/ --	B/ 12.0/ 28'
	TH	Free					
	RT						

TH 3 & CSAH 66 is a stop controlled intersection with CSAH 66 under stop control. The WB approach consists of a single lane. There is a private business with driveway on the west side of the intersection, but this driveway has not been analyzed for capacity. Northbound consists of a through lane and a right-turn lane. Southbound has a left-turn lane and a through lane.

Analysis of existing conditions shows that the WB approach sees LOS D in the AM peak, and LOS E in the PM peak.

In the no-build scenario, the intersection would fail without intersection improvements. With a widened TH 3, including a two-lane approach both northbound and southbound that continues through the roundabout, the intersection would see LOS D in both peak hours.

In the full build scenario, the increased traffic from full development results in failure for WB traffic in both peaks. Capacity improvements such as an exclusive left-turn lane has minimal positive affect. It is reasonable to expect that this intersection would meet warrants for signalization or roundabout control. **These results are consistent with 2036 traffic forecasts.**

<u>Recommended improvements</u>

- TH 3 widening, including two lane approaches in the NB and SB approach (No-Build)
- Exclusive WB right-turn lane plus signalization or roundabout control when warranted (Full Build)

TH 3 (CHIPPENDALE AVENUE) & ELM STREET (CSAH 50)

TABLE 21.09 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE

DIRECTION	MOVEMENT	2011 EXISTING		2031 NO-BUILD		2031 FULL BUILD	
		AM	PM	AM	PM	AM	PM
Eastbound	LT	C/ 26.1/ 197'	C/ 34.6/ 357'	D/ 35.6/ 306'	D/ 46.0/ **621'**	D/ 40.6/ 463'	E/ 57.5/ **839'**
	TH	A/ 7.1/ 56'	A/ 7.3/ 114'	A/ 6.3/ 67'	B/ 10.1/ 200'	A/ 5.8/ 68'	A/ 7.2/ 155'
	RT						
Westbound	LT	B/ 15.4/ 92'	B/ 13.5/ 60'	B/ 16.5/ 131'	B/ 13.3/ 75'	B/ 15.5/ 135'	B/ 11.4/ 68'
	TH						
	RT						
Northbound	LT	C/ 29.0/ 166'	D/ 37.6/ 236'	D/ 35.3/ 245'	D/ 52.5/ 378'	D/ 42.0/ 275'	F/ 88.8/ 436'
	TH	A/ 9.4/ 135'	B/ 12.7/ 157'	B/ 11.9/ 216'	B/ 16.3/ 238'	B/ 14.3/ 277'	C/ 21.5/ 354'
	RT	A/ 0/ --	A/ 0/ --	A/ 0/ --	A/ 0/ --	A/ 0/ --	A/ 0/ --
Southbound	LT	C/ 28.3/ --	D/ 35.7/ 35'	C/ 33.8/ --	D/ 40.3/ 44'	D/ 37.5/ 20'	D/ 40.6/ 44'
	TH	B/ 17.0/ 94'	C/ 24.0/ 233'	C/ 22.3/ 160'	C/ 32.9/ 347'	C/ 26.0/ 257'	D/ 41.3/ 432'
	RT	A/ 4.7/ 82'	A/ 5.8/ 90'	A/ 5.9/ 104'	A/ 6.5/ 104'	A/ 6.4/ 120'	B/ 10.7/ 191'

TH 3 & Elm Street is a signalized intersection with protected permissive phasing through flashing yellow arrow signal configuration for northbound and southbound left-turn phases. The EB approach has a left-turn lane and a shared right-through lane. Its right-turn is overlapped with the NB left-turn phase. The WB approach consists of a single lane. The NB and SB approaches consist of a left-turn lane, two through lanes and a right-turn lane.

Analysis of existing conditions shows that the intersection functions at LOS B in both peak hours.

In the no-build scenario, the intersection would see LOS B in the AM peak hour, and LOS C in the PM peak. The EB left-turn movement would see LOS D and long queues. EB dual left-turn lanes would provide capacity for this movement.

In the full build scenario, the increased traffic from full development would increase delay and queues. The EB dual left-turn lane improvement provides enough capacity for the intersection to function acceptably. **These results are consistent with 2036 traffic forecasts.**

<u>Recommended improvements</u>

- EB dual left-turn lanes (No-Build)

AKIN ROAD & 195TH STREET (CSAH 64)

TABLE 21.10 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE

DIRECTION	MOVEMENT	2011 EXISTING		20362036 FULL BUILD Single lane roundabout		2036 full build Expanded roundabout	
		AM	PM	AM	PM	AM	PM
Eastbound	LT	A/ 8.0/ 84’	C/ 17.9/ 161’	**A/ 7.2/ 20’**	**F/ 149.4/ 760’**	**B/ 10.2/ 40’**	**A/ 9.6/ 40’**
	TH	B/ 11.4/ 84’	C/ 20.3/ 161’				
	RT	A/ 4.7/ 84’	B/ 13.5/ 161’				
Westbound	LT	A/ 9.8/ 89’	B/ 14.9/ 100’	**C/ 23.4/ 120’**	**B/ 10.8/ 20’**	**A/ 6.0/ - -**	**B/ 18.6/ 120’**
	TH	B/ 14.3/ 89’	C/ 19.0/ 100’				
	RT	A/ 6.7/ 45’	A/ 9.3/ 46’				
Northbound	LT	B/ 10.4/ 37’	B/ 12.8/ 42’	**A/ 7.8/ 20’**	**B/ 17.4/ 162’**	**A/ 7.8/ 20’**	**B/ 12.0/ 20’**
	TH	B/ 11.4/ 62’	B/ 13.9/ 83’				
	RT	A/ 8.7/ 47’	A/ 8.9/ 43’				
Southbound	LT	A/ 9.2/ 40’	B/ 13.6/ 57’	**A/9.6/ 20’**	**B/ 19.2/ 60’**	**A/ 9.6/ 20’**	**B/ 19.2/ 120’**
	TH	A/ 9.9/ 56’	B/ 14.8/ 91’				
	RT	A/ 8.7/ 40’	B/ 11.4/ 54’				

Akin Road & 195th Street West was an all-way stop controlled intersection. The EB approach has had a right-turn lane and a shared through-left lane. The WB approach consists of a single lane. The NB approach consisted of a left-turn lane and a shared through-right lane, and the SB approach has had a right-turn lane and a shared through-left turn lane. Akin Road Elementary School is located in the northwest quadrant of the intersection. **Since the 2011 AUAR, the intersection was converted to a single lane roundabout.**

In the **2036** full build scenario, with **single-lane roundabout** control, the intersection would see LOS **B** in the AM peak, and LOS E in the PM peak, with some movements expected to see failing conditions. **A right-turn bypass lane would be required for the EB and WB approaches. With the addition of these bypass lanes, the intersection is expected to see LOS A in the AM peak, and LOS B in the PM peak.**

Recommended improvements

- EB and WB right-turn bypass lanes (Full Build)

TH 3 (CHIPPENDALE AVENUE) & ACCESS A

TABLE 21.11 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE

DIRECTION	MOVEMENT	2011 EXISTING		2031 NO-BUILD		2031 FULL BUILD	
		AM	PM	AM	PM	AM	PM
Eastbound	LT					F/ 52.5/ 186'	F/ 274.0/ 350'
	TH						
	RT					B/ 12.8/ 50'	D/ 25.5/ 94'
Northbound	LT					A/ 9.9/ --	D/ 31.0/ 154'
	TH					Free	
	RT						
Southbound	LT						
	TH					Free	
	RT						

Access A is the northern-most access point to the development. For the full build scenario, this access point would connect to the future Dakota County east-west corridor which would provide access to TH 3. The driveway to the future east-west corridor would consist of a left-turn lane (if westbound access is authorized) and a right-turn lane. TH 3 would be a four-lane divided highway, with a NB left-turn lane, and a SB right-turn lane to the future east-west corridor. The access would be stop-controlled.

Analysis shows that left-turning vehicles out of the development would have difficulty finding a gap in TH 3 traffic in both peak hours. It is reasonable to expect that this driveway would warrant signalization or roundabout control with full build traffic volumes. These results are consistent with the 2036 analysis.

<u>Recommended improvements</u>

- **Develop plan for connection between AUAR area and east-west corridor with future traffic study**

TH 3 (CHIPPENDALE AVENUE) & ACCESS B

TABLE 21.12 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE							
DIRECTION	MOVEMENT	2011 EXISTING		2031 NO-BUILD		2031 FULL BUILD	
		AM	PM	AM	PM	AM	PM
Eastbound	LT					C/ 25.0/ 41'	F/ 55.2/ 70'
	TH						
	RT					B/ 12.2/ --	C/ 19.9/ 29'
Northbound	LT					A/ 10.0/ --	C/ 18.7/ 37'
	TH					Free	
	RT						
Southbound	LT						
	TH					Free	
	RT						

Access B is the driveway located between Access A and Access B on TH 3. For the full build scenario, the driveway would consist of a left-turn lane and a right-turn lane. TH 3 would be a four-lane divided highway, with a NB left-turn lane, and a SB right-turn lane. The access would be stop-controlled.

Analysis shows that left-turning vehicles out of the development would experience LOS C in the AM peak, and have difficulty finding a gap in the PM peak hour. This driveway may warrant signalization or roundabout control with full build traffic volumes. **These results are consistent with the 2036 traffic forecasts.**

<u>Recommended improvements</u>

- Signal or roundabout control if warranted (Full Build)

TH 3 (CHIPPENDALE AVENUE) & ACCESS C

TABLE 21.13 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE

DIRECTION	MOVEMENT	2011 EXISTING		2031 NO-BUILD		2031 FULL BUILD	
		AM	PM	AM	PM	AM	PM
Eastbound	LT					D/ 26.6/ 50'	F/ 88.7/ 156'
	TH						
	RT					B/ 12.3/ --	D/ 25.0/ 85'
Northbound	LT					B/ 10.0/ --	C/ 21.3/ 62'
	TH					Free	
	RT						
Southbound	LT						
	TH					Free	
	RT						

Access C is the southern-most driveway located to the development on TH 3. For the full build scenario, the driveway would consist of a left-turn lane and a right-turn lane. TH 3 would be a four-lane divided highway, with a NB left-turn lane, and a SB right-turn lane. The access would be stop-controlled.

Analysis shows that left-turning vehicles out of the development would experience LOS D in the AM peak, and have difficulty finding a gap in the PM peak hour. This driveway may warrant signalization or roundabout control with full build traffic volumes. These results are consistent with the 2036 analysis.

<u>Recommended improvements</u>

- Signal or roundabout control if warranted (Full Build)

190TH STREET WEST & ACCESS D

TABLE 21.14 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE

DIRECTION	MOVEMENT	2011 EXISTING		2031 NO-BUILD		2031 FULL BUILD	
		AM	PM	AM	PM	AM	PM
Eastbound	LT					B/ 18.0/ 116'	C/ 31.8/ 300'
	TH					B/ 19.2/ 359'	B/ 14.3/ 344'
	RT						
Westbound	LT						
	TH					B/ 17.0/ 307'	B/ 12.9/ 294'
	RT					A/ 4.9/ 82'	A/ 4.7/ 101'
Southbound	LT					B/ 19.1/ 370'	C/ 24.9/ 360'
	TH						
	RT					A/ 3.0/ 53'	A/ 4.2/ 64'

Access D would be the main development driveway providing access to the commercial area on 190th Street. For analysis purposes, this access would be signalized. The EB approach would have a left-turn lane and a through lane, and the WB approach would consist of a through lane and a right-turn lane. The driveway exit would have a left-turn lane and a right-turn lane.

A northbound approach for this intersection has not been analyzed. The area south of the intersection is proposed for residential development and will be connecting to this intersection with a northbound approach as its primary entrance/exit. When 195th/190th Street was connected to TH 3, right and left-turn lanes were built on the eastbound and westbound approaches for this future intersection. With the turn lanes already in place, the addition of the northbound approach and its expected utilization, should have only a nominal effect on the LOS of the intersection.

Under signalized control, this intersection would see LOS B in the AM peak, and LOS C in the PM peak hour. It should be noted that this access would also function acceptably as a roundabout. **These results are consistent with the 2036 analysis.**

<u>Recommended improvements</u>

- Signal or roundabout control (Full Build)

195TH STREET WEST & ACCESS E

TABLE 21.15 – INTERSECTION LEVEL OF SERVICE/DELAY PER VEHICLE/95TH QUEUE

DIRECTION	MOVEMENT	2011 EXISTING		2031 NO-BUILD		2031 FULL BUILD	
		AM	PM	AM	PM	AM	PM
Eastbound	LT					A/ 9.7/ --	A/ 9.8/ --
	TH					Free	
	RT						
Westbound	LT						
	TH					Free	
	RT						
Southbound	LT					E/ 39.8/ 52'	F/ 72.0/ 69'
	TH						
	RT					C/ 15.5/ --	C/ 15.0/ --

Access E is the western-most driveway to the property on 195th Street. For the full build scenario, the driveway would consist of a left-turn lane and a right-turn lane. 190th Street would have an EB left-turn lane, and a WB right-turn lane. The access would be stop-controlled.

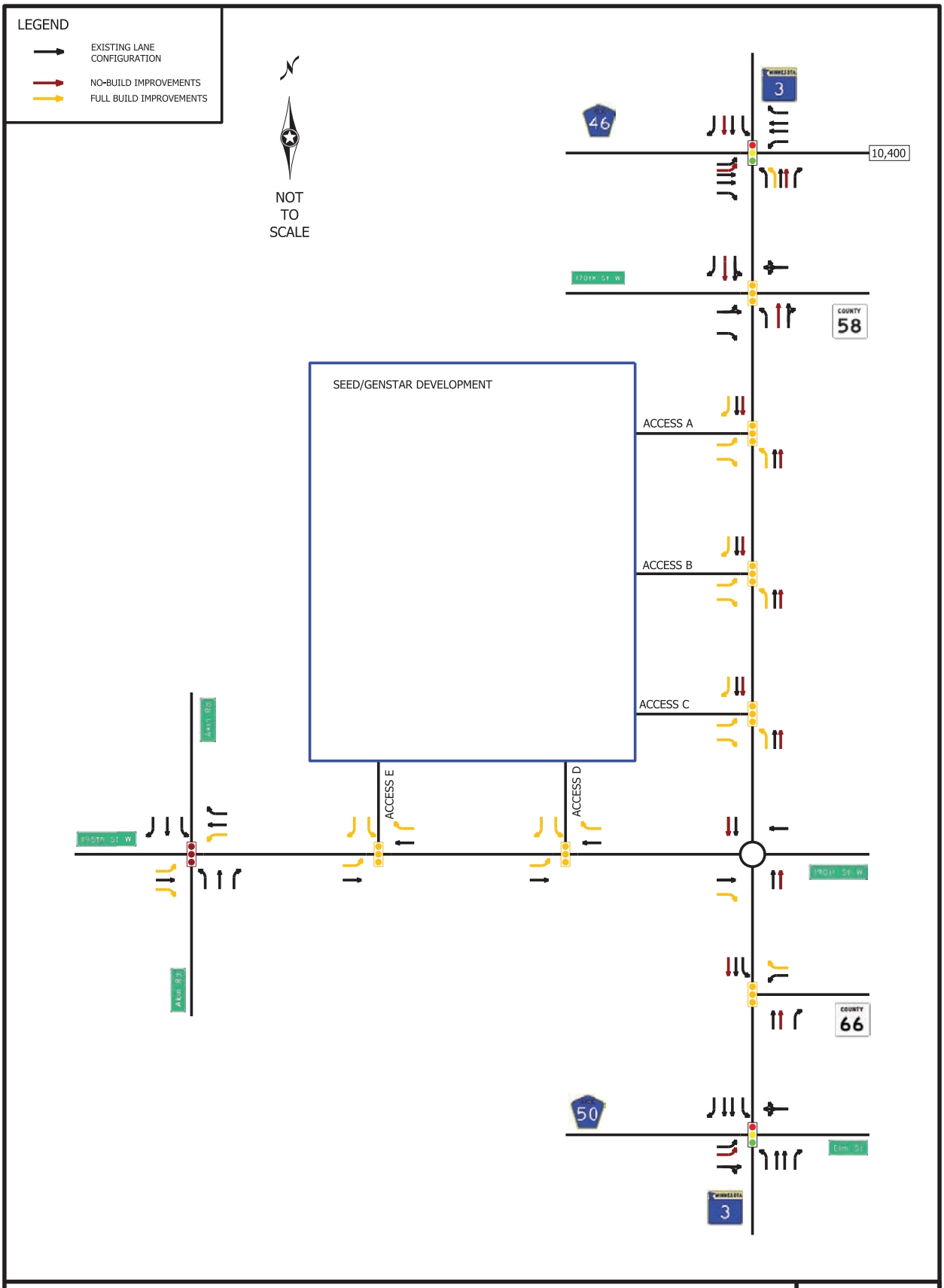
Analysis shows that left-turning vehicles out of the development would experience LOS E in the AM peak, and have difficulty finding a gap in the PM peak hour. This driveway may warrant signalization or roundabout control with full build traffic volumes. **These results are consistent with the 2036 traffic forecasts.**

Recommended improvements

- Signal or roundabout control if warranted (Full Build)

Figure 21-10 shows a graphical summary of recommended improvements. **The following improvements have been added to the 2016 AUAR update, and are not included on Figure 21-10:**

- **At full build, EB for 190th St at TH3 will require a dual left and the WB approach will need to be two lanes**
- **195th St at Akin Rd is currently a roundabout, and at full build will require dedicated right-turn lanes for EB and WB**
- **At full build, NB and SB of TH 3 at 170th St will need dedicated left-turn lanes**



RECOMMENDED IMPROVEMENTS

FIGURE 21-10

SEED/GENSTAR AUAR UPDATE

CITY OF FARMINGTON

Project 000141-11333 DATE: 24 JUNE 2011

Bonestroo

22. *Vehicle-Related Air Emissions*

Provide an estimate of the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discus the effect of traffic improvements or other mitigation measures on air quality impacts. (If the project involves 500 or more parking spaces, consult "EAW Guidelines" about whether a detailed air quality analysis is needed).

An air quality study was prepared for the original AUAR based on post-development traffic generation projections and utilizing EPA air models appropriate for the time. The model output is presented in Appendix D. The study concluded that all predicted carbon monoxide ambient air quality values within the AUAR area would be within the Minnesota ambient standards. This analysis was utilized in subsequent revisions of the AUAR. Changes to the air quality analysis since the 2011 AUAR Update are noted in bold.

Carbon monoxide (CO) levels are often elevated near roadway intersections due to the emission of this pollutant from the vehicles idling and passing by. The State of Minnesota has ambient CO standards that are designed to protect human health and the environment. The Standards are:

- 1-hour average: 30 parts per million (ppm); and
- 8-hour average: 9 ppm.

Concentrations near or above these levels are most likely to occur near intersections that are severely congested (Levels of Service D, E or F) and have high traffic volumes. **Since the 2011 AUAR Update, the Minnesota Department of Transportation has developed a screening method designed to identify intersections that may cause a CO impact above the State standards. This method requires an intersection to be heavily congested (Level of Service F) and have a traffic volume of greater than 140,000 vehicles per day in order to be considered to have the potential for causing CO air pollution problems. None of the intersections in the AUAR area exceed the criteria that would lead to a violation of the air quality standards. The highest volume intersections have volumes around 3,000 – 4,000 vehicles in the peak hour. With a K-factor of 0.10, this translates into a daily volume of approximately 40,000 vehicles per day, which is lower than the threshold of 140,000 vehicles (see Section 21 for detailed traffic information).**

23. *Stationary Source Air Emissions*

Will the project involve any stationary sources of air emissions (such as boilers or exhaust stacks)?
___ Yes X__ No

Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult EAW Guidelines for a listing) and any greenhouse gases (such as carbon dioxide, methane, nitrous oxide) and ozone-depleting chemicals (cloro-fluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.

24. *Dust, Odors, Noise*

Will the project generate dust, odors, or noise during construction and/or operation?
__X_ Yes ___ No

If yes, describe the sources, characteristics, duration, and quantities or intensity, and any proposed measures to mitigate adverse impacts. Also identify the locations of sensitive receptors in the vicinity and estimate the impacts on these receptors. Discuss potential impacts on human health or quality of life.

Minnesota Rules Chapter 7030 provide the Minnesota standards for noise. These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of health and welfare. These standards are designed to be consistent with sleep, speech, annoyance, and hearing conservation requirements for receivers within areas grouped according to land use activities. The Minnesota standards are as follows:

	7:00 AM to 10:00 PM		10:00 PM to 7:00 AM	
	L_{10}	L_{50}	L_{10}	L_{50}
NAC-1 (Residential)	65	60	55	50
NAC-2 (Commercial)	70	65	70	65
NAC-3 (Industrial)	80	75	80	75

L_{10} means the sound level which is exceeded for 10 percent of the time for a one-hour period. L_{50} means the sound level which is exceeded 50 percent of the time for a one-hour period. Sound levels are expressed in dBA. A dBA is a unit of sound level expressed in decibels and weighted for the purpose of determining the human response to sound.

Minnesota Statutes, Section 116.07, Subd. 2a, exempt noise from local and county roads from the requirements of these noise rules unless full control of access to the road has been acquired.

Existing Noise Levels

In order to define existing project-area noise levels, SBP conducted monitoring at the following four locations:

- 125 feet from the center of TH 3, at the Southern Hills Golf Course.
- 100 feet from the center of 170th Street, near the rail crossing.
- Western terminus of 194th Street.
- Eastern terminus of 195th Street.

Results of the monitoring are as follows:

Table 24-1
Noise Monitoring Results

	Date	Time	L_{10}	L_{50}
R1 - Golf Course	11/15/02	12:30 – 1:30 p.m.	65.0	56.5
R2 – 170th Street	11/15/02	1:44 – 2:44 p.m.	65.5	55.5
R3 – 194th Street Terminus	12/10/02	2:53 – 3:25 p.m.	45.0	42.5
R4 – 195th Street Terminus	12/10/02	3:49 – 4:22 p.m.	53.0	48.5

The monitoring locations are shown in Figure 3-1. Detailed graphical summaries of all monitoring results are provided in Appendix A.

Post-Development Noise Levels

Using the Minnoise computer model and traffic and roadway information provided by Bonestroo, Rosene, and Anderlik Associates (BRA), SBP estimated post-development noise levels generated by traffic on roadways serving the project area. Noise impacts were estimated for hypothetical receptor locations at 50 foot intervals from 50 to 400 feet from the center of the following roadways:

- TH 3
- 195th Street Extension
- 170th Street

Minnoise Model

The Minnoise model is a modified (modified by the Minnesota Department of Transportation) version of the Federal Highway Administration's Optima/Stamina model that is used to predict noise levels from highway projects and to assist with the development of noise barriers.

Model Assumptions

Noise level predictions were based on the following data and assumptions:

- The noise analysis was completed for the peak afternoon rush hour.
- Traffic data for year 2013 for the study was generated by BRA and is provided in Appendix B.
- Shielding from natural or man-made barriers was not considered.
- The analysis assumed acoustically soft ground cover between the roadway and all receiver locations (alpha = 0.5).
- Vehicle mix was based on counts conducted during noise monitoring, with 3 percent heavy trucks and 14 percent medium trucks.
- Constant vehicle speeds of 45 mph on Chippendale Avenue and 40 mph on other roads was assumed.

Table 24-2
Traffic Noise Impact at Various Distances from Roadway Centerline

Road Segment	Traffic Noise Impact at Various Distances from Roadway Centerline (dBA)[1]															
	50 Feet		100 Feet		150 Feet		200 Feet		250 Feet		300 Feet		350 Feet		400 Feet	
	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}	L_{10}	L_{50}
170th Street West of Chippendale	73	65	68	61	65	59	63	58	62	57	61	56	59	55	58	54
170th Street East of Chippendale	60	48	57	46	55	45	54	45	53	45	52	44	51	44	51	44
Chippendale North of North Access Road	79	73	74	69	71	67	69	65	67	64	66	63	65	62	64	61
Chippendale Between North and South Site Access Road	78	71	73	68	70	66	68	64	67	63	65	62	64	61	63	60
Chippendale South Access Road to 195th Street Extension	77	71	73	67	70	65	68	63	66	62	65	61	64	60	63	59
Chippendale 195th Extended to CSAH 66	77	70	72	67	69	64	67	63	66	62	64	60	63	60	62	59
Chippendale CSAH 66 to Elm Street	77	71	73	67	70	65	68	63	66	62	65	61	63	60	62	59
195th Street Extended	73	64	68	61	65	59	63	58	62	56	60	55	59	54	58	53

[1] Shaded values are above the Minnesota daytime standard for residential areas.

Model Results

- Daytime Noise Levels

Table 3-2 shows the results of the modeling analysis for the peak daytime hour.

The model results show that, without any intervening terrain or barriers, state daytime noise levels may be exceeded to distances of approximately 400 feet from the centerline of Chippendale Avenue, out to approximately 200 feet from 170th Street, and out to approximately 100 feet from the 195th Street extension. The State daytime standard is based on the suitability of an area for outdoor use.

Complete model output files are provided in Appendix C.

- Nighttime Noise Levels

Minnesota noise rules define nighttime as the hours between 10:00 p.m. and 7:00 a.m. The nighttime standards (L_{10} = 55 dBA, L_{50} = 50 dBA) are designed to prevent interference with sleep in a building with partially open windows. Peak nighttime traffic noise levels typically occur during the 6:00 a.m. – 7:00 a.m. hour. Assuming traffic levels of about 70 percent of the peak daytime hour traffic levels, traffic noise levels of 1 – 2 dBA less than the peak daytime levels presented in Table 3-2 can be expected.

Railroad Noise

A CP Rail line runs through the proposed development site. According to MNDOT, the track is used primarily by Union Pacific, with an average use of 10 trains per day at 45 mph. In order to evaluate the noise impact of this rail line, SBP used the methodology prescribed by the US Department of Housing and Urban Development (HUD) in "The Noise Guidebook", (September 1991 HUD-953-CPD(1)). HUD requires that projects developed with HUD assistance evaluate expected project noise levels at residences and compare them to HUD standards.

HUD Standards are expressed in a descriptor called the "day-night average sound level", abbreviated as DNL and symbolized as L_{dn}". The descriptor represent a 24-hour average noise level with a 10 decibel penalty added to the nighttime hourly noise levels. The HUD standards are presented on the table that follows:

HUD SITE ACCEPTABILITY STANDARDS

	DNL	Special approvals and requirements
Acceptable	Not exceeding 65 dB [(1)]	None
Normally Unacceptable	Above 65 dB but not exceeding 75 dB	Special Approvals Environmental Review Attenuation
Unacceptable	Above 75 dB[(1)]	Special Approvals Environmental Reviews Attenuation

Notes:
(1) Acceptable threshold may be shifted to 70 dB in special circumstances. The attenuation measures in **Unacceptable** cases are granted on a case-by-case basis.

In conducting the impact assessment for this project, SBP used the following assumptions:

- 50 cars per train
- 2 diesel locomotives per train
- Average train speed of 45 mph
- Bolted tracks (not welded)
- Night operations (10:00 p.m. to 7:00 a.m.) are 15 percent of the 24-hour total

SBP used the HUD methodology to define the extent of the "Unacceptable" and "Normally Unacceptable" zones for 10 (current number) and 20 trains per day and for areas where whistles are used (defined as areas perpendicular to any point on the track between the whistle posts). The results of this analysis are summarized in Table 3-3.

Table 24-3
Railroad Noise Impact

	No Whistle Zone		Whistle Zone	
	Extent of Unacceptable Zone	Extent of Normally Unacceptable Zone	Extent of Unacceptable Zone	Extent of Normally Unacceptable Zone
10 Cars per Day	Less than 50 feet from track.	100 feet from track.	50 feet from track.	300 feet from track.
20 Cars per Day	Less than 50 feet from track.	200 feet from track.	100 feet from track.	500 feet from track.

The HUD worksheets used in this determination is provided in Appendix D.

Mitigation Plan

Protect residential areas from potential noise impacts generated by roadways and the railroad tracks.

1. Conduct a detailed noise study of the proposed site plan to define any required noise mitigation strategies. Potential strategies may include one or a combination of the following:
    - Buffer zones
    - Noise barriers
    - Strategic building placement
    - Building construction requirements

25. Nearby Resources

Are any of the following resources on or in proximity to the site:

a. *archaeological, historical, or architectural resources?*
_X_ Yes __ No

b. *prime or unique farmlands?* ***___ Yes _X_ No***

c. *designated parks, recreation areas, or trails?* ***_X_ Yes ___No***

d. *scenic views and vistas?* ***____Yes _X__ No***

e. *other unique resources?* ***____ Yes __X__No***

f. *If any items are answered* ***Yes****, describe the resource and identify any impacts on the resource due to the project. Describe any measures to be taken to minimize or avoid adverse impacts.*

Archeological, Historical and Architectural Resources
The Minnesota Historical Society indicated that there is one history/architecture property, the Dakota County Poor Farm, which is included in their statewide inventory (DK-EMP-002). The property has not been evaluated. The MHS suggested that the property be evaluated for National Register eligibility by a qualified historian. If eligible, the appropriate treatment of the property should be included as part of the Mitigation Plan and development planning process.

Property buildings on the Dakota County Poor Farm site were demolished under authority of a demolition permit issued in February 2010. All buildings on-site were removed and the site was backfilled at that time.

The MHS indicated that an archaeological survey of the project area is not necessary.

The State Archaeologist indicated during review of this update that Archaeological site 21DK0076 is located within the proposed development area. It is located on a prominent landform common in the area designated "Grassland Tree Complex" in Figure 10-1.

Mitigation Plan

Goal 1. Assure proper investigation of archaeological resources. Before any disturbance of areas designated as "Grassland Tree Complex" in Figure 10-1 where a previous archaeologic site has been identified, a qualified archaeologist will perform a survey to determine if the project could result in adverse effects to currently unknown archaeological resources.

Responsible Parties: City of Farmington, private developer

Regulatory Program: Minnesota Field Archaeology Act

Implementation Timeframe: as development is proposed

Designated Parks, Recreational Areas and Trails
The Jim Bell Park and Preserve, established in 2001, is located immediately west of the AUAR area. The park features picnic areas, a playground, trails and natural areas.

In 2010, the City of Farmington acquired a parcel immediately east of the Jim Bell Park and Preserve, in the southwestern most part of the AUAR area. This parcel has been zoned park and open space by the City Council. However, the parcel is currently being used for active agriculture, with a lease that will expire in 2018. It is the City's intention to expand the Jim Bell Park and Preserve and develop their parcel as parkland. A master plan for this park was developed in 2007 is included in Figure 6-1.

Several existing city trails run through and along the borders of the AUAR study area. These trails are part of a city-wide network, connecting different residential neighborhoods to the downtown. Within the AUAR study area, trails run:

- **South on Chippendale Avenue (TH 3) from 190th Street (construction on this segment is currently occurring in 2016)**
- **From Chippendale Avenue (TH 3) west along 190th Street, continuing onto 195th Street**
- **A loop trail south of 195th Street between Deerbrook Path on the west and North Creek on the east. This loop trail connects with the trail along 195th Street and is designated by the city as part of the North Creek Regional Trail.**

The Metropolitan Council identifies existing and planned regional parks and trails in the 2040 Regional Parks Policy Plan. Within the AUAR area, the Metropolitan Council identifies one planned regional trail: the North Creek Greenway Regional Trail. This 14-mile trail will connect Eagan, Apple Valley, Lakeville, Farmington and Empire Township. Although small segments of the trail within the AUAR area have already been developed by the City of Farmington, the entire trail will ultimately

be part of the Dakota County trail system. The North Creek Greenway Master Plan, which includes implementation strategies for the trail, was adopted by Dakota County in 2011 and approved by the Metropolitan Council in 2012.

All existing and planned parks and trails are illustrated in Figure 25-1.
Mitigation Plan
Goal 1: Ensure that future development is integrated with existing and planned parks, especially the Jim Bell Park and Preserve.

Responsible Parties: City of Farmington and Developer

Regulatory Program: City site plan review process (as described in the City's Code §10-6-23).

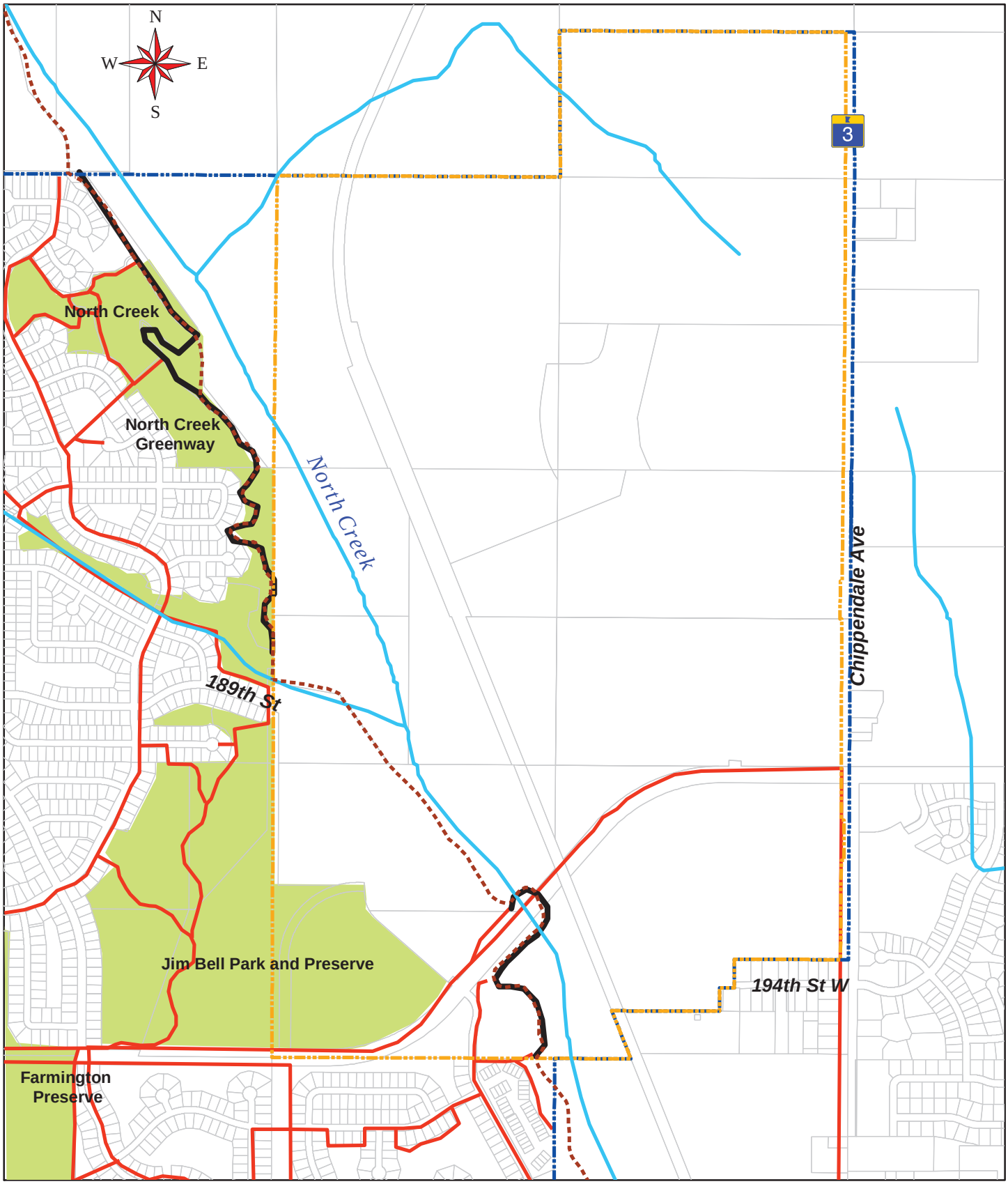
Development Time Frame: As development is planned.

Goal 2: Integrate new development with the City's existing trail network.

Responsible Parties: City of Farmington and Developer

Regulatory Program: City site plan review process (as described in the City's Code §10-6-23).

Development Time Frame: As development is planned.



