

BOARD OF COUNTY COMMISSIONERS
SARPY COUNTY, NEBRASKA

RESOLUTION: SPECIAL USE PERMIT –MUD to construct and operate a
COMPRESSED NATURAL GAS (CNG) FUEL STATION WITHOUT A
CONVENIENCE STORE

Southwest corner of Cornhusker Rd and 132nd Street

WHEREAS, pursuant to Neb. Rev. Stat. § 23-104 (Reissue 2012), the County has the power to do all acts in relation to the concerns of the County necessary to the exercise of its corporate powers; and,

WHEREAS, pursuant to Neb. Rev. Stat. § 23-103 (Reissue 2012), the powers of the County as a body are exercised by the County Board; and,

WHEREAS, the County Board of Commissioners has the authority to adopt a Zoning Regulation, which shall have the force and effect of law pursuant to Neb. Rev. Stat. § 23-114 (Reissue 2012); and,

WHEREAS, said Zoning Regulations require the County Board of Commissioners to approve Special Use Permits; and

WHEREAS, the Planning Department has reviewed the MUD Special Use Permit application to allow a Compressed Natural Gas (CNG) Fuel Station without a Convenience Store generally located at the southwest corner of Cornhusker Road and 132nd Street and legally described as follows:

Lot 3, Hilltop Industrial Park Replat 13 in Sarpy County, Nebraska.

NOW, THEREFORE, BE IT RESOLVED BY THE SARPY COUNTY BOARD OF COMMISSIONERS that this Board makes the following findings of fact:

- I. A public hearing regarding the amendment to the Special Use Permit was held before the Sarpy County Planning Commission on November 19, 2013 and December 17, 2013 and further, the Planning Commission gave their recommendation.
- II. A public hearing regarding the amendment to the Special Use Permit was held by this Board.
- III. Notice of each of the Public Hearings described above was published at least ten (10) days immediately prior to each respective public hearing as required by Neb. Rev. Stat. §23-164 (Reissue 2012), and the proof of publication has been filed in the Office of the Sarpy County Clerk.
- IV. The Planning Department has made a recommendation as noted in the attached Exhibit "A", which Exhibit "A" includes the Planning Department report, the operation plan, the Site Plan and an aerial view of the subject property.

- V. The zoning at the property described above is IL, Light Industrial.
- VI. The Special Use Permit application is in compliance with the Comprehensive Development Plan and the Sarpy County Zoning Regulations.

FURTHER BE IT RESOLVED THAT this Board in light of the above recited findings of fact, after due deliberation and consideration, approves the MUD Special Use Permit application to construct the Preferred Alternative Plan 1 site plan and to operate a Compressed Natural Gas (CNG) Fuel Station without a Convenience Store as specifically described in the application subject to the following conditions:

1. The use remains compliant and consistent with the Operation Plan attached hereto in Exhibit "A" and as specifically described above.
2. The fuel station canopy shall have supporting pillars that have brick or stone bases of not less than four feet in height. Colors should be comprised of earth tone color ranges.
3. The canopy coloring should be consistent and complimentary to the stone or brick used for the pillars and the storage area enclosure walls.
4. The storage area enclosure walls should be constructed of the same materials as the canopy pillars (brick or stone) and be of the same earth tone color ranges. Landscaping around the enclosure will also be required.
5. All under-canopy lighting shall be recessed, including lens or shroud, to minimize glare.
6. Elevation drawings of the canopy and storage area enclosure must be submitted and approved at time of building permit application.
7. Any future owners/operators of the facility must provide written confirmation that they have received a copy of the SUP and any conditions it contains and agree to abide by and operate the facility according to those conditions.
8. If facility is abandoned, the property owner shall remove all equipment from the site within six (6) months.

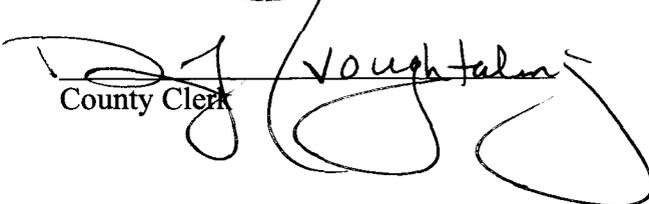
The above Resolution was approved by a vote of the Sarpy County Board of Commissioners at a public meeting duly held in accordance with applicable law on the 28th day of January, 2014.

Attest

SEAL




Sarpy County Board Chairman


County Clerk

Sarpy County Board of Commissioners
Exhibit "A"
Planning Department Report
County Board Meeting Date: January 28, 2014

Subject	Type	By
Request by Metropolitan Utilities District (MUD) for a Special Use Permit (SUP) to allow for a Compressed Natural Gas (CNG) Fuel Station without a Convenience Store at the southwest corner of Cornhusker Road and 132 nd Street.	Public Hearing & Resolution	Bruce Fountain, AICP, EDFP Director, Planning & Building Dept.



➤ **Summary and Purpose of Requests:**

- Metropolitan Utilities District (MUD) has submitted an application for a Special Use Permit (SUP) to allow for a Compressed Natural Gas (CNG) Fuel Station without a Convenience Store at the southwest corner of Cornhusker Road and 132nd Street.
- Per the Operational Plan, the proposed fueling station will be open 24 hours a day but will have no on-site employees. It will be an automatic, self-service operation. Customers will include the general public, MUD fleet vehicles and other users with MUD agreements for service.

➤ **Background and Analysis:**

- The subject property is zoned IL (Light Industrial). This application for a Special Use Permit follows up on a previous application by MUD for a text amendment to the Sarpy County Zoning Regulations to add this type of facility as a permitted special use in the IL (Light Industrial) zoning district. The Planning Commission recommended approval of the zoning text amendment at their December 17, 2013 meeting and if the County Board approves that text amendment, this application for a SUP would then be consistent with the County's Zoning Regulations.
- The Planning Commission held two public hearings on both the proposed zoning text amendment and this SUP application on November 19, 2013 and December 17, 2013. The Planning Commission recommended approval of both applications which included the original site plan for the development dated October 8, 2013. A detailed staff report on this application was presented to the Planning Commission at those meetings and is attached for your information and review.
- Since the Planning Commission's meeting on December 17, 2013, MUD has had additional discussions with the neighboring property owner, Sergeants Pet Care, regarding the site plan for the proposed layout of this development. MUD has agreed to revise their original site plan as requested by Sergeants representatives to move the walled compressor and storage area to the northeast corner of the site in order to provide greater separation from the Sergeants facility. The proposed revised site plan is attached to this report as "Preferred Alternative Plan 1."