Stantec

Feet

1,200 0 1,200

City of Farmington

Seed-Genstar

AUAR-Update 2016

Existing and Planned Parks and Trails

Figure 25-1

Planned North Creek Greenway Regional Trail	Parks
City Paved Trail	Study Area Boundary
North Creek Regional Trail	City Boundary
Streams	Parcels

January 2017

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26. *Visual Impacts*

Will the project create adverse visual impacts? (Examples include: glare from intense lights; lights visible in wilderness areas; and large visible plumes from cooling towers or exhaust stacks.) ____ ***Yes*** __X__ ***No***

If yes, explain.

27. *Compatibility with Plans*

2016 AUAR Update

Proposed development is consistent with the 2008 Comprehensive Plan and the 2007 Master Plan for the Jim Bell Park and Preserve, as described in section 6.

Is the project subject to an adopted local comprehensive land use plan or any other applicable land use, water, or resource management plan of a local, regional, state or federal agency?
__X___***Yes*** ____ ***No***

If yes, identify the applicable plan(s), discuss the compatibility of the project with the provisions of the plan(s), and explain how any conflicts between the project and the plan(s) will be resolved. If no, explain.

The AUAR must include a statement of certification from the RGU that its comprehensive plan complies with the requirements set out at 4410.3610, subpart 1. The AUAR document should discuss the proposed AUAR area development in the context of the comprehensive plan. If this has not been done as a part of the responses to items 6, 9, 19, 22, and others, if must be addressed here; a brief synopsis should b presented here if the material has been presented in detail under other items. Necessary amendments to comprehensive plan elements to allow for any of the development scenarios should be noted. If there are any management plans of any other local, state, or federal agencies applicable to the AUAR area, the document must discuss the compatibility of the plan with the various development scenarios studied, with emphasis on any incompatible elements.

Compatibility with Plans and Land Use Regulations

The City of Farmington updated its comprehensive plan consistent with the requirements of the Metropolitan Land Planning Act requirements for 2008 plan updates. This plan was reviewed by the Metropolitan Council and found to be consistent with the *Regional Blueprint* and with the Metropolitan Council's regional systems plans. In April 20, 2009, the City of Farmington officially adopted its Comprehensive Plan as official public policy. This plan complies with the requirements set out in Minnesota Rules 4410.3610, subpart 1, which requires local comprehensive plans to address land use, transportation and sanitary sewer systems.

The response to question 6 regarding a detailed description of the AUAR is in the context of the City of Farmington's Comprehensive Plan and takes into consideration amendments to the City's official controls or Zoning Ordinance.

28. Impact on Infrastructure and Public Services

Will new or expanded utilities, roads, or other infrastructure, or public services be required to serve the project? ***__X__ Yes ____ No***

If yes, describe the new or additional infrastructure/services needed. (Any infrastructure that is a "connected action" with respect to the project must be assess in this EAW; see "EAW Guidelines" for details.)

This item should first of all summarize information on physical infrastructure presented under other items (such as 6, 18, 19, and 22).

Other major infrastructure or public services not covered under other items should be discussed as well – this includes major social services such as schools, police, fire, etc. As noted above and in the "EAW Guidelines," the RGU must be careful to include project-associated infrastructure as an explicit part of the AUAR review if it is to be exempt from project-specific review in the future.

The infrastructure (roads, utilities, etc.) required to serve the project are detailed under the appropriate items in this AUAR. These include Question 13 (Water Use/Water Supply), Question 18 (Surface Water Runoff), Question 19 (Wastewaters), Question 21 (Solid Wastes), Question 22 (Traffic).

Infrastructure needed to support the proposed development is included in the City of Farmington's Capital Improvement Plan (CIP).

The following summarizes the infrastructure system information:

Roadway Network

The Seed/Genstar AUAR identified the need for an east-west connection through the AUAR to State Highway 3. Since the 2006 Update the two-lane segment of 195th Street was completed in 2009.

This 2011 Update to the AUAR analyzed the potential traffic and other environmental impacts of the completion of this new roadway and related roadways.

The extension of 195th Street has been completed from its current easterly terminus at Diamond Path Road westerly to Trunk Highway 3. The roadway includes a bridge over North Creek and the Canadian Pacific Railway as a key component of the project. The bridge minimizes environmental impacts to the creek and wetland when compared with other design alternatives for the roadway.

The proposed development of the Seed/Genstar property will increase the traffic volumes on roadways within the site vicinity. The traffic analysis indicated the improvements and mitigation strategies that will be needed to accommodate the increased traffic. Improvements would include widening TH3 to a four-lane section in the area, signalization or roundabout control for several intersections that are currently stop-controlled, and additional lanes or turn lanes on other roadways in the area.

The 2004 AUAR and the City's Comprehensive Plan includes the potential extension of Diamond Path Road through the AUAR area. While Diamond Path is included in the AUAR, City Staff will continue to review the feasibility of the road as this project moves forward.

The Mitigation Plan discusses phasing the improvements in several increments through the year 2021 to accommodate the proposed development in the AUAR area and surrounding areas.

Sanitary Sewer System

The study area is currently not served by sanitary sewer. An addendum to the City of Farmington's May 1996 Comprehensive Sewer Policy Plan was prepared in early 2002 that incorporates trunk sewer service to the study area. The proposed trunk sewer system is shown if Figure 19.1. It consists primarily of gravity trunk sewers with one lift station and force main.

Metropolitan sewer service will be provided to the study area by the Metropolitan Council Environmental Services (MCES) existing 48-inch Apple Valley Interceptor. This interceptor currently bisects the AUAR study area, which is fully within current MUSA staging areas for the City of Farmington. This interceptor will convey the wastewater to the Empire Wastewater Treatment Plant.

Municipal Water System

The City of Farmington currently has **eight** municipal wells, designed to meet the City's water demands until at least the year **2020**. Water supply trunk lines will be added in the AUAR study area to connect the area to the City's current water supply system. These trunks will range in diameter from 16 to 20 inches. A 5.0-million gallon ground storage water reservoir is proposed within the AUAR study area. This ground storage reservoir is primarily intended to expand the City's water storage capacity to accommodate for peak demand as the community grows. Ultimately, the size of this future storage facility may be adjusted based on actual community growth.

The source of water for the area will be the City of Farmington's current municipal wells completed in the Prairie du Chien-Jordan aquifer. Development of the area will likely require additional pumping of the City's current wells to meet proposed demand, and the water supply system was design to meet this projected demand.

Stormwater System

Stormwater from the majority of the AUAR study area will drain to North Creek, a tributary of the Vermillion River. Two smaller subwatersheds within the AUAR area drain directly to the Vermillion River. Development in the AUAR study area will be required to meet NPDES permit standards adopted by the MPCA in August, 2003 for areas that drain to Special Waters.

Meeting this standard for the AUAR project area is expected to provide adequate protection to North Creek regarding runoff volume, thermal loads, and other runoff-driven pollutants. Meeting the standard will reduce runoff volume and pollutant loads below those generated by the existing conditions on the site. The standard used for the AUAR was actually higher than the standard adopted by the MPCA in August, 2004 (after the AUAR was adopted), so the system proposed for the area will exceed the level of protection required to meet state rules.

Compliance with the MPCA standard requires wide-spread application of infiltration approaches to control runoff volume and associated pollutant loads for the development intensity proposed. These approaches and the stormwater management system for the AUAR area are detailed in Section 17 and the Mitigation Plan.

c. Information about the anticipated staging of various developments, to the extent known, and of the infrastructure, and how the infrastructure staging will influence the development schedule.

The AUAR Study Area has been fully annexed. The AUAR Study Area is included in a proposed Growth Area and within the MUSA boundaries identified in the City of Farmington Comprehensive Plan Update.
The area is expected to be developed by a single developer as a Planned Unit Development, however no formal development proposals has been submitted to the City for formal review. Development is expected to be staged over more than 10 years, and will depend on market conditions.

29. *Related Developments; Cumulative Impacts*

This item does not require a response for an AUAR since the entire AUAR process deals with cumulative impacts from related developments within the AUAR area.

However, the questions of this item should be answered with respect to the cumulative impacts of development within the AUAR boundaries compared with past, present, and reasonably foreseeable future projects outside of the AUAR area, where such cumulative impacts may be potentially significant.

The Traffic Section discusses the potential cumulative impacts of development within the AUAR area with current and foreseeable projects in nearby areas, including new developments in Empire Township. The identified cumulative impacts from related developments are the potential impacts of increasing traffic on Trunk Highway 3. These

impacts are analyzed in the Traffic Section, and mitigation strategies are proposed to address the potential impacts.

The AUAR Mitigation Plan proposes a phasing of this development, in order to minimize these impacts and phase the developments with potential improvements that will help to manage traffic on Highway 3. The Mitigation Plan describes a variety of improvements to be completed at intersections on related roadwaysto mitigate for traffic created by the proposed development. The City of Farmington has also indicated its willingness to work with MnDOT, Dakota County, and other communities in the Trunk Highway 3 corridor, to help to develop a long-term solution to the impacts of development in Dakota County on this roadway.

30. *Other Potential Environmental Impacts*

If the project may cause any adverse environmental impacts, which were not addressed by items 1 to 28, identify them here, along with any proposed mitigation.

None identified.

31. *Summary of Issues*

List any impacts and issues identified above that may require further investigation before the project is commenced. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.

The Mitigation Plan that follows identifies the issues that might impact the AUAR Study Area and the mitigation steps to be taken.

Mitigation Plan – Farmington Seed/Genstar AUAR Update

This is the Final Mitigation Plan for the Seed/Genstar AUAR Update. It incorporates the Final Mitigation Plan from the Seed/Genstar AUAR, and adds comments on completed mitigation efforts that address the potential impacts from the proposed roadway changes proposed in the 2006 **and 2011** AUAR Update.

1.0 Introduction

This comprehensive environmental protection plan has been prepared as a part of the Farmington Seed/Genstar Alternative Urban Areawide Review (AUAR) Update. This plan is intended to satisfy the AUAR rules that require preparation of a "mitigation plan" that specifies measures or procedures that will be used to avoid, minimize, or mitigate for potential impacts of development of the AUAR area. Finally, the plan specifies legal and financial measures and institutional arrangements that will assure that the mitigation measures recommended in the plan are implemented. The mitigation plan will be used by the City of Farmington to guide development of the Seed/Genstar AUAR area through the avoidance, minimization, and/or mitigation of environmental impacts.

NOTE: SECTION NUMBERS IN THE MITIGATION PLAN CORRESPOND TO THE SECTION NUMBERS IN THE AUAR REPORT. **Items added for the 2016 AUAR Update are included in bold Century Gothic type.**

10. Cover Types--Natural Communities

The majority of land cover in the AUAR study area is currently agricultural cropland and pasture land. The natural communities in the study area include wetlands and natural areas within the North Creek corridor.

Wetlands. The Farmington Surface Water Management Plan (1997) and Surface Water Plan Update (2002) identify the wetlands in the AUAR area, and include a field inventory and wetland classification. The classification of wetlands in the AUAR area is based on the same functions and values assessment used to classify wetlands in the rest of the City, and considers native plant community quality and susceptibility to stormwater impacts.

North Creek Corridor. The City's Comprehensive Plan identifies the North Creek Corridor as and "environmentally sensitive area". The plan and city ordinances include strategies for preservation of this corridor by restricting development within the floodplain and requiring undisturbed vegetative buffers around wetlands. The Dakota County Farmland and Natural Area Protection Plan (2002) also identifies the North Creek corridor as a "priority natural corridor" in the county.

The goals and strategies that follow are proposed to protect the quality of the natural communities that remain on the Seed/Genstar property as development occurs in the future.

<u>Goal 1:Protect the natural communities and habitat connections within the North Creek Greenway Corridor.</u>

Protection Strategies:

1. Implement provisions of the City's Comprehensive Plan, Surface Water Management Plan, Wetland Ordinance, and Shoreline Ordinance to protect the natural areas in the North Creek Corridor by prohibiting development within the corridor and floodplain areas, and requiring vegetated buffers along the creek and wetlands in the corridor.

   Responsible Parties**:** City of Farmington and private developer.

   Regulatory Program**:** Enforcement of City Ordinances and policies. The City may also apply to non-regulatory programs such as DNR's Metro Greenways and Conservation Partners programs to seek funding assistance for protection and restoration of natural communities.

   Implementation Time Frame: Enforcement of Ordinances and policies will occur with development.

2. The City will support efforts to remove exotic species and restore native vegetation in the buffer areas along North Creek to improve water quality and habitat.

Responsible parties: City of Farmington, Natural Resource Agencies, volunteer groups

Regulatory program: None.

Implementation Time Frame: As grant programs, volunteers, or other resources are available for these efforts.

3. The City will implement the alignment option for the 195th Street Extension recommended in the Feasibility Report for the project (January, 2006), and shown in Figure 10.3, including the wetland and floodplain mitigation and banking proposed in the Feasibility Report for the project (January, 2006) to minimize and mitigate for potential impacts to wetlands and floodplains in the project area.

   Responsible parties: City of Farmington, Natural Resource Agencies, developer and contractors

   Regulatory program: Minnesota Wetland Conservation Act, state and federal floodplain regulations, City Wetland, Floodplain and Stormwater ordinances, NPDES permit.

   Implementation Time Frame: **Completed with construction of 195th Street.**

4. The City will implement the North Creek Channel Rehabilitation included in the Feasibility Report for the 195th Street Extension project (January, 2006), and shown in Figure 10.3 to minimize and mitigate for potential impacts to North Creek and its habitat from the extension of 195th Street.

   Responsible parties: City of Farmington, Natural Resource Agencies, developer and contractors

   Regulatory program: DNR permits, City Wetland, Floodplain and Stormwater ordinances, NPDES permit.

   Implementation Time Frame: **Completed with construction of 195th Street.**

<u>Goal 2:Protect healthy individual trees and groves of trees within existing woodland areas, and mitigate for any loss of trees through replanting.</u>

Protection Strategies:

1. Implement the vegetation preservation and protection plan and tree preservation requirements of the City's Subdivision Ordinance and Zoning Ordinance.

   Responsible Parties: City of Farmington and private developers.

   Regulatory Program: City Subdivision and Zoning Ordinances.

Implementation Time Frame: Tree protection plans should be developed along with grading plans for the development. Protection and replacement should occur as the development plan is implemented.

Goal 3: Protect wetland resources in the project area to assure no net loss of these resources by avoiding and minimizing wetland impacts when feasible, and mitigating for unavoidable impacts.

Protection Strategies:

1. The developer will follow the requirements of the Farmington Surface Water Management Plan and Wetland Ordinance, and applicable state and federal regulations to avoid, minimize and/or mitigate for impacts to wetlands that result from development.

   Responsible Parties: Private developers, City of Farmington, and regulatory agencies.

   Regulatory Program: Farmington Surface Water Management Plan, Wetland Ordinance, Shoreland Ordinance, Minnesota Wetland Conservation Act, Sections 401 and 404 of the Clean Water Act, and Minnesota DNR Protected Waters Program.

   Implementation Time Frame: Complete analysis of wetland impacts and mitigation needs as final plat and grading plan are completed. Implement efforts to avoid or mitigate for impacts as development occurs.

2. The City will implement the alignment option for the 195th Street Extension recommended in the Feasibility Report for the project (January, 2006), and shown in Figure 10.3, including the wetland and floodplain mitigation and banking proposed in the Feasibility Report for the project (January, 2006) to minimize and mitigate for potential impacts to wetlands and floodplains in the project area.

   Responsible parties: City of Farmington, Natural Resource Agencies, developer and contractors

   Regulatory program: Minnesota Wetland Conservation Act, state and federal floodplain regulations, City Wetland, Floodplain and Stormwater ordinances, NPDES permit.

   Implementation Time Frame: **Completed with construction of 195th Street.**

3. Site plans will indicate methods that will be used to avoid impacts to wetlands and meet the requirements of the wetland regulations. Required buffers around wetlands will be clearly delineated with permanent monumentation acceptable to

the City. In residential subdivisions, a monument is required for each lot. In other situations, a monument is required for each 300 feet of wetland edge.

Responsible Parties: Private developer and City of Farmington.

Regulatory Program: Same as 1. above.

Implementation Time Frame: Wetlands were delineated prior to development. Monuments will be placed as development occurs.

4. Require the use, management and enforcement of Best Management Practices (BMP's) to control erosion and sedimentation and provide pretreatment of water discharged to wetlands during and after construction, as specified in the City's Surface Water Management Plan.

   Responsible Parties: City of Farmington.

   Regulatory Program: City's Zoning and Subdivision Ordinances, Wetland Ordinance, Excavation and Grading Ordinance and Grading Plan Requirements, and NPDES Stormwater Management Program.

   Implementation Time Frame: Specify BMP's to be used in grading plans, and implement BMP's as development occurs.

11. Fish, Wildlife and Sensitive Resources

The Minnesota County Biological Survey identified no rare or threatened species in the AUAR study area during their countywide inventory. Based upon a review of the MDNR Natural Heritage Information System (NHIS database) under license agreement LA-760, there are no known records of state-listed species within the AUAR study area. However, the review indicated there are three known occurrences of rare species and natural communities within one mile of the AUAR study area.

Goal 1. Protect the natural areas and habitat connections in the North Creek Greenway and the water quality and habitat in North Creek as development occurs in the AUAR area, through the strategies identified in Section 10 above and Section 17.

Goal 2. Minimize impacts to unmaintained grassland areas within the AUAR study area as much as possible to limit impacts to loggerheads shrikes and their habitat. The information provided by the MDNR on shrike habitat will be provided to the developer.

Goal 3. Construction activities in grasslands, roadsides, shrublands, wetlands, or woodlands (natural habitats) within the AUAR study area may result in the taking of migratory birds, eggs, young and/or active nests. If rare or state-listed species are determined to be present in a field study conducted within the year prior to development, removal of vegetation in natural habitat will occur outside of the anticipated migratory bird nesting window in Minnesota (i.e., mid-March to August 15) to minimize the potential take of migratory birds.

Goal 4. Best management practices during construction activities and operation within the AUAR study area will be implemented to minimize the introduction or spread of noxious weeds and invasive species at the site, especially along the North Creek Greenway.

12. Impacts on Water Resources

No changes in mitigation plan strategies for the 2016 AUAR Update compared to the 2011 AUAR Update. As the AUAR area develops, wetlands and water resources will be protected and managed in accordance with the City's 2008 Local Surface Water Management Plan as well as watershed and State requirements. Stormwater BMPs will be implemented to satisfy City, watershed, and State requirements. BMPs will be designed in accordance with the recently-adopted NOAA Atlas 14 rainfall amounts and distributions. Such BMPs could include stormwater storage for rate control; infiltration, filtration, bioretention, or stormwater reuse for volume control and water quality treatment; and temporary erosion and sediment control features such as vegetative restoration, storm drain inlet protection, construction entrance protection, and silt fence.

Water resources in the AUAR study area include North Creek and a variety of wetland types. Protection Strategies under Sections 10, 11, 16 and 17 in this AUAR Update will be implemented to avoid, minimize, or mitigate impacts on the Water Resources in the study area.

The Vermillion River Watershed Management Plan notes that North Creek is fed by shallow ground water flows. The infiltration and wetland protection strategies proposed in Sections 10, 11 and 17 should help to maintain shallow ground water resources in the AUAR area.

In addition, the following strategies are included:

<u>Goal 1.Protect ground water resources that support flows in North Creek.</u>

Protection Strategies:

1. The City will avoid construction of utilities in close proximity to North Creek when feasible. When utility construction near the creek is necessary, require use of trench dams or other barriers, and backfilling of utility trenches with native material to prevent drainage of shallow groundwater in the area.

2. The City will consider the use of directional boring techniques in the construction of water distribution and sanitary sewer collection lines that are proposed to cross under North Creek.

   Responsible parties: City of Farmington

   Regulatory program: MPCA Best Management Practices

   Implementation time frame: Implement as utilities are constructed in the AUAR area.

13. Water Use

Since the AUAR area has historically been used for farming and rural residences, it is possible that some private wells are located in the project area, though the Minnesota Geological Survey's County Well Index for Dakota County indicates no well records within the boundary of the project area. However, the possibility exists that unsealed, abandoned wells may be encountered after construction begins.

Goal 1. Protect the quality of ground water in the AUAR area.

Protection Strategies

1. Require that unsealed, abandoned wells are properly sealed and abandoned to meet codes required by **Dakota County.**

   Responsible parties: City of Farmington, private developer and property owners

   Regulatory program: **Dakota County**

   Implementation time frame: As development occurs.

14. Land Use Management Districts

Goal 1. Protect existing floodplain areas from impacts of the proposed roadways.

1. The City will implement the alignment option for the 195th Street Extension recommended in the Feasibility Report for the project (January, 2006), and shown in Figure 10.3, including the wetland and floodplain mitigation and banking proposed in the Feasibility Report to minimize and mitigate for potential impacts to wetlands and floodplains in the project area.

   Responsible parties: City of Farmington, Natural Resource Agencies, developer and contractors

   Regulatory program: Minnesota Wetland Conservation Act, state and federal floodplain regulations, City Wetland, Floodplain and Stormwater ordinances, NPDES permit.

   Implementation time frame: Completed with construction of 195th Street.

16. Erosion and Sedimentation

No changes in erosion and sedimentation issues for the AUAR study area compared to the 2011 AUAR Update. As the AUAR study area develops, temporary erosion and sediment control features will be implemented to satisfy City, watershed, and State requirements. Such features could include vegetative restoration, storm drain inlet protection, construction entrance protection, and silt fence.

Goal 1. Minimize erosion and sedimentation and impacts on surface waters as development occurs.

Protection strategies:

1. Identify and protect areas of existing native vegetation, and minimize soil exposure during development.

2. Use created storm water ponds as sediment basins during construction.

3. Implement the City's Erosion Control and Turf Establishment Ordinance. Work with the grading contractor to ensure that these practices are implemented, and that contractors follow the City's erosion and sediment control requirements.

4. Implement the Additional BMP's included in the MPCA's NPDES Permit for Special Waters (August, 2003).

5. Employ inspectors on site to ensure that Best Management Practices and City Ordinances are implemented.

   Responsible Parties: City of Farmington, private developers.

   Regulatory Program: City Ordinances, and Grading Plan Requirements.

   Implementation Time Frame: Developer approach and use of BMP's should be specified in grading plan. Adoption and enforcement of BMP's should occur throughout the development process.

17. Water Quality—Surface Water Runoff

No changes in mitigation plan strategies for the 2016 AUAR Update compared to the 2011 AUAR Update. As the AUAR area develops, surface water runoff will be managed in accordance with the City's 2008 Local Surface Water Management Plan as well as watershed and State requirements. Stormwater BMPs will be implemented to satisfy City, watershed, and State requirements. BMPs will be designed in accordance with the recently-adopted NOAA Atlas 14 rainfall amounts and distributions. Such BMPs could include stormwater storage for rate control; infiltration, filtration, bioretention, or stormwater reuse for volume control and water quality treatment; and temporary erosion and sediment control features such as vegetative restoration, storm drain inlet protection, construction entrance protection, and silt fence. Goal 1: Protect the water and habitat quality of North Creek to meet or exceed applicable MPCA water quality standards.

Protection Strategies:

1. The City of Farmington will work with the developer to identify and consider strategies to infiltrate and detain stormwater to reduce runoff to protect North Creek. Infiltration strategies will be considered in areas where Hydrologic Soil Groups A and B have been identified by the Dakota County Detailed Soil Survey. The City's P.U.D. ordinance allows for modifications through its design review process to accommodate a variety of strategies to infiltrate or detain stormwater and meet the identified performance standard. The following strategies will be considered for use where feasible in the AUAR area:
    - Reduce residential street widths to reduce impervious surface coverage
    - Use vegetated islands within cul de sacs designed to hold stormwater
    - Provide small scale infiltration areas such as "rainwater gardens" and /or larger regional infiltration basins
    - Use cluster development that maintains open space, minimizes impervious surfaces, and protects soils with high infiltration rates, so that drainage may be directed to these areas
    - Encourage homeowners to direct downspouts from roofs over yards or other vegetated areas or into rain barrels, and away from driveways or paved surfaces
    - Encourage plantings of native vegetation on public and private properties to slow and capture runoff and encourage infiltration
    - Infiltration strategies will also help to maintain the quantity and quality of shallow ground water flows that sustain North Creek
    - In planning areas where shallow ground water prevents the use of infiltration as a stormwater management strategy, consider use of shaded swales or other strategies to control the temperature of runoff before it reaches North Creek.

Responsible Parties: City of Farmington, private developers, MPCA.

Regulatory Program: MPCA Water Quality Standards.

Implementation Time Frame: Identify strategies to implement these plans as a part of the final plat and grading plan; implement strategies as development occurs.

2. In areas where Hydrologic Soil Groups C and D have been identified by the Dakota County Detailed Soil Survey, infiltration is not an effective strategy for managing surface water runoff volumes. (These soil types are concentrated in the southwest portion of the AUAR study area; see Figure 17-2.) In these areas, the following strategies will be considered to manage surface water runoff and protect the quality and water temperature of North Creek:

   - Filtration strategies such as swales and "rainwater gardens" may be used to protect water quality
   - Where ponds are required to manage water quality and quantity, and protect the creek from high flows, water will be discharged where possible through shaded swales, channels or pipes to cool the water temperature before it reaches the creek.

   Responsible Parties: City of Farmington, private developers, MPCA.

   Regulatory Program: MPCA Water Quality Standards.

   Implementation Time Frame: Identify strategies to implement these plans as a part of the final plat and grading plan; implement strategies as development occurs.

3. Implement provisions of the City's Comprehensive Plan, Surface Water Management Plan, Wetland Ordinance, and Shoreline Ordinance to protect the natural areas in the North Creek Corridor by restricting development within the corridor and floodplain areas, and requiring vegetated buffers along the creek and wetlands in the corridor.

   Responsible Parties: City of Farmington and private developer.

   Regulatory Program: Enforcement of City Ordinances. The City may also apply to non-regulatory programs such as DNR's Metro Greenways and Conservation Partners programs to seek funding assistance for protection and restoration of natural communities.

   Implementation Time Frame: Enforcement of Ordinances will occur with development. Restoration activities may be completed as resources are available.

4. The developer will follow the requirements of the Farmington Surface Water Management Plan and Wetland Ordinance, and applicable state and federal regulations, to avoid, minimize and/or mitigate for impacts to wetlands that result from development.

Responsible Parties: Private developer, City of Farmington, and regulatory agencies

Regulatory Program: Farmington Surface Water Management Plan, Wetland Ordinance, Shoreland Ordinance, Minnesota Wetland Conservation Act, Sections 401 and 404 of the Clean Water Act, and Minnesota DNR Protected Waters Program.

Implementation Time Frame: Complete analysis of wetland impacts and mitigation needs as final plat and grading plan are completed. Implement efforts to avoid or mitigate for impacts as development occurs.

5. Require the use, management and enforcement of Best Management Practices (BMP's) to control erosion and sedimentation and provide pretreatment of water discharged to wetlands during and after construction, as specified in the City's Surface Water Management Plan.

   Responsible Parties: City of Farmington

   Regulatory Program: City's Zoning and Subdivision Ordinances, Wetland Ordinance, Excavation and Grading Ordinance and Grading Plan Requirements, and NPDES Phase II Stormwater Management Program.

   Implementation Time Frame: Specify BMP's to be used in grading plans, and implement BMP's as development occurs.

6. The Minnesota DNR and Vermillion River Watershed JPO should continue monitoring efforts on North Creek and the Vermillion River, including biomonitoring through the River Watch program, flow monitoring, and electro-fishing and stream temperature studies to identify any significant changes as development occurs in the AUAR area.

   Responsible Parties: Minnesota DNR and VRWD

   Regulatory Program: Vermillion River Watershed Management Plan

   Implementation Time Frame: Existing monitoring should be continued.

20. Solid Wastes; Hazardous Wastes; Storage Tanks

Goal 1. Protect future site occupants and the natural environment from the presence of past contamination.

Protection Strategies:

1. **If soil contamination is discovered through a due diligence process or during the course of development, the developer or other responsible party will be required to appropriately mitigate the contaminants according to the type of development planned and in compliance with MPCA rules and Dakota County ordinance.**

2. **Location of future storage tanks and businesses that produce, store, or use hazardous materials and/or petroleum products will consider the sensitivity of the area geology and avoid locations where sensitivity is high, depth to bedrock or groundwater is shallow, or the area overlaps with the City of Farmington's Drinking Water Supply Management Area.**

Responsible Parties: City of Farmington, private developers, MPCA.

Regulatory Program: MPCA guidelines and Dakota County Ordinance 110.

Implementation Time Frame: Implement strategies as development occurs.

21. Traffic

This study serves as an update to the previous traffic impact study performed for the AUAR approved by the Met Council on January 20, 2004. This update includes a more detailed breakdown of land uses, which provides a better estimate of development-generated trips. The previous AUAR also assumed an extension of Diamond Path Road, as well as 208th Street. These extensions are not included in this study. Also, this analysis includes three site accesses on TH 3, and two accesses on 190th/195th Street.

It should be noted that an extension of Diamond Path Road has been platted to extend north to 189th Street West. Although not currently programmed, the Diamond Path Road extension, if constructed, is expected to reach 7,000 to 8,000 daily trips within 20 years. The Diamond Path Road extension may be an important north-south collector roadway in the future. The City will continue to review this connection as the project progresses.

This analysis examined current traffic volumes on the study intersections, and determined necessary improvements based on capacity analysis for future year 2031 conditions.

The proposed development generates 31,163 trips daily. Subtracting pass-by trips and internal capture, the development generates 672 entering and 1,271 exiting trips in the AM peak hour, and 1,362 entering and 975 exiting trips in the PM peak hour.

Analysis shows that background growth in the study area, without traffic from the Seed/Genstar property, require capacity improvements to the roadway network by year **2036**. TH 3 will be overcapacity and requires widening north of Elm Street. Also, analysis shows that the Akin Road & 195th Street intersection fails as an all-way stop during the PM peak hour by year 2031.

With development trips, there are additional capacity improvements needed. Since the analysis year **2036** is twenty years away, it is recommended to perform future studies as each phase of development occurs to more accurately determine the appropriate type of improvements as well as timing of construction.

The following summarize improvements required for the No-Build Condition:

<u>Overall</u>

- TH 3 widening to a four-lane section with turn lanes.

<u>TH 3 & 160th Street West (CSAH 46)</u>

- Eastbound dual left-turn lanes.

<u>TH 3 & 190th Street West</u>

- Improvement to a multi-lane roundabout with 2 lanes for NB and SB through movements.

TH 3 & Elm Street (CSAH 50)

- Eastbound dual left-turn lanes

Akin Road & 195th Street West (CSAH 64)

- Signalized or roundabout control when warranted **(completed in 2009)**

The following summarize improvements required for the Full Build Condition. **Before any improvements are made, they will be evaluated against current traffic conditions and updates to the City and County's planned roadway network.**

TH 3 & 160th Street (CSAH 46)

- Northbound dual left-turn lanes.

TH 3 & 170th Street (CSAH 58)

- Signalized or roundabout control when warranted.
- **Dedicated left-turn lanes for NB and SB when warranted.**

TH 3 & 190th Street

- Two-lane eastbound approach with **dual left turns when warranted.**
- **Two-lane westbound approach when warranted.**

TH 3 & CSAH 66 (Vermillion River Trail)

- Exclusive westbound right-turn lane plus signalized or roundabout control when warranted.

Akin Road & 195th Street West (CSAH 64)

- **Eastbound and westbound free right turn lanes when warranted.**

The following summarize recommendations for the property accesses.

TH 3 & Access A

Develop plan for connection between AUAR area and east-west corridor with future traffic study

TH 3 & Access B

- Right-turn and left-turn lane on the driveway exiting the development.
- Right-turn and left-turn lanes on the major roadway entering the development.
- Signalized or roundabout control if warranted.

TH 3 & Access C

- Right-turn and left-turn lane on the driveway exiting the development.
- Right-turn and left-turn lanes on the major roadway entering the development.
- Signalized or roundabout control if warranted.

190th Street & Access D

- Right-turn and left-turn lane on the driveway exiting the development.
- Right-turn and left-turn lanes on the major roadway entering the development.
- Signalized or roundabout control.

195th Street & Access E

- Right-turn and left-turn lane on the driveway exiting the development.
- Right-turn and left-turn lanes on the major roadway entering the development.
- Signalized or roundabout control if warranted.

It is important to note that residential development reaches occupancy over a period of time, unlike retail land uses, which generate traffic on opening day. For this property, it is recommended to signalize or construct a roundabout for opening day for the 190th Street & Access D intersection because this driveway will accommodate most of the commercial traffic. It is recommended to phase-in signalization or roundabout control for the other accesses as residential occupancy increases and ultimately meet warrant thresholds.

24. Dust, Odors, Noise

Goal 1: Protect residential areas from noise impacts from roadways and the railroad tracks.

1. Conduct a detailed noise study of the proposed site plan to define any required noise mitigation strategies. Potential strategies may include one or a combination of the following:
    - Buffer zones
    - Noise barriers
    - Strategic building placement
    - Building construction requirements
    - Encourage the Minnesota Department of Transportation to design landscaping or other strategies to reduce noise levels to homes along State Highway 3 that may be affected by noise levels at full-proposed development of this roadway.

Responsible Parties: Minnesota Department of Transportation, City of Farmington.

Regulatory Program: Minnesota Statutes Section 116.07.

Implementation Time Frame: As roadway is designed and constructed, estimated to occur from 2010-2020.

2. Enforce State Air Quality Standards to regulate air emissions in the development area.

   Responsible Parties: Minnesota Pollution Control Agency.

   Regulatory Program: Indirect Source Permit Program.

   Implementation Time Frame: Regulations are currently in effect. Enforce during site development.

3. Implement Best Management Practices to minimize dust during and after construction of developments and infrastructure in the AUAR area.

   Responsible Parties: City of Farmington, private developer.

   Regulatory Program: City Subdivision Regulations

   Implementation Time Frame: Implement existing regulations as development occurs.

4. Regulate hours when construction may occur to control construction noise.

   Responsible Parties: City of Farmington

   Regulatory Program: None

   Implementation Time Frame: Control as development occurs.

25a. Archaeological, Historical and Architectural Resources

Goal 1: Assure proper investigation of archaeological resources.

Before any disturbance of areas designated as "Grassland Tree Complex" in Figure 10-1 where a previous archaeologic site has been identified, a qualified archaeologist will perform a survey to determine if the project could result in adverse effects to currently unknown archaeological resources.

Responsible Parties: City of Farmington, private developer.

Regulatory Program: Minnesota Field Archaeology Act.

Timeframe: as development is proposed.

25C. Designated Parks, Recreational Areas and Trails

Goal 1: Ensure that future development is integrated with existing and planned parks, especially the Jim Bell Park and Preserve.

Responsible Parties: City of Farmington and Developer

Regulatory Program: City site plan review process (as described in the City's Code §10-6-23).

Development Time Frame: As development is planned.

Goal 2: Integrate new development with the City's existing trail network.

Responsible Parties: City of Farmington and Developer

Regulatory Program: City site plan review process (as described in the City's Code §10-6-23).

Development Time Frame: As development is planned.

ADOPTED ENVIRONMENTAL PROTECTION PLANS AND REGULATIONS

The City of Farmington has a variety of plans, ordinances and regulations in place that address environmental issues in the proposed development area. These mechanisms will be enforced and amended as indicated in the Mitigation Plan to provide a comprehensive framework and set of tools to protect the natural resources of the area as development occurs:

City Comprehensive Plan

Zoning and Subdivision Ordinances (includes Tree Planting Requirements)

Open Space Zoning/Cluster Zoning

Excavation and Grading Ordinance No. 1549

Stormwater Management Plan and Ordinances

Floodway Ordinances

Shoreland Management Ordinance

Wetland Conservation Act

Water Supply and Distribution Plans

Comprehensive Greenway and Park Plans

Individual Sewage Treatment System Ordinance

Wellhead Protection Ordinance

APPENDICES—UPDATE

Traffic Volumes

MINNESOTA DEPT OF TRANSPORTATION

TRAFFIC DATA COLLECTION - METRO

TH-3 at CSAH-66 / Vermillion River Trail
Ref.Pt.: 026.643 Farmington
JAMAR # D4-3365 CH
TURN MOVEMENT COUNT

File Name : TH-3 at CSAH-66 Vermillion Riv Trl 2009
Site Code : 00000000
Start Date : 5/20/2009
Page No : 1

Groups Printed- Cars & Trucks

	TH-3 / Chippendale Ave. Southbound				CSAH-66 / Vermillion River Trail Westbound				TH-3 / Chippendale Ave. Northbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:00	3	21	0	0	13	0	9	0	0	61	8	0	115
06:15	2	47	0	0	21	0	15	0	0	88	9	0	182
06:30	1	50	0	0	27	0	17	0	0	105	13	0	213
06:45	2	66	0	0	41	0	13	0	0	112	6	0	240
Total	8	184	0	0	102	0	54	0	0	366	36	0	750
07:00	1	88	0	0	34	0	27	0	0	112	17	0	279
07:15	1	69	0	0	29	0	14	0	0	105	20	0	238
07:30	5	56	0	0	30	0	16	0	0	151	15	0	273
07:45	5	98	0	0	27	0	15	0	0	102	23	0	270
Total	12	311	0	0	120	0	72	0	0	470	75	0	1060
08:00	3	46	0	0	17	0	9	0	0	87	12	0	174
08:15	1	50	0	0	33	0	17	0	0	81	17	0	199
08:30	3	64	0	0	21	0	12	0	0	87	10	0	197
08:45	4	75	0	0	22	0	1	0	0	66	22	0	190
Total	11	235	0	0	93	0	39	0	0	321	61	0	760
15:00	8	91	0	0	17	0	3	0	0	75	18	0	212
15:15	10	96	0	0	26	0	1	0	0	78	20	0	231
15:30	10	89	0	0	26	0	7	0	0	93	23	1	249
15:45	8	106	0	0	17	0	5	0	0	92	27	0	255
Total	36	382	0	0	86	0	16	0	0	338	88	1	947
16:00	9	127	0	0	23	0	6	0	0	87	27	0	279
16:15	14	117	0	0	13	0	8	0	1	115	27	0	295
16:30	11	110	0	0	14	0	6	0	0	102	36	0	279
16:45	14	146	0	0	18	0	6	0	0	110	35	0	329
Total	48	500	0	0	68	0	26	0	1	414	125	0	1182
17:00	10	118	0	0	32	0	5	0	0	96	24	0	285
17:15	17	126	0	0	19	0	11	0	0	86	30	0	289
17:30	18	140	0	0	25	0	12	0	0	97	27	0	319
17:45	15	135	0	0	33	0	7	0	0	80	23	0	293
Total	60	519	0	0	109	0	35	0	0	359	104	0	1186
Grand Total	175	2131	0	0	578	0	242	0	1	2268	489	1	5885
Apprch %	7.6	92.4	0	0	70.5	0	29.5	0	0	82.2	17.7	0	
Total %	3	36.2	0	0	9.8	0	4.1	0	0	38.5	8.3	0	

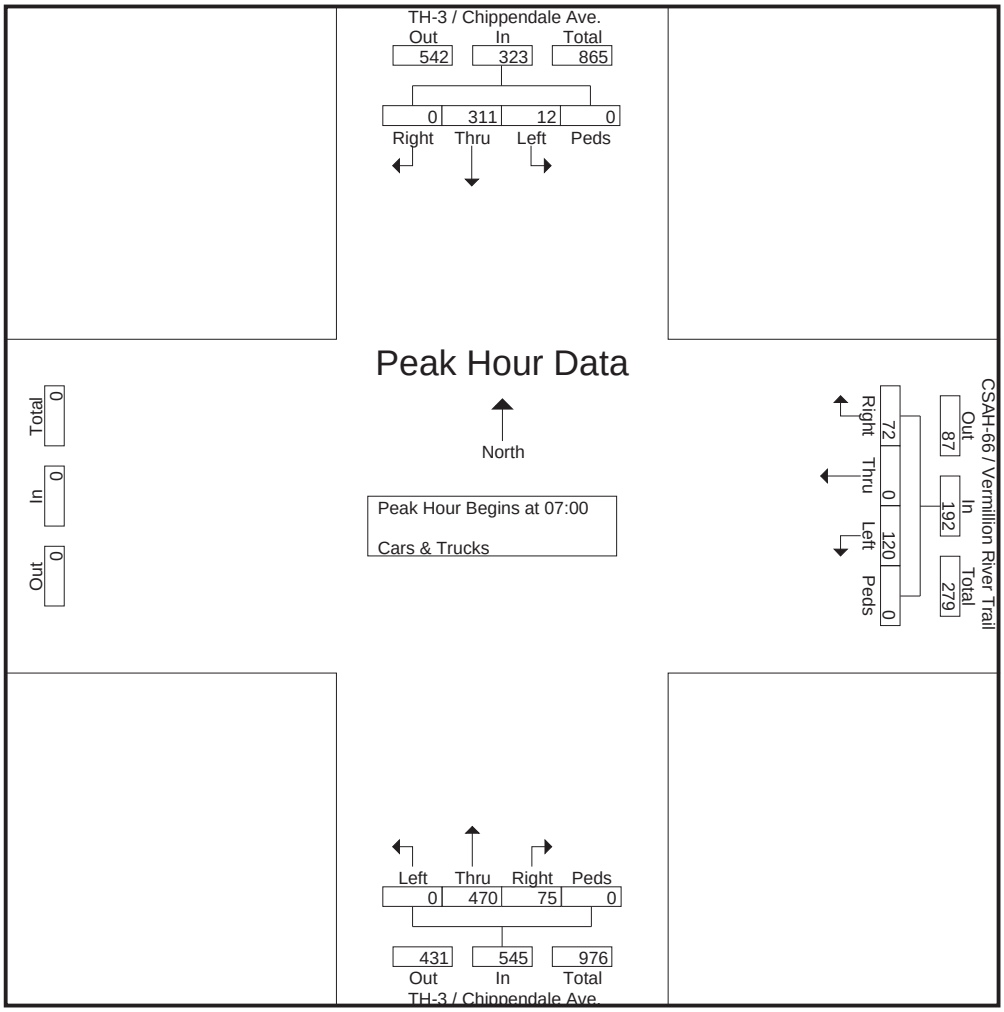
MINNESOTA DEPT OF TRANSPORTATION

TRAFFIC DATA COLLECTION - METRO

TH-3 at CSAH-66 / Vermillion River Trail
Ref.Pt.: 026.643 Farmington
JAMAR # D4-3365 CH
TURN MOVEMENT COUNT

File Name : TH-3 at CSAH-66 Vermillion Riv Trl 2009
Site Code : 00000000
Start Date : 5/20/2009
Page No : 2

	TH-3 / Chippendale Ave. Southbound					CSAH-66 / Vermillion River Trail Westbound					TH-3 / Chippendale Ave. Northbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:00																
07:00	1	88	0	0	89	**34**	0	**27**	0	**61**	0	112	17	0	129	**279**
07:15	1	69	0	0	70	29	0	14	0	43	0	105	20	0	125	238
07:30	**5**	56	0	0	61	30	0	16	0	46	0	**151**	15	0	**166**	273
07:45	5	**98**	0	0	**103**	27	0	15	0	42	0	102	**23**	0	125	270
Total Volume	12	311	0	0	323	120	0	72	0	192	0	470	75	0	545	1060
% App. Total	3.7	96.3	0	0		62.5	0	37.5	0		0	86.2	13.8	0		
PHF	.600	.793	.000	.000	.784	.882	.000	.667	.000	.787	.000	.778	.815	.000	.821	.950



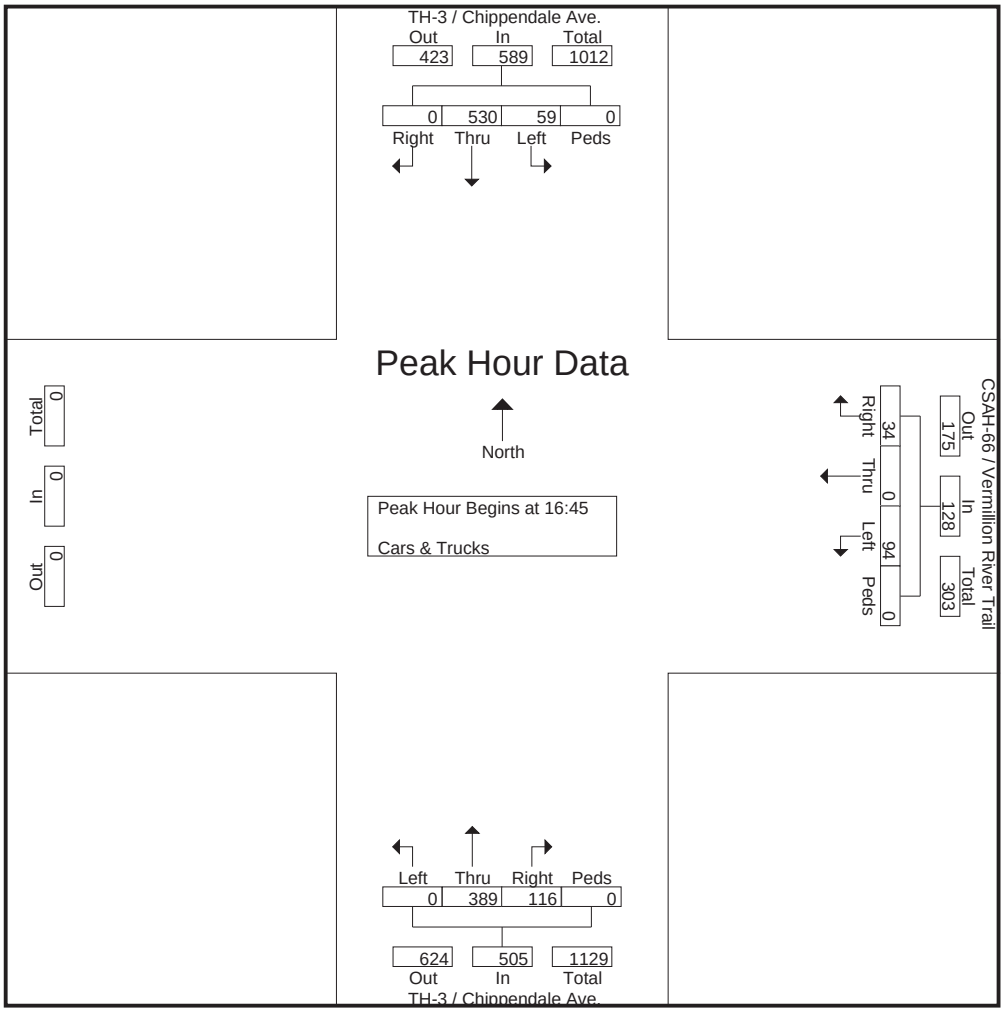
MINNESOTA DEPT OF TRANSPORTATION

TRAFFIC DATA COLLECTION - METRO

TH-3 at CSAH-66 / Vermillion River Trail
Ref.Pt.: 026.643 Farmington
JAMAR # D4-3365 CH
TURN MOVEMENT COUNT

File Name : TH-3 at CSAH-66 Vermillion Riv Trl 2009
Site Code : 00000000
Start Date : 5/20/2009
Page No : 3

	TH-3 / Chippendale Ave. Southbound					CSAH-66 / Vermillion River Trail Westbound					TH-3 / Chippendale Ave. Northbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 15:00 to 17:45 - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 16:45																
16:45	14	**146**	0	0	**160**	18	0	6	0	24	0	**110**	**35**	0	**145**	**329**
17:00	10	118	0	0	128	**32**	0	5	0	**37**	0	96	24	0	120	285
17:15	17	126	0	0	143	19	0	11	0	30	0	86	30	0	116	289
17:30	**18**	140	0	0	158	25	0	**12**	0	37	0	97	27	0	124	319
Total Volume	59	530	0	0	589	94	0	34	0	128	0	389	116	0	505	1222
% App. Total	10	90	0	0		73.4	0	26.6	0		0	77	23	0		
PHF	.819	.908	.000	.000	.920	.734	.000	.708	.000	.865	.000	.884	.829	.000	.871	.929



MINNESOTA DEPT OF TRANSPORTATION

TRAFFIC DATA COLLECTION - METRO

TH-3 at 170th St W / Co.Rd.58
Ref.Pt.: 030.342
JAMAR # T-2638 CAH
TURN MOVEMENT COUNT

File Name : TH-3 at 170th St CoRd-58 2010
Site Code : 00000000
Start Date : 10/19/2010
Page No : 1

Groups Printed- Cars & Trucks

	TH-3 Southbound				170th St W / Co.Rd.58 Westbound				TH-3 Northbound				170th St W / Co.Rd.58 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:00	2	15	3	0	0	2	0	0	17	99	3	0	11	1	4	0	157
06:15	6	27	5	0	0	2	1	0	17	120	3	0	7	3	1	0	192
06:30	3	39	7	0	0	2	6	0	24	163	2	0	17	1	5	0	269
06:45	1	35	8	0	2	0	2	0	28	130	1	0	14	1	5	0	227
Total	12	116	23	0	2	6	9	0	86	512	9	0	49	6	15	0	845
07:00	4	50	3	0	2	2	13	0	26	160	2	0	18	2	5	0	287
07:15	4	52	9	0	1	1	9	0	25	170	0	0	17	2	15	0	305
07:30	9	64	9	0	1	0	3	0	29	200	5	0	22	6	8	1	357
07:45	2	66	6	0	0	1	5	0	25	140	4	0	24	1	4	0	278
Total	19	232	27	0	4	4	30	0	105	670	11	0	81	11	32	1	1227
08:00	1	50	6	0	1	4	6	0	20	105	0	0	16	0	6	0	215
08:15	6	48	8	0	2	3	2	0	18	105	0	0	16	2	7	0	217
08:30	11	36	6	0	2	0	5	0	14	94	2	0	17	1	6	0	194
08:45	2	45	6	0	1	1	9	0	17	77	3	0	8	1	6	0	176
Total	20	179	26	0	6	8	22	0	69	381	5	0	57	4	25	0	802
*** BREAK ***																	
15:00	5	72	16	0	4	2	3	0	10	43	3	0	10	4	21	0	193
15:15	2	108	18	0	7	1	5	0	6	61	1	0	10	0	10	0	229
15:30	4	78	11	0	2	2	3	0	12	79	0	0	11	2	19	0	223
15:45	2	104	13	0	2	3	3	0	16	64	0	0	7	0	11	0	225
Total	13	362	58	0	15	8	14	0	44	247	4	0	38	6	61	0	870
16:00	4	117	22	1	2	5	1	0	14	65	3	0	5	2	34	0	275
16:15	5	159	25	0	5	2	4	1	18	81	5	0	5	2	24	0	336
16:30	2	149	25	0	4	3	2	0	21	71	1	0	14	1	25	0	318
16:45	2	145	32	0	2	1	1	0	14	85	4	0	8	2	32	0	328
Total	13	570	104	1	13	11	8	1	67	302	13	0	32	7	115	0	1257
17:00	2	121	35	0	5	1	3	0	21	72	0	0	17	2	21	0	300
17:15	0	120	38	0	0	0	3	0	22	82	0	0	12	0	23	0	300
17:30	6	128	28	0	1	1	3	0	14	77	1	0	13	0	26	0	298
17:45	4	136	20	0	2	2	2	0	17	67	0	0	11	4	22	0	287
Total	12	505	121	0	8	4	11	0	74	298	1	0	53	6	92	0	1185
Grand Total	89	1964	359	1	48	41	94	1	445	2410	43	0	310	40	340	1	6186
Apprch %	3.7	81.4	14.9	0	26.1	22.3	51.1	0.5	15.4	83.2	1.5	0	44.9	5.8	49.2	0.1	
Total %	1.4	31.7	5.8	0	0.8	0.7	1.5	0	7.2	39	0.7	0	5	0.6	5.5	0	

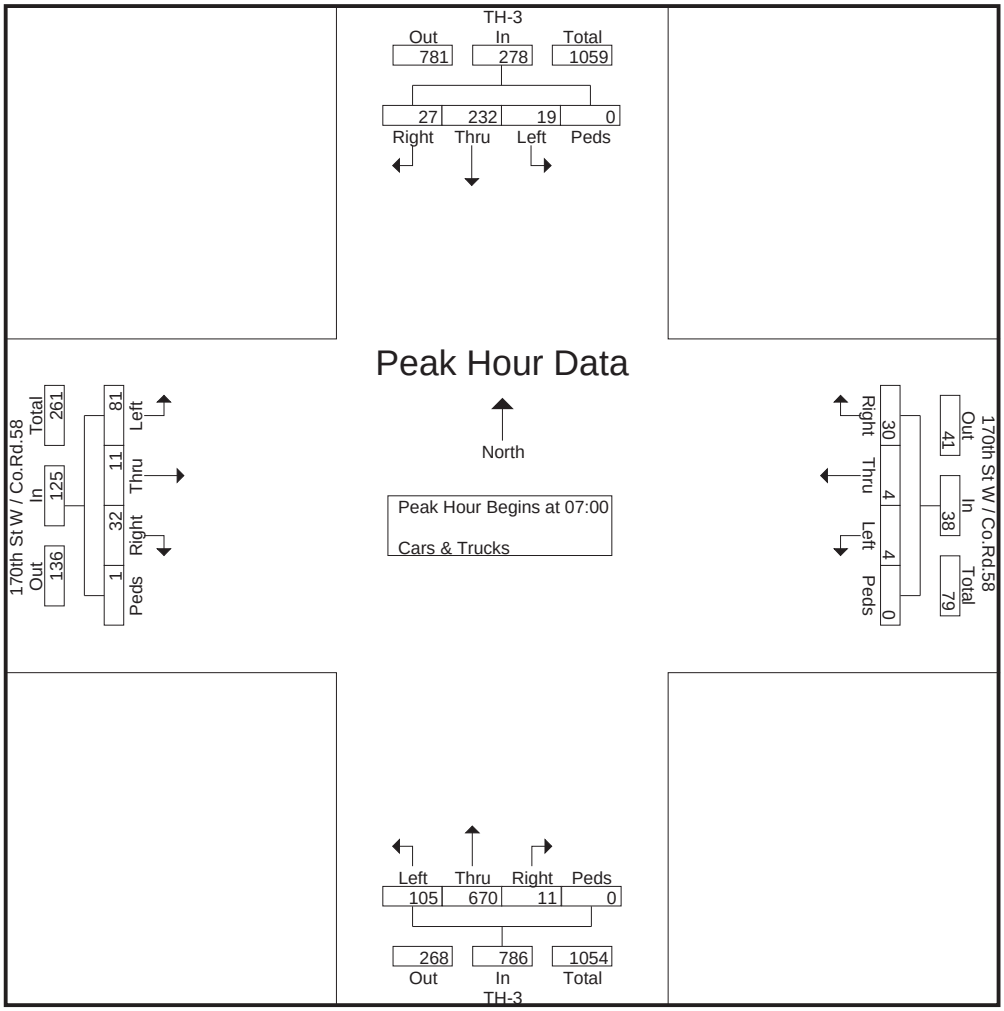
MINNESOTA DEPT OF TRANSPORTATION

TRAFFIC DATA COLLECTION - METRO

TH-3 at 170th St W / Co.Rd.58
Ref.Pt.: 030.342
JAMAR # T-2638 CAH
TURN MOVEMENT COUNT

File Name : TH-3 at 170th St CoRd-58 2010
Site Code : 00000000
Start Date : 10/19/2010
Page No : 2

	TH-3 Southbound					170th St W / Co.Rd.58 Westbound					TH-3 Northbound					170th St W / Co.Rd.58 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	4	50	3	0	57	**2**	**2**	**13**	0	**17**	26	160	2	0	188	18	2	5	0	25	287
07:15	4	52	**9**	0	65	1	1	9	0	11	25	170	0	0	195	17	2	**15**	0	34	305
07:30	**9**	64	9	0	**82**	1	0	3	0	4	**29**	**200**	**5**	0	**234**	22	**6**	8	**1**	**37**	**357**
07:45	2	**66**	6	0	74	0	1	5	0	6	25	140	4	0	169	**24**	1	4	0	29	278
Total Volume	19	232	27	0	278	4	4	30	0	38	105	670	11	0	786	81	11	32	1	125	1227
% App. Total	6.8	83.5	9.7	0		10.5	10.5	78.9	0		13.4	85.2	1.4	0		64.8	8.8	25.6	0.8		
PHF	.528	.879	.750	.000	.848	.500	.500	.577	.000	.559	.905	.838	.550	.000	.840	.844	.458	.533	.250	.845	.859



MINNESOTA DEPT OF TRANSPORTATION

TRAFFIC DATA COLLECTION - METRO

TH-3 at 170th St W / Co.Rd.58
Ref.Pt.: 030.342
JAMAR # T-2638 CAH
TURN MOVEMENT COUNT

File Name : TH-3 at 170th St CoRd-58 2010
Site Code : 00000000
Start Date : 10/19/2010
Page No : 3

	TH-3 Southbound					170th St W / Co.Rd.58 Westbound					TH-3 Northbound					170th St W / Co.Rd.58 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 15:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	**5**	**159**	25	0	**189**	**5**	2	**4**	**1**	**12**	18	81	**5**	0	**104**	5	**2**	24	0	31	**336**
16:30	2	149	25	0	176	4	**3**	2	0	9	**21**	71	1	0	93	14	1	25	0	40	318
16:45	2	145	32	0	179	2	1	1	0	4	14	**85**	4	0	103	8	2	**32**	0	**42**	328
17:00	2	121	**35**	0	158	5	1	3	0	9	21	72	0	0	93	**17**	2	21	0	40	300
Total Volume	11	574	117	0	702	16	7	10	1	34	74	309	10	0	393	44	7	102	0	153	1282
% App. Total	1.6	81.8	16.7	0		47.1	20.6	29.4	2.9		18.8	78.6	2.5	0		28.8	4.6	66.7	0		
PHF	.550	.903	.836	.000	.929	.800	.583	.625	.250	.708	.881	.909	.500	.000	.945	.647	.875	.797	.000	.911	.954

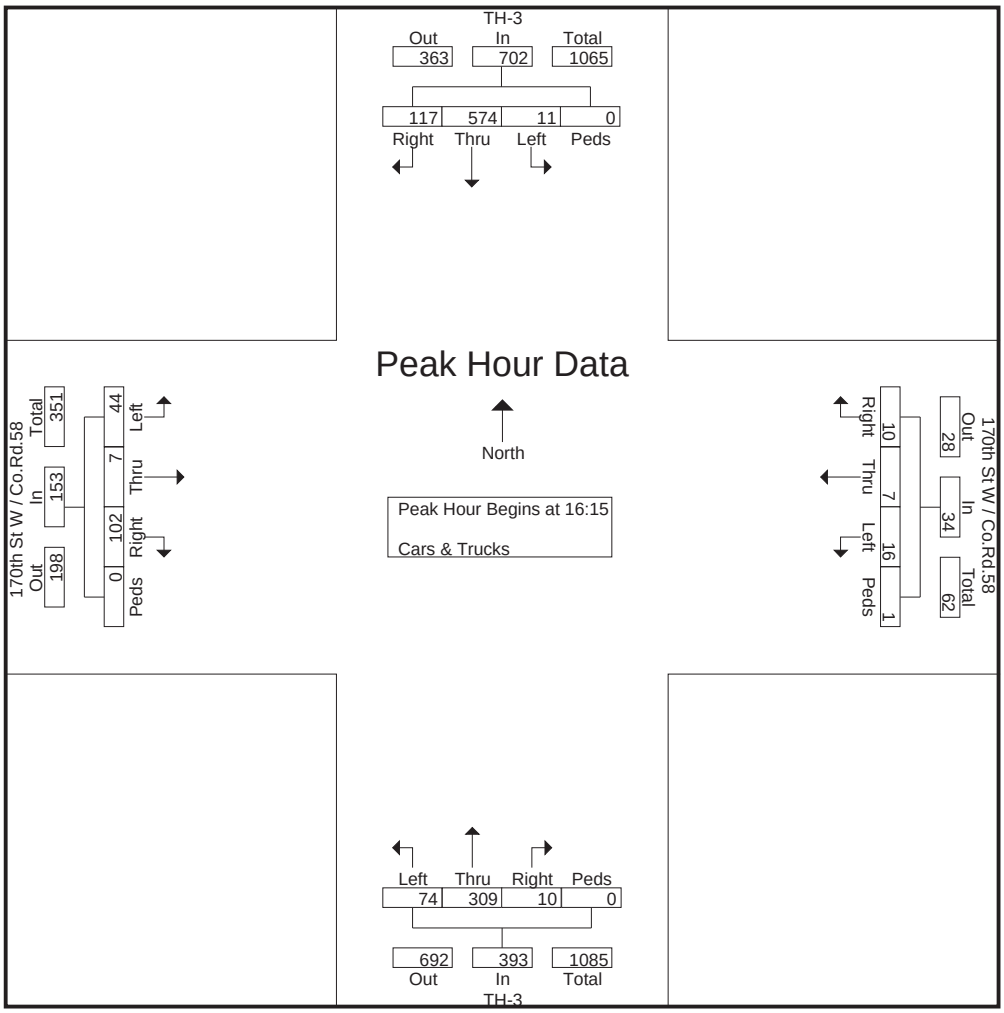


Table C2
2030 PM Trip Generation

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
CR 42 and US 52 East Ramp	1	0	0	0	0	0	16	2	0	0	1	0
CR 42 and US 52 West Ramp	0	0	0	0	0	6	0	18	1	0	2	0
CR 42 and CR 71	0	0	0	0	0	0	0	19	0	0	8	0
CR 42 and CR 73	0	0	0	0	0	0	0	19	0	0	8	0
CR 42 and Auburn Ave (Secondary Access #1)	0	0	13	0	0	0	0	6	0	5	3	0
CR 42 and 145th St W	0	0	0	0	0	0	0	6	0	0	3	0
CR 42 and Biscayne Ave	5	0	6	0	0	0	0	0	1	3	0	0
CR 42 and TH 3	0	1	0	0	1	0	0	1	0	0	5	0
CR 46 and US 52 East Ramp	1	0	0	0	0	0	0	3	24	0	1	0
CR 46 and US 52 West Ramp	13	0	0	0	0	0	0	27	2	0	2	0
CR 46 and TH 3	1	0	1	1	0	0	0	4	0	2	10	1
CR 46 and Biscayne Ave	0	0	0	0	0	2	1	5	0	0	11	0
CR 46 and Akron Ave	0	0	0	14	0	5	2	15	0	0	8	7
CR 46 and Primary Access #1	0	0	0	14	0	5	2	3	0	0	6	7
Akron Ave and Primary Access #2	9	0	0	0	0	0	0	0	19	0	0	0
Biscayne and Secondary Access #2	0	0	1	4	0	0	0	0	0	2	0	11
170th St and Secondary Access #3	0	0	0	0	0	2	1	0	0	0	0	0

Notes: Red shaded values where the 2030 site generated trips are 10% or more of the existing traffic for that movement

Existing PM Volume

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
CR 42 and US 52 East Ramp	83	0	17	0	0	0	200	178	0	0	206	27
CR 42 and US 52 West Ramp	0	0	0	26	1	513	0	352	93	19	270	0
CR 42 and CR 71	4	3	3	42	5	76	27	400	1	1	762	20
CR 42 and CR 73	13	0	7	4	0	4	1	425	48	6	831	5
CR 42 and Auburn Ave (Secondary Access #1)	0	0	0	24	0	41	67	474	0	0	790	73
CR 42and 145th St W	0	0	0	93	0	17	40	448	0	0	643	197
CR 42 and Biscayne Ave	11	6	20	5	11	106	142	430	4	9	632	3
CR 42 and TH 3	34	217	88	31	384	330	319	400	42	157	497	53
CR 46 and US 52 East Ramp	133	20	11	2	2	40	57	357	83	22	154	6
CR 46 and US 52 West Ramp	128	0	177	15	1	36	5	311	166	34	289	5
CR 46 and TH 3	77	234	50	70	434	193	117	391	123	92	355	72
CR 46 and Biscayne Ave	2	3	0	11	4	23	23	444	2	1	448	4
CR 46 and Akron Ave	2	3	0	11	4	23	23	444	2	1	448	4
CR 46 and Primary Access #1	0	0	0	0	0	0	0	469	0	0	473	0
Akron Ave and Primary Access #2	0	30	0	0	38	0	0	0	0	0	0	0
Biscayne and and Secondary Access #2	5	32	0	0	19	5	10	0	5	0	0	0
170th St and Secondary Access #3	0	0	0	0	0	0	0	30	0	0	30	0

Table C1
2030 AM Trip Generation

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
CR 42 and US 52 East Ramp	1	0	0	0	0	0	18	4	0	0	4	0
CR 42 and US 52 West Ramp	0	0	0	0	0	18	0	22	1	0	5	0
CR 42 and CR 71	0	0	0	0	0	0	0	23	0	0	23	0
CR 42 and CR 73	0	0	0	0	0	0	0	23	0	0	23	0
CR 42 and Auburn Ave (Secondary Access #1)	0	0	15	0	0	0	0	8	0	15	8	0
CR 42 and 145th St W	0	0	0	0	0	0	0	8	0	0	8	0
CR 42 and Biscayne Ave	5	0	8	0	0	0	0	0	5	8	0	0
CR 42 and TH 3	0	1	0	0	1	0	0	5	0	0	5	0
CR 46 and US 52 East Ramp	2	0	0	0	0	0	0	4	31	0	4	0
CR 46 and US 52 West Ramp	31	0	0	0	0	0	0	35	2	0	6	0
CR 46 and TH 3	1	0	3	1	0	0	0	12	1	3	12	1
CR 46 and Biscayne Ave	0	0	0	0	0	2	2	14	0	0	14	0
CR 46 and Akron Ave	0	0	0	17	0	6	6	20	0	0	20	17
CR 46 and Primary Access #1	0	0	0	18	0	6	6	8	0	0	8	18
Akron Ave and Primary Access #2	23	0	0	0	0	0	0	0	23	0	0	0
Biscayne and Secondary Access #2	0	0	2	13	0	0	0	0	0	2	0	13
170th St and Secondary Access #3	0	0	0	0	0	3	3	0	0	0	0	0

Notes: Red shaded values where the 2030 site generated trips are 10% or more of the existing traffic for that movement

Existing AM Volume

Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
CR 42 and US 52 East Ramp	73	3	11	0	0	0	516	140	0	0	167	21
CR 42 and US 52 West Ramp	0	0	0	17	1	261	0	639	66	5	235	0
CR 42 and CR 71	0	2	0	10	7	17	48	694	1	2	429	39
CR 42 and CR 73	7	0	7	2	0	3	3	818	118	5	339	1
CR 42 and Auburn Ave (Secondary Access #1)	0	0	0	94	0	47	14	845	0	0	342	7
CR 42and 145th St W	0	0	0	137	0	21	9	722	0	0	313	79
CR 42 and Biscayne Ave	2	10	24	7	10	54	40	700	2	14	315	5
CR 42 and TH 3	23	375	212	74	119	108	178	491	17	45	249	35
CR 46 and US 52 East Ramp	129	12	2	0	11	14	14	144	246	210	183	2
CR 46 and US 52 West Ramp	33	0	30	2	1	25	9	372	96	15	307	4
CR 46 and TH 3	165	388	124	41	119	68	240	365	50	40	257	48
CR 46 and Biscayne Ave	4	14	6	2	1	17	24	469	0	3	324	11
CR 46 and Akron Ave	4	14	6	2	1	17	24	469	0	3	324	11
CR 46 and Primary Access #1	0	0	0	0	0	0	0	493	0	0	345	0
Akron Ave and Primary Access #2	0	49	0	0	20	0	0	0	0	0	0	0
Biscayne and and Secondary Access #2	5	31	0	0	16	10	5	0	5	0	0	0
170th St and Secondary Access #3	0	0	0	0	0	0	0	30	0	0	20	0

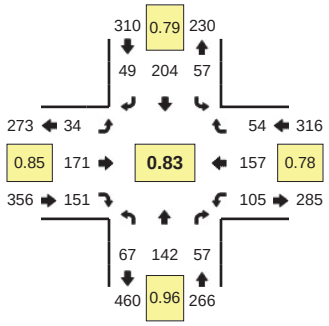
Type of peak hour being reported: Intersection Peak

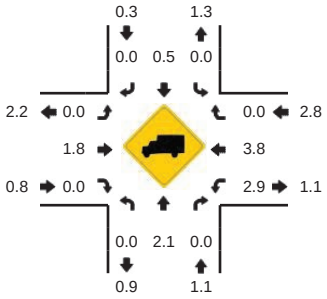
Method for determining peak hour: Total Entering Volume

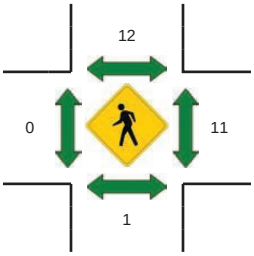
LOCATION: Akin Rd -- 195th St W
CITY/STATE: Farmington, MN

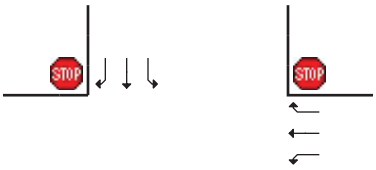
QC JOB #: 10627108
DATE: 6/8/2011

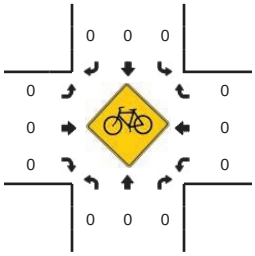
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

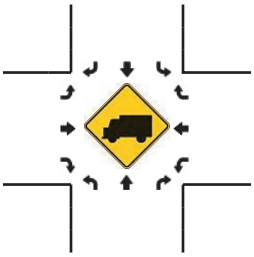


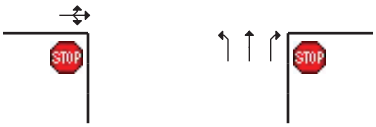


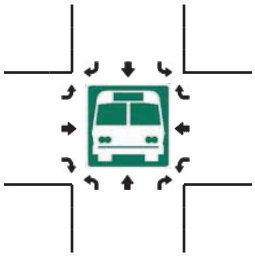












15-Min Count Period Beginning At	Akin Rd (Northbound)				Akin Rd (Southbound)				195th St W (Eastbound)				195th St W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	21	32	13	0	14	26	14	0	13	30	19	0	19	26	7	0	234	
4:15 PM	15	31	18	0	13	28	4	0	4	41	22	0	14	34	5	0	229	
4:30 PM	11	37	19	0	18	43	15	0	5	53	15	0	14	27	11	0	268	
4:45 PM	14	42	13	0	20	30	9	0	9	52	27	0	13	28	8	0	265	996
5:00 PM	14	40	16	0	12	38	10	0	5	45	21	0	18	32	12	0	263	1025
5:15 PM	13	24	20	0	19	52	8	0	5	53	34	0	17	31	12	0	288	1084
5:30 PM	15	39	11	0	12	48	13	0	14	33	41	0	31	49	13	0	319	1135
5:45 PM	25	39	10	0	14	66	18	0	10	40	55	0	39	45	17	0	378	1248

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	100	156	40	0	56	264	72	0	40	160	220	0	156	180	68	0	1512
Heavy Trucks	0	8	0		0	0	0		0	0	0		8	4	0		20
Pedestrians		0				16				0				12			28
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/13/2011 10:37 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

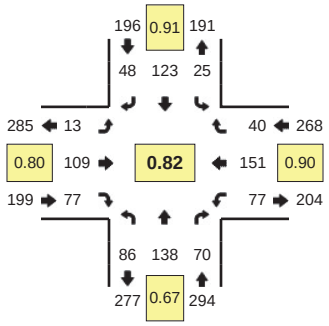
Type of peak hour being reported: Intersection Peak

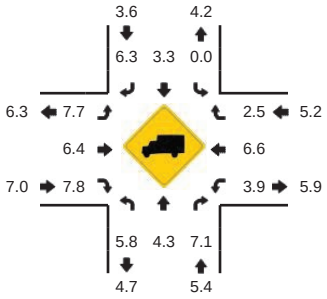
Method for determining peak hour: Total Entering Volume