➤ **Staff Recommendation:**

- Staff recommends **APPROVAL** of a Special Use Permit for Metropolitan Utilities District to construct and operate a CNG fuel station without a convenience store as specifically described in their Application and Operation Plan as it is in conformance with the Sarpy County Zoning Regulations and Comprehensive Plan provided that the related proposed Zoning Regulations text amendment is approved. Staff also recommends approval of the "Preferred Alternative Plan 1" site layout as it is a reasonable compromise to help alleviate concerns of the neighboring property owner. Staff makes this recommendation with the following additional conditions:
 1. The fuel station canopy shall have supporting pillars that have brick or stone bases of not less than four feet in height. Colors should be comprised of earth tone color ranges.
 2. The canopy coloring should be consistent and complimentary to the stone or brick used for the pillars and the storage area enclosure walls
 3. The storage area enclosure walls should be constructed of the same materials as the canopy pillars (brick or stone) and be of the same earth tone color ranges. Landscaping around the enclosure will also be required.
 4. All under-canopy lighting shall be recessed, including lens or shroud, to minimize glare.

5. Elevation drawings of the canopy and storage area enclosure must be submitted and approved at time of building permit application.
6. Any future owners/operators of the facility must provide written confirmation that they have received a copy of the SUP and any conditions it contains and agree to abide by and operate the facility according to those conditions.
7. If facility is abandoned, the property owner shall remove all equipment from the site within six (6) months.

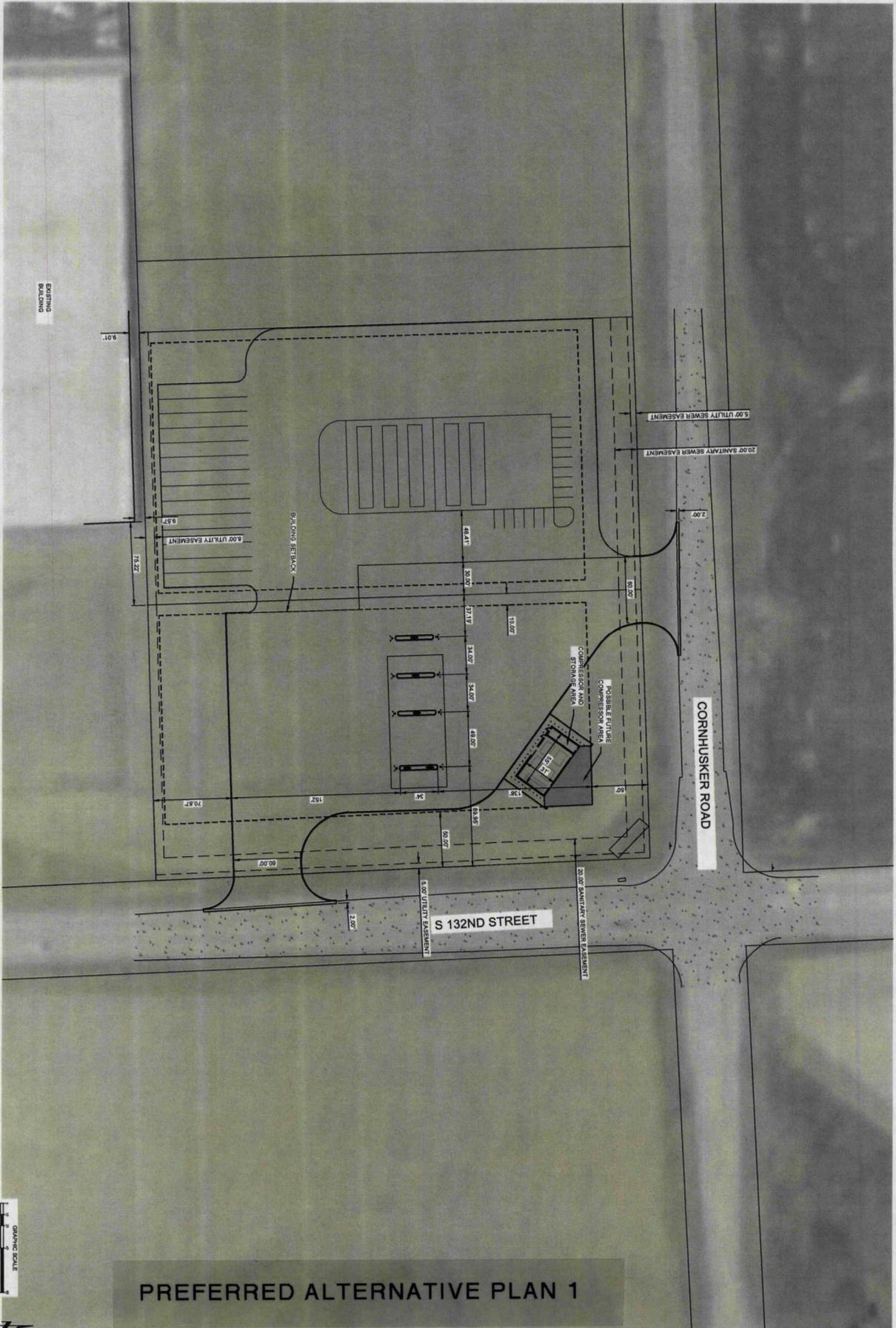
➤ **Planning Commission Recommendation:**

- On December 17, 2013 the Planning Commission voted 7-1 to recommend **APPROVAL** of the application by MUD for a Special Use Permit for a Compressed Natural Gas (CNG) Fuel Station without a Convenience Store at the southwest corner of Cornhusker Road and 132nd Street as specifically described in their application and Operational Plan.

MOTION: Malmquist moved, seconded by Torczon to recommend approval of the Special Use Permit for Metropolitan Utilities District to construct and operate a CNG fuel station without a convenience store as specifically described in their Application and Operation Plan and under the original site plan submitted dated 10-8-2013, as it is in conformance with the Sarpy County Zoning Regulations and Comprehensive Plan provided that the related proposed Zoning Regulations text amendment is approved, with the following conditions:

1. The fuel station canopy shall have supporting pillars that have brick or stone bases of not less than four feet in height. Colors should be comprised of earth tone color ranges.
2. The canopy coloring should be consistent and complimentary to the stone or brick used for the pillars and the storage area enclosure walls
3. The storage area enclosure walls should be constructed of the same materials as the canopy pillars (brick or stone) and be of the same earth tone color ranges. Landscaping around the enclosure will also be required.
4. All under-canopy lighting shall be recessed, including lens or shroud, to minimize glare.
5. Elevation drawings of the canopy and storage area enclosure must be submitted and approved at time of building permit application.
6. Any future owners/operators of the facility must provide written confirmation that they have received a copy of the Special Use Permit and any conditions it contains and agree to abide by and operate the facility according to those conditions; and
7. If facility is abandoned, the property owner shall remove all equipment from the site within six (6) months.