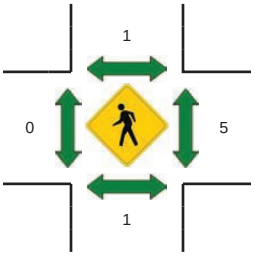
LOCATION: Akin Rd -- 195th St W
CITY/STATE: Farmington, MN

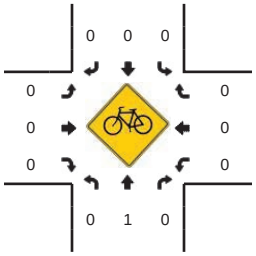
QC JOB #: 10627107
DATE: 6/8/2011

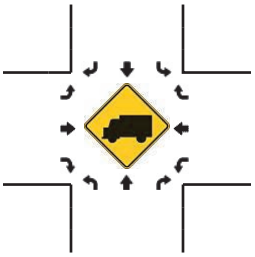
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

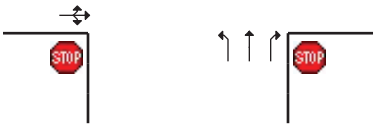


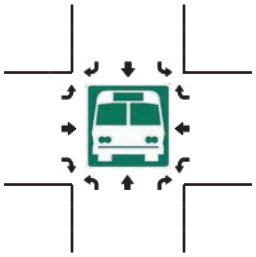












15-Min Count Period Beginning At	Akin Rd (Northbound)				Akin Rd (Southbound)				195th St W (Eastbound)				195th St W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	16	25	24	0	6	42	6	0	4	29	25	0	29	23	14	0	243	
7:15 AM	35	59	16	0	6	35	9	0	4	32	26	0	29	35	6	0	292	
7:30 AM	21	35	19	0	7	25	15	0	2	22	18	0	13	43	12	0	232	
7:45 AM	14	19	11	0	6	21	18	0	3	26	8	0	6	50	8	0	190	957
8:00 AM	11	27	13	0	4	21	24	0	4	29	19	0	18	46	14	0	230	944
8:15 AM	19	33	13	0	3	13	4	0	3	19	8	0	8	17	3	0	143	795
8:30 AM	8	25	7	0	4	13	11	0	4	16	11	0	5	27	7	0	138	701
8:45 AM	12	20	2	0	2	13	25	0	3	24	13	0	6	37	6	0	163	674

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	140	236	64	0	24	140	36	0	16	128	104	0	116	140	24	0	1168
Heavy Trucks	8	8	0		0	4	4		0	8	0		4	12	0		48
Pedestrians		4				0				0				0			4
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/13/2011 10:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

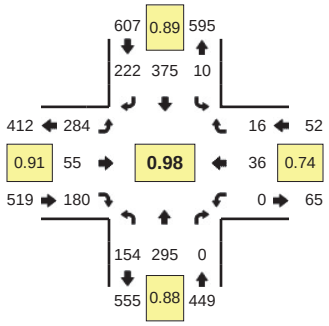
Type of peak hour being reported: Intersection Peak

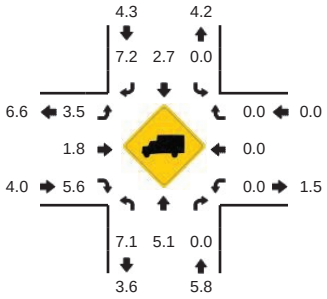
Method for determining peak hour: Total Entering Volume

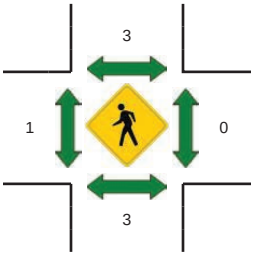
LOCATION: TH 3 (Chippendale Ave) -- Elm St (County Rd 50)
CITY/STATE: Farmington, MN

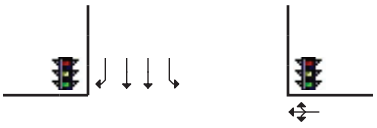
QC JOB #: 10627106
DATE: 6/8/2011

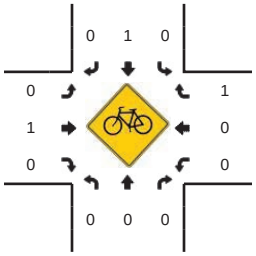
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

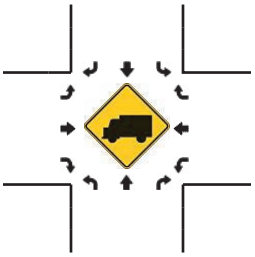


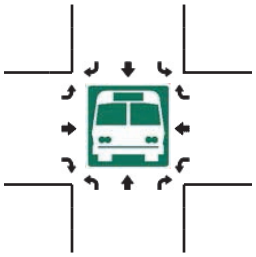












15-Min Count Period Beginning At	TH 3 (Chippendale Ave) (Northbound)				TH 3 (Chippendale Ave) (Southbound)				Elm St (County Rd 50) (Eastbound)				Elm St (County Rd 50) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	36	63	0	0	3	69	51	0	69	6	39	0	0	11	3	0	350	
4:15 PM	30	50	1	0	5	84	46	0	55	13	41	0	0	14	7	0	346	
4:30 PM	41	86	0	0	1	75	46	0	83	15	45	0	0	12	2	0	406	
4:45 PM	36	74	0	0	1	99	52	0	80	15	49	0	0	5	3	0	414	1516
5:00 PM	45	51	0	0	3	113	58	0	69	15	46	0	0	8	5	0	413	1579
5:15 PM	32	84	0	0	5	88	66	0	52	10	40	0	0	11	6	0	394	1627
5:30 PM	38	66	0	0	1	62	54	1	55	10	33	0	0	5	4	0	329	1550
5:45 PM	37	57	1	0	2	90	75	0	69	10	38	0	0	14	6	0	399	1535

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	144	296	0	0	4	396	208	0	320	60	196	0	0	20	12	0	1656
Heavy Trucks	4	20	0		0	12	24		12	0	16		0	0	0		88
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/13/2011 10:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

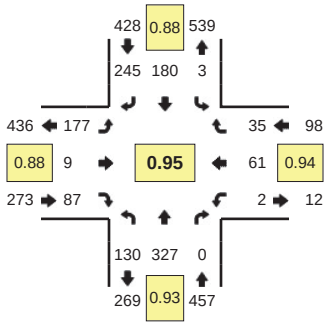
Type of peak hour being reported: Intersection Peak

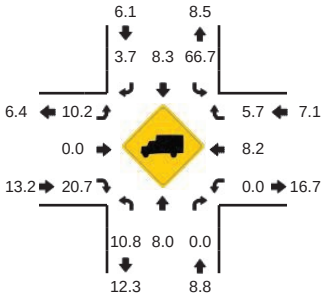
Method for determining peak hour: Total Entering Volume

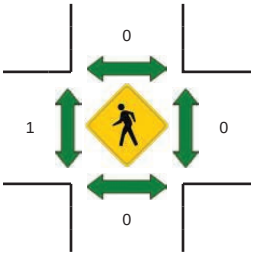
LOCATION: TH 3 (Chippendale Ave) -- Elm St (County Rd 50)
CITY/STATE: Farmington, MN

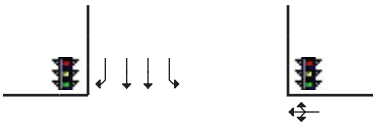
QC JOB #: 10627105
DATE: 6/8/2011

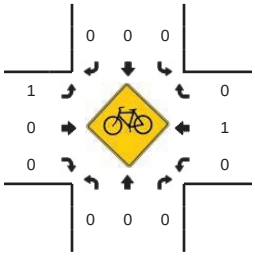
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

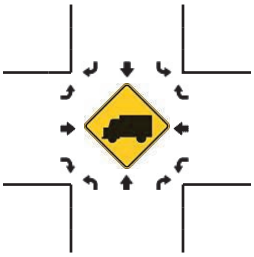


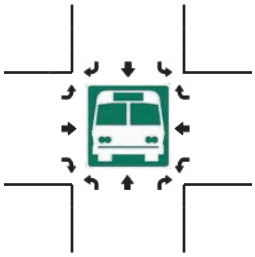












15-Min Count Period Beginning At	TH 3 (Chippendale Ave) (Northbound)				TH 3 (Chippendale Ave) (Southbound)				Elm St (County Rd 50) (Eastbound)				Elm St (County Rd 50) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	32	69	0	0	3	29	74	0	38	4	17	0	1	17	6	0	290	
7:15 AM	25	90	0	0	0	44	54	0	54	3	23	0	0	17	8	0	318	
7:30 AM	27	91	0	0	0	50	48	0	45	1	28	0	1	13	12	0	316	
7:45 AM	46	77	0	0	0	57	69	0	40	1	19	0	0	14	9	0	332	1256
8:00 AM	30	57	0	0	0	39	78	0	43	4	19	0	0	11	8	0	289	1255
8:15 AM	22	41	0	0	2	44	57	0	41	3	19	0	0	13	4	0	246	1183
8:30 AM	35	47	0	0	1	35	48	0	38	4	13	0	0	9	6	0	236	1103
8:45 AM	29	42	2	0	0	43	55	0	41	9	19	0	2	15	2	0	259	1030

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	184	308	0	0	0	228	276	0	160	4	76	0	0	56	36	0	1328
Heavy Trucks	4	28	0		0	20	24		4	0	16		0	4	4		104
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/13/2011 10:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

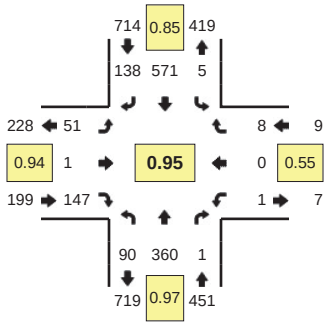
LOCATION: TH 3 (Chippendale Ave) -- 195th St W

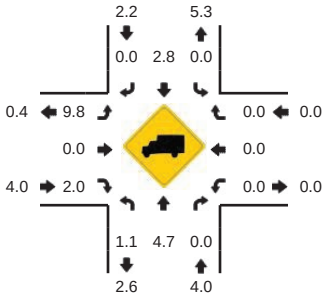
CITY/STATE: Farmington, MN

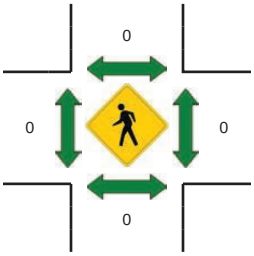
QC JOB #: 10627104

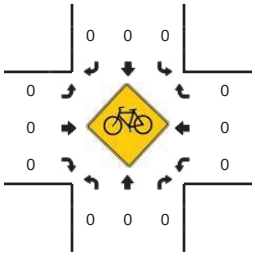
DATE: 6/8/2011

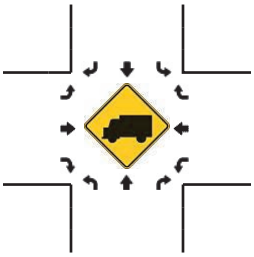
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

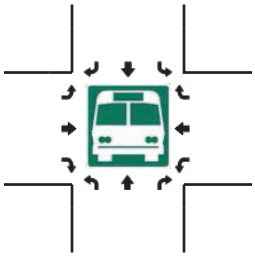












15-Min Count Period Beginning At	TH 3 (Chippendale Ave) (Northbound)				TH 3 (Chippendale Ave) (Southbound)				195th St W (Eastbound)				195th St W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	23	92	2	0	0	103	23	1	6	0	30	0	1	1	0	0	282	
4:15 PM	18	86	0	0	0	129	23	1	13	0	32	0	0	0	2	0	304	
4:30 PM	20	91	0	0	0	136	24	0	10	0	42	0	0	0	1	0	324	
4:45 PM	19	95	0	0	3	141	32	0	15	0	36	0	0	0	3	0	344	1254
5:00 PM	23	87	0	0	0	172	38	0	11	1	31	0	0	0	0	0	363	1335
5:15 PM	28	87	1	0	2	122	44	0	15	0	38	0	1	0	4	0	342	1373
5:30 PM	28	76	0	0	1	131	26	0	9	2	34	0	0	2	1	0	310	1359
5:45 PM	38	77	1	0	1	132	27	0	6	3	44	0	0	0	0	0	329	1344

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	92	348	0	0	0	688	152	0	44	4	124	0	0	0	0	0	1452
Heavy Trucks	0	20	0		0	12	0		8	0	4		0	0	0		44
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 6/13/2011 10:36 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

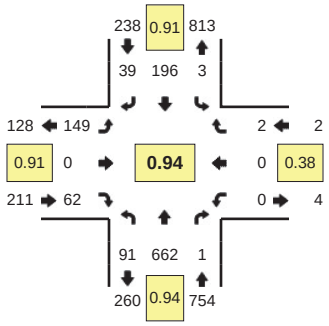
LOCATION: TH 3 (Chippendale Ave) -- 195th St W

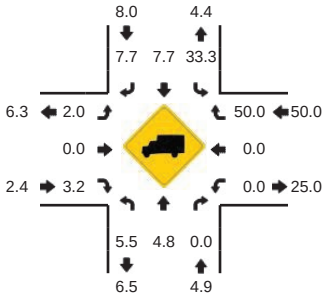
CITY/STATE: Farmington, MN

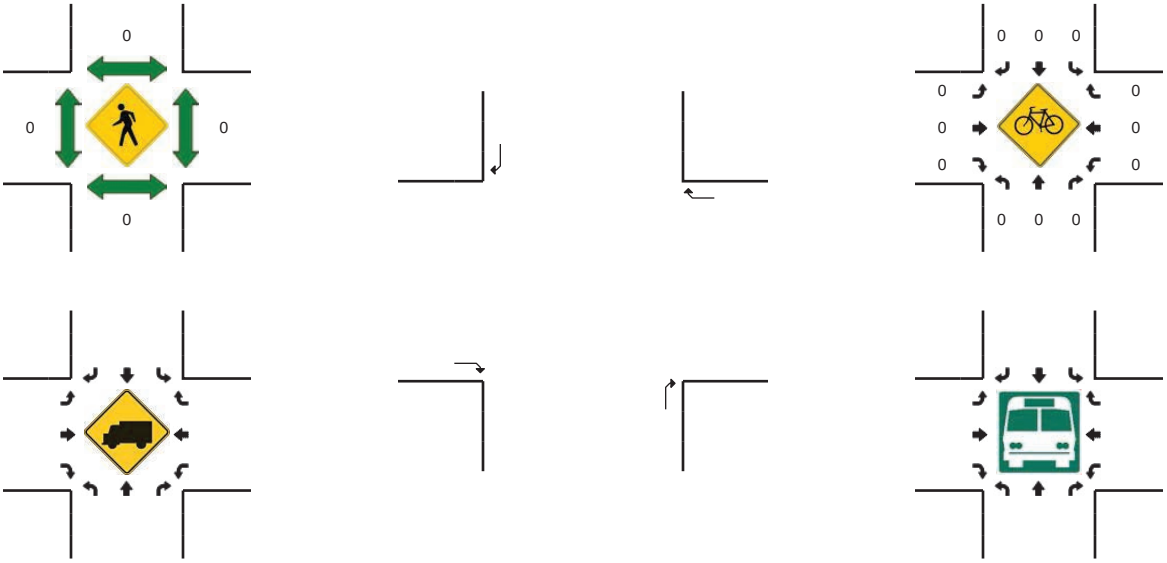
QC JOB #: 10627103

DATE: 6/8/2011

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM







15-Min Count Period Beginning At	TH 3 (Chippendale Ave) (Northbound)				TH 3 (Chippendale Ave) (Southbound)				195th St W (Eastbound)				195th St W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	18	169	0	0	0	30	12	0	37	0	20	0	0	0	0	0	286	
7:15 AM	19	178	0	0	2	52	11	0	44	0	14	0	0	0	1	0	321	
7:30 AM	22	177	0	2	1	54	6	0	38	0	15	0	0	0	1	0	316	
7:45 AM	30	138	1	0	0	60	10	0	30	0	13	0	0	0	0	0	282	1205
8:00 AM	22	98	0	0	3	48	8	0	30	0	25	0	0	0	0	0	234	1153
8:15 AM	8	85	1	0	0	53	12	0	14	1	16	0	0	1	0	0	191	1023
8:30 AM	11	103	0	0	1	39	8	0	16	0	8	0	0	0	0	0	186	893
8:45 AM	11	73	0	0	3	52	5	1	11	1	17	0	1	1	0	0	176	787

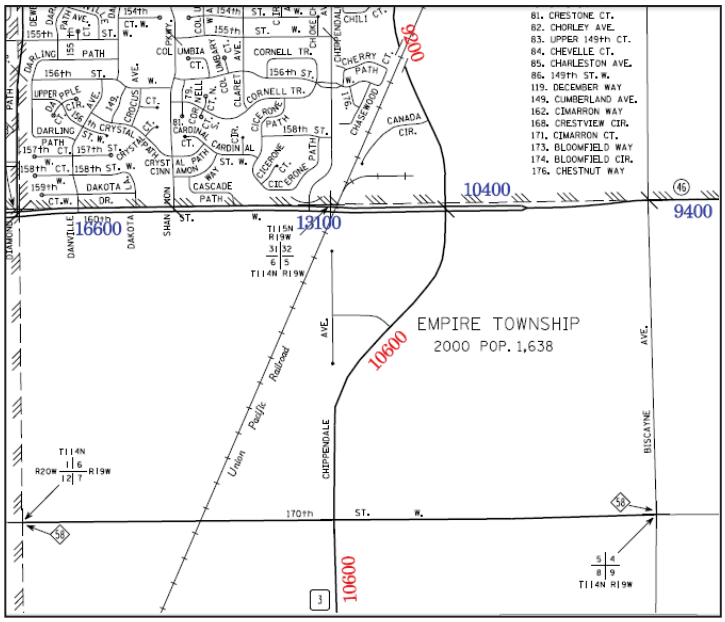
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	76	712	0	0	8	208	44	0	176	0	56	0	0	0	4	0	1284
Heavy Trucks	0	36	0		4	4	4		0	0	0		0	0	0		48
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

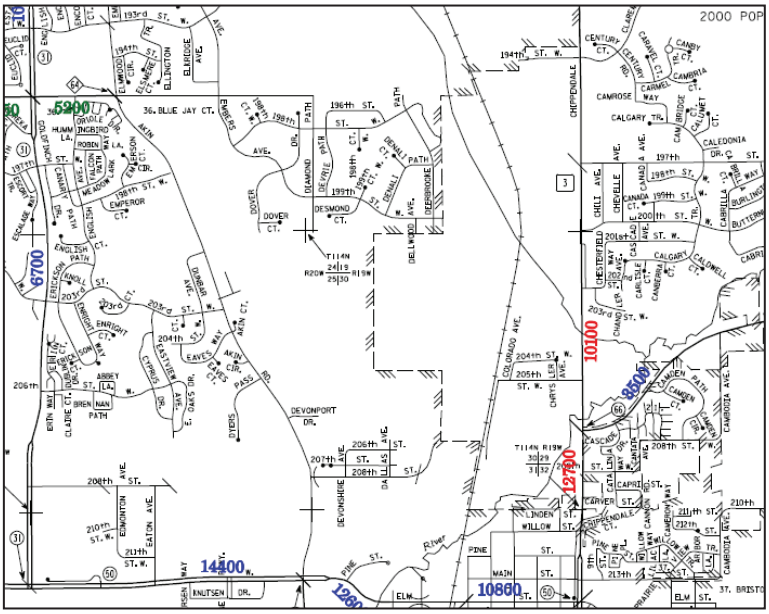
Comments:

Report generated on 6/13/2011 10:35 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

MnDOT
Office of Transportation Data & Analysis
2008 -09 Traffic Volumes





Projected Volume Calculations

Seed/Genstar AUAR update - AM Peak

TH 3 (S Robert Trl) & 160th Street W (CSAH 46)													
	AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
A	Existing 2011	240	365	50	40	257	48	165	388	124	41	119	68
B	Growth factor	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	96	146	20	16	103	19	66	155	50	16	48	27
D	Other trips	0	12	1	3	12	1	1	35	3	1	12	0
E (a+c+d)	No-build 2031	336	523	71	59	372	68	232	578	177	58	179	95
F	site trips IN	672	672	672	672	672	672	672	672	672	672	672	672
G	site trips OUT	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271
H	project dist% in	0%	0%	11%	5%	0%	0%	0%	0%	0%	0%	21%	0%
I	project dist% out	0%	0%	0%	0%	0%	0%	11%	21%	5%	0%	0%	0%
J (f*h)	Project trips IN	0	0	74	34	0	0	0	0	0	0	141	0
K (g*i)	Project trips OUT	0	0	0	0	0	0	140	267	64	0	0	0
L	Pass-by trips	0	0	0	0	0	0	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	336	523	145	93	372	68	372	845	240	58	320	95

TH 3 (Chippendale Ave) & 170th Street W (CSAH 58)													
	AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
A	Existing 2011	81	11	32	4	4	30	105	670	11	19	232	27
B	Growth factor	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	32	4	13	2	2	12	42	268	4	8	93	11
D	Other trips	0	0	0	0	0	0	0	35	0	0	12	0
E (a+c+d)	No-build 2031	113	15	45	6	6	42	147	973	15	27	337	38
F	site trips IN	672	672	672	672	672	672	672	672	672	672	672	672
G	site trips OUT	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271
H	project dist% in	0%	0%	7%	1%	0%	0%	0%	0%	0%	0%	37%	0%
I	project dist% out	0%	0%	0%	0%	0%	0%	7%	37%	1%	0%	0%	0%
J (f*h)	Project trips IN	0	0	47	7	0	0	0	0	0	0	249	0
K (g*i)	Project trips OUT	0	0	0	0	0	0	89	470	13	0	0	0
L	Pass-by trips	0	0	0	0	0	0	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	113	15	92	12	6	42	236	1443	28	27	585	38

TH 3 (Chippendale Ave) & 190th Street W													
	AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
A	Existing 2011	149	0	62	0	0	2	91	662	1	3	196	39
B	Growth factor	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	60	0	25	0	0	1	36	265	0	1	78	16
D	Other trips	0	7	2	17	20	30	3	5	6	10	2	0
E (a+c+d)	No-build 2031	209	7	89	17	20	33	130	932	7	14	276	55
F	site trips IN	672	672	672	672	672	672	672	672	672	672	672	672
G	site trips OUT	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271
H	project dist% in	14%	0%	0%	0%	0%	0%	14%	11%	0%	0%	0%	25%
I	project dist% out	25%	0%	14%	0%	0%	0%	0%	0%	0%	0%	11%	14%
J (f*h)	Project trips IN	91	0	0	0	0	0	92	76	0	0	0	166
K (g*i)	Project trips OUT	315	0	175	0	0	0	0	0	0	0	143	172
L	Pass-by trips	0	0	0	0	0	0	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	614	7	264	17	20	33	223	1007	7	14	419	393

TH 3 (Chippendale Ave) & CSAH 66 (Vermillion River Tr)								
	AM	WBL	WBR	NBT	NBR	SBL	SBT
A	Existing 2011	120	72	470	75	12	311
B	Growth factor	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	48	29	188	30	5	124
D	Other trips	4	11	6	1	4	17
E (a+c+d)	No-build 2031	172	112	664	106	21	452
F	site trips IN	672	672	672	672	672	672
G	site trips OUT	1271	1271	1271	1271	1271	1271
H	project dist% in	0%	2%	23%	0%	0%	0%
I	project dist% out	0%	0%	0%	0%	2%	23%
J (f*h)	Project trips IN	0	13	155	0	0	0
K (g*i)	Project trips OUT	0	0	0	0	25	292
L	Pass-by trips	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	172	125	819	106	46	745

TH 3 (Chippendale Ave) & Elm Street (CSAH 50)													
	AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
A	Existing 2011	177	9	87	2	61	35	130	327	0	3	180	245
B	Growth factor	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	71	4	35	1	24	14	52	131	0	1	72	98
D	Other trips	0	0	0	0	0	0	0	7	0	0	21	0
E (a+c+d)	No-build 2031	248	13	122	3	85	49	182	465	0	4	273	343
F	site trips IN	672	672	672	672	672	672	672	672	672	672	672	672
G	site trips OUT	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271
H	project dist% in	10%	0%	0%	0%	0%	0%	0%	13%	0%	0%	0%	0%
I	project dist% out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	10%
J (f*h)	Project trips IN	67	0	0	0	0	0	0	87	0	0	0	0
K (g*i)	Project trips OUT	0	0	0	0	0	0	0	0	0	0	165	127
L	Pass-by trips	0	0	0	0	0	0	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	315	13	122	3	85	49	182	552	0	4	438	470

Akin Road & 195th Street W (CSAH 64)													
	AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
A	Existing 2011	13	109	77	77	151	40	86	138	70	25	123	48
B	Growth factor	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	5	44	31	31	60	16	34	55	28	10	49	19
D	Other trips	0	9	0	0	23	0	0	0	0	0	0	0
E (a+c+d)	No-build 2031	18	162	108	108	234	56	120	193	98	35	172	67
F	site trips IN	672	672	672	672	672	672	672	672	672	672	672	672
G	site trips OUT	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271	1271
H	project dist% in	0%	15%	0%	0%	0%	0%	0%	0%	5%	10%	0%	0%
I	project dist% out	0%	0%	0%	5%	15%	10%	0%	0%	0%	0%	0%	0%
J (f*h)	Project trips IN	0	101	0	0	0	0	0	0	34	67	0	0
K (g*i)	Project trips OUT	0	0	0	64	191	127	0	0	0	0	0	0
L	Pass-by trips	0	0	0	0	0	0	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	18	262	108	171	425	183	120	193	132	102	172	67

TH 3 (Chippendale Ave) & Access A										
	AM	EBL		EBR		NBL	NBT		SBT	SBR
A	Existing 2011	0		0		0	786		268	0
B	Growth factor	2%		2%		2%	2%		2%	2%
C (b*years)*a	Background	0		0		0	314		107	0
D	Other trips	0		0		0	35		12	0
E (a+c+d)	No-build 2031	0		0		0	1135		387	0
F	site trips IN	672		672		672	672		672	672
G	site trips OUT	1271		1271		1271	1271		1271	1271
H	project dist% in	0%		0%		14%	0%		34%	11%
I	project dist% out	11%		14%		0%	34%		0%	0%
J (f*h)	Project trips IN	0		0		92	0		227	76
K (g*i)	Project trips OUT	143		175		0	429		0	0
L	Pass-by trips	0		0		0	0		0	0
M (e+j+k+l)	Build 2031	143		175		92	1564		614	76

TH 3 (Chippendale Ave) & Access B										
	AM	EBL		EBR		NBL	NBT		SBT	SBR
A	Existing 2011	0		0		0	786		268	0
B	Growth factor	2%		2%		2%	2%		2%	2%
C (b*years)*a	Background	0		0		0	314		107	0
D	Other trips	0		0		0	35		12	0
E (a+c+d)	No-build 2031	0		0		0	1135		387	0
F	site trips IN	672		672		672	672		672	672
G	site trips OUT	1271		1271		1271	1271		1271	1271
H	project dist% in	0%		0%		6%	14%		29%	5%
I	project dist% out	5%		6%		0%	29%		14%	0%
J (f*h)	Project trips IN	0		0		37	92		197	30
K (g*i)	Project trips OUT	57		70		0	372		175	0
L	Pass-by trips	0		0		0	0		0	0
M (e+j+k+l)	Build 2031	57		70		37	1600		759	30

TH 3 (Chippendale Ave) & Access C										
	AM	EBL		EBR		NBL	NBT		SBT	SBR
A	Existing 2011	0		0		0	813		238	0
B	Growth factor	2%		2%		2%	2%		2%	2%
C (b*years)*a	Background	0		0		0	325		95	0
D	Other trips	0		0		0	35		12	0
E (a+c+d)	No-build 2031	0		0		0	1173		345	0
F	site trips IN	672		672		672	672		672	672
G	site trips OUT	1271		1271		1271	1271		1271	1271
H	project dist% in	0%		0%		6%	19%		25%	5%
I	project dist% out	5%		6%		0%	25%		19%	0%
J (f*h)	Project trips IN	0		0		37	129		166	30
K (g*i)	Project trips OUT	57		70		0	315		245	0
L	Pass-by trips	9		20		9	-9		-20	20
M (e+j+k+l)	Build 2031	66		90		46	1608		736	50

190th Street W & Access D								
	AM	EBL	EBT	WBT	WBR	SBL	SBR
A	Existing 2011	0	211	130	0	0	0
B	Growth factor	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	0	84	52	0	0	0
D	Other trips	0	9	23	0	0	0
E (a+c+d)	No-build 2031	0	304	205	0	0	0
F	site trips IN	672	672	672	672	672	672
G	site trips OUT	1271	1271	1271	1271	1271	1271
H	project dist% in	15%	14%	4%	35%	0%	0%
I	project dist% out	0%	4%	14%	0%	35%	15%
J (f*h)	Project trips IN	101	91	24	235	0	0
K (g*i)	Project trips OUT	0	44	172	0	445	191
L	Pass-by trips	9	-9	-20	20	9	20
M (e+j+k+l)	Build 2031	110	431	380	255	454	211

195th Street W & Access E							
	AM	EBL	EBT	WBT	WBR	SBL	SBR
A	Existing 2011	0	204	268	0	0	0
B	Growth factor	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	0	82	107	0	0	0
D	Other trips	0	9	23	0	0	0
E (a+c+d)	No-build 2031	0	295	398	0	0	0
F	site trips IN	672	672	672	672	672	672
G	site trips OUT	1271	1271	1271	1271	1271	1271
H	project dist% in	2%	29%	0%	4%	0%	0%
I	project dist% out	0%	0%	29%	0%	4%	2%
J (f*h)	Project trips IN	10	192	0	24	0	0
K (g*i)	Project trips OUT	0	0	362	0	44	19
L	Pass-by trips	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	10	486	760	24	44	19

Seed/Genstar AUAR update - PM Peak

TH 3 (S Robert Trl) & 160th Street W (CSAH 46)													
	PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
A	Existing 2011	117	391	123	92	355	72	77	234	50	70	434	193
B	Growth factor	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	47	156	49	37	142	29	31	94	20	28	174	77
D	Other trips	0	4	0	2	10	1	1	24	1	1	43	0
E (a+c+d)	No-build 2031	164	551	172	131	507	102	109	352	71	99	651	270
F	site trips IN	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362
G	site trips OUT	975	975	975	975	975	975	975	975	975	975	975	975
H	project dist% in	0%	0%	11%	5%	0%	0%	0%	0%	0%	0%	21%	0%
I	project dist% out	0%	0%	0%	0%	0%	0%	11%	21%	5%	0%	0%	0%
J (f*h)	Project trips IN	0	0	150	68	0	0	0	0	0	0	286	0
K (g*i)	Project trips OUT	0	0	0	0	0	0	107	205	49	0	0	0
L	Pass-by trips	0	0	0	0	0	0	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	164	551	322	199	507	102	216	556	120	99	937	270

TH 3 (Chippendale Ave) & 170th Street W (CSAH 58)													
	PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
A	Existing 2011	44	7	102	16	7	10	74	309	10	11	574	117
B	Growth factor	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	18	3	41	6	3	4	30	124	4	4	230	47
D	Other trips	0	0	0	0	0	0	0	24	0	0	43	0
E (a+c+d)	No-build 2031	62	10	143	22	10	14	104	457	14	15	847	164
F	site trips IN	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362
G	site trips OUT	975	975	975	975	975	975	975	975	975	975	975	975
H	project dist% in	0%	0%	7%	1%	0%	0%	0%	0%	0%	0%	37%	0%
I	project dist% out	0%	0%	0%	0%	0%	0%	7%	37%	1%	0%	0%	0%
J (f*h)	Project trips IN	0	0	95	14	0	0	0	0	0	0	504	0
K (g*i)	Project trips OUT	0	0	0	0	0	0	68	361	10	0	0	0
L	Pass-by trips	0	0	0	0	0	0	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	62	10	238	36	10	14	172	817	24	15	1351	164

TH 3 (Chippendale Ave) & 190th Street W													
	PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
A	Existing 2011	51	1	147	1	0	8	90	360	1	5	571	138
B	Growth factor	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	20	0	59	0	0	3	36	144	0	2	228	55
D	Other trips	0	23	5	11	13	20	2	4	19	35	8	0
E (a+c+d)	No-build 2031	71	24	211	12	13	31	128	508	20	42	807	193
F	site trips IN	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362
G	site trips OUT	975	975	975	975	975	975	975	975	975	975	975	975
H	project dist% in	14%	0%	0%	0%	0%	0%	14%	11%	0%	0%	0%	25%
I	project dist% out	25%	0%	14%	0%	0%	0%	0%	0%	0%	0%	11%	14%
J (f*h)	Project trips IN	184	0	0	0	0	0	187	153	0	0	0	337
K (g*i)	Project trips OUT	241	0	134	0	0	0	0	0	0	0	110	132
L	Pass-by trips	0	0	0	0	0	0	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	497	24	345	12	13	31	315	661	20	42	917	662

TH 3 (Chippendale Ave) & CSAH 66 (Vermillion River Tr)								
	PM	WBL	WBR	NBT	NBR	SBL	SBT
A	Existing 2011	94	34	389	116	59	530
B	Growth factor	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	38	14	156	46	24	212
D	Other trips	3	8	19	4	13	11
E (a+c+d)	No-build 2031	135	56	564	166	96	753
F	site trips IN	1362	1362	1362	1362	1362	1362
G	site trips OUT	975	975	975	975	975	975
H	project dist% in	0%	2%	23%	0%	0%	0%
I	project dist% out	0%	0%	0%	0%	2%	23%
J (f*h)	Project trips IN	0	27	313	0	0	0
K (g*i)	Project trips OUT	0	0	0	0	20	224
L	Pass-by trips	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	135	83	877	166	115	977

TH 3 (Chippendale Ave) & Elm Street (CSAH 50)													
	PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
A	Existing 2011	284	55	180	0	36	16	154	295	0	10	375	222
B	Growth factor	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	114	22	72	0	14	6	62	118	0	4	150	89
D	Other trips	0	0	0	0	0	0	0	23	0	0	14	0
E (a+c+d)	No-build 2031	398	77	252	0	50	22	216	436	0	14	539	311
F	site trips IN	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362
G	site trips OUT	975	975	975	975	975	975	975	975	975	975	975	975
H	project dist% in	10%	0%	0%	0%	0%	0%	0%	13%	0%	0%	0%	0%
I	project dist% out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	10%
J (f*h)	Project trips IN	136	0	0	0	0	0	0	177	0	0	0	0
K (g*i)	Project trips OUT	0	0	0	0	0	0	0	0	0	0	127	98
L	Pass-by trips	0	0	0	0	0	0	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	534	77	252	0	50	22	216	613	0	14	666	408

Akin Road & 195th Street W (CSAH 64)													
	PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
A	Existing 2011	34	171	151	105	157	54	67	142	57	57	204	49
B	Growth factor	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	14	68	60	42	63	22	27	57	23	23	82	20
D	Other trips	0	28	0	0	15	0	0	0	0	0	0	0
E (a+c+d)	No-build 2031	48	267	211	147	235	76	94	199	80	80	286	69
F	site trips IN	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362
G	site trips OUT	975	975	975	975	975	975	975	975	975	975	975	975
H	project dist% in	0%	15%	0%	0%	0%	0%	0%	0%	5%	10%	0%	0%
I	project dist% out	0%	0%	0%	5%	15%	10%	0%	0%	0%	0%	0%	0%
J (f*h)	Project trips IN	0	204	0	0	0	0	0	0	68	136	0	0
K (g*i)	Project trips OUT	0	0	0	49	146	98	0	0	0	0	0	0
L	Pass-by trips	0	0	0	0	0	0	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	48	472	211	196	381	173	94	199	148	216	286	69

TH 3 (Chippendale Ave) & Access A											
	PM	EBL		EBR			NBL	NBT		SBT	SBR
A	Existing 2011	0		0			0	393		692	0
B	Growth factor	2%		2%			2%	2%		2%	2%
C (b*years)*a	Background	0		0			0	157		277	0
D	Other trips	0		0			0	25		37	0
E (a+c+d)	No-build 2031	0		0			0	575		1006	0
F	site trips IN	1362		1362			1362	1362		1362	1362
G	site trips OUT	975		975			975	975		975	975
H	project dist% in	0%		0%			14%	0%		34%	11%
I	project dist% out	11%		14%			0%	34%		0%	0%
J (f*h)	Project trips IN	0		0			187	0		460	153
K (g*i)	Project trips OUT	110		134			0	329		0	0
L	Pass-by trips	0		0			0	0		0	0
M (e+j+k+l)	Build 2031	110		134			187	904		1465	153

TH 3 (Chippendale Ave) & Access B											
	PM	EBL		EBR			NBL	NBT		SBT	SBR
A	Existing 2011	0		0			0	393		692	0
B	Growth factor	2%		2%			2%	2%		2%	2%
C (b*years)*a	Background	0		0			0	157		277	0
D	Other trips	0		0			0	25		37	0
E (a+c+d)	No-build 2031	0		0			0	575		1006	0
F	site trips IN	1362		1362			1362	1362		1362	1362
G	site trips OUT	975		975			975	975		975	975
H	project dist% in	0%		0%			6%	14%		29%	5%
I	project dist% out	5%		6%			0%	29%		14%	0%
J (f*h)	Project trips IN	0		0			75	187		398	61
K (g*i)	Project trips OUT	44		54			0	285		134	0
L	Pass-by trips	0		0			0	0		0	0
M (e+j+k+l)	Build 2031	44		54			75	1048		1538	61

TH 3 (Chippendale Ave) & Access C											
	PM	EBL		EBR			NBL	NBT		SBT	SBR
A	Existing 2011	0		0			0	419		714	0
B	Growth factor	2%		2%			2%	2%		2%	2%
C (b*years)*a	Background	0		0			0	168		286	0
D	Other trips	0		0			0	25		37	0
E (a+c+d)	No-build 2031	0		0			0	612		1037	0
F	site trips IN	1362		1362			1362	1362		1362	1362
G	site trips OUT	975		975			975	975		975	975
H	project dist% in	0%		0%			6%	19%		25%	5%
I	project dist% out	5%		6%			0%	25%		19%	0%
J (f*h)	Project trips IN	0		0			75	262		337	61
K (g*i)	Project trips OUT	44		54			0	241		188	0
L	Pass-by trips	32		70			32	-32		-74	74
M (e+j+k+l)	Build 2031	76		124			107	1083		1487	135

190th Street W & Access D								
	PM	EBL	EBT	WBT	WBR	SBL	SBR
A	Existing 2011	0	199	228	0	0	0
B	Growth factor	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	0	80	91	0	0	0
D	Other trips	0	28	15	0	0	0
E (a+c+d)	No-build 2031	0	307	334	0	0	0
F	site trips IN	1362	1362	1362	1362	1362	1362
G	site trips OUT	975	975	975	975	975	975
H	project dist% in	15%	14%	4%	35%	0%	0%
I	project dist% out	0%	4%	14%	0%	35%	15%
J (f*h)	Project trips IN	204	184	48	477	0	0
K (g*i)	Project trips OUT	0	34	132	0	341	146
L	Pass-by trips	32	-32	-74	74	30	70
M (e+j+k+l)	Build 2031	236	493	439	551	371	216

195th Street W & Access E							
	PM	EBL	EBT	WBT	WBR	SBL	SBR
A	Existing 2011	0	285	316	0	0	0
B	Growth factor	2%	2%	2%	2%	2%	2%
C (b*years)*a	Background	0	114	126	0	0	0
D	Other trips	0	28	15	0	0	0
E (a+c+d)	No-build 2031	0	427	457	0	0	0
F	site trips IN	1362	1362	1362	1362	1362	1362
G	site trips OUT	975	975	975	975	975	975
H	project dist% in	2%	29%	0%	4%	0%	0%
I	project dist% out	0%	0%	29%	0%	4%	2%
J (f*h)	Project trips IN	20	388	0	48	0	0
K (g*i)	Project trips OUT	0	0	278	0	34	15
L	Pass-by trips	0	0	0	0	0	0
M (e+j+k+l)	Build 2031	20	815	735	48	34	15

Trip Generation

Seed/Genstar AUAR Update - City of Farmington
Summary of Multi-Use Trip Generation
Average Weekday Driveway Volumes
6-Jun-11

Land Use	Size	24 Hour Two-Way Volume	AM Pk Hour Enter	AM Pk Hour Exit	PM Pk Hour Enter	PM Pk Hour Exit
Single Family Detached Housing	1026 Dwelling Units	9819	195	575	657	380
Residential Condominium / Townhouse	1380 Dwelling Units	8018	97	511	483	235
General Office Building	40 Th.Sq.Ft. GFA	440	54	8	10	50
General Office Building	40 Th.Sq.Ft. GFA	440	54	8	10	50
General Office Building	62 Th.Sq.Ft. GFA	683	84	12	16	77
Hardware / Paint Store	15 Th.Sq.Ft. GFA	769	0	0	34	39
Automobile Parts Sales	15 Th.Sq.Ft. GFA	929	0	0	44	46
Convenience Market with Gasoline Pumps	4 Vehicle Fueling Positions	2170	33	33	38	38
Arts and Crafts Store	15 Th.Sq.Ft. GFA	848	0	0	43	50
Pharmacy / Drugstore with Drive-Thru	11 Th.Sq.Ft. GFA	970	17	13	57	57
Furniture Store	21 Th.Sq.Ft. GFA	106	3	1	5	5
Drive-in Bank	13 Th.Sq.Ft. GFA	1926	90	71	168	168
Hair Salon	2 Th.Sq.Ft. GFA	20	0	0	1	2
Quality Restaurant	10 Th.Sq.Ft. GFA	900	0	0	50	25
Fast-Food Restaurant with Drive-Thru	3 Th.Sq.Ft. GFA	1488	76	73	53	49
Coffee/Donut Shop with Drive-Thru	2 Th.Sq.Ft. GFA	1637	113	109	43	43
Total Driveway Volume		31163	816	1414	1712	1314
Total Peak Hour Pass-By Trips			58	57	212	201
Total Peak Hour Vol. Added to Adjacent Streets			814	1411	1521	1134

Note: A zero indicates no data available.

TRIP GENERATION BY MICROTRANS

Internal Capture Spreadsheet

Project	Seed/Genstar AUAR update
Date	6/6/2011
Peak	PM
Phase	Full Build

Land Use A — RETAIL
Size — 111,000 SF

	Total	Internal	External
Enter	536	59	477
Exit	522	75	447
Total	1058	134	924
		13%	87%

Enter: **477**
Exit: **447**

Land Use B — OFFICE
Size — 142,000 SF

	Total	Internal	External
Enter	36	11	25
Exit	177	14	163
Total	213	25	188
		12%	88%

Enter: **25**
Exit: **163**

Land Use C — RESIDENTIAL
Size — 2406 Units

	Total	Internal	External
Enter	1140	68	1072
Exit	615	48	567
Total	1755	116	1639
		7%	93%

Enter: **1072**
Exit: **567**

from A to B
Demand 3% 16
Balanced 11
to B from A
Demand 31% 11

to A from B
Demand 2% 11
Balanced 11
from B to A
Demand 23% 41

from A to C
Demand 12% 64
Balanced 64
to C from A
Demand 31% 353

to A from C
Demand 9% 48
Balanced 48
Demand 53% 326
from C to A

to B from C
Demand 0% 0
Balanced 0
Demand 2% 4
from B to C

from C to B
Demand 0% 0
Balanced 0
Demand 2% 23
to C from B

Total Enter	**1574**	prev	1712 IC reduce	**8%**
Total Exit	**1176**	prev	1314 IC reduce	**11%**

Internal Capture Spreadsheet

Project	Seed/Genstar AUAR update
Date	6/6/2011
Peak	AM
Phase	Full Build

Land Use A — RETAIL
Size — 111,000 SF

	Total	Internal	External
Enter	332	36	296
Exit	300	49	251
Total	632	85	547
		13%	87%

Enter **296**
Exit **251**

Land Use B — OFFICE
Size — 142,000 SF

	Total	Internal	External
Enter	192	9	183
Exit	28	7	21
Total	220	16	204
		7%	93%

Enter **183**
Exit **21**

Land Use C — RESIDENTIAL
Size — 2406 units

	Total	Internal	External
Enter	292	40	252
Exit	1086	30	1056
Total	1378	70	1308
		5%	95%

Enter **252**
Exit **1056**

from A to B
Demand 3% 9
Balanced 9
to B from A
Demand 31% 60

to A from B
Demand 2% 7
Balanced 6
from B to A
Demand 23% 6

from A to C
Demand 12% 40
Balanced 40
to C from A
Demand 31% 91

to A from C
Demand 9% 30
Balanced 30
Demand 53% 576
from C to A

to B from C
Demand 0% 0 Balanced 0
from C to B
Demand 0% 0

Demand 2% 1 Balanced 1
from B to C
Demand 2% 6
to C from B

Total Enter	**730**	prev	816 IC reduce	**11%**
Total Exit	**1328**	prev	1414 IC reduce	**6%**

Existing Signal Timing

By-Phase Timing Data

	Phase											
	1	2	3	4	5	6	7	8	9	10	11	12
Direction												
Minimum Green	7	20	0	10	7	20	0	10	0	0	0	0
Bike Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Cond Serv Min Grn	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0
Ped Clearance	0	12	0	12	0	15	0	12	0	7	0	7
Veh Extension	3.0	3.5	0.0	3.0	3.0	3.5	0.0	3.0	0.0	0.0	0.0	0.0
Alt Veh Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Extension	0	0	0	0	0	0	0	0	0	0	0	0
Max 1	20	60	0	40	20	60	0	40	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0
Det. Fail Max	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Change	3.0	4.5	3.0	3.5	3.0	4.5	3.0	3.5	3.0	3.0	3.0	3.0
Red Clearance	2.0	1.5	1.0	2.0	2.0	1.5	1.0	2.0	1.0	1.0	1.0	1.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act. B4 Init	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Actuation	0.0	1.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0	35	0	0	0	35	0	0	0	0	0	0
Time B4 Reduction	0	20	0	0	0	20	0	0	0	0	0	0
Cars Waiting	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	20	0	0	0	20	0	0	0	0	0	0
Minimum Gap	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0

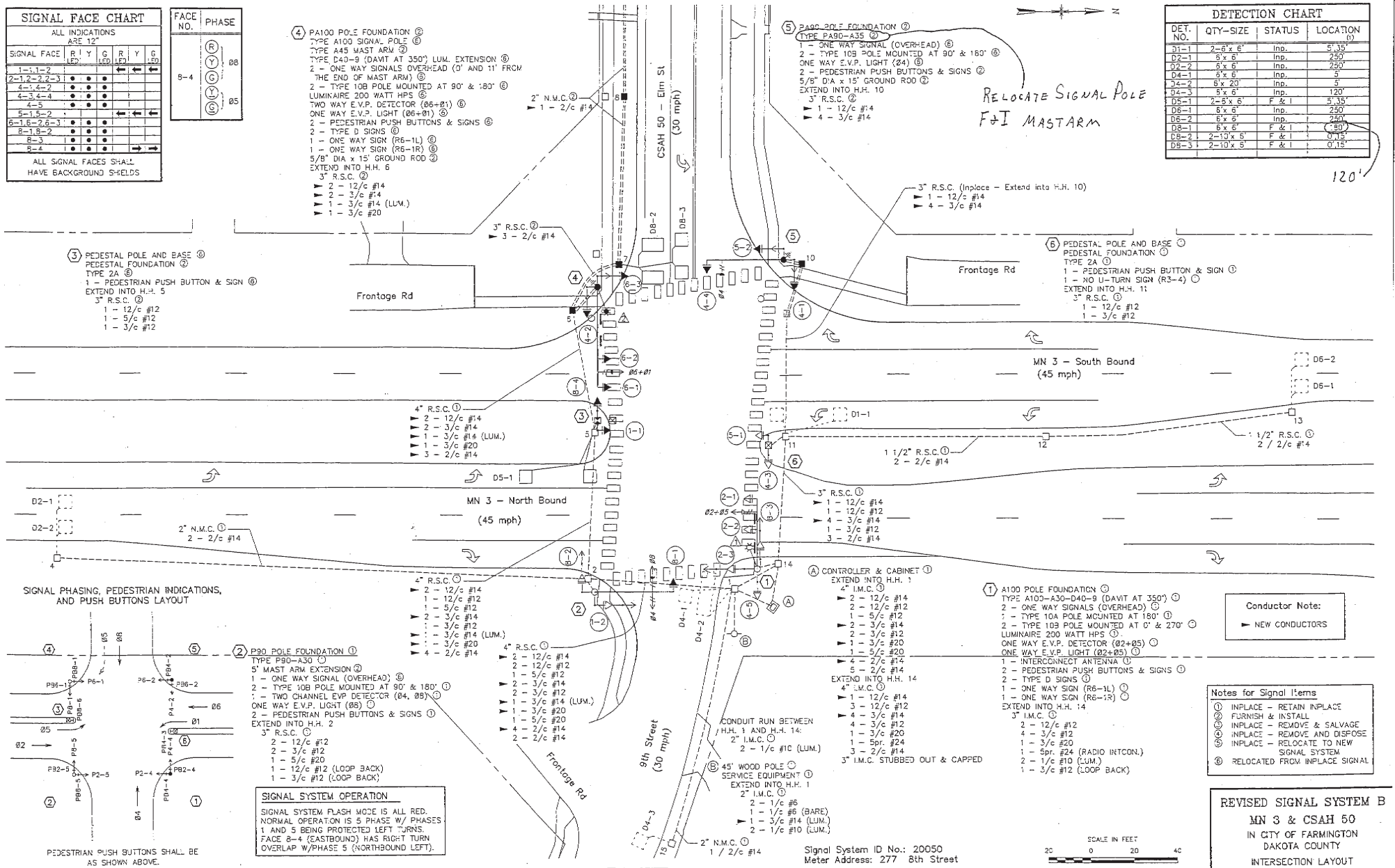
SIGNAL FACE CHART

ALL INDICATIONS ARE 12"

SIGNAL FACE	R LED	Y	G LED	R LED	Y	G LED
1-1,1-2				←	←	←
2-1,2-2,2-3	●	●	●			
4-1,4-2	●	●	●			
4-3,4-4	●	●	●			
4-5	●	●	●			
5-1,5-2				←	←	←
6-1,6-2,6-3	●	●	●			
8-1,8-2	●	●	●			
8-3	●	●	●			
8-4	●	●	●		→	→

ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS

FACE NO.	PHASE
8-4	R, Y, G, L, G — Ø8; R, Y, G, L, G — Ø5



DETECTION CHART

DET. NO.	QTY-SIZE	STATUS	LOCATION (1)
D1-1	2-6'x 6'	Inp.	5',35'
D2-1	6'x 6'	Inp.	250'
D2-2	6'x 6'	Inp.	250'
D4-1	6'x 6'	Inp.	5'
D4-2	6'x 20'	Inp.	5'
D4-3	5'x 6'	Inp.	120'
D5-1	2-6'x 6'	F & I	5',35'
D6-1	6'x 6'	Inp.	250'
D6-2	6'x 6'	Inp.	250'
D8-1	6'x 6'	F & I	180'
D8-2	2-10'x 5'	F & I	0',15'
D8-3	2-10'x 5'	F & I	0',15'

SIGNAL SYSTEM OPERATION

SIGNAL SYSTEM FLASH MODE IS ALL RED. NORMAL OPERATION IS 5 PHASE W/ PHASES 1 AND 5 BEING PROTECTED LEFT TURNS. FACE 8-4 (EASTBOUND) HAS RIGHT TURN OVERLAP W/PHASE 5 (NORTHBOUND LEFT).

REVISED SIGNAL SYSTEM B
MN 3 & CSAH 50
IN CITY OF FARMINGTON
DAKOTA COUNTY
INTERSECTION LAYOUT

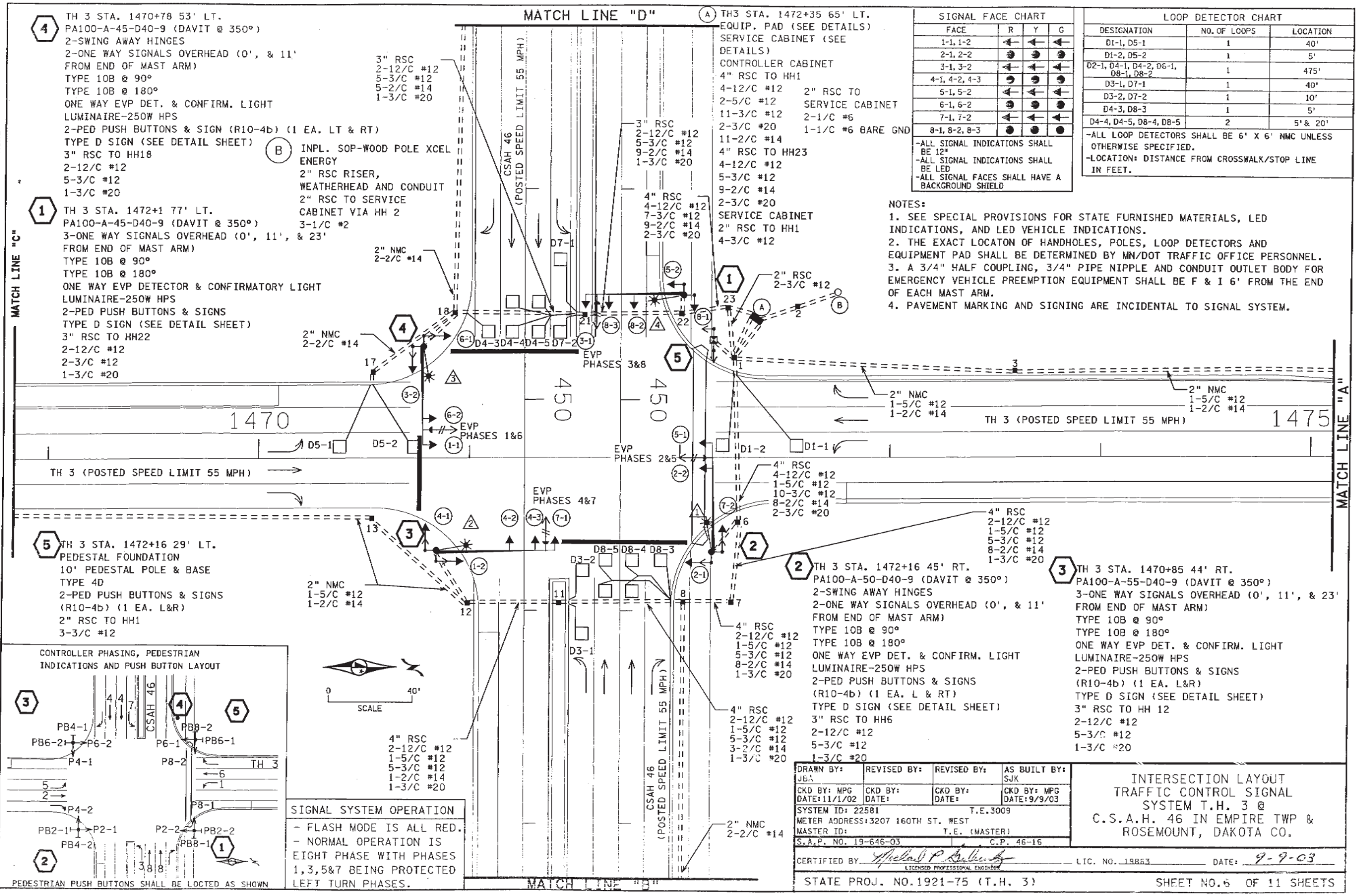
NO.	BY	DATE	REVISIONS	ITEM	DESIGN	CHECKED

Certified by _____ LICENSED ENGINEER Lic. No. 41612 | Date: 01-02-07 | Dakota County Transportation | C.P. 50-05 S.A.P. 19-650-05 M.S.A.P. 212-020-08 | Sheet 87 of 171

ASC 8000/ASC 2 DIRECT CONNECT-EAST METRO TH 3 & (46)/160th St W # 6/8/2011 15:19

By-Phase Timing Data

	Phase											
	1	2	3	4	5	6	7	8	9	10	11	12
Direction	SBLT	NB3	WBLT	EB	NBLT	SB3	EBLT	WB				
Minimum Green	7	20	7	20	7	20	7	20	0	0	0	0
Bike Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Cond Serv Min Grn	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0
Ped Clearance	0	23	0	15	0	24	0	17	0	7	0	7
Veh Extension	2.5	6.0	2.5	3.0	2.5	6.0	2.5	3.0	0.0	0.0	0.0	0.0
Alt Veh Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Extension	0	5	0	10	0	5	0	10	0	0	0	0
Max 1	30	60	30	45	30	60	30	45	0	0	0	0
Max 2	0	0	0	0	0	0	0	0	0	0	0	0
Max 3	0	75	0	65	0	75	0	65	0	0	0	0
Det. Fail Max	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Change	3.0	5.5	3.0	5.5	3.0	5.5	3.0	5.5	3.0	3.0	3.0	3.0
Red Clearance	2.0	2.0	2.0	1.5	2.0	2.0	2.0	1.5	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act. B4 Init	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Actuation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0	0	0	0	0	0	0	0	0	0	0	0
Time B4 Reduction	0	20	0	0	0	20	0	0	0	0	0	0
Cars Waiting	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	20	0	0	0	20	0	0	0	0	0	0
Minimum Gap	0.0	4.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0



NOTES:
1. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS, LED INDICATIONS, AND LED VEHICLE INDICATIONS.
2. THE EXACT LOCATON OF HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD SHALL BE DETERMINED BY MN/DOT TRAFFIC OFFICE PERSONNEL.
3. A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE F & I 6' FROM THE END OF EACH MAST ARM.
4. PAVEMENT MARKING AND SIGNING ARE INCIDENTAL TO SIGNAL SYSTEM.

SIGNAL FACE CHART

FACE	R	Y	G
1-1, 1-2	◄	◄	◄
2-1, 2-2	●	●	●
3-1, 3-2	◄	◄	◄
4-1, 4-2, 4-3	●	●	●
5-1, 5-2	◄	◄	◄
6-1, 6-2	●	●	●
7-1, 7-2	◄	◄	◄
8-1, 8-2, 8-3	●	●	●

-ALL SIGNAL INDICATIONS SHALL BE 12"
-ALL SIGNAL INDICATIONS SHALL BE LED
-ALL SIGNAL FACES SHALL HAVE A BACKGROUND SHIELD

LOOP DETECTOR CHART

DESIGNATION	NO. OF LOOPS	LOCATION
D1-1, D5-1	1	40'
D1-2, D5-2	1	5'
D2-1, D4-1, D4-2, D6-1, D8-1, D8-2	1	475'
D3-1, D7-1	1	40'
D3-2, D7-2	1	10'
D4-3, D8-3	1	5'
D4-4, D4-5, D8-4, D8-5	2	5' & 20'

-ALL LOOP DETECTORS SHALL BE 6' X 6' NMC UNLESS OTHERWISE SPECIFIED.
-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET.

SIGNAL SYSTEM OPERATION

- FLASH MODE IS ALL RED.
- NORMAL OPERATION IS EIGHT PHASE WITH PHASES 1,3,5&7 BEING PROTECTED LEFT TURN PHASES.

DRAWN BY: JBA	REVISED BY:	REVISED BY:	AS BUILT BY: SJK
CKD BY: MPG DATE:11/1/02	CKD BY: DATE:	CKD BY: DATE:	CKD BY: MPG DATE:9/9/03

SYSTEM ID: 22581 T.E.3009
METER ADDRESS:3207 160TH ST. WEST
MASTER ID: T.E. (MASTER)
S.A.P. NO. 19-646-03 C.P. 46-16

INTERSECTION LAYOUT
TRAFFIC CONTROL SIGNAL
SYSTEM T.H. 3 @
C.S.A.H. 46 IN EMPIRE TWP &
ROSEMOUNT, DAKOTA CO.

CERTIFIED BY: Michael P. Lebinski LICENSED PROFESSIONAL ENGINEER LIC. NO. 19863 DATE: 9-9-03

STATE PROJ. NO.1921-75 (T.H. 3) SHEET NO.6 OF 11 SHEETS

NONE

FILENAME: S:\TRAFFIC\Steve Kurallo\As-builts\22581\22581A.DGN

PLOTTED: 09-Sep-2003 09:52

Synchro Output

Existing Year 2011

Lanes, Volumes, Timings
5: 160th St W & TH 3

6/14/2011

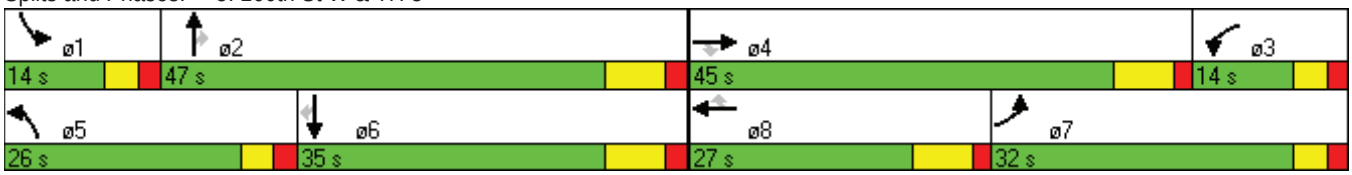
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	365	50	40	257	48	165	388	124	41	119	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			56			53			86			76
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		7135			4969			536			1032	
Travel Time (s)		88.5			61.6			6.6			12.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	267	406	56	44	286	53	183	431	138	46	132	76
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	14.0	27.0	27.0	14.0	27.0	27.0	14.0	27.5	27.5	14.0	27.5	27.5
Total Split (s)	32.0	45.0	45.0	14.0	27.0	27.0	26.0	47.0	47.0	14.0	35.0	35.0
Total Split (%)	26.7%	37.5%	37.5%	11.7%	22.5%	22.5%	21.7%	39.2%	39.2%	11.7%	29.2%	29.2%
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.5	7.5	5.0	7.5	7.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	20.2	30.2	30.2	15.8	20.3	20.3	15.6	35.8	35.8	8.0	22.7	22.7
Actuated g/C Ratio	0.19	0.29	0.29	0.15	0.20	0.20	0.15	0.35	0.35	0.08	0.22	0.22
v/c Ratio	0.77	0.39	0.11	0.16	0.41	0.15	0.69	0.67	0.23	0.34	0.32	0.19
Control Delay	56.2	35.9	11.1	39.9	41.0	12.5	57.0	37.4	13.0	56.3	38.5	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	35.9	11.1	39.9	41.0	12.5	57.0	37.4	13.0	56.3	38.5	9.7
LOS	E	D	B	D	D	B	E	D	B	E	D	A
Approach Delay		41.4			36.9			37.7			33.1	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	264	204	0	38	138	0	182	419	40	46	119	0
Queue Length 95th (ft)	457	324	57	101	243	58	337	656	122	119	230	64
Internal Link Dist (ft)		7055			4889			456			952	
Turn Bay Length (ft)	200		200	200		200	200		200	200		200
Base Capacity (vph)	467	1345	637	285	693	352	364	720	665	156	501	481
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.30	0.09	0.15	0.41	0.15	0.50	0.60	0.21	0.29	0.26	0.16

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 103.7
Natural Cycle: 85
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 38.3 Intersection LOS: D
Intersection Capacity Utilization 76.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 5: 160th St W & TH 3



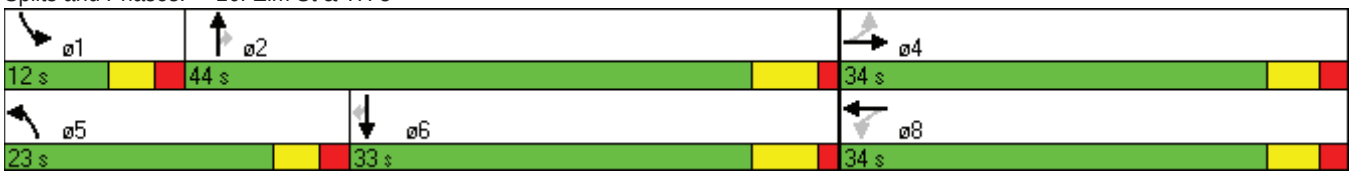
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	177	9	87	2	61	35	130	327	0	3	180	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		200	200		200
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	1608	0	0	1772	0	1770	3539	1863	1770	3539	1583
Flt Permitted	0.810				0.995		0.950			0.950		
Satd. Flow (perm)	1509	1608	0	0	1764	0	1770	3539	1863	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			33							258
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		3432			506			3700			1290	
Travel Time (s)		78.0			11.5			56.1			19.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	101	0	0	103	0	137	344	0	3	189	258
Turn Type	Perm			Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	21.0	21.0		21.0	21.0		12.0	26.0	26.0	12.0	26.0	26.0
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	23.0	44.0	44.0	12.0	33.0	33.0
Total Split (%)	37.8%	37.8%	0.0%	37.8%	37.8%	0.0%	25.6%	48.9%	48.9%	13.3%	36.7%	36.7%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	14.4	14.4			14.4		10.3	30.9		7.3	20.7	20.7
Actuated g/C Ratio	0.24	0.24			0.24		0.17	0.52		0.12	0.35	0.35
v/c Ratio	0.51	0.22			0.23		0.44	0.19		0.01	0.15	0.36
Control Delay	26.1	7.1			15.4		29.0	9.4		28.3	17.0	4.7
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	26.1	7.1			15.4		29.0	9.4		28.3	17.0	4.7
LOS	C	A			B		C	A		C	B	A
Approach Delay		19.4			15.4			15.0			10.0	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	96	4			33		73	42		2	40	0
Queue Length 95th (ft)	197	56			92		166	135		14	94	82
Internal Link Dist (ft)		3352			426			3620			1210	
Turn Bay Length (ft)	200						200			200		200
Base Capacity (vph)	754	850			898		559	2358		218	1675	885
Starvation Cap Reductn	0	0			0		0	0		0	0	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.25	0.12			0.11		0.25	0.15		0.01	0.11	0.29

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 59.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 14.3 Intersection LOS: B
Intersection Capacity Utilization 54.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 16: Elm St & TH 3



HCM Unsignalized Intersection Capacity Analysis
4: 170th St & TH 3

6/13/2011

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	81	11	32	4	4	30	105	670	11	19	232	27
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	94	13	37	5	5	35	122	779	13	22	270	31
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			5									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1374	1350	270	1369	1375	785	301			792		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1374	1350	270	1369	1375	785	301			792		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	5	90	95	95	96	91	90			97		
cM capacity (veh/h)	99	132	769	99	128	392	1260			829		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	144	44	122	792	292	31
Volume Left	94	5	122	0	22	0
Volume Right	37	35	0	13	0	31
cSH	137	257	1260	1700	829	1700
Volume to Capacity	1.05	0.17	0.10	0.47	0.03	0.02
Queue Length 95th (ft)	312	24	13	0	3	0
Control Delay (s)	154.7	21.9	8.2	0.0	1.0	0.0
Lane LOS	F	C	A		A	
Approach Delay (s)	154.7	21.9	1.1		0.9	
Approach LOS	F	C				

Intersection Summary			
Average Delay	17.2		
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	120	0	72	0	470	75	12	311	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	126	0	76	0	495	79	13	327	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	923	926	327	847	847	495	327			574		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	923	926	327	847	847	495	327			574		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	55	100	87	100			99		
cM capacity (veh/h)	215	265	714	279	295	575	1232			999		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	202	0	495	79	13	327	0
Volume Left	0	126	0	0	0	13	0	0
Volume Right	0	76	0	0	79	0	0	0
cSH	1700	346	1700	1700	1700	999	1700	1700
Volume to Capacity	0.00	0.58	0.00	0.29	0.05	0.01	0.19	0.00
Queue Length 95th (ft)	0	141	0	0	0	2	0	0
Control Delay (s)	0.0	29.1	0.0	0.0	0.0	8.6	0.0	0.0
Lane LOS	A	D				A		
Approach Delay (s)	0.0	29.1	0.0			0.3		
Approach LOS	A	D						

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

17: 195th St & Akin Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.0	0.3	0.1	0.2	0.6	0.1	0.3	0.4	0.2	0.1	0.3	0.2
Delay / Veh (s)	8.0	11.4	4.7	9.8	14.3	6.7	10.4	11.4	8.7	9.2	9.9	8.7

17: 195th St & Akin Rd Performance by movement

Movement	All
Total Delay (hr)	2.8
Delay / Veh (s)	10.2

Intersection: 17: 195th St & Akin Rd

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	151	130	48	48	72	54	43	73	60
Average Queue (ft)	41	51	22	24	39	28	19	33	25
95th Queue (ft)	84	89	45	37	62	47	40	56	40
Link Distance (ft)	2987	5893			812			843	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			100	100		100	100		100
Storage Blk Time (%)		1							
Queuing Penalty (veh)		0							

TH 3 & 190th Street 2011 AM Existing

RODEL.EXE

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 13:6:11                    TH 3 AND 190TH ST 2011 EX                          1
 E     (m)    4.30   4.30   4.30   4.30          TIME PERIOD      min      90
 L'    (m)   10.00  10.00  10.00  10.00          TIME SLICE       min      15
 V     (m)    3.65   3.65   3.65   3.65          RESULTS PERIOD   min 15 75
 RAD   (m)   20.00  20.00  20.00  20.00          TIME COST       $/hr 15.00
 PHI   (d)   25.00  25.00  25.00  25.00          FLOW PERIOD      min 15 75
 DIA   (m)   40.00  40.00  40.00  40.00          FLOW TYPE    pcu/veh   VEH
 GRAD SEP       0      0      0      0           FLOW PEAK   am/op/pm    AM

 LEG NAME  PCU  VEH TURNS (1st exit, 2nd..U)  FLOF  CL   FLOW RATIO     FLOW TIME
 TH 3   SB 1.02   039  196  003  0            1.00  50  0.75 0.924 0.75  15 45 75
 190TH  EB 1.02   062  000  149  0            1.00  50  0.75 0.924 0.75  15 45 75
 TH 3   NB 1.02   001  662  091  0            1.00  50  0.75 0.924 0.75  15 45 75
 190TH  WB 1.02   002  000  000  0            1.00  50  0.75 0.924 0.75  15 45 75

                                   MODE 2
 FLOW          veh     238    211    754      2                AVEDEL   s    6.6
 CAPACITY      veh    1214   1153   1180    756                LOS    SIG     A
 AVE DELAY    mins    0.06   0.06   0.14   0.08                LOS UNSIG      A
 MAX DELAY    mins    0.07   0.07   0.17   0.09
 AVE QUEUE     veh       0      0      2      0                VEHIC HRS    2.2
 MAX QUEUE     veh       0      0      2      0                COST     $    33
F1mode   F2direct  F3peak  CtrlF3rev  F4fact F6stats  F8econ  F9prnt  F10run Esc
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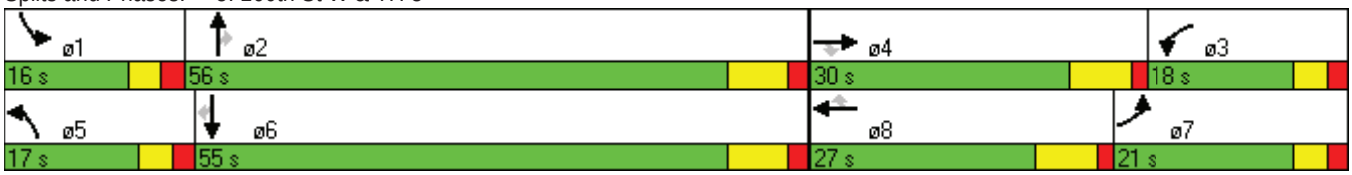
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	117	391	123	92	355	72	77	234	50	70	434	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			134			80			56			132
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		7135			4969			536			1032	
Travel Time (s)		88.5			61.6			6.6			12.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	434	137	102	394	80	86	260	56	78	482	214
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	14.0	27.0	27.0	14.0	27.0	27.0	14.0	27.5	27.5	14.0	27.5	27.5
Total Split (s)	21.0	30.0	30.0	18.0	27.0	27.0	17.0	56.0	56.0	16.0	55.0	55.0
Total Split (%)	17.5%	25.0%	25.0%	15.0%	22.5%	22.5%	14.2%	46.7%	46.7%	13.3%	45.8%	45.8%
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.5	7.5	5.0	7.5	7.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	12.1	25.0	25.0	11.3	20.8	20.8	9.9	32.0	32.0	9.4	31.6	31.6
Actuated g/C Ratio	0.13	0.26	0.26	0.12	0.22	0.22	0.10	0.33	0.33	0.10	0.33	0.33
v/c Ratio	0.59	0.47	0.27	0.49	0.52	0.20	0.47	0.42	0.10	0.45	0.79	0.35
Control Delay	54.7	37.7	9.0	52.9	40.0	10.8	54.9	27.9	6.6	55.3	40.5	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	37.7	9.0	52.9	40.0	10.8	54.9	27.9	6.6	55.3	40.5	12.0
LOS	D	D	A	D	D	B	D	C	A	E	D	B
Approach Delay		35.2			38.2			30.7			34.1	
Approach LOS		D			D			C			C	
Queue Length 50th (ft)	125	211	2	97	188	0	83	204	0	75	443	59
Queue Length 95th (ft)	256	350	90	214	328	70	188	331	42	175	675	154
Internal Link Dist (ft)		7055			4889			456			952	
Turn Bay Length (ft)	200		200	200		200	200		200	200		200
Base Capacity (vph)	305	977	534	252	764	404	229	975	855	210	955	876
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.44	0.26	0.40	0.52	0.20	0.38	0.27	0.07	0.37	0.50	0.24