Ballot: Ayes – Bliss, Lichter, Stuart, Mohr, Malmquist, Fenster, and Torczon. Nays – Davis. Abstain – None. Absent – Ackley, Whitfield, and Fenster. **Motion carried.**



PREFERRED ALTERNATIVE PLAN 1



PROJECT NO. 1308931.00
 DATE 1/21/2014
 DRAWN BY DAN
 CHECKED BY
 DESIGNED BY
 PLANNING AND DESIGN
 BY THE METROPOLITAN UTILITIES DISTRICT
 FIELD OFFICE
 SHEET NO. 10
 PLAN NUMBER
 132ND & CORNHUSKER
 METROPOLITAN UTILITIES DISTRICT
 132ND & CORNHUSKER
 SARPY COUNTY, NEBRASKA

SITE PLAN

2013
 CNG FUEL STATION
 METROPOLITAN UTILITIES DISTRICT
 132ND & CORNHUSKER ROAD
 SARPY COUNTY, NEBRASKA





**SARPY COUNTY PLANNING
& BUILDING DEPARTMENT**

RECOMMENDATION REPORT

**SPECIAL USE PERMIT AMENDMENT (SUP 13-0006)
METROPOLITAN UTILITIES DISTRICT
TO ALLOW FOR A COMPRESSED NATURAL GAS FUEL STATION
WITHOUT A CONVENIENCE STORE**

**PLANNING COMMISSION HEARING OF: NOVEMBER 19, 2013
CONTINUED TO: DECEMBER 17, 2013**

I. GENERAL INFORMATION

A. APPLICANT:

Metropolitan Utilities District (MUD)
c/o Stephanie Henn
1723 Harney Street
Omaha NE 68102-1960

B. PROPERTY OWNER:

Mytty Properties, LLC
10710 I Street
Omaha, NE 68127

C. SUBJECT PROPERTY LOCATION: Subject property is located at the southwest corner of 132nd Street and Cornhusker Road.

D. LEGAL DESCRIPTION: currently part of Lot 1, Hilltop Industrial Park Replat 1 – under Administrative Replat the legal will be Lot 3, Hilltop Industrial Park Replat 13 once recorded.

E. SUBJECT PROPERTY SIZE: proposed lot will be approximately 2.5 acres

F. EXISTING FUTURE LAND USE AND ZONING DESIGNATIONS:

- Future Land Use Designation: Business Park
- Zoning: IL (Light Industrial)

G. REQUESTED ACTION(S):

- To approve a Special Use Permit to allow a compressed natural gas (CNG) fuel station that includes fuel pumps, storage equipment screened by an enclosure, and a fuel pump canopy

II. BACKGROUND INFORMATION

A. EXISTING CONDITION OF SITE: The site is currently vacant.

B. GENERAL VICINITY ZONING AND LAND USE

- North: zoned IL (Light Industrial District); currently vacant farm ground
- East: zoned AG (Agricultural Farming District); currently owned by Papio-Missouri River Natural Resources District and being developed as a recreational area with a lake as part of a flood control project for the region.
- South: zoned IL (Light Industrial District); location of corporate headquarters and labs for Sergeants Pet Care.

- West: zoned IL (Light Industrial District); vacant property and office/warehouse facility for Inland Truck Parts.

C. RELEVANT CASE INFORMATION:

- MUD has applied for a text amendment to Section 23 – IL (Light Industrial District) to allow this type of development as a Permitted Special Use within the zoning district. If that text amendment application is approved, then this proposed use could be allowed at this location with a Special Use Permit with conditions as may be specified.
- MUD has begun utilizing a number of CNG powered vehicles within its own fleet as well as marketing this to the public and other businesses utilizing large fleets of vehicles.
- A difficulty in marketing this alternative energy is the lack of fueling stations in the area. This proposed fueling station would begin to help address that problem.
- MUD is also in discussions with a truck service company considering locating a facility adjacent to this site on the west side. The company would then service and sell CNG semi-trucks. That facility would be a Permitted Use in the IL district.

D. APPLICABLE REGULATIONS:

- Sarpy County Comprehensive Plan
- Sarpy County Zoning Regulations:
 - Section 23 regarding the IL (Light Industrial) District – with proposed text amendment
 - Section 41 regarding Special Use Permits

III. ANALYSIS / STAFF COMMENTS

A. COMPREHENSIVE PLAN:

- The Comprehensive Plan future land use map shows this area as Business Park. The proposed use would be compatible with the Comprehensive Plan.

B. TRAFFIC AND ACCESS:

- Cornhusker Road - via a shared driveway easement with Lot 2 to the west.
- 132nd Street – a full-movement access drive would be allowed to the very south end of the property at the time of development. This access will be limited to a right-in / right-out only drive when improvements are made to the intersection of 132nd and Cornhusker Road sometime in the future.
- Access easement agreements will be required when the building permit application is submitted.
- A traffic study is included as Attachment “E” to this report

C. OTHER AGENCY REVIEW/COMMENTS:

- The applications were sent to area jurisdictional agencies or departments that may have an interest. The only feedback received is noted below. All other responses received indicated no comments or objections to the application.
 - The Papillion Fire Chief had no objections to the project but requested that MUD work with them to provide training for first responders that could be called to any type of incident at the fueling station. MUD has agreed to work with the fire department on this.
 - Since the development site is directly adjacent to the City of Papillion’s extra-territorial jurisdiction and they will likely be annexing the area in the not too distant future, staff asked the City of Papillion’s Planning Department for some specific input

on this project. During those discussions, it was requested that the County consider design guidelines for this project similar to those that the City of Papillion would have for fuel station canopies. Those guidelines included the following:

- ✓ Fuel station canopy shall have supporting pillars that have brick or stone bases of not less than four feet in height. Colors should be comprised of earth tone color ranges.
- ✓ The canopy coloring should be consistent and complimentary to the stone or brick used for the pillars and the storage area enclosure walls.
- ✓ The storage area enclosure walls should be constructed of the same materials as the canopy pillars (brick or stone) and be of the same earth tone color ranges.
- ✓ All under-canopy lighting shall be recessed, including lens or shroud, to minimize glare.

D. GENERAL:

- The applicant's Operation Plan states:
 - The facility will be open 24 hours a day but will have no on-site employees. It will be an automatic, self-service operation.
 - Customers will include the general public, MUD fleet vehicles and other users with agreements with MUD for service.
 - Site lighting will be adequate for fuel service operations and positioned and designed to minimize impact on adjacent properties.
 - The facility will have 24-7 call accessibility and immediate response to critical equipment failures.
 - A support technician will always be within 60 minutes of the facility.
 - Landscaping maintenance will be scheduled on a monthly basis.
 - Lawn mowing will be completed weekly or "as-needed" during the growing season.
 - Snow removal will be provided and completed as needed.
 - Trash/debris removal from the site will be completed monthly or "as-needed."

E. ADDITIONAL INFORMATION

- The following additional information has been provided since the November 19th Planning Commission meeting:
 - MUD will own the land on which the proposed development will be located, however, they are in negotiations with another company, Trillium CNG, which has extensive experience in this field, to actually develop and operate this CNG facility. Information on Trillium CNG is included at Attachment "D" of this report. MUD representatives will discuss the details of this arrangement at the December 17th Planning Commission meeting.
 - If this SUP application is approved, any future owners/operators of the facility must provide written confirmation that they have received a copy of the SUP, the Operation Plan, and any conditions it contains. They will be required to agree to abide by and operate the facility according to those conditions and documents.
 - MUD has indicated that the site will be monitored 24-7 by security cameras under the canopy.
 - Several tours of an existing CNG facility at 5318 L Street were conducted by MUD officials for Planning Commission members, County Board officials, County staff and Sergeants Pet Care representatives. MUD officials answered questions regarding the operations and safety issues related to the facility.

- Information regarding maintenance and safety inspections utilized by Trillium CNG for their facilities have been provided by MUD and is included as Attachment "C" for your review. MUD has indicated that these types of operations, maintenance and safety inspections will be followed regardless of who owns/operates the facility.
- Since concerns were brought up by Sergeants Pet Care regarding traffic issues, staff requested that MUD hire a consultant to conduct a traffic study on the impacts of this development on the 132nd Street and Cornhusker intersection. Copies of that traffic study, as well as comments from the County Engineer's office, are included with this report as Attachments "E" and "F" for your information.
- MUD and Sergeants Pet Care representatives have had continuing discussions regarding this proposed facility. As a result, MUD has been analyzing alternatives to their proposed site layout. Information on those possible alternative site plans are included as Attachment "G" and will be discussed at the Planning Commission meeting on December 17th.

IV. **STAFF RECOMMENDATIONS:**

- Staff recommends **APPROVAL** of a Special Use Permit for Metropolitan Utilities District to construct and operate a CNG fuel station without a convenience store as specifically described in their Application and Operation Plan as it is in conformance with the Sarpy County Zoning Regulations and Comprehensive Plan provided that the related proposed Zoning Regulations text amendment is approved. Staff makes this recommendation with the following additional conditions:
 1. The fuel station canopy shall have supporting pillars that have brick or stone bases of not less than four feet in height. Colors should be comprised of earth tone color ranges.
 2. The canopy coloring should be consistent and complimentary to the stone or brick used for the pillars and the storage area enclosure walls
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 4. All under-canopy lighting shall be recessed, including lens or shroud, to minimize glare.
 5. Elevation drawings of the canopy and storage area enclosure must be submitted and approved at time of building permit application.
 6. Any future owners/operators of the facility must provide written confirmation that they have received a copy of the SUP and any conditions it contains and agree to abide by and operate the facility according to those conditions.

V. **PLANNING COMMISSION RECOMMENDATION:**

- **MOTION:** Malmquist moved, seconded by Torczon to recommend approval of the Special Use Permit for Metropolitan Utilities District to construct and operate a CNG fuel station without a convenience store as specifically described in their Application and Operation Plan and under the original site plan submitted dated 10-8-2013, as it is in conformance with the Sarpy County Zoning Regulations and Comprehensive Plan

provided that the related proposed Zoning Regulations text amendment is approved, with the following conditions:

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5. Elevation drawings of the canopy and storage area enclosure must be submitted and approved at time of building permit application.
6. Any future owners/operators of the facility must provide written confirmation that they have received a copy of the Special Use Permit and any conditions it contains and agree to abide by and operate the facility according to those conditions; and
7. If facility is abandoned, the property owner shall remove all equipment from the site within six (6) months.

Ballot: *Ayes – Bliss, Lichter, Stuart, Mohr, Malmquist, Fenster, and Torczon.*
Nays – Davis. Abstain – None. Absent – Ackley, Whitfield, and Fenster.

Motion carried.

VI. ATTACHMENTS TO REPORT:

1. Attachment "A" - Maps
 - Sarpy County Current Zoning Map
 - Current Development Structure Plan Figure 5.1 of Sarpy Co. Comprehensive Plan (Future Land Use)
2. Attachment "B"-Application and Operation Plan
3. Attachment "C" - Information on Facility Operations and Maintenance
4. Attachment "D"-Company Overview on Trillium CNG
5. Attachment "E" - Traffic Study
6. Attachment "F" - Memo from Sarpy County Engineer's office regarding their review of the Traffic Study
7. Attachment "G"- Revised Conceptual Site Plan Options