Intersection Summary

Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 96.4	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 34.8	Intersection LOS: C
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: 160th St W & TH 3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	284	55	180	0	36	16	154	295	0	10	375	222
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		200	200		200
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	1649	0	0	1786	0	1770	3539	1863	1770	3539	1583
Flt Permitted	0.720						0.950			0.950		
Satd. Flow (perm)	1341	1649	0	0	1786	0	1770	3539	1863	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		196			17							241
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		3432			506			3700			1290	
Travel Time (s)		78.0			11.5			56.1			19.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	309	256	0	0	56	0	167	321	0	11	408	241
Turn Type	Perm			Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	21.0	21.0		21.0	21.0		12.0	26.0	26.0	12.0	26.0	26.0
Total Split (s)	39.0	39.0	0.0	39.0	39.0	0.0	21.0	39.0	39.0	12.0	30.0	30.0
Total Split (%)	43.3%	43.3%	0.0%	43.3%	43.3%	0.0%	23.3%	43.3%	43.3%	13.3%	33.3%	33.3%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	21.9	21.9			21.9		11.8	35.7		7.2	20.8	20.8
Actuated g/C Ratio	0.31	0.31			0.31		0.17	0.50		0.10	0.29	0.29
v/c Ratio	0.75	0.40			0.10		0.57	0.18		0.06	0.40	0.38
Control Delay	34.6	7.3			13.5		37.6	12.7		35.7	24.0	5.8
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	34.6	7.3			13.5		37.6	12.7		35.7	24.0	5.8
LOS	C	A			B		D	B		D	C	A
Approach Delay		22.2			13.5			21.2			17.5	
Approach LOS		C			B			C			B	
Queue Length 50th (ft)	190	29			19		108	56		7	120	0
Queue Length 95th (ft)	357	114			60		236	157		35	233	90
Internal Link Dist (ft)		3352			426			3620			1210	
Turn Bay Length (ft)	200						200			200		200
Base Capacity (vph)	645	895			868		407	1798		178	1220	704
Starvation Cap Reductn	0	0			0		0	0		0	0	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.48	0.29			0.06		0.41	0.18		0.06	0.33	0.34

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 71.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 19.9 Intersection LOS: B
Intersection Capacity Utilization 61.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 16: Elm St & TH 3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	7	102	16	7	10	74	309	10	11	574	117
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	46	7	107	17	7	11	78	325	11	12	604	123
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			5									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1123	1119	604	1171	1237	331	727			336		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1123	1119	604	1171	1237	331	727			336		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	96	78	86	95	99	91			99		
cM capacity (veh/h)	161	187	498	119	159	711	876			1223		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	161	35	78	336	616	123
Volume Left	46	17	78	0	12	0
Volume Right	107	11	0	11	0	123
cSH	494	172	876	1700	1223	1700
Volume to Capacity	0.33	0.20	0.09	0.20	0.01	0.07
Queue Length 95th (ft)	56	29	12	0	1	0
Control Delay (s)	21.8	31.2	9.5	0.0	0.3	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	21.8	31.2	1.8		0.2	
Approach LOS	C	D				

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	94	0	34	0	389	116	59	530	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	0	101	0	37	0	418	125	63	570	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1152	1240	570	1115	1115	418	570			543		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1152	1240	570	1115	1115	418	570			543		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	43	100	94	100			94		
cM capacity (veh/h)	157	164	521	176	195	635	1003			1026		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	138	0	418	125	63	570	0
Volume Left	0	101	0	0	0	63	0	0
Volume Right	0	37	0	0	125	0	0	0
cSH	1700	218	1700	1700	1700	1026	1700	1700
Volume to Capacity	0.00	0.63	0.00	0.25	0.07	0.06	0.34	0.00
Queue Length 95th (ft)	0	149	0	0	0	8	0	0
Control Delay (s)	0.0	46.0	0.0	0.0	0.0	8.7	0.0	0.0
Lane LOS	A	E				A		
Approach Delay (s)	0.0	46.0	0.0			0.9		
Approach LOS	A	E						

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

17: 195th St & Akin Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.1	1.0	0.6	0.5	0.9	0.1	0.2	0.6	0.1	0.2	0.9	0.2
Delay / Veh (s)	17.9	20.3	13.5	14.9	19.0	9.3	12.8	13.9	8.9	13.6	14.8	11.4

17: 195th St & Akin Rd Performance by movement

Movement	All
Total Delay (hr)	5.4
Delay / Veh (s)	15.1

Intersection: 17: 195th St & Akin Rd

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	210	115	49	48	116	52	67	97	84
Average Queue (ft)	86	68	24	24	48	25	30	57	26
95th Queue (ft)	161	100	46	42	83	43	57	91	54
Link Distance (ft)	2987	5893			812			843	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			100	100		100	100		100
Storage Blk Time (%)		1			1			0	0
Queuing Penalty (veh)		0			1			0	0

TH 3 & 190th Street 2011 PM Existing

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RODEL.EXE
  13:6:11                    TH 3 AND 190TH ST 2011 EX                          2
 E     (m)    4.30    4.30    4.30    4.30              TIME PERIOD      min    90
 L'    (m)   10.00   10.00   10.00   10.00              TIME SLICE       min    15
 V     (m)    3.65    3.65    3.65    3.65              RESULTS PERIOD   min 15 75
 RAD   (m)   20.00   20.00   20.00   20.00              TIME COST       $/hr 15.00
 PHI   (d)   25.00   25.00   25.00   25.00              FLOW PERIOD      min 15 75
 DIA   (m)   40.00   40.00   40.00   40.00              FLOW TYPE    pcu/veh   VEH
 GRAD SEP       0       0       0       0               FLOW PEAK   am/op/pm    PM

 LEG NAME  PCU  VEH TURNS (1st exit, 2nd..U)  FLOF  CL   FLOW RATIO      FLOW TIME
 TH 3   SB 1.02   138  571  005  0           1.00  50  0.75 0.996 0.75  15 45 75
 190TH  EB 1.02   147  001  051  0           1.00  50  0.75 0.996 0.75  15 45 75
 TH 3   NB 1.02   001  360  090  0           1.00  50  0.75 0.996 0.75  15 45 75
 190TH  WB 1.02   008  000  001  0           1.00  50  0.75 0.996_0.75  15 45 75

                                   MODE 2
 FLOW          veh     714     199     451       9                AVEDEL   s    5.9
 CAPACITY      veh    1214     940    1233     982                LOS    SIG     A
 AVE DELAY    mins    0.12    0.08    0.08    0.06                LOS UNSIG      A
 MAX DELAY    mins    0.15    0.10    0.09    0.07
 AVE QUEUE     veh       1       0       1       0                VEHIC HRS    2.2
 MAX QUEUE     veh       2       0       1       0                COST     $    34
F1mode   F2direct  F3peak  CtrlF3rev  F4fact F6stats  F8econ  F9prnt  F10run Esc
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Year 2031 No-Build

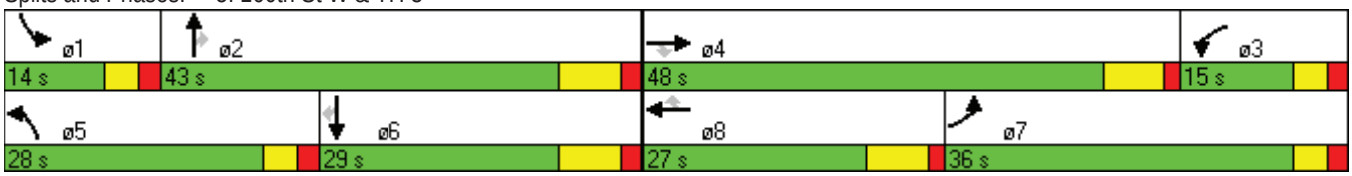
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	336	523	71	59	372	68	232	578	177	58	179	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71			76			149			106
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		7135			4969			536			1032	
Travel Time (s)		88.5			61.6			6.6			12.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	373	581	79	66	413	76	258	642	197	64	199	106
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	14.0	27.0	27.0	14.0	27.0	27.0	14.0	27.5	27.5	14.0	27.5	27.5
Total Split (s)	36.0	48.0	48.0	15.0	27.0	27.0	28.0	43.0	43.0	14.0	29.0	29.0
Total Split (%)	30.0%	40.0%	40.0%	12.5%	22.5%	22.5%	23.3%	35.8%	35.8%	11.7%	24.2%	24.2%
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.5	7.5	5.0	7.5	7.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	27.2	30.9	30.9	19.2	20.1	20.1	20.1	34.8	34.8	8.4	20.3	20.3
Actuated g/C Ratio	0.24	0.27	0.27	0.17	0.18	0.18	0.18	0.31	0.31	0.07	0.18	0.18
v/c Ratio	0.87	0.60	0.16	0.22	0.65	0.22	0.81	0.59	0.33	0.48	0.31	0.28
Control Delay	62.4	40.8	10.6	42.8	49.6	11.3	65.4	36.9	11.2	65.0	43.1	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	40.8	10.6	42.8	49.6	11.3	65.4	36.9	11.2	65.0	43.1	10.3
LOS	E	D	B	D	D	B	E	D	B	E	D	B
Approach Delay		46.3			43.6			38.9			37.5	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	427	350	8	66	251	0	299	358	43	76	113	0
Queue Length 95th (ft)	#673	426	68	141	344	69	#492	462	141	152	173	79
Internal Link Dist (ft)		7055			4889			456			952	
Turn Bay Length (ft)	200		200	200		200	200		200	200		200
Base Capacity (vph)	491	1322	636	314	634	346	365	1150	615	143	681	390
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.44	0.12	0.21	0.65	0.22	0.71	0.56	0.32	0.45	0.29	0.27

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 112.4
Natural Cycle: 95
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 42.1 Intersection LOS: D
Intersection Capacity Utilization 85.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: 160th St W & TH 3



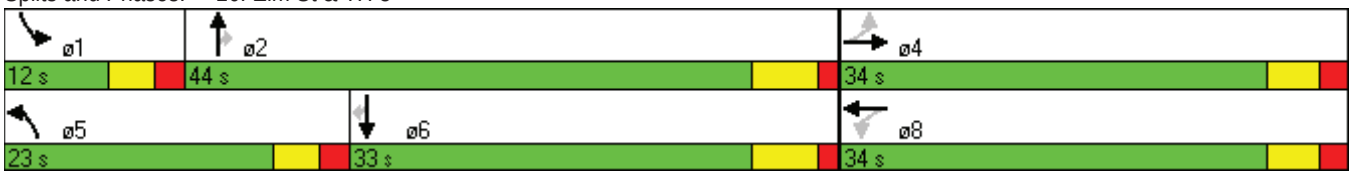
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	248	13	122	3	85	49	182	465	0	4	273	343
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		200	200		200
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	1611	0	0	1770	0	1770	3539	1863	1770	3539	1583
Flt Permitted	0.679				0.995		0.950			0.950		
Satd. Flow (perm)	1265	1611	0	0	1763	0	1770	3539	1863	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		128			33							361
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		3432			506			3700			1290	
Travel Time (s)		78.0			11.5			56.1			19.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	142	0	0	144	0	192	489	0	4	287	361
Turn Type	Perm			Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	21.0	21.0		21.0	21.0		12.0	26.0	26.0	12.0	26.0	26.0
Total Split (s)	34.0	34.0	0.0	34.0	34.0	0.0	23.0	44.0	44.0	12.0	33.0	33.0
Total Split (%)	37.8%	37.8%	0.0%	37.8%	37.8%	0.0%	25.6%	48.9%	48.9%	13.3%	36.7%	36.7%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	19.7	19.7			19.7		12.8	36.3		7.1	20.4	20.4
Actuated g/C Ratio	0.28	0.28			0.28		0.18	0.52		0.10	0.29	0.29
v/c Ratio	0.73	0.26			0.28		0.59	0.27		0.02	0.28	0.50
Control Delay	35.6	6.3			16.5		35.3	11.9		33.8	22.3	5.9
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	35.6	6.3			16.5		35.3	11.9		33.8	22.3	5.9
LOS	D	A			B		D	B		C	C	A
Approach Delay		25.3			16.5			18.5			13.3	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	159	7			57		121	84		3	79	0
Queue Length 95th (ft)	306	67			131		245	216		18	160	104
Internal Link Dist (ft)		3352			426			3620			1210	
Turn Bay Length (ft)	200						200			200		200
Base Capacity (vph)	527	746			754		466	1993		181	1397	843
Starvation Cap Reductn	0	0			0		0	0		0	0	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.50	0.19			0.19		0.41	0.25		0.02	0.21	0.43

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 69.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 18.0 Intersection LOS: B
Intersection Capacity Utilization 67.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 16: Elm St & TH 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	113	15	45	6	6	42	147	973	15	27	337	38
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	131	17	52	7	7	49	171	1131	17	31	392	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			5									
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1415	1945	196	1749	1981	574	436			1149		
vC1, stage 1 conf vol	455	455		1482	1482							
vC2, stage 2 conf vol	960	1491		267	499							
vCu, unblocked vol	1415	1945	196	1749	1981	574	436			1149		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	18	86	94	93	95	89	85			95		
cM capacity (veh/h)	161	121	812	107	145	462	1120			604		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	201	63	171	754	395	162	261	44
Volume Left	131	7	171	0	0	31	0	0
Volume Right	52	49	0	0	17	0	0	44
cSH	209	286	1120	1700	1700	604	1700	1700
Volume to Capacity	0.96	0.22	0.15	0.44	0.23	0.05	0.15	0.03
Queue Length 95th (ft)	329	33	22	0	0	7	0	0
Control Delay (s)	101.0	21.1	8.8	0.0	0.0	2.7	0.0	0.0
Lane LOS	F	C	A			A		
Approach Delay (s)	101.0	21.1	1.1			0.9		
Approach LOS	F	C						

Intersection Summary			
Average Delay	11.5		
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	172	0	112	0	664	106	21	452	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	181	0	118	0	699	112	22	476	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	987	1331	238	981	1219	349	476			811		
vC1, stage 1 conf vol	520	520		699	699							
vC2, stage 2 conf vol	467	811		282	520							
vCu, unblocked vol	987	1331	238	981	1219	349	476			811		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	51	100	82	100			97		
cM capacity (veh/h)	347	321	763	367	364	647	1083			811		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	0	299	0	349	349	112	22	238	238	0
Volume Left	0	181	0	0	0	0	22	0	0	0
Volume Right	0	118	0	0	0	112	0	0	0	0
cSH	1700	442	1700	1700	1700	1700	811	1700	1700	1700
Volume to Capacity	0.00	0.68	0.00	0.21	0.21	0.07	0.03	0.14	0.14	0.00
Queue Length 95th (ft)	0	196	0	0	0	0	3	0	0	0
Control Delay (s)	0.0	28.5	0.0	0.0	0.0	0.0	9.6	0.0	0.0	0.0
Lane LOS	A	D					A			
Approach Delay (s)	0.0	28.5	0.0				0.4			
Approach LOS	A	D								

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

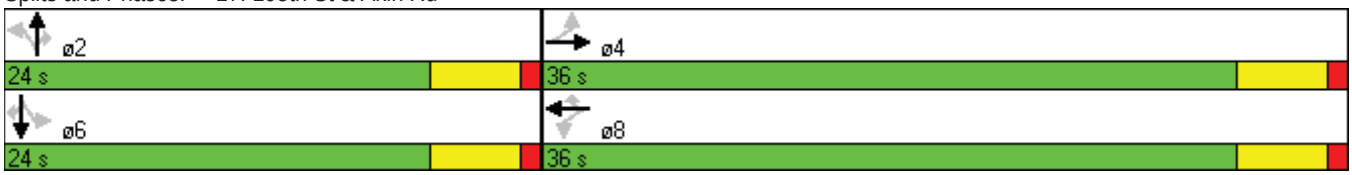
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	162	108	108	234	56	120	193	98	35	172	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	100		100	100		100
Storage Lanes	0		0	0		1	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	0	1762	0	0	1833	1583	1770	1863	1583	1770	1863	1583
Flt Permitted		0.961			0.803		0.626			0.612		
Satd. Flow (perm)	0	1699	0	0	1496	1583	1166	1863	1583	1140	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		74				68			120			82
Link Speed (mph)		40			50			45			45	
Link Distance (ft)		3038			5971			846			881	
Travel Time (s)		51.8			81.4			12.8			13.3	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	352	0	0	417	68	146	235	120	43	210	82
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	4	4		8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	21.0	21.0		21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	36.0	36.0	0.0	36.0	36.0	36.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (%)	60.0%	60.0%	0.0%	60.0%	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)		16.5			16.5	16.5	11.3	11.3	11.3	11.3	11.3	11.3
Actuated g/C Ratio		0.43			0.43	0.43	0.29	0.29	0.29	0.29	0.29	0.29
v/c Ratio		0.46			0.65	0.10	0.43	0.43	0.22	0.13	0.39	0.16
Control Delay		8.4			14.6	2.8	17.2	15.2	4.6	13.1	14.6	4.8
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		8.4			14.6	2.8	17.2	15.2	4.6	13.1	14.6	4.8
LOS		A			B	A	B	B	A	B	B	A
Approach Delay		8.4			12.9			13.2			12.0	
Approach LOS		A			B			B			B	
Queue Length 50th (ft)		52			89	0	35	57	0	9	50	0
Queue Length 95th (ft)		142			229	20	116	162	37	42	145	31
Internal Link Dist (ft)		2958			5891			766			801	
Turn Bay Length (ft)						100	100		100	100		100
Base Capacity (vph)		1415			1235	1319	623	994	901	608	994	883
Starvation Cap Reductn		0			0	0	0	0	0	0	0	0
Spillback Cap Reductn		0			0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.25			0.34	0.05	0.23	0.24	0.13	0.07	0.21	0.09

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 38.6
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 11.9 Intersection LOS: B
Intersection Capacity Utilization 67.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 17: 195th St & Akin Rd



TH 3 & 190th Street 2035 AM No-Build

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RODEL.EXE
15:6:11                    TH 3 AND 190TH ST 2035 NOBUILD                    5
E     (m)    8.00   4.30   8.00   4.30          TIME PERIOD      min     90
L'    (m)   10.00  10.00  10.00  10.00          TIME SLICE       min     15
V     (m)    7.30   3.65   7.30_  3.65          RESULTS PERIOD   min 15 75
RAD   (m)   20.00  20.00  20.00_ 20.00          TIME COST       $/hr 15.00
PHI   (d)   25.00  25.00  25.00  25.00          FLOW PERIOD      min 15 75
DIA   (m)   40.00  40.00  40.00  40.00          FLOW TYPE    pcu/veh   VEH
GRAD SEP       0      0      0      0           FLOW PEAK   am/op/pm    AM

LEG NAME  PCU  VEH TURNS (1st exit, 2nd..U)  FLOF  CL   FLOW RATIO     FLOW TIME
TH 3   SB 1.02   055  276  014  0            1.00  50  0.75 0.924 0.75  15 45 75
190TH  EB 1.02   089  007  209  0            1.00  50  0.75 0.924 0.75  15 45 75
TH 3   NB 1.02   007  932  130  0            1.00  50  0.75 0.924 0.75  15 45 75
190TH  WB 1.02   033  020  017  0            1.00  50  0.75 0.924 0.75  15 45 75