VII. COPIES OF REPORT SENT TO:

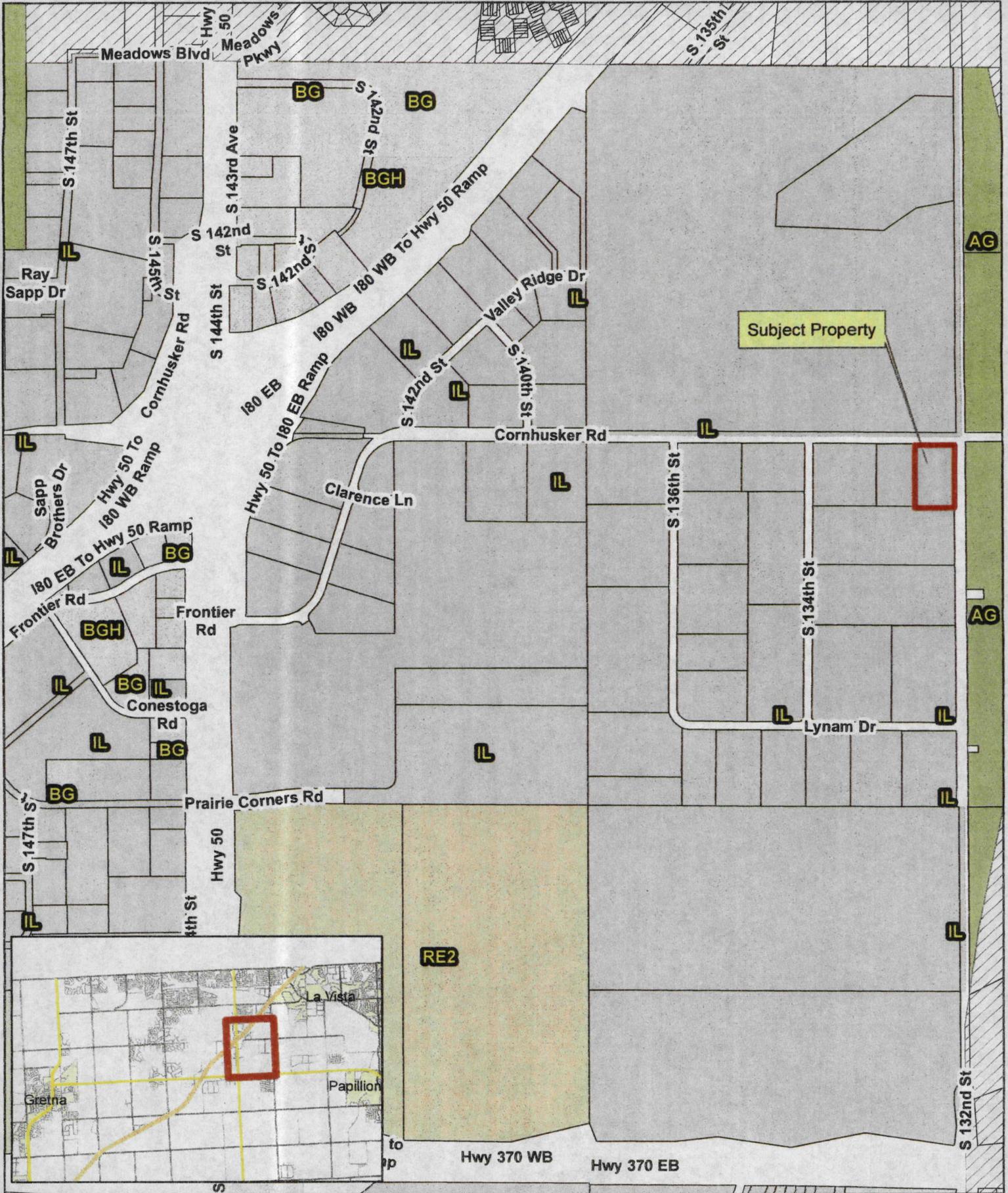
1. Metropolitan Utilities District – Stephanie Henn (applicant)
2. Mytty Properties, LLC (current property owner)
3. JEO Consulting Group (applicant's consultant)
4. Bob Scharf – Sergeant's Pet Care
5. Public Upon Request

Report prepared by: Bruce Fountain, Director – Planning & Building Dept.

ATTACHMENT “A”

MAPS

- **Sarpy County Zoning Map**
- **Current Development Structure Plan – Figure 5.1 of Sarpy County Comprehensive Plan (Future Land Use)**



Vicinity Map - Zoning

Lot 3 Hilltop Industrial Park Replat 13

Special Use Permit



ATTACHMENT “B”

APPLICATION AND OPERATION PLAN

**LETTERS OF SUPPORT SUBMITTED
BY APPLICANT**



SARPY COUNTY PLANNING & BUILDING DEPT.

1210 GOLDEN GATE DRIVE, #1240
PAPILLION, NE 68046
PHONE: 402-593-1555 FAX: 402-593-1558
E-MAIL: PLANNING@SARPY.COM

SPECIAL USE PERMIT APPLICATION

In order for your application to be considered **COMPLETE**, please answer all applicable questions and provide the following:

1. Completed Special Use Permit Application
2. Non-Refundable Fee of **\$500.00** made payable to Sarpy County (an additional fee of **\$25.00** is also be required to cover cost of mailing of public notifications)
3. Two (2) site plan drawings and/or other such plans and data showing the dimensions, arrangements, description, data, and other material which shall constitute a record essential to the understanding of the proposed use.
4. One (1) reduced size site plan drawing or other material provided above (8.5 x 11)
5. One (1) electronic copy of site plan drawing or other material provided above (in PDF form)
6. A detailed operational plan for propose use
7. Other information as deemed necessary by Sarpy County Planning Department
8. **Please review Section 41 of the Sarpy County Zoning Regulations for complete information, processes and submittal requirements for Special Use Permits.**

PLANNING STAFF USE ONLY:

APPLICATION #: SUP 13-0006
 DATE RECEIVED: 10/25/13
 CP DESIGNATION: BP
 CURRENT ZONING DESIGNATION: 1L
 PROPOSED ZONING DESIGNATION: -
 APPLICATION FEE: \$ 525 - RECEIPT NO. 2011
 PUBLIC NOTIFICATION
 PROCESSING FEE: \$25.00 RECEIPT NO. 2011
 RECEIVED BY: BE/O
 NOTES: _____

APPLICATION FILING FEES – see Sarpy County Master Fee Schedule for the Planning and Building Department

APPLICANT INFORMATION:

NAME: Metropolitan Utilities District E-MAIL: stephanie_henn@mudnebr.com
 ADDRESS: 1723 Harney Street CITY/STATE/ZIP: Omaha, NE 68102-1960
 MAILING ADDRESS: _____ CITY/STATE/ZIP: _____
 (IF DIFFERENT)
 PHONE: 402.504.7902 FAX: 402.504.5902

PROPERTY OWNER INFORMATION: (If multiple owners, please attach separate sheet)

NAME: Hilltop Industrial Park, LLC E-MAIL: _____
 ADDRESS: 2425 N 84th Street CITY/STATE/ZIP: Omaha, NE 68134
 MAILING ADDRESS: _____ CITY/STATE/ZIP: _____
 (IF DIFFERENT)
 PHONE: 402.393.3327 FAX: 402.397.7461

ENGINEERING/SURVEYING OR OTHER CONSULTING PROFESSIONAL'S INFORMATION:

NAME: JEO Consulting Group, Inc. E-MAIL: dnielsen@jeo.com
 ADDRESS: 11717 Burt Street, Ste. 210 CITY/STATE/ZIP: Omaha, NE 68154
 MAILING ADDRESS: _____ CITY/STATE/ZIP: _____
 (IF DIFFERENT)
 PHONE: 402.392.9934 FAX: 402.934.3681

OPERATION PLAN / PROJECT DESCRIPTION: Describe the project in detail, including proposed improvements, proposed uses or business, operating hours, number of employees, anticipated customers, other operational details, etc. – Attach as separate document entitled "Operation Plan." **PLEASE NOTE:** A detailed project description is essential to the reviewing process of this request.

PROJECT SITE INFORMATION: Complete each section in its entirety. If a question is not applicable to your project, please indicate this to show that each question has been carefully considered.

SUBDIVISION NAME (if applicable): Hilltop Industrial Park Replat 1

ASSESSOR'S PARCEL NUMBER: 011355336 **ADDITIONAL PARCEL NUMBERS** _____

GENERAL LOCATION: 132nd & Cornhusker Road
(example 189th & Giles Rd)

LEGAL DESCRIPTION: (Describe property to wit:) Lot 1 Hilltop Industrial Park Replat 1
to be known as Hilltop Industrial Park Replat 13, Lot 3 → ADMIN. REP. 13-0009 

SIZE OF PROPERTY: 5.65 acres **CURRENT ZONING:** IL **REQUESTED ZONING** (if applicable): _____

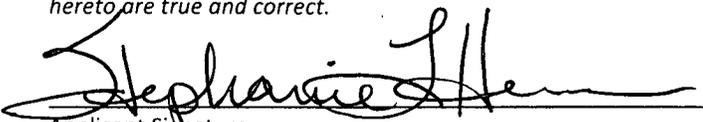
ADDITIONAL INFORMATION: Please use this space to provide any other information you feel is appropriate for Sarpy County to consider during review of your application. Attach extra sheets if necessary.

It is our intent to have the existing Lot 1 Hilltop Industrial Park Replat 1
divided into two separate lots by administrative replat as shown in site plan

PLEASE NOTE THE FOLLOWING PROCEDURES:

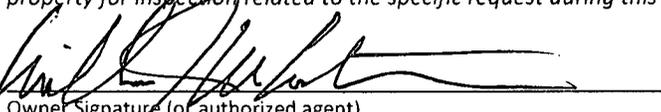
1. The Planning Department will review the application material along with other appropriate departments and/or agencies and provide a recommendation report to the Planning Commission and County Board.
2. The Planning Commission will hold a public hearing and make a recommendation to the County Board.
3. The County Board will hold a public hearing and make a final decision on the Special Use Permit application.
4. Any necessary agreements will be recorded with the Sarpy County Register of Deeds, the cost of which will be borne by the applicant or the property owner.

The applicant (or authorized agent) has prepared this application and certifies that the facts stated herein and exhibits attached hereto are true and correct.


Applicant Signature

10/24/13
Date

I, the undersigned, understand the Special Use Permit process as stated above and I authorize Sarpy County staff to enter the property for inspection related to the specific request during this process.


Owner Signature (or authorized agent)

10/25/13
Date

Owner Signature (or authorized agent)

Date

OPERATION PLAN

METROPOLITAN UTILITIES DISTRICT
CNG FUEL STATION
132ND & CORNHUSKER

IMPROVEMENT DESCRIPTION:

A COMPRESSED NATURAL GAS FUEL STATION THAT INCLUDES THE FUEL PUMPS, STORAGE EQUIPMENT, FUEL PUMP CANOPY, EQUIPMENT ENCLOSURE, PAVEMENT, AND UTILITY SERVICE IMPROVEMENTS.

SITE ACCESS:

CORNHUSKER ROAD

- FULL MOVEMENT AS SHOWN ON SITE PLAN

132ND STREET

- FULL MOVEMENT AT TIME OF CONSTRUCTION
- RIGHT-IN/RIGHT-OUT WHEN IMPROVEMENTS ARE MADE TO THE CORNHUSKER/132ND STREET INTERSECTION

SITE LIGHTING:

SITE SHALL BE ADEQUATELY LIGHTED FOR FUEL STATION OPERATIONS:

- ALL UNDER CANOPY LIGHTING SHALL BE RECESSED, INCLUDING LENS OR SHROUDED TO MINIMIZE GLARE
- LIGHT POLES SHALL BE POSITIONED AND DESIGNED TO MINIMIZE IMPACT ON ADJACENT LOTS

HOURS OF OPERATION:

24 HOURS

ON-SITE STAFF:

NONE

CUSTOMERS:

PUBLIC

METROPOLITAN UTILITIES DISTRICT (MUD)

USER'S WITH AGREEMENTS WITH MUD

MAINTENANCE:

A MAINTENANCE CONTRACT WILL BE ESTABLISHED WITH A MAINTENANCE FIRM TO PROVIDE:

1. 24-7 HOUR CALL ACCESSIBILITY AND IMMEDIATE RESPONSE TO CRITICAL EQUIPMENT FAILURES.
2. SUPPORT TECHNICIAN TO BE WITHIN 60 MINUTES OF CNG FUEL STATION
3. MOWING SHALL BE COMPLETED WEEKLY OR "AS-NEEDED" DURING THE GROWING SEASONS
4. LANDSCAPING MAINTENANCE SHALL BE SCHEDULED ANNUALLY
5. TRASH/DEBRIS REMOVAL FROM LANDSCAPING AREAS SHALL BE COMPLETED MONTHLY OR "AS-NEEDED"
6. SNOW REMOVAL SHALL BE COMPLETED "AS-NEEDED"

Midwest Delivery Company, Inc.

14805 Custer Road

Omaha, NE 68138

402-891-1400 402-891-1411 (Fax)

Bruce Fountain
Sarpy County Planning and Building Director
1210 Golden Gate Drive
Papillion, NE 68046

Dear Mr. Fountain,

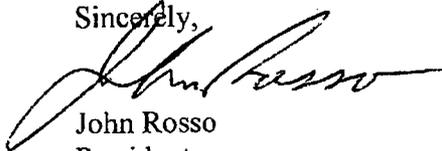
Midwest Delivery Company is a locally-owned business located at 14805 Custer Road in Sarpy County. We operate a fleet of 7 delivery vehicles from our Omaha facility as well as 45 vehicles from locations in Iowa, Illinois, Missouri and Oklahoma. Fuel costs are obviously a critical component of our business and fluctuations in petroleum prices have a tremendous impact on our operations.