                                MODE 2
FLOW          veh     345    305   1069     70                AVEDEL   s   3.3
CAPACITY      veh    2247   1092   2197    547                LOS    SIG    A
AVE DELAY    mins    0.03   0.07   0.05   0.12                LOS UNSIG     A
MAX DELAY    mins    0.04   0.09   0.06   0.15
AVE QUEUE     veh       0      0      1      0                VEHIC HRS   1.6
MAX QUEUE     veh       0      0      1      0                COST     $   25
F1mode   F2direct   F3peak   CtrlF3rev   F4fact   F6stats   F8econ   F9prnt   F10run Esc
```

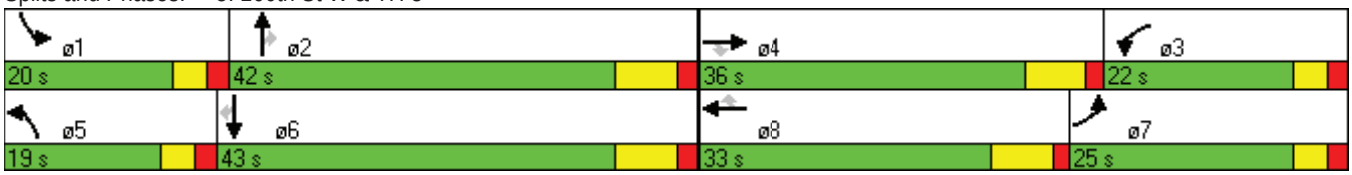
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	551	172	131	507	102	109	352	71	99	651	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			88			79			201
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		7135			4969			536			1032	
Travel Time (s)		88.5			61.6			6.6			12.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	612	191	146	563	113	121	391	79	110	723	300
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	14.0	27.0	27.0	14.0	27.0	27.0	14.0	27.5	27.5	14.0	27.5	27.5
Total Split (s)	25.0	36.0	36.0	22.0	33.0	33.0	19.0	42.0	42.0	20.0	43.0	43.0
Total Split (%)	20.8%	30.0%	30.0%	18.3%	27.5%	27.5%	15.8%	35.0%	35.0%	16.7%	35.8%	35.8%
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.5	7.5	5.0	7.5	7.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	15.5	24.6	24.6	14.0	23.2	23.2	11.6	28.4	28.4	11.5	28.3	28.3
Actuated g/C Ratio	0.15	0.24	0.24	0.14	0.22	0.22	0.11	0.27	0.27	0.11	0.27	0.27
v/c Ratio	0.69	0.73	0.40	0.61	0.71	0.27	0.61	0.40	0.16	0.56	0.75	0.52
Control Delay	57.8	43.4	13.9	56.3	44.5	14.2	60.6	33.0	8.0	57.9	40.5	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	43.4	13.9	56.3	44.5	14.2	60.6	33.0	8.0	57.9	40.5	14.8
LOS	E	D	B	E	D	B	E	C	A	E	D	B
Approach Delay		40.4			42.4			35.3			35.4	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	190	328	43	151	302	22	127	180	0	115	376	83
Queue Length 95th (ft)	339	474	153	285	448	104	248	278	59	226	529	228
Internal Link Dist (ft)		7055			4889			456			952	
Turn Bay Length (ft)	200		200	200		200	200		200	200		200
Base Capacity (vph)	349	1013	554	297	908	472	245	1205	591	262	1240	685
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.60	0.34	0.49	0.62	0.24	0.49	0.32	0.13	0.42	0.58	0.44

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 103.6
Natural Cycle: 85
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 38.4 Intersection LOS: D
Intersection Capacity Utilization 70.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: 160th St W & TH 3



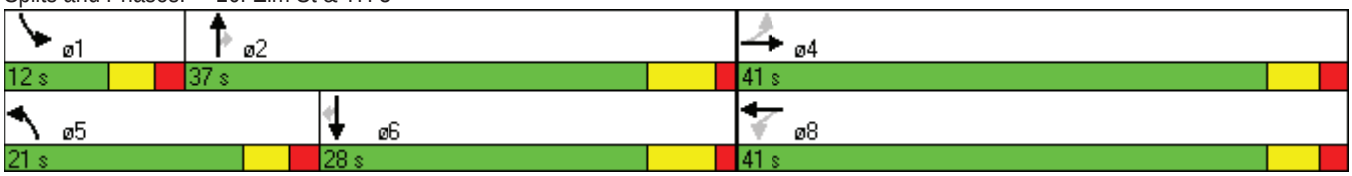
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	398	77	252	0	50	22	216	436	0	14	539	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		200	200		200
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	1649	0	0	1785	0	1770	3539	1863	1770	3539	1583
Flt Permitted	0.706						0.950			0.950		
Satd. Flow (perm)	1315	1649	0	0	1785	0	1770	3539	1863	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		215			24							338
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		3432			506			3700			1290	
Travel Time (s)		78.0			11.5			56.1			19.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	433	358	0	0	78	0	235	474	0	15	586	338
Turn Type	Perm			Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	21.0	21.0		21.0	21.0		12.0	26.0	26.0	12.0	26.0	26.0
Total Split (s)	41.0	41.0	0.0	41.0	41.0	0.0	21.0	37.0	37.0	12.0	28.0	28.0
Total Split (%)	45.6%	45.6%	0.0%	45.6%	45.6%	0.0%	23.3%	41.1%	41.1%	13.3%	31.1%	31.1%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	31.2	31.2			31.2		14.4	38.6		7.1	21.4	21.4
Actuated g/C Ratio	0.37	0.37			0.37		0.17	0.46		0.08	0.26	0.26
v/c Ratio	0.88	0.48			0.11		0.77	0.29		0.10	0.65	0.52
Control Delay	46.0	10.1			13.3		52.5	16.3		40.3	32.9	6.5
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	46.0	10.1			13.3		52.5	16.3		40.3	32.9	6.5
LOS	D	B			B		D	B		D	C	A
Approach Delay		29.8			13.3			28.3			23.5	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	348	84			30		205	131		13	254	0
Queue Length 95th (ft)	#621	200			75		#378	238		44	347	104
Internal Link Dist (ft)		3352			426			3620			1210	
Turn Bay Length (ft)	200						200			200		200
Base Capacity (vph)	565	831			781		343	1632		150	942	669
Starvation Cap Reductn	0	0			0		0	0		0	0	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.77	0.43			0.10		0.69	0.29		0.10	0.62	0.51

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 83.7
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 26.5 Intersection LOS: C
Intersection Capacity Utilization 71.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Elm St & TH 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	62	10	143	22	10	14	104	457	14	15	847	164
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	65	11	151	23	11	15	109	481	15	16	892	173
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			5									
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1403	1638	446	1190	1803	248	1064			496		
vC1, stage 1 conf vol	923	923		707	707							
vC2, stage 2 conf vol	479	715		483	1096							
vCu, unblocked vol	1403	1638	446	1190	1803	248	1064			496		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	96	73	89	93	98	83			99		
cM capacity (veh/h)	240	250	560	216	160	752	650			1064		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	226	48	109	321	175	313	594	173
Volume Left	65	23	109	0	0	16	0	0
Volume Right	151	15	0	0	15	0	0	173
cSH	721	252	650	1700	1700	1064	1700	1700
Volume to Capacity	0.31	0.19	0.17	0.19	0.10	0.01	0.35	0.10
Queue Length 95th (ft)	54	28	24	0	0	2	0	0
Control Delay (s)	18.1	22.7	11.7	0.0	0.0	0.6	0.0	0.0
Lane LOS	C	C	B			A		
Approach Delay (s)	18.1	22.7	2.1			0.2		
Approach LOS	C	C						

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	135	0	56	0	564	166	96	753	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	0	0	145	0	60	0	606	178	103	810	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1380	1801	405	1218	1623	303	810			785		
vC1, stage 1 conf vol	1016	1016		606	606							
vC2, stage 2 conf vol	363	785		611	1016							
vCu, unblocked vol	1380	1801	405	1218	1623	303	810			785		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	53	100	91	100			88		
cM capacity (veh/h)	206	208	595	312	244	693	812			829		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	0	205	0	303	303	178	103	405	405	0
Volume Left	0	145	0	0	0	0	103	0	0	0
Volume Right	0	60	0	0	0	178	0	0	0	0
cSH	1700	372	1700	1700	1700	1700	829	1700	1700	1700
Volume to Capacity	0.00	0.55	0.00	0.18	0.18	0.10	0.12	0.24	0.24	0.00
Queue Length 95th (ft)	0	128	0	0	0	0	17	0	0	0
Control Delay (s)	0.0	26.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0
Lane LOS	A	D					A			
Approach Delay (s)	0.0	26.0	0.0				1.1			
Approach LOS	A	D								

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

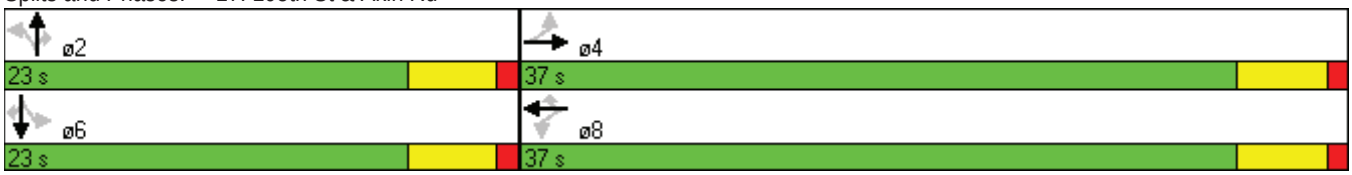
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	267	211	147	235	76	94	199	80	80	286	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	100		100	100		100
Storage Lanes	0		0	0		1	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	0	1753	0	0	1827	1583	1770	1863	1583	1770	1863	1583
Flt Permitted		0.928			0.613		0.431			0.599		
Satd. Flow (perm)	0	1635	0	0	1142	1583	803	1863	1583	1116	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		86				90			96			72
Link Speed (mph)		40			50			45			45	
Link Distance (ft)		3038			5971			846			881	
Travel Time (s)		51.8			81.4			12.8			13.3	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	634	0	0	460	92	113	240	96	96	345	83
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	4	4		8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	21.0	21.0		21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	37.0	37.0	0.0	37.0	37.0	37.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	61.7%	61.7%	0.0%	61.7%	61.7%	61.7%	38.3%	38.3%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)		24.0			24.0	24.0	13.8	13.8	13.8	13.8	13.8	13.8
Actuated g/C Ratio		0.49			0.49	0.49	0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio		0.74			0.81	0.11	0.49	0.45	0.18	0.30	0.65	0.17
Control Delay		14.8			24.6	2.4	25.1	18.9	5.3	18.5	23.2	6.7
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		14.8			24.6	2.4	25.1	18.9	5.3	18.5	23.2	6.7
LOS		B			C	A	C	B	A	B	C	A
Approach Delay		14.8			20.9			17.5			19.7	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)		176			159	1	44	93	0	35	143	4
Queue Length 95th (ft)		325			319	23	111	181	37	88	261	40
Internal Link Dist (ft)		2958			5891			766			801	
Turn Bay Length (ft)						100	100		100	100		100
Base Capacity (vph)		1165			796	1130	318	738	685	442	738	670
Starvation Cap Reductn		0			0	0	0	0	0	0	0	0
Spillback Cap Reductn		0			0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.54			0.58	0.08	0.36	0.33	0.14	0.22	0.47	0.12

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 48.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 18.1 Intersection LOS: B
Intersection Capacity Utilization 87.6% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 17: 195th St & Akin Rd



TH 3 & 190th Street 2035 PM No-Build

RODEL.EXE

15:6:11 TH 3 AND 190TH ST 2035 NOBUILD 6

E (m)	8.00	4.30	8.00	4.30	TIME PERIOD	min	90
L' (m)	10.00	10.00	10.00	10.00	TIME SLICE	min	15
V (m)	7.30	3.65	7.30_	3.65	RESULTS PERIOD	min	15 75
RAD (m)	20.00	20.00	20.00	20.00	TIME COST	$/hr	15.00
PHI (d)	25.00	25.00	25.00	25.00	FLOW PERIOD	min	15 75
DIA (m)	40.00	40.00	40.00	40.00	FLOW TYPE	pcu/veh	VEH
GRAD SEP	0	0	0	0	FLOW PEAK	am/op/pm	PM

LEG NAME	PCU	VEH TURNS (1st exit, 2nd..U)	FLOF	CL	FLOW RATIO	FLOW TIME
TH 3 SB	1.02	193 807 042 0	1.00	50	0.75 0.996 0.75	15 45 75
190TH EB	1.02	211 024 071 0	1.00	50	0.75 0.996 0.75	15 45 75
TH 3 NB	1.02	020 508 128 0	1.00	50	0.75 0.996 0.75	15 45 75
190TH WB	1.02	031 013 012 0	1.00	50	0.75 0.996 0.75	15 45 75

MODE 2

FLOW	veh	1042	306	656	56	AVEDEL s	3.4
CAPACITY	veh	2258	779	2270	866	LOS SIG	A
AVE DELAY	mins	0.05	0.13	0.04	0.07	LOS UNSIG	A
MAX DELAY	mins	0.06	0.16	0.04	0.09		
AVE QUEUE	veh	1	1	0	0	VEHIC HRS	2.0
MAX QUEUE	veh	1	1	0	0	COST $	29

F1mode F2direct F3peak CtrlF3rev F4fact F6stats F8econ F9prnt F10run Esc

Year 2031 Full Build

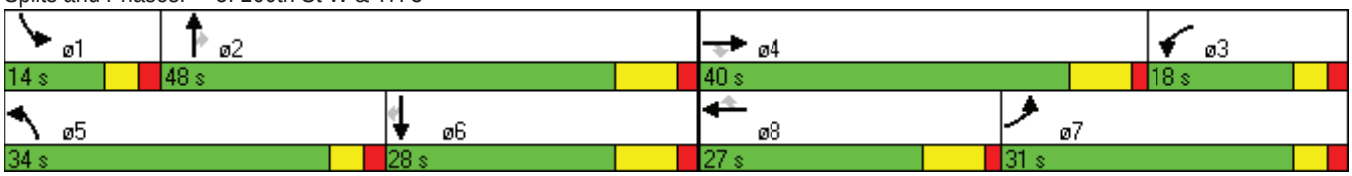
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	336	523	145	93	372	68	372	845	240	58	320	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131			76			147			106
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		7135			4969			536			1032	
Travel Time (s)		88.5			61.6			6.6			12.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	373	581	161	103	413	76	413	939	267	64	356	106
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	14.0	27.0	27.0	14.0	27.0	27.0	14.0	27.5	27.5	14.0	27.5	27.5
Total Split (s)	31.0	40.0	40.0	18.0	27.0	27.0	34.0	48.0	48.0	14.0	28.0	28.0
Total Split (%)	25.8%	33.3%	33.3%	15.0%	22.5%	22.5%	28.3%	40.0%	40.0%	11.7%	23.3%	23.3%
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.5	7.5	5.0	7.5	7.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	26.0	26.1	26.1	19.9	20.0	20.0	29.0	43.1	43.1	8.4	20.2	20.2
Actuated g/C Ratio	0.22	0.22	0.22	0.17	0.17	0.17	0.24	0.36	0.36	0.07	0.17	0.17
v/c Ratio	0.97	0.75	0.36	0.35	0.70	0.23	0.96	0.74	0.40	0.51	0.60	0.30
Control Delay	85.8	50.0	11.7	50.2	54.1	11.4	80.7	38.4	15.2	68.3	50.6	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.8	50.0	11.7	50.2	54.1	11.4	80.7	38.4	15.2	68.3	50.6	10.4
LOS	F	D	B	D	D	B	F	D	B	E	D	B
Approach Delay		56.4			47.9			45.4			44.7	
Approach LOS		E			D			D			D	
Queue Length 50th (ft)	459	356	30	113	255	0	506	550	106	77	216	0
Queue Length 95th (ft)	#774	428	115	218	347	70	#831	680	229	153	298	80
Internal Link Dist (ft)		7055			4889			456			952	
Turn Bay Length (ft)	200		200	200		200	200		200	200		200
Base Capacity (vph)	385	976	531	294	591	328	429	1278	666	133	606	359
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.60	0.30	0.35	0.70	0.23	0.96	0.73	0.40	0.48	0.59	0.30

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 119.7
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 48.9 Intersection LOS: D
Intersection Capacity Utilization 93.0% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: 160th St W & TH 3



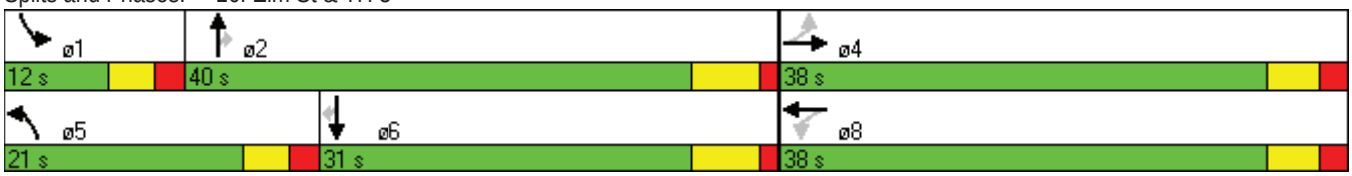
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	315	13	122	3	85	49	182	552	0	4	438	470
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		200	200		200
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	1611	0	0	1770	0	1770	3539	1863	1770	3539	1583
Flt Permitted	0.677				0.995		0.950			0.950		
Satd. Flow (perm)	1261	1611	0	0	1763	0	1770	3539	1863	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		128			35							495
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		3432			506			3700			1290	
Travel Time (s)		78.0			11.5			56.1			19.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	332	142	0	0	144	0	192	581	0	4	461	495
Turn Type	Perm			Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	21.0	21.0		21.0	21.0		12.0	26.0	26.0	12.0	26.0	26.0
Total Split (s)	38.0	38.0	0.0	38.0	38.0	0.0	21.0	40.0	40.0	12.0	31.0	31.0
Total Split (%)	42.2%	42.2%	0.0%	42.2%	42.2%	0.0%	23.3%	44.4%	44.4%	13.3%	34.4%	34.4%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	24.7	24.7			24.7		12.8	37.4		7.2	21.6	21.6
Actuated g/C Ratio	0.33	0.33			0.33		0.17	0.49		0.09	0.28	0.28
v/c Ratio	0.81	0.23			0.24		0.64	0.33		0.02	0.46	0.62
Control Delay	40.6	5.8			15.5		42.0	14.3		37.5	26.0	6.4
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	40.6	5.8			15.5		42.0	14.3		37.5	26.0	6.4
LOS	D	A			B		D	B		D	C	A
Approach Delay		30.2			15.5			21.2			15.9	
Approach LOS		C			B			C			B	
Queue Length 50th (ft)	222	7			57		136	130		3	156	0
Queue Length 95th (ft)	#463	68			135		275	277		20	257	120
Internal Link Dist (ft)		3352			426			3620			1210	
Turn Bay Length (ft)	200						200			200		200
Base Capacity (vph)	553	778			793		382	1757		167	1194	862
Starvation Cap Reductn	0	0			0		0	0		0	0	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.60	0.18			0.18		0.50	0.33		0.02	0.39	0.57

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 75.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 20.5 Intersection LOS: C
Intersection Capacity Utilization 70.9% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Elm St & TH 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	113	15	92	12	6	42	236	1443	28	27	585	38
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	131	17	107	14	7	49	274	1678	33	31	680	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			5									
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2183	3002	340	2655	3030	855	724			1710		
vC1, stage 1 conf vol	743	743		2243	2243							
vC2, stage 2 conf vol	1440	2259		412	787							
vCu, unblocked vol	2183	3002	340	2655	3030	855	724			1710		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	14	84	50	84	84	69			91		
cM capacity (veh/h)	37	20	656	28	45	301	874			367		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	256	70	274	1119	592	258	453	44
Volume Left	131	14	274	0	0	31	0	0
Volume Right	107	49	0	0	33	0	0	44
cSH	56	86	874	1700	1700	367	1700	1700
Volume to Capacity	4.54	0.82	0.31	0.66	0.35	0.09	0.27	0.03
Queue Length 95th (ft)	Err	169	54	0	0	11	0	0
Control Delay (s)	Err	136.5	11.0	0.0	0.0	3.3	0.0	0.0
Lane LOS	F	F	B			A		
Approach Delay (s)	Err	136.5	1.5			1.1		
Approach LOS	F	F						

Intersection Summary			
Average Delay	838.6		
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	172	0	125	0	819	106	46	745	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	181	0	132	0	862	112	48	784	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1444	1855	392	1351	1743	431	784			974		
vC1, stage 1 conf vol	881	881		862	862							
vC2, stage 2 conf vol	563	974		489	881							
vCu, unblocked vol	1444	1855	392	1351	1743	431	784			974		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	34	100	77	100			93		
cM capacity (veh/h)	218	220	607	275	255	572	830			704		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	0	313	0	431	431	112	48	392	392	0
Volume Left	0	181	0	0	0	0	48	0	0	0
Volume Right	0	132	0	0	0	112	0	0	0	0
cSH	1700	352	1700	1700	1700	1700	704	1700	1700	1700
Volume to Capacity	0.00	0.89	0.00	0.25	0.25	0.07	0.07	0.23	0.23	0.00
Queue Length 95th (ft)	0	346	0	0	0	0	9	0	0	0
Control Delay (s)	0.0	58.8	0.0	0.0	0.0	0.0	10.5	0.0	0.0	0.0
Lane LOS	A	F					B			
Approach Delay (s)	0.0	58.8	0.0				0.6			
Approach LOS	A	F								

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	143	175	92	1564	614	76
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	159	194	102	1738	682	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1756	341	767			
vC1, stage 1 conf vol	682					
vC2, stage 2 conf vol	1073					
vCu, unblocked vol	1756	341	767			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	29	70	88			
cM capacity (veh/h)	224	655	843			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	159	194	102	869	869	341	341	84
Volume Left	159	0	102	0	0	0	0	0
Volume Right	0	194	0	0	0	0	0	84
cSH	224	655	843	1700	1700	1700	1700	1700
Volume to Capacity	0.71	0.30	0.12	0.51	0.51	0.20	0.20	0.05
Queue Length 95th (ft)	186	50	16	0	0	0	0	0
Control Delay (s)	52.5	12.8	9.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B	A					
Approach Delay (s)	30.7		0.5			0.0		
Approach LOS	D							

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	57	70	37	1600	759	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	63	78	41	1778	843	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1814	422	877			
vC1, stage 1 conf vol	843					
vC2, stage 2 conf vol	971					
vCu, unblocked vol	1814	422	877			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	74	87	95			
cM capacity (veh/h)	243	581	766			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	63	78	41	889	889	422	422	33
Volume Left	63	0	41	0	0	0	0	0
Volume Right	0	78	0	0	0	0	0	33
cSH	243	581	766	1700	1700	1700	1700	1700
Volume to Capacity	0.26	0.13	0.05	0.52	0.52	0.25	0.25	0.02
Queue Length 95th (ft)	41	18	7	0	0	0	0	0
Control Delay (s)	25.0	12.2	10.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	B	A					
Approach Delay (s)	17.9		0.2			0.0		
Approach LOS	C							

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	66	90	46	1608	736	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	73	100	51	1787	818	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1813	409	873			
vC1, stage 1 conf vol	818					
vC2, stage 2 conf vol	996					
vCu, unblocked vol	1813	409	873			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	83	93			
cM capacity (veh/h)	239	592	768			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	73	100	51	893	893	409	409	56
Volume Left	73	0	51	0	0	0	0	0
Volume Right	0	100	0	0	0	0	0	56
cSH	239	592	768	1700	1700	1700	1700	1700
Volume to Capacity	0.31	0.17	0.07	0.53	0.53	0.24	0.24	0.03
Queue Length 95th (ft)	50	24	9	0	0	0	0	0
Control Delay (s)	26.6	12.3	10.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	D	B	B					
Approach Delay (s)	18.4		0.3			0.0		
Approach LOS	C							

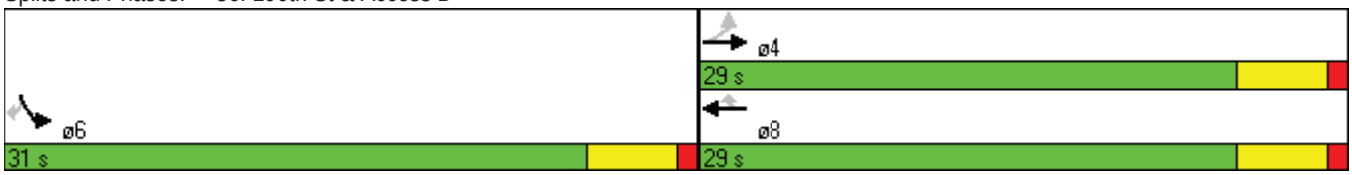
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	110	431	380	255	454	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			100	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100			100	100	100
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.405				0.950	
Satd. Flow (perm)	754	1863	1863	1583	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				235		234
Link Speed (mph)		55	55		30	
Link Distance (ft)		1337	1296		574	
Travel Time (s)		16.6	16.1		13.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	479	422	283	504	234
Turn Type	Perm			Perm		Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Detector Phase	4	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	29.0	29.0	29.0	29.0	31.0	31.0
Total Split (%)	48.3%	48.3%	48.3%	48.3%	51.7%	51.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	None	Min	Min
Act Effct Green (s)	17.2	17.2	17.2	17.2	18.4	18.4
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.40	0.40
v/c Ratio	0.44	0.69	0.61	0.39	0.72	0.30
Control Delay	18.0	19.2	17.0	4.9	19.1	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	19.2	17.0	4.9	19.1	3.0
LOS	B	B	B	A	B	A
Approach Delay		19.0	12.1		14.0	
Approach LOS		B	B		B	
Queue Length 50th (ft)	38	167	141	13	172	0
Queue Length 95th (ft)	116	359	307	82	370	53
Internal Link Dist (ft)		1257	1216		494	
Turn Bay Length (ft)	100			100		
Base Capacity (vph)	420	1037	1037	986	1067	1048
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.46	0.41	0.29	0.47	0.22

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 46.3	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 14.8	Intersection LOS: B
Intersection Capacity Utilization 63.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 36: 190th St & Access D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	486	760	24	44	19
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	540	844	27	49	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	871				1407	844
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	871				1407	844
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				68	94
cM capacity (veh/h)	774				151	363

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	11	540	844	27	49	21
Volume Left	11	0	0	0	49	0
Volume Right	0	0	0	27	0	21
cSH	774	1700	1700	1700	151	363
Volume to Capacity	0.01	0.32	0.50	0.02	0.32	0.06
Queue Length 95th (ft)	2	0	0	0	52	7
Control Delay (s)	9.7	0.0	0.0	0.0	39.8	15.5
Lane LOS	A				E	C
Approach Delay (s)	0.2		0.0		32.5	
Approach LOS					D	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	262	108	171	425	183	120	193	132	102	172	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	100		100	100		100
Storage Lanes	0		0	0		1	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	0	1788	0	0	1837	1583	1770	1863	1583	1770	1863	1583
Flt Permitted		0.959			0.745		0.549			0.500		
Satd. Flow (perm)	0	1718	0	0	1388	1583	1023	1863	1583	931	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43				121			127			72
Link Speed (mph)		40			50			45			45	
Link Distance (ft)		3038			2086			846			881	
Travel Time (s)		51.8			28.4			12.8			13.3	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	474	0	0	727	223	146	235	161	124	210	82
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	4	4		8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	21.0	21.0		21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	63.0	63.0	0.0	63.0	63.0	63.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (%)	70.0%	70.0%	0.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)		42.8			42.8	42.8	16.0	16.0	16.0	16.0	16.0	16.0
Actuated g/C Ratio		0.61			0.61	0.61	0.23	0.23	0.23	0.23	0.23	0.23
v/c Ratio		0.44			0.85	0.22	0.62	0.55	0.35	0.58	0.49	0.20
Control Delay		8.0			23.1	3.6	40.9	32.1	11.1	39.9	30.8	10.0
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		8.0			23.1	3.6	40.9	32.1	11.1	39.9	30.8	10.0
LOS		A			C	A	D	C	B	D	C	B
Approach Delay		8.0			18.5			28.2			29.4	
Approach LOS		A			B			C			C	
Queue Length 50th (ft)		135			358	26	95	151	20	80	133	6
Queue Length 95th (ft)		227			592	62	196	269	84	172	243	52
Internal Link Dist (ft)		2958			2006			766			801	
Turn Bay Length (ft)						100	100		100	100		100
Base Capacity (vph)		1409			1132	1313	355	647	633	324	647	596
Starvation Cap Reductn		0			0	0	0	0	0	0	0	0
Spillback Cap Reductn		0			0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.34			0.64	0.17	0.41	0.36	0.25	0.38	0.32	0.14

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 69.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 20.5 Intersection LOS: C
Intersection Capacity Utilization 85.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 17: 195th St & Akin Rd

TH 3 & 190th Street 2035 AM Full Build

RODEL.EXE

15:6:11 TH 3 AND 190TH ST 2035 BUILD 7

E,	(m)	8.00	4.30	8.00	4.30	TIME PERIOD	min 90
L,	(m)	10.00	10.00	10.00	10.00	TIME SLICE	min 15
V	(m)	7.30	3.65	7.30	3.65	RESULTS PERIOD	min 15 75
RAD	(m)	20.00	20.00	20.00	20.00	TIME COST	$/hr 15.00
PHI	(d)	25.00	25.00	25.00	25.00	FLOW PERIOD	min 15 75
DIA	(m)	40.00	40.00	40.00	40.00	FLOW TYPE	pcu/veh VEH
GRAD SEP		0	0	0	0	FLOW PEAK	am/op/pm AM

LEG NAME	PCU	VEH TURNS (1st exit, 2nd..U)	FLOF	CL	FLOW RATIO	FLOW TIME
TH 3 SB	1.02	393 419 014 0	1.00	50	0.75 0.924 0.75	15 45 75
190TH EB	1.02	264 007 614 0	1.00	50	0.75 0.924 0.75	15 45 75
TH 3 NB	1.02	007 1007 223_ 0	1.00	50	0.75 0.924 0.75	15 45 75
190TH WB	1.02	033 020 017 0	1.00	50	0.75 0.924 0.75	15 45 75

MODE 2

FLOW	veh	826	885	1237	70
CAPACITY	veh	2173	1011	1877	224
AVE DELAY	mins	0.04	0.47	0.09	0.42
MAX DELAY	mins	0.05	0.73	0.12	0.64
AVE QUEUE	veh	1	7	2	1
MAX QUEUE	veh	1	11	2	1

AVEDEL s	11.8
LOS SIG	B
LOS UNSIG	B
VEHIC HRS	9.9
COST $	148

F1mode F2direct F3peak CtrlF3rev F4fact F6stats F8econ F9prnt F10run Esc

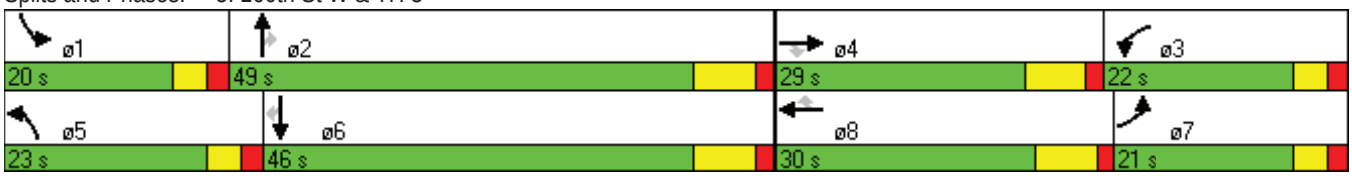
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	551	322	199	507	102	216	556	120	99	937	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		200	200		200
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			245			85			113			145
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		7135			4969			536			1032	
Travel Time (s)		88.5			61.6			6.6			12.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	612	358	221	563	113	240	618	133	110	1041	300
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	14.0	27.0	27.0	14.0	27.0	27.0	14.0	27.5	27.5	14.0	27.5	27.5
Total Split (s)	21.0	29.0	29.0	22.0	30.0	30.0	23.0	49.0	49.0	20.0	46.0	46.0
Total Split (%)	17.5%	24.2%	24.2%	18.3%	25.0%	25.0%	19.2%	40.8%	40.8%	16.7%	38.3%	38.3%
Yellow Time (s)	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5	3.0	5.5	5.5
All-Red Time (s)	2.0	1.5	1.5	2.0	1.5	1.5	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.5	7.5	5.0	7.5	7.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	16.3	22.0	22.0	16.5	22.2	22.2	17.6	43.0	43.0	12.1	37.5	37.5
Actuated g/C Ratio	0.14	0.19	0.19	0.14	0.19	0.19	0.15	0.36	0.36	0.10	0.32	0.32
v/c Ratio	0.75	0.93	0.72	0.89	0.85	0.31	0.91	0.48	0.21	0.61	0.93	0.50
Control Delay	69.1	69.1	24.1	86.0	59.3	16.1	86.5	31.0	7.8	65.1	53.8	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	69.1	24.1	86.0	59.3	16.1	86.5	31.0	7.8	65.1	53.8	19.5
LOS	E	E	C	F	E	B	F	C	A	E	D	B
Approach Delay		55.1			60.4			41.3			47.5	
Approach LOS		E			E			D			D	
Queue Length 50th (ft)	221	398	129	272	356	29	296	307	16	132	651	149
Queue Length 95th (ft)	#402	#580	312	#502	#488	112	#540	408	86	226	#856	287
Internal Link Dist (ft)		7055			4889			456			952	
Turn Bay Length (ft)	200		200	200		200	200		200	200		200
Base Capacity (vph)	244	660	494	255	689	377	270	1287	648	225	1154	614
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.93	0.72	0.87	0.82	0.30	0.89	0.48	0.21	0.49	0.90	0.49

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 118.1
Natural Cycle: 95
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 50.7 Intersection LOS: D
Intersection Capacity Utilization 86.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: 160th St W & TH 3



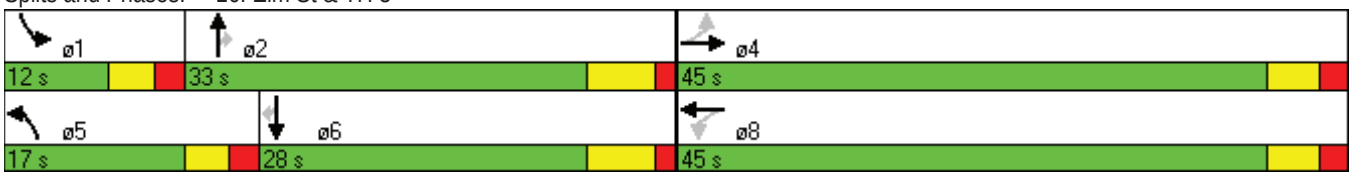
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	534	77	252	0	50	22	216	613	0	14	666	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		200	200		200
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	1770	1649	0	0	1786	0	1770	3539	1863	1770	3539	1583
Flt Permitted	0.708						0.950			0.950		
Satd. Flow (perm)	1319	1649	0	0	1786	0	1770	3539	1863	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		233			23							369
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		3432			506			3700			1290	
Travel Time (s)		78.0			11.5			56.1			19.5	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	562	346	0	0	76	0	227	645	0	15	701	429
Turn Type	Perm			Perm			Prot		Perm	Prot		Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Detector Phase	4	4		8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	20.0	20.0	7.0	20.0	20.0
Minimum Split (s)	21.0	21.0		21.0	21.0		12.0	26.0	26.0	12.0	26.0	26.0
Total Split (s)	45.0	45.0	0.0	45.0	45.0	0.0	17.0	33.0	33.0	12.0	28.0	28.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	18.9%	36.7%	36.7%	13.3%	31.1%	31.1%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	4.0	5.5	5.5	4.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	None	None	None	None	None
Act Effct Green (s)	39.2	39.2			39.2		12.0	36.2		7.0	21.6	21.6
Actuated g/C Ratio	0.44	0.44			0.44		0.13	0.41		0.08	0.24	0.24
v/c Ratio	0.97	0.41			0.10		0.95	0.45		0.11	0.82	0.65
Control Delay	57.5	7.2			11.4		88.8	21.5		40.6	41.3	10.7
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	57.5	7.2			11.4		88.8	21.5		40.6	41.3	10.7
LOS	E	A			B		F	C		D	D	B
Approach Delay		38.3			11.4			39.0			29.8	
Approach LOS		D			B			D			C	
Queue Length 50th (ft)	484	60			27		208	207		13	316	43
Queue Length 95th (ft)	#839	155			68		#436	354		44	#432	191
Internal Link Dist (ft)		3352			426			3620			1210	
Turn Bay Length (ft)	200						200			200		200
Base Capacity (vph)	584	859			803		238	1435		139	872	668
Starvation Cap Reductn	0	0			0		0	0		0	0	0
Spillback Cap Reductn	0	0			0		0	0		0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0		0	0		0	0	0
Reduced v/c Ratio	0.96	0.40			0.09		0.95	0.45		0.11	0.80	0.64

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 89.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 34.6 Intersection LOS: C
Intersection Capacity Utilization 80.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Elm St & TH 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	62	10	238	36	10	14	172	817	24	15	1351	164
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	72	12	277	42	12	16	200	950	28	17	1571	191
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			5									
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2503	2984	785	2190	3160	489	1762			978		
vC1, stage 1 conf vol	1606	1606		1364	1364							
vC2, stage 2 conf vol	897	1378		826	1797							
vCu, unblocked vol	2503	2984	785	2190	3160	489	1762			978		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	82	17	0	0	97	43			98		
cM capacity (veh/h)	64	63	335	2	4	525	351			701		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	360	70	200	633	345	541	1047	191
Volume Left	72	42	200	0	0	17	0	0
Volume Right	277	16	0	0	28	0	0	191
cSH	229	3	351	1700	1700	701	1700	1700
Volume to Capacity	1.58	22.83	0.57	0.37	0.20	0.02	0.62	0.11
Queue Length 95th (ft)	900	Err	135	0	0	3	0	0
Control Delay (s)	317.8	Err	28.1	0.0	0.0	0.7	0.0	0.0
Lane LOS	F	F	D			A		
Approach Delay (s)	317.8	Err	4.8			0.2		
Approach LOS	F	F						

Intersection Summary			
Average Delay	241.5		
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	135	0	83	0	877	166	115	977	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	0	142	0	87	0	923	175	121	1028	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1819	2368	514	1679	2194	462	1028			1098		
vC1, stage 1 conf vol	1271	1271		923	923							
vC2, stage 2 conf vol	549	1098		756	1271							
vCu, unblocked vol	1819	2368	514	1679	2194	462	1028			1098		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	32	100	84	100			81		
cM capacity (veh/h)	128	124	505	208	165	547	671			631		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4
Volume Total	0	229	0	462	462	175	121	514	514	0
Volume Left	0	142	0	0	0	0	121	0	0	0
Volume Right	0	87	0	0	0	175	0	0	0	0
cSH	1700	272	1700	1700	1700	1700	631	1700	1700	1700
Volume to Capacity	0.00	0.84	0.00	0.27	0.27	0.10	0.19	0.30	0.30	0.00
Queue Length 95th (ft)	0	279	0	0	0	0	28	0	0	0
Control Delay (s)	0.0	62.1	0.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0
Lane LOS	A	F					B			
Approach Delay (s)	0.0	62.1	0.0				1.3			
Approach LOS	A	F								

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	76	124	107	1083	1487	135
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	84	138	119	1203	1652	150
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2492	826	1802			
vC1, stage 1 conf vol	1652					
vC2, stage 2 conf vol	839					
vCu, unblocked vol	2492	826	1802			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	29	56	65			
cM capacity (veh/h)	119	315	338			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	84	138	119	602	602	826	826	150
Volume Left	84	0	119	0	0	0	0	0
Volume Right	0	138	0	0	0	0	0	150
cSH	119	315	338	1700	1700	1700	1700	1700
Volume to Capacity	0.71	0.44	0.35	0.35	0.35	0.49	0.49	0.09
Queue Length 95th (ft)	156	85	62	0	0	0	0	0
Control Delay (s)	88.7	25.0	21.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	D	C					
Approach Delay (s)	49.2		1.9			0.0		
Approach LOS	E							

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	110	134	187	904	1465	153
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	122	149	208	1004	1628	170
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2546	814	1798			
vC1, stage 1 conf vol	1628					
vC2, stage 2 conf vol	918					
vCu, unblocked vol	2546	814	1798			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	54	39			
cM capacity (veh/h)	94	321	339			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	122	149	208	502	502	814	814	170
Volume Left	122	0	208	0	0	0	0	0
Volume Right	0	149	0	0	0	0	0	170
cSH	94	321	339	1700	1700	1700	1700	1700
Volume to Capacity	1.30	0.46	0.61	0.30	0.30	0.48	0.48	0.10
Queue Length 95th (ft)	350	94	154	0	0	0	0	0
Control Delay (s)	274.0	25.5	31.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	D	D					
Approach Delay (s)	137.6		5.3			0.0		
Approach LOS	F							

Intersection Summary			
Average Delay	13.3		
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	44	54	75	1048	1538	61
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	60	83	1164	1709	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2458	854	1777			
vC1, stage 1 conf vol	1709					
vC2, stage 2 conf vol	749					
vCu, unblocked vol	2458	854	1777			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	59	80	76			
cM capacity (veh/h)	119	302	346			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	60	83	582	582	854	854	68
Volume Left	49	0	83	0	0	0	0	0
Volume Right	0	60	0	0	0	0	0	68
cSH	119	302	346	1700	1700	1700	1700	1700
Volume to Capacity	0.41	0.20	0.24	0.34	0.34	0.50	0.50	0.04
Queue Length 95th (ft)	70	29	37	0	0	0	0	0
Control Delay (s)	55.2	19.9	18.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	C	C					
Approach Delay (s)	35.7		1.2			0.0		
Approach LOS	E							

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	20	815	735	48	34	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	906	817	53	38	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	870				1767	817
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	870				1767	817
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				58	96
cM capacity (veh/h)	775				89	377

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	22	906	817	53	38	17
Volume Left	22	0	0	0	38	0
Volume Right	0	0	0	53	0	17
cSH	775	1700	1700	1700	89	377
Volume to Capacity	0.03	0.53	0.48	0.03	0.42	0.04
Queue Length 95th (ft)	4	0	0	0	69	6
Control Delay (s)	9.8	0.0	0.0	0.0	72.0	15.0
Lane LOS	A				F	C
Approach Delay (s)	0.2		0.0		54.5	
Approach LOS					F	

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

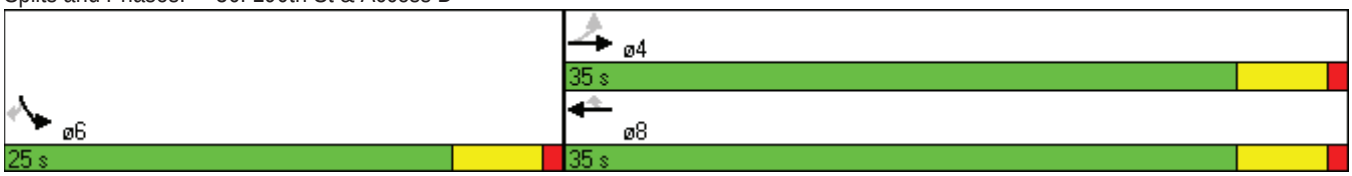
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	236	493	439	551	371	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			100	0	0
Storage Lanes	1			1	1	1
Taper Length (ft)	100			100	100	100
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.387				0.950	
Satd. Flow (perm)	721	1863	1863	1583	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				527		240
Link Speed (mph)		55	55		30	
Link Distance (ft)		1337	1296		574	
Travel Time (s)		16.6	16.1		13.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	262	548	488	612	412	240
Turn Type	Perm			Perm		Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Detector Phase	4	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	35.0	35.0	35.0	35.0	25.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	None	None	Min	Min