We are convinced that using CNG vehicles will help us to reduce our fuel costs significantly. We've been operating CNG vehicles in our Oklahoma fleet since 2011 and have been very pleased with the results. There are a large number of public CNG station in Oklahoma so it made sense for us to begin operating CNG trucks there. We know that the Metropolitan Utilities District is planning to build a new station near 132nd & Cornhusker Road in Sarpy County. We're excited about the opportunity to begin using CNG vehicles here in our home town by utilizing a nearby public station.

I hope that the plans for a new station will move forward so that our business and others in the area can begin using this cleaner, cheaper American fuel here in Sarpy County.

Thank you for your consideration.

Sincerely,



John Rosso
President
Midwest Delivery Company



December 13, 2013

Bruce Fountain
Sarpy County Planning and Building Director
1210 Golden Gate Drive
Papillion, NE 68046

Dear Mr. Fountain,

Premier-Midwest Beverage Company is located at 10367 South 134th Street in the Hilltop Industrial Park. We operate a fleet of over 40 vehicles from our facility.

We have done extensive evaluation of compressed natural gas (CNG) and are convinced that it is a safe and environmentally-friendly alternative fuel that will help us to realize significant savings on fuel costs—one of our largest operational expenses. In addition to the cost savings, CNG will enable us to substantially reduce our carbon footprint which is an important goal to our company. The biggest barrier to us in implementing CNG vehicles is the current lack of a nearby fueling station.

We are aware that the Metropolitan Utilities District (MUD) is planning to establish a new CNG station near 132nd & Cornhusker Road. This would be an ideal location for us as it is in close proximity to our distribution center. We are currently evaluating a proposal to replace up to 18 of our diesel tractors with CNG tractors which would fuel primarily at the new station. Our decision on that proposal relies heavily on the new station being developed.

Premier-Midwest Beverage fully supports MUD's efforts to establish this new CNG station and we ask that the Sarpy County Planning Commission consider the significant economic and environmental benefits that a public CNG station would provide to our business as well as others in the area.

Thank you for consideration.

Sincerely,

Premier Midwest Beverage Company



P.O. Box 45308 • Omaha, NE 68145-0308
(402) 895-6640

November 19, 2013

Sarpy County Planning Commission
1210 Golden Gate Drive
Papillion, NE 68046

RE: MUD Application for Special Use Permit

Dear Commissioners,

I am the Director of Operations for Werner Enterprises, headquartered in Sarpy County, Nebraska. Werner Enterprises, along with other businesses in the trucking industry, have been working with Metropolitan Utilities District ("MUD") to develop a compressed natural gas ("CNG") facility in close proximity to our terminals. Werner is in the process of expanding its CNG program and has orders for new CNG tractors on standby pending the approval of the facility at 132nd & Cornhusker. Due to the demand for CNG vehicles, this standby order can only remain intact for a limited period.

We are anxious to proceed and request that the planning commission act upon this application without delay. CNG vehicles leave a carbon footprint that is a small fraction of traditional gas or diesel vehicles. To implement this program, Werner needs to act without delay.

Your immediate attention and decision on this application is greatly appreciated.

Sincerely,

Mike Hasenjager
Director of Operations - Van Network
Werner Enterprises
14507 Frontier Road
Omaha, NE 68138



City of Omaha
Jean Stothert, Mayor

Fire Department

1516 Jackson Street
Omaha, Nebraska 68102-3110
(402) 444-5700
FAX (402) 444-6378

Bernard J. Kanger, Jr.
Interim Fire Chief

Bruce Fountain
Sarpy County Planning and Building Director
1210 Golden Gate Drive
Papillion, NE 68046

Dear Mr. Fountain,

I am aware that the Metropolitan Utilities District (MUD) is planning to establish a new compressed natural gas (CNG) station near 132nd & Cornhusker Road in your jurisdiction. The Omaha Fire Prevention Division was involved in the permitting and inspection process for the CNG stations that MUD currently operates in Omaha.

As I'm sure you are aware, there are extensive industry codes and regulations relating to safe design, construction and operation of CNG fueling stations. From our experience in Omaha we are convinced that CNG stations which are designed, constructed and operated according to these standards have a minimal risk of fire related incidents.

I hope this information is helpful to Sarpy County officials as they evaluate the proposed MUD station.

Respectfully,

Steven Thornburg
Acting Assistant Fire Marshall
Omaha Fire Department
1516 Jackson Street
Omaha, NE 68102



The Nebraska Environmental Trust

preserving NATURAL NEBRASKA™ for future generations

Dave Heineman, Governor

Mark A. Brohman, Executive Director

December 11, 2013

Bruce Fountain
Director of Planning and Building Department
1210 Golden Gate Drive
Papillion, NE 68046

Dear Mr. Fountain:

The Nebraska Environmental Trust supports the establishment of a public compressed natural gas (CNG) station in Sarpy County. We approved a grant for the Metropolitan Utilities District (MUD) this year with the intent to fund that grant next year and the following year for their CNG project. A fueling station is a vital part of this project and will aid in the expansion of CNG use in the metro area. We hope MUD is able to successfully locate a fueling site within your jurisdiction.

Thank you for considering this worthwhile and important project.

Sincerely,

Mark A. Brohman
Executive Director

ATTACHMENT “C”

INFORMATION ON FACILITY OPERATIONS AND MAINTENANCE

Trillium's Turnkey Operations and Maintenance



Qualified Team of Technicians

Trillium prides itself on having the highest customer satisfaction in the industry. The foundation for exceptional service is having trained, professional, and responsive personnel.

All Trillium technicians are highly trained and stay up to date on new technologies and maintenance issues through regular team conference calls. They are trained in a variety of settings, including on-site learning, factory classroom facilities and locally organized classes. They are also engaged in continuing education and their skills are updated as technology changes. Every Trillium mechanic is required to complete Ariel factory training as well as Trillium's own CNG training program. Our local mechanics are fully qualified to provide basic and advanced station maintenance.



Routine Maintenance Plan

One of the certainties in operating CNG stations is that it is better to take the time to fix small issues to prevent them from becoming larger problems. That's why we proactively manage our preventative maintenance schedules.