Act Effct Green (s)	22.8	22.8	22.8	22.8	15.9	15.9
Actuated g/C Ratio	0.46	0.46	0.46	0.46	0.32	0.32
v/c Ratio	0.79	0.64	0.57	0.60	0.72	0.36
Control Delay	31.8	14.3	12.9	4.7	24.9	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	14.3	12.9	4.7	24.9	4.2
LOS	C	B	B	A	C	A
Approach Delay		20.0	8.3		17.3	
Approach LOS		B	A		B	
Queue Length 50th (ft)	101	191	162	22	187	0
Queue Length 95th (ft)	#300	344	294	101	#360	64
Internal Link Dist (ft)		1257	1216		494	
Turn Bay Length (ft)	100			100		
Base Capacity (vph)	470	1214	1214	1215	770	824
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.45	0.40	0.50	0.54	0.29

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 49.4
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 14.3 Intersection LOS: B
Intersection Capacity Utilization 69.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 36: 190th St & Access D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	472	211	196	381	173	94	199	148	216	286	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		100	100		100	100		100
Storage Lanes	0		0	0		1	1		1	1		1
Taper Length (ft)	100		100	100		100	100		100	100		100
Satd. Flow (prot)	0	1785	0	0	1831	1583	1770	1863	1583	1770	1863	1583
Flt Permitted		0.869			0.513		0.302			0.474		
Satd. Flow (perm)	0	1556	0	0	956	1583	563	1863	1583	883	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43				111			141			46
Link Speed (mph)		40			50			45			45	
Link Distance (ft)		3038			2086			846			881	
Travel Time (s)		51.8			28.4			12.8			13.3	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	892	0	0	704	211	115	243	180	263	349	84
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		6
Detector Phase	4	4		8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	21.0	21.0		21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	61.0	61.0	0.0	61.0	61.0	61.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	67.8%	67.8%	0.0%	67.8%	67.8%	67.8%	32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Act Effct Green (s)		56.0			56.0	56.0	24.0	24.0	24.0	24.0	24.0	24.0
Actuated g/C Ratio		0.62			0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
v/c Ratio		0.91			1.18	0.21	0.77	0.49	0.34	1.12	0.70	0.18
Control Delay		29.1			119.4	4.0	64.5	31.8	9.7	128.3	38.6	14.6
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		29.1			119.4	4.0	64.5	31.8	9.7	128.3	38.6	14.6
LOS		C			F	A	E	C	A	F	D	B
Approach Delay		29.1			92.8			31.4			69.6	
Approach LOS		C			F			C			E	
Queue Length 50th (ft)		613			~777	33	96	186	27	~278	286	26
Queue Length 95th (ft)		#800			#969	66	#212	270	87	#452	390	72
Internal Link Dist (ft)		2958			2006			766			801	
Turn Bay Length (ft)						100	100		100	100		100
Base Capacity (vph)		984			595	1027	150	497	526	235	497	456
Starvation Cap Reductn		0			0	0	0	0	0	0	0	0
Spillback Cap Reductn		0			0	0	0	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.91			1.18	0.21	0.77	0.49	0.34	1.12	0.70	0.18

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 57.9 Intersection LOS: E
Intersection Capacity Utilization 110.3% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: 195th St & Akin Rd

TH 3 & 190th Street 2035 PM Full Build

RODEL.EXE

15:6:11 TH 3 AND 190TH ST 2035 BUILD 8

E (m)	8.00	4.30	8.00	4.30	TIME PERIOD	min	90
L' (m)	10.00	10.00	10.00	10.00	TIME SLICE	min	15
V (m)	7.30	3.65	7.30	3.65	RESULTS PERIOD	min	15 75
RAD (m)	20.00	20.00	20.00	20.00	TIME COST	$/hr	15.00
PHI (d)	25.00	25.00	25.00	25.00	FLOW PERIOD	min	15 75
DIA (m)	40.00	40.00	40.00	40.00	FLOW TYPE	pcu/veh	VEH
GRAD SEP	0	0	0	0	FLOW PEAK	am/op/pm	PM

LEG NAME	PCU	VEH TURNS (1st exit, 2nd..U)	FLOF	CL	FLOW RATIO	FLOW TIME
TH 3 SB	1.02	662 917 042 0	1.00	50	0.75 0.996 0.75	15 45 75
190TH EB	1.02	345 024 497 0	1.00	50	0.75 0.996 0.75	15 45 75
TH 3 NB	1.02	020 661 315 0	1.00	50	0.75 0.996 0.75	15 45 75
190TH WB	1.02	031 013 012 0	1.00	50	0.75 0.996 0.75	15 45 75

MODE 2

FLOW	veh	1621	866	996	56	AVEDEL s	90.3
CAPACITY	veh	2110	717	2007	483	LOS SIG	F
AVE DELAY	mins	0.13	5.84	0.06	0.14	LOS UNSIG	F
MAX DELAY	mins	0.19	11.94	0.07	0.17		
AVE QUEUE	veh	4	104	1	0	VEHIC HRS	88.8
MAX QUEUE	veh	5	160	1	0	COST $	1331

F1mode F2direct F3peak CtrlF3rev F4fact F6stats F8econ F9prnt F10run Esc

RESOLUTION NO. _____

APPROVING THE 2016 SEED/GENSTAR AUAR AND MITIGATION PLAN UPDATE

Pursuant to due call and notice thereof, a regular meeting of the City Council of the City of Farmington, Minnesota, was held in the Council Chambers of said city on the 21st day of February, 2017 at 7:00 P.M.

Members Present:
Members Absent:

Member _____ introduced and Member _____ seconded the following:

Whereas, there exists 960 acres of land in northeast Farmington, west of Trunk Highway 3 and bisected by North Creek, and;

Whereas, in 2005 the City of Farmington adopted an AUAR for this area as form of environmental review in compliance with Minnesota Rules 4410, and that review is required to be updated every five years. The last update to the AUAR was completed in 2011, and;

Whereas, as the Responsible Governmental Unit, the City of Farmington has completed an update to its 2011 AUAR to identify the potential environmental impacts of development that is consistent with the City of Farmington's current comprehensive plan, and mitigation for identified impacts, in accordance with Minnesota Rule 441.3600, including distribution of a Draft AUAR Update for agency comment, and a revised environmental analysis and mitigation plan in response to those comments, and;

Whereas, objections to the Draft AUAR Update were neither filed with the City nor the EQB within the objection period defined in Minnesota Rule 441.3610 Sub 5(D);

NOW, THEREFORE, BE IT RESOLVED that the Farmington City Council hereby approves the Seed/Genstar AUAR and Mitigation Plan Update consistent with the intents and purposes of the Rules of the Minnesota Environmental Quality Board under the provisions for Alternative Urban Areawide Review (AUAR). The following conditions shall govern this review:

1. The specific boundaries of the Seed/Genstar Area for review under the AUAR are depicted on the map attached hereto as Exhibit A.

This resolution adopted by recorded vote of the Farmington City Council in open session on the 21st Day of February, 2017.

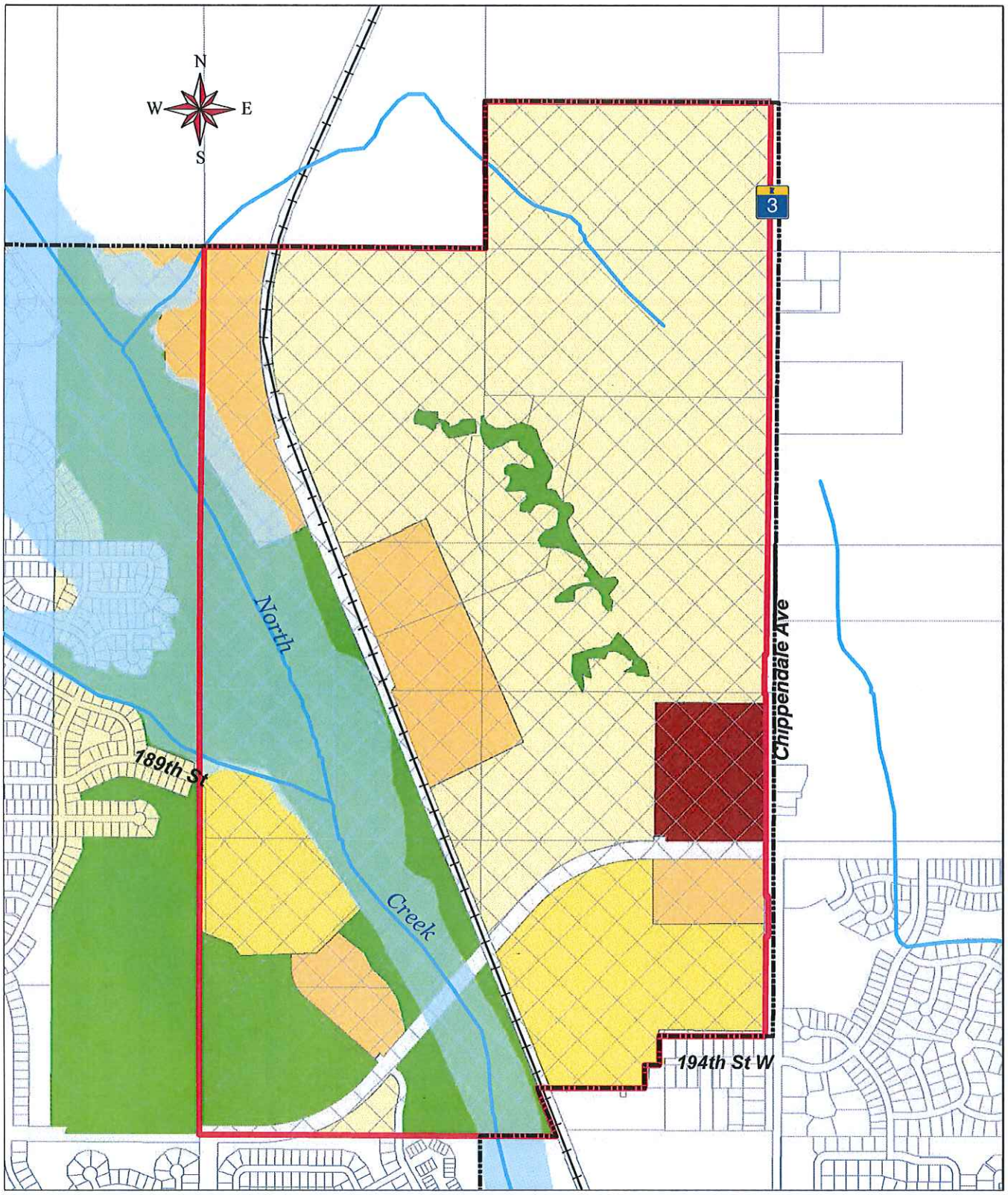
_____
Todd Larson, Mayor

Attest to the ____ day of February, 2017.

_____
David McKnight, City Administrator

SEAL

Exhibit A



Stantec

Feet

1,200 0 1,200

City of Farmington
Seed-Genstar
AUAR-Update
Existing Zoning

Figure 5-3

- R-1, Low Density Residential
- R-2, Low/Medium Density Residential
- R-3, Medium Density Residential
- Mixed Use (Commercial/Residential)
- P/OS, Park/Open Space
- Planned Unit Development (PUD)
- 100-Year Floodplain
- Study Area Boundary
- City Boundary
- Railroad
- Parcel Base Map

November 2016
V:\1938\active\193803747\GIS\Projects\Fig 5-3 Zoning.mxd

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Tony Wippler, Planning Manager

SUBJECT: Application to Amend Comprehensive Plan from Low Density Residential to Commercial and Rezone Property from R-1 (Low Density Residential) to B-4 (Neighborhood Business) - Mr. Craig Bongard - 20522 Akin Road

DATE: February 21, 2017

INTRODUCTION

Mr. Craig Bongard has submitted an application to amend the city's 2030 Comprehensive Plan from Low Density Residential to Commercial and rezone property from R-1 (Low Density Residential) to B-4 (Neighborhood Business). The subject property is 20522 Akin Road.

DISCUSSION

Planning Division Review

Site Address: 20522 Akin Road

Property Owner / Applicant: Craig Bongard

Attachments:

- Comprehensive Plan Amendment Application
- Rezoning Application
- Rezoning Ordinance
- Comprehensive Plan Amendment Resolution

Lot Size: 4.79 acres

Existing Zoning: R-1 (Low Density Residential)

2030 Comprehensive Plan Guidance: Low Density Residential

Surrounding Land Uses: Single-family residences are located to the north and west of the subject property. Farmington Lutheran Church is located to the south and farmland is adjacent to the east.

Background / Review

On August 10, 1976 the city's Planning Commission granted a special exception permit for the property located at 20522 Akin Road to allow Equipment Maintenance & Storage, Non-commercial on this site. The definition for Equipment Maintenance & Storage, Non-commercial was established by ordinance No. 076-39 and reads as follows:

"Equipment Maintenance & Storage, Non-commercial: A building in which is exclusively maintained, repaired or stored, only equipment which is owned and used by the same individual, firm, or organization that owns, rents, leases or occupies the building and in which no maintenance, repair or storage of equipment is performed for any other party or person. "

A special exception permit is similar to what a conditional use permit is in today's zoning code and allows for certain uses of property after review and approval by the Planning Commission. Special exception permits, like conditional use permits, run with the land. Special exceptions no longer exist in the city's zoning ordinance as uses and therefore cannot be amended.

The subject property has been used in the recent past for Mr. Bongard's trucking operation in accordance with the aforementioned special exception permit.

Comprehensive Plan & Zoning Amendment Request

Mr. Bongard is requesting an amendment to the city's 2030 Comprehensive Plan as well as a rezoning of the property located at 20522 Akin Road. The request is to amend the Comprehensive Plan guidance for this property from R-1 (Low Density Residential) to Commercial and to rezone the property from R-1 (Low Density Residential) to B-4 (Neighborhood Business). It is Mr. Bongard's belief that a B-4 zoning for the property would afford him the opportunity to sell the property as many of the inquiries for the property are for uses that can be found in the B-4 zoning classification.

As the city council is aware, Mr. Bongard applied for a Comprehensive Plan amendment and rezoning for this same property in 2016 to a commercial designation and B-3 (Heavy Business), respectively. These applications were denied by the city council due in large part because the request did not fit into the character of the surrounding neighborhood. The B-3 zone is a high intensity commercial zoning district and the uses within that district generally are incompatible with other commercial zones such as the B-4.

The purpose statement for the B-4 zone is as follows:

"The B-4 neighborhood business district is intended to provide a setting for low to medium density housing combined with complementary and supporting business land uses that serve a neighborhood and are developed and operated in harmony with the residential characteristics of a neighborhood."

The permitted and conditional uses currently allowed under the B-4 zoning district are as follows:

Permitted

- Dental laboratories
- Neighborhood services
- Nonprofit recreational, cultural entertainment uses
- Offices
- Personal and professional services, less than 3,000 square feet
- Personal health and beauty services, less than 3,000 square feet

Conditional

- Animal clinics
- Child daycare facilities, commercial
- Churches
- Clinics
- Data Centers
- Dwellings, multi-family
- Funeral homes
- Health clubs
- Light manufacturing facilities
- Ministorage units
- Personal and professional services, greater than 3,000 square feet
- Personal health and beauty services, greater than 3,000 square feet
- Public and parochial schools
- Public utility buildings
- Recreational vehicle storage facilities

It is important to note that a change in the zoning of this property to a B-4 classification would entitle this property to any of the aforementioned uses in the future.

Planning Commission Review

The Planning Commission met on February 14, 2017 and held a public hearing regarding these applications. After taking public comment, the Commission voted 4-0 to recommend approval of the requested comprehensive plan amendment and rezoning. It was the commission's opinion that the uses allowed in the B-4 zone are of an intensity that is compatible with the uses surrounding this property, which are largely residential. This point is broadened by the purpose statement for the B-4 zone that states the district is intended to allow complementary and supporting business land uses that serve a residential neighborhood.

BUDGET IMPACT

NA

ACTION REQUESTED

1. Approve the attached resolution granting a Comprehensive Plan Amendment from Low Density Residential to Commercial for the property addressed as 20522 Akin Road.
2. Adopt the attached ordinance rezoning the property addressed as 20522 Akin Road from R-1 (Low Density Residential) to B-4 (Neighborhood Business).

ATTACHMENTS:

Type	Description
Backup Material	Comprehensive Plan Amendment Application
Backup Material	Rezoning Application
Ordinance	Rezoning Ordinance
Resolution	Comprehensive Plan Amendment Resolution

City of Farmington
430 Third Street
Farmington, Minnesota
651.280.6800 • Fax 651.280.6899
www.ci.farmington.mn.us

JAN 1 2 2017

PETITION FOR COMPREHENSIVE PLAN AMENDMENT

Applicant: Craig Bongard Telephone: ( ) _____ Fax: ( ) _____

Address: 20522 Akin Rd, Fgtn, Mn. 55024
Street City State Zip Code

Owner: Craig Bongard Telephone: 612 850 6258 Fax: ( ) _____

Mailing Address: 2925 Plantation Rd, Winterhaven, FL 33884
Street City State Zip Code

Premises Involved: 20522 Akin Rd, Fgtn, Mn. 55024
Address/ Legal Description (lot, block, plat name, section, township, range)

Current Comprehensive Plan Designation: low density residential
Proposed Comprehensive Plan Designation: commercial

I understand that a public hearing is required as well as a published notice of hearing, for which I hereby attach payment of the fee in the amount of $_____, which I understand further will be refunded if no meeting is scheduled.

Craig Bogard
Signature of Owner

1-12-17
Date

For office use only

Request Submitted to Planning staff on_____
Public Hearing Set for: _____ Advertised in Local Newspaper: _____

Planning Commission Action: _____Approved _____Denied
City Council Action (if necessary): _____Approved _____Denied

Comments: _____

Conditions Set: _____

Planning division: _____ Date: _____

9/06

In accordance with Title 10, Chapter 3, Section 12 of the City Code.

City of Farmington
430 Third Street
Farmington, Minnesota
651.280.6800 • Fax 651.280.6899
www.ci.farmington.mn.us

JAN 1 2 2017

PETITION FOR REZONING APPLICATION

Applicant: Craig Bongard Telephone: ( ) _____ Fax: ( ) _____

Address: 20522 Akin Rd, Fgtn, Mn. 55024
Street City State Zip Code

Owner: Craig Bongard Telephone: 813 850 6758 Fax: ( ) _____

Mailing Address: 2925 Plantation Rd. Winterhaven FL 33884
Street City State Zip Code

Premises Involved: 20522 Akin Rd, Fgtn, Mn 55024
Address/ Legal Description (lot, block, plat name, section, township, range)

Current Zoning R-1 **Proposed Zoning** B-4

I understand that a public hearing is required as well as a published notice of hearing, for which I hereby attach payment of the fee in the amount of $ Ø, which I understand further will be refunded if no meeting is scheduled.

Craig R Bongard
Signature of Owner

1-12-17
Date

For office use only

Request Submitted to Planning staff on _____
Public Hearing Set for: _____ Advertised in Local Newspaper: _____

Planning Commission Action: _____Approved _____Denied
City Council Action (if necessary): _____Approved _____Denied

Comments: _____

Conditions Set: _____

Planning division: _____ Date: _____

9/06

In accordance with Title 10, Chapter 3, Section 12 of the City Code.

CITY OF FARMINGTON
DAKOTA COUNTY, MINNESOTA

ORDINANCE NO. ___

An Ordinance Amending Title 10 of the Farmington City Code, the Farmington Zoning Ordinance, rezoning the property known as the Bongard property (20522 Akin Road)

THE CITY COUNCIL OF THE CITY OF FARMINGTON HEREBY ORDAINS AS FOLLOWS:

SECTION 1. Section 10-5-1 of the Farmington City Code is amended by rezoning the property legally described on the attached Exhibit A, depicted in Exhibit B and addressed as 20522 Akin Road from R-1 (Low Density Residential) to B-4 (Neighborhood Business).

SECTION 2. The Zoning Map of the City of Farmington, adopted under Section 10-5-1 of the Farmington City Code, shall be republished to show the aforesaid zoning.

SECTION 3. This ordinance shall be effective immediately upon its passage.

Adopted this __ day of _____, 2017, by the City Council of the City of Farmington.

SEAL

CITY OF FARMINGTON

_____
MAYOR

_____
CITY ADMINISTRATOR

ATTEST:

Approved as to form the ___ day of _____, 2017.

_____
CITY ATTORNEY

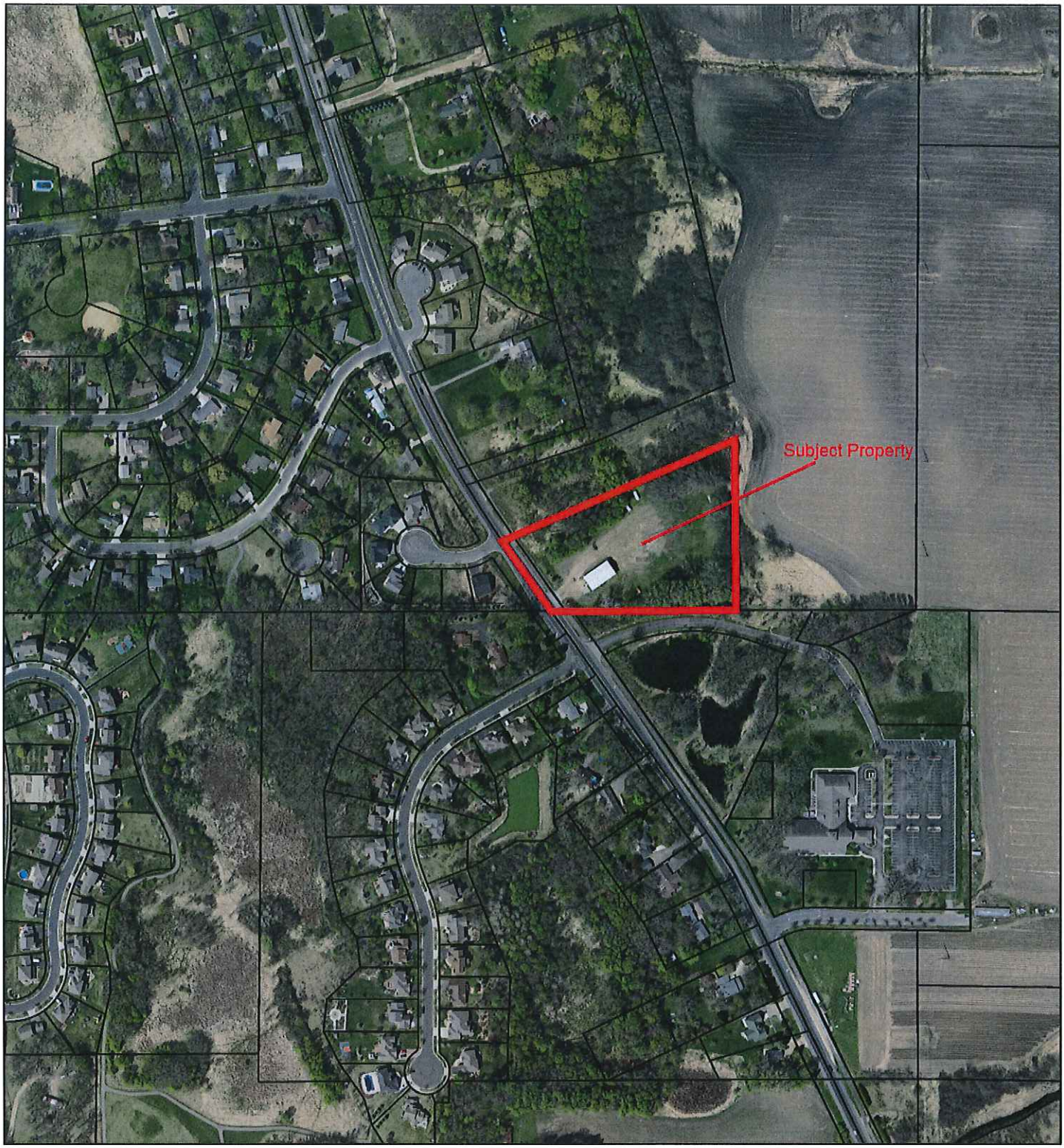
Published in the Farmington Independent the ___ day of _____, 2017.

Exhibit "A": Legal Description of The Property (20522 Akin Road)

That part of the Northeast Quarter (NE1/4) of Section Twenty-Five (25), Township One-Hundred Fourteen (114), Range Twenty (20), described as follows: Commencing at the intersection of the North line of said Northeast Quarter (NE1/4) with the centerline of C.S.A.H. No. 31; thence Southeasterly, along said centerline, a distance of 230.55 feet, along a non-tangential curve, concave to the West, having a radius of 5729.74 feet; thence South 17 degrees 21 minutes 05 seconds East, assumed bearing, tangent to said curve, a distance of 1506.67 feet; thence Southeasterly, along said centerline, along a tangential curve, concave to the East, having a radius of 2864.85 feet, a central angel of 5 degrees 56 minutes 07 seconds a distance of 296.77 feet; thence continue Southeasterly along said curve, concave to the East, having a radius of 2864.85 feet, a central angle of 5 degrees 56 minutes 23 seconds, a distance of 297.00 feet; thence continue Southeasterly along said curve, concave to the East, having a radius of 2864.85 feet, a central angle of 4 degrees 48 minutes 36 seconds,a distance of 240.49 feet to the point of beginning of the land to be described; thence Southeasterly along said curve, concave to the East, having a radius of 2864.85 feet, a central angle of 0 degrees 26 minutes 24 seconds, a distance of 22.00 feet; thence South 34 degrees 28 minutes 35 seconds East, tangent to the last described curve, along said centerline, a distance of 217.35 feet to the South line of said Northeast Quarter (NE1/4); thence South 89 degrees 19 minutes 31 seconds East, along the South line of said Northeast Quarter (NE1/4)a distance of 522.66 feet to a point, distane 514.00 feet Westerly of the Southeast corner of said Northeast Quarter (NE1/4); thence North0 degrees 40 minutes 29 seconds East, a distance of 478.00 feet; thence South 67 degrees 31 minutes 57 seconds West, a distance of 718.18 feet to the point of beginning, according to the United States Government Survey thereof and situate in Dakota County, Minnesota.

Exhibit B

Dakota County, MN



February 9, 2017

1:4,800

0 225 450 900 ft

0 65 130 260 m

Property Information
Dakota County

RESOLUTION NO.

AMENDING THE 2030 COMPREHENSIVE PLAN FOR THE BONGARD PROPERTY LOCATED AT 20522 AKIN ROAD

Pursuant to due call and notice thereof, a regular meeting of the City Council of the City of Farmington, Minnesota, was held in the Council Chambers of said City on the 21st day of February, 2017 at 7:00 P.M.

Members Present:
Members Absent:

Member _____ introduced and Member _____ seconded the following:

WHEREAS, Mr. Craig Bongard petitioned for a Comprehensive Land Use amendment for the property located at 20522 Akin Road, and depicted in the attached Exhibit A, and that said request proposes that the land use designation be changed from Low Density Residential to Commercial; and

WHEREAS, the Planning Commission held a public hearing on the 14th day of February, 2017 after notice of the same was published in the official newspaper of the City and proper notice sent to surrounding property owners; and

WHEREAS, the Planning Commission accepted public comments at the public hearing and recommended approval of the Comprehensive Plan Amendment for the Bongard property, located at 20522 Akin Road, said amendment changing the land use designation from Low Density Residential to Commercial.

NOW, THEREFORE, BE IT RESOLVED that the City Council of Farmington hereby amends the 2030 Comprehensive Plan for the Bongard property, located at 20522 Akin Road from Low Density Residential to Commercial.

This resolution adopted by recorded vote of the Farmington City Council in open session on the 21st day of February, 2017

_____
Mayor

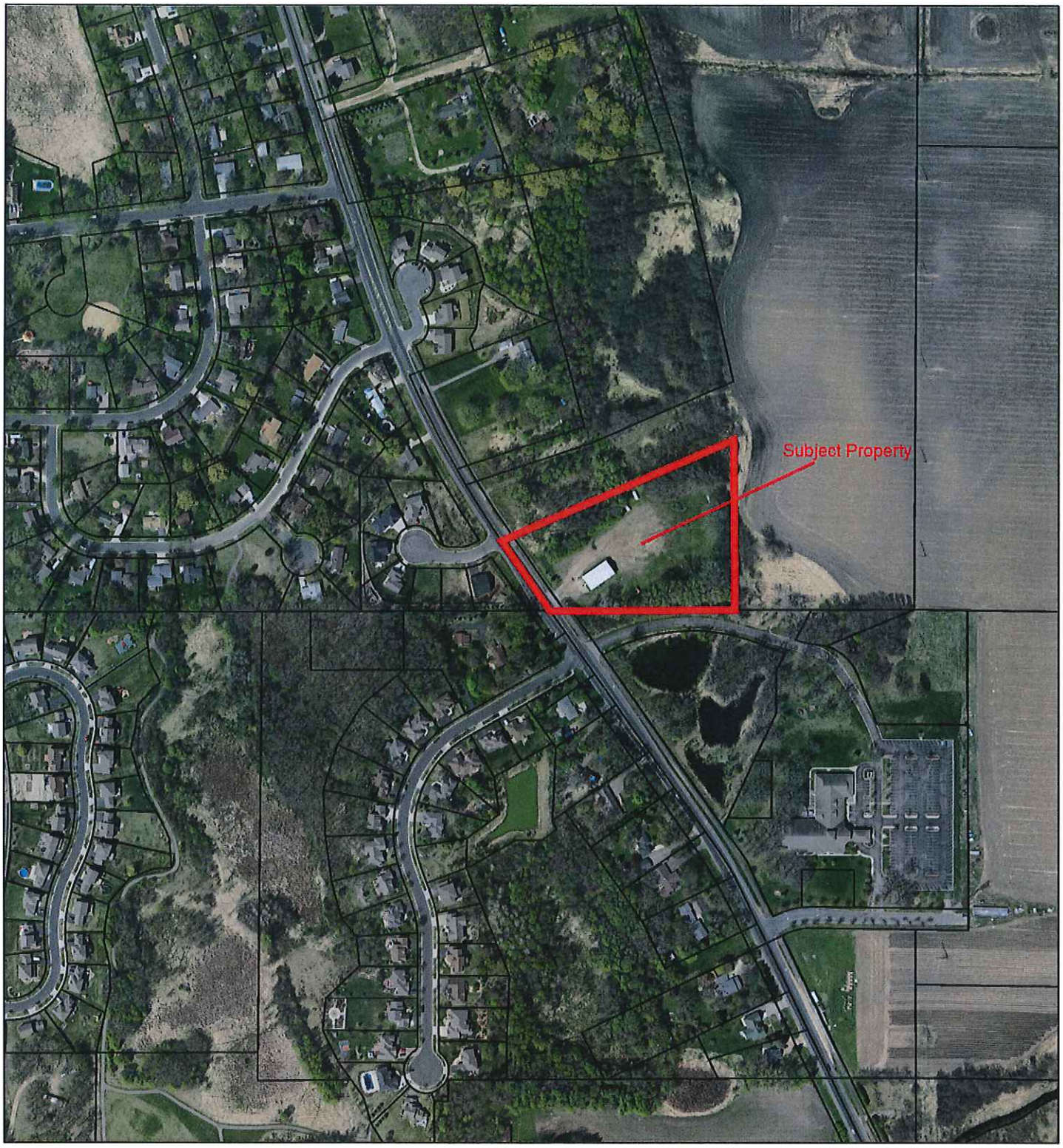
Attested to the _____ day of February, 2017.

_____
City Administrator

SEAL

Exhibit A

Dakota County, MN



February 9, 2017

1:4,800

0 225 450 900 ft

0 65 130 260 m

Property Information
Dakota County

City of Farmington

430 Third Street
Farmington, Minnesota
651.280.6800 - Fax 651.280.6899
www.ci.farmington.mn.us

TO: Mayor, Councilmembers and City Administrator

FROM: Jennifer Dullum, Natural Resource Specialist

SUBJECT: Wetland Health Evaluation Program Joint Powers Agreement

DATE: February 21, 2017

INTRODUCTION

Since 1998, the city of Farmington has participated in the Wetland Health Evaluation Program (WHEP). WHEP is coordinated through a partnership between participating cities, Dakota County, the Minnesota Pollution Control Agency (MPCA) and a consultant.

Each year a team of citizen volunteers evaluates wetlands selected by Farmington. Wetlands are evaluated for macroinvertebrates and plants. The wetland's health is determined and an annual report depicting the results for each wetland studied is published and distributed to each participating city, MPCA and volunteers.

DISCUSSION

Several wetlands in Farmington have been evaluated since joining WHEP. The city has both a long-term monitoring site and newer sites whose data can be evaluated for project specific decisions. Data is also used for general assessments, trend analysis, effects of wetland management and to compare development impacts on local water resources. Another major benefit of WHEP is its environmental education and civic engagement. Volunteers become local experts in wetland health. Participants in WHEP develop a stronger sense of belonging in their community. WHEP fosters attitudes and behaviors that value wetlands, and increase the public's knowledge when volunteers teach their friends and neighbors to protect wetland resources.

By approving this joint powers agreement between the city of Farmington and Dakota County, we are continuing this beneficial program and maintaining our working relationship with the County. WHEP is managed and administered by Dakota County.

BUDGET IMPACT

The city of Farmington currently monitors three wetlands. The annual fee averages $3,000. The funds are budgeted annually in the Storm Water Utility account for this program.

ACTION REQUESTED

Authorize execution of the attached joint powers agreement for the Wetland Health Evaluation Program from 2017 through 2021.

ATTACHMENTS:

Type	Description
Backup Material	WHEP JPA resolution
Backup Material	Joint Powers Agreement

RESOLUTION NO. R-

JOINT POWERS AGREEMENT
WETLAND HEALTH EVALUATION PROGRAM

Pursuant to due call and notice thereof, a regular meeting of the City Council of the City of Farmington, Minnesota was held in the Council Chambers of said City on the 21st day of February 2017 at 7:00 p.m.

Members present:
Members absent:

Member introduced and Member seconded the following resolution:

WHEREAS, a resolution of the City Council adopted the 21st day of February authorized the City to enter into the 2017 through 2021 Wetland Health Evaluation Program as part of the Joint Powers Agreement administered by Dakota County; and,

WHEREAS, said Joint Powers Agreement will be submitted to Dakota County.

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Farmington, Minnesota,

1. That the Wetland Health Evaluation Program will be performed as part of the Joint Powers Agreement administered by Dakota County.
2. The Mayor and the City Administrator are hereby authorized to execute the Joint Powers Agreement with Dakota County.

This resolution adopted by recorded vote of the Farmington City Council in open session on the 21st day of February 2017.

_____
Mayor

Attested to the _____ day of February, 2017.

_____
City Administrator

SEAL

JOINT POWERS AGREEMENT
BETWEEN DAKOTA COUNTY AND THE CITY OF FARMINGTON
FOR THE WETLAND HEALTH EVALUATION PROGRAM

The parties to this Agreement are the County of Dakota, a political subdivision of the State of Minnesota (County) and the City of FARMINGTON (City), a governmental and political subdivision of the State of Minnesota. This Agreement is made pursuant to the authority conferred upon the parties by Minn. Stat. § 471.59.

NOW, THEREFORE, in consideration of the mutual promises and benefits that the County and the City shall derive from this Agreement, the County and the City hereby enter into this Agreement for the purposes stated herein.

SECTION 1
PURPOSE

The purpose of this Agreement is to facilitate the analysis of wetlands located with the City through the Dakota County Wetland Health Evaluation Program (WHEP), which is coordinated and managed by the County, to obtain data and other information to assist both parties in performing their responsibilities under the Minnesota Wetland Conservation Act.

SECTION 2
TERM

Notwithstanding the date of the signatures of the parties, the term of this Agreement shall commence on January 1, 2017, and shall continue in full force and effect until December 31, 2021, unless earlier terminated by law or according to the provisions of this Agreement.

SECTION 3
COOPERATION

The parties agree to cooperate and use their reasonable efforts to ensure prompt implementation of the various provisions of this Agreement and to, in good faith, undertake resolution of any dispute in an equitable and timely manner.

SECTION 4
EXERCISE OF POWERS

The parties to this Agreement agree that the County shall administer the funds collected hereunder and disburse these funds for expenses incurred by WHEP.

SECTION 5
POWERS AND DUTIES OF THE COUNTY

5.1 The County shall administer the WHEP funds on behalf of the City.

5.2 The County shall serve as fiscal agent for the funds collected hereunder. The County shall establish and maintain such funds and accounts as may be required by generally accepted accounting practices.

5.3 The County may apply for and accept gifts, grants, loans and money, other property or assistance from federal or state agencies, or any other person to carry out the WHEP in Dakota County.

5.4 The County may use funds to hire and retain a monitoring coordinator, a non-profit agency, consulting firms and such other personnel as may be needed to provide the services contemplated under this Agreement. Notwithstanding the foregoing, the parties agree that WHEP is a volunteer based program and that data collection shall be performed solely by volunteers trained by the County. All volunteers participating in the WHEP shall be considered agents of the County and not agents of the City.

SECTION 6
FUNDING

On or before March 31 each year of the term of this Agreement, the County shall provide to the City a complete WHEP fee schedule for that calendar year, including an itemization of the fee for analyzing each wetland and the fee for performing a quality assurance recheck to enable the City to evaluate whether to participate in the WHEP for that year. If the City elects to participate in the WHEP for that year, the City shall notify the County and the County shall provide the services described herein. On or about July 1 of each year that the City elects to participate, the County shall submit an invoice to the City for the WHEP fees for that year and the City shall remit payment to the County within 30 days after receipt of such invoice.

SECTION 7
WHEP TIMELINE

The parties agree to the following timeline for each year of the term of this Agreement:

Spring	The County shall provide a WHEP fee schedule to the City and the City shall notify the County if the City elects to participate in the WHEP for that calendar year and identify the specific wetlands to be analyzed.
Late Spring and Summer	Trained volunteers shall collect data regarding the quantity and variety of plants and macroinvertebrates within each City designated wetland, making note of any invasive species sighted. A consultant hired by the County shall conduct a quality assurance recheck based on monitoring protocols.
Fall	The consultant hired by the County shall compile and analyze the data collected for all wetlands within the City under the WHEP and prepare a written report on the same.
Winter	The County shall deliver to the City the consultant's written report and the data collected for all wetlands analyzed within the City.

SECTION 8
INDEMNIFICATION

Each party to this Agreement shall be liable for the acts of its officers, employees or agents and the results thereof to the extent authorized by law and shall not be responsible for the acts of the other party, its officers, employees or agents. The provisions of the Municipal Tort Claims Act, Minn. Stat. ch. 466 and other applicable laws govern liability of the County and the City. The provisions of this section shall survive the expiration or termination of this Agreement.

SECTION 9
AUTHORIZED REPRESENTATIVES AND LIAISONS

9.1 AUTHORIZED REPRESENTATIVES. The following named persons are designated the Authorized Representatives of the parties for purposes of this Agreement. These persons have authority to bind the party they represent and to consent to modifications, except that the authorized representative shall have only the authority specifically or generally granted by their respective governing boards. Notice required to be provided pursuant to this Agreement shall be provided to the following named persons and addresses unless otherwise stated in this Agreement, or in a modification of this Agreement:

TO THE COUNTY: Georg Fischer or successor, Director
Environmental Resources Department
14955 Galaxie Avenue
Apple Valley, MN 55124

TO THE CITY: Todd Larson or successor, Mayor
City of Farmington
430 Third Street
Farmington, MN 55024

In addition, notification to the County regarding termination of this Agreement by the other party shall be provided to the Office of the Dakota County Attorney, Civil Division,1560 Highway 55, Hastings, Minnesota 55033.

9.2 LIAISONS. To assist the parties in the day-to-day performance of this Agreement and to ensure compliance and provide ongoing consultation, a liaison shall be designated by the County and the City. The parties shall keep each other continually informed, in writing, of any change in the designated liaison. At the time of execution of this Agreement, the following persons are the designated liaisons:

County Liaison	City Liaison
Paula Liepold	Jen Dullum, or successor
Telephone: (952) 891-7117	Telephone: 651-280-6845
Email: paula.liepold@co.dakota.mn.us	Email: jdullum@ci.farmington.mn.us

SECTION 10
TERMINATION

Either party may terminate this Agreement at any time upon 90 days written notice to the other party.

SECTION 11
GENERAL PROVISIONS

11.1 COMPLIANCE WITH LAWS/STANDARDS. The City and the County agree to abide by all federal, state or local laws, statutes, ordinances, rules and regulations now in effect or hereafter adopted pertaining to this Agreement or to the facilities, programs and staff for which either party is responsible.

11.2 EXCUSED DEFAULT – FORCE MAJEURE. Neither party shall be liable to the other party for any loss or damage resulting from a delay or failure to perform due to unforeseeable acts or events outside the defaulting party's reasonable control, providing the defaulting party gives notice to the other party as soon as possible. Acts and events may include acts of God, acts of terrorism, war, fire, flood, epidemic, acts of civil or military authority, and natural disasters.

11.3 CONTRACT RIGHTS CUMULATIVE NOT EXCLUSIVE.

A. All remedies available to either party for breach of this Agreement are cumulative and may be exercised concurrently or separately, and the exercise of any one remedy shall not be deemed an election of such remedy to the exclusion of other remedies. The rights and remedies provided in this Agreement are not exclusive and are in addition to any other rights and remedies provided by law.

B. Waiver for any default shall not be deemed to be a waiver of any subsequent default. Waiver of breach of any provision of this Agreement shall not be construed to be modification for the terms of this Agreement unless stated to be such in writing and signed by authorized representatives of the County and the City.

11.4 RECORDS RETENTION AND AUDITS. Each party's bonds, records, documents, papers, accounting procedures and practices, and other records relevant to this Agreement are subject to the examination, duplication, transcription and audit by the other party, the Legislative Auditor or State Auditor under Minn. Stat. § 16C.05, subd. 5. If any funds provided under this Agreement use federal funds these records are also subject to review by the Comptroller General of the United States and his or her approved representative. Following termination of this Agreement, the parties must keep these records for at least six years or longer if any audit-in-progress needs a longer retention time.

11.5 MODIFICATIONS. Any alterations, variations, modifications, or waivers of the provisions of this Agreement shall only be valid when they have been reduced to writing and signed by the authorized representatives of the County and the City.

11.6 ASSIGNMENT. Neither party may assign any of its rights under this Agreement without the prior written consent of the other party. Said consent may be subject to conditions.

11.7 GOVERNMENT DATA PRACTICES. For purposes of this Agreement, all data on individuals collected, created, received, maintained or disseminated shall be administered consistent with the Minnesota Government Data Practices Act, Minn. Stat. ch. 13.

11.8 MINNESOTA LAW TO GOVERN. This Agreement shall be governed by and construed in accordance with the substantive and procedural laws of the State of Minnesota, without giving effect to the principles of conflict of laws. All proceedings related to this Agreement shall be venued in Dakota County, Minnesota. The provisions of this section shall survive the expiration or termination of this Agreement.

11.9 MERGER. This Agreement is the final expression of the agreement of the parties and the complete and exclusive statement of the terms agreed upon and shall supersede all prior negotiations, understandings, or agreements.

11.10 SEVERABILITY. The provisions of this Agreement shall be deemed severable. If any part of this Agreement is rendered void, invalid, or unenforceable, such rendering shall not affect the validity and enforceability of the remainder of this Agreement unless the part or parts that are void, invalid or otherwise unenforceable shall substantially impair the value of the entire Agreement with respect to either party.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the date(s) indicated below.

APPROVED AS TO FORM:

/s/Helen R. Brosnahan August 11, 2016
Assistant County Attorney/Date
KS-16-243-003
County Board Res. No. 16-_____

DAKOTA COUNTY

By _____
Georg Fischer or successor, Director
Environmental Resources Department
Date of Signature: _____

CITY OF FARMINGTON

By _____
Todd Larson or successor, Mayor
Date of Signature: _____

By _____
_____, City Clerk
Date of Signature: _____