The service program for each station is based on scheduled maintenance intervals that are defined by the equipment manufacturers, as well as our own extensive experience in operating CNG stations. Each major component, like the dryers, compressors, engines and dispensers will have their own list of scheduled

Station Equipment Maintenance Schedule

	Daily	Weekly	Monthly	Semi-Annual	Annual
Visual Site Inspection	✓				
Check Skids for Gas Leaks	✓				
Check for Oil Leaks	✓				
Check/Maintain Oil Levels	✓				
Monitor/Record Station Operation	✓				
Check Equipment Fault History	✓				
Check Dispensers for Gas Leaks	✓				
Check Hoses and Nozzles	✓				
Complete Daily Reports	✓				
Drain Oil From Skid Recovery System		✓			
Drain Dryer Liquid		✓			
Drain Oil From Dispensers		✓			
Cycle Dryer			✓		
Lubricate Motors			✓		
Lubricate Fan Bearings			✓		
Service Air Dryer			✓		
Change Compressor Coalescing Filter				✓	
Change Dispenser Coalescing Filters				✓	
Change Air Compressor Oil				✓	
Check/Drain Storage Vessels				✓	
Check/Tighten Fan Belts				✓	
Calibrate Dew Point Sensors on Dryer					✓
Service Gas Dryer					✓
Change Dryer Filters					✓
Check all Compressor Safety Shutdowns					✓
Check ESD Operation					✓
Check all Station Shutdowns					✓
Check Dryer Safety Shutdowns					✓
Test Dispenser Hoses					✓
Check/Test Pressure Relief Valves					✓

service items (see table). By staying up to date on planned maintenance items, Trillium reduces the need for unplanned work and maximizes station reliability.

Ensuring that the schedule is followed is the responsibility of the entire Trillium service organization. The local and regional managers are supported by the national office with sophisticated tools to track the service intervals. A calendar on our web-based service system schedules reminders for monthly, semi-annual and annual service that is due on a calendar basis. Trillium's controls monitor the hours on major equipment and alerts the technical team when runtime based service is due. The system also alerts managers of any work that is not completed on schedule so that they can follow up with the local and regional service teams.



24/7 Monitoring and Support

Typically, service needs at the CNG station are addressed during the daily scheduled maintenance. At times, however, unexpected issues may occur. That is why Trillium operates a robust remote monitoring program that supports customers around the country. Monitoring operations alert us instantly about any equipment malfunction, and our team gets to work resolving them right away.

Our service desk is staffed 24 hours a day, 7 days a week by a team of Service Coordinators. The service coordinators' duties include visually monitoring Trillium stations, answering incoming calls to the service line, responding immediately to equipment faults, and working with our local service teams to diagnose and repair equipment issues.

Trillium tracks the 24/7 team's performance each month. Generally, alarms are responded to in 2 or 3 minutes. This fast response time means that our customers rarely experience any fueling inconveniences.



Unplanned Service

Occasionally, urgent issues arise at a CNG station that have the potential to impact fueling. If your station is partially or completely unavailable for fueling, or a potentially unsafe condition exists, Trillium's team of local technicians and 24/7 monitoring staff respond immediately. In cases when the emergency shutdown (ESD) system is activated, whether as a result of methane detection or activation of an ESD button, Trillium sends out a technician immediately, without exception. Trillium's service desk also contacts the customer's facility personnel to determine the reason for the ESD and passes the information along to the mechanic. Once onsite, Trillium service technicians evaluate the current situation and take appropriate actions.



Maintenance Management System

Effective maintenance management includes keeping current information on services provided and their frequency. Trillium uses SharePoint technology to coordinate and track service at our stations. Through a single secure interface, our technicians and managers can view current station conditions, daily maintenance logs, maintenance calendars, spare parts inventory levels, manuals, drawings, photos, and contact information for site personnel and emergency contacts. By hosting all of this information in one place, our staff has convenient access to resources. In addition, the system can automatically send updates of the service logs your staff via email.

An electronic database includes four types of reports:

- **Daily Log Report** – records any activity by any Trillium employee or contractor by date
- **Skid Statistic Reports** – records key information such as equipment hours, operating temperatures, pressures and quantity of oil added and drained
- **Station Statistic Report** – records general station information such as gas meter readings, fill times, numbers of times the equipment started, dryer status and dispenser status
- **Field Service Report** – captures record of each equipment issue or repair, includes technician who is responsible, the status of the task, the priority of the task, and notes regarding the work to be performed



Spare Parts

To ensure fast repairs and support our commitment to reliability, Trillium will maintain an onsite inventory of spare parts for the station. These parts will be available to support Trillium's service responsibilities. Included will be consumables such as oil, o-rings and filters. In addition, commonly used spare parts including replacement valves, fittings, nozzles, hoses, will be readily available. Having these parts on hand means that Trillium can perform station repairs quickly and efficiently.

The cost for all spare parts and equipment failures is included in Trillium's full-service pricing. No additional cost or procurement action will be required for equipment repair. The spare parts inventory is tracked and logged in our maintenance system. The use of any spare parts will also appear on the repair logs.

ATTACHMENT “D”

COMPANY OVERVIEW ON TRILLIUM CNG



Company Overview

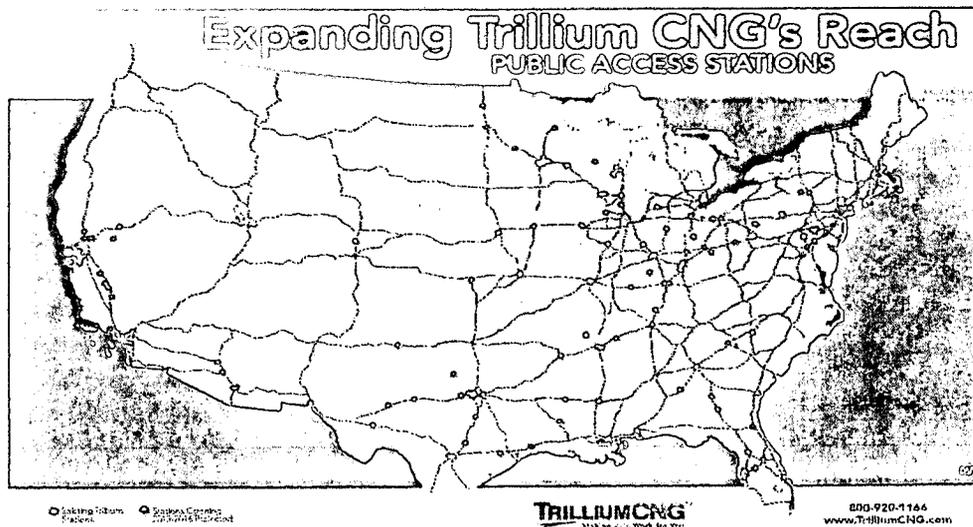
In 1994, Trillium began to promote compressed natural gas (CNG) as a viable alternative to traditional fuels by providing turnkey CNG fueling sites. Throughout the last 20 years, Trillium has expanded into various markets across the United States. Trillium provides complete CNG services to a variety of retail and fleet based customers.

Trillium has installed and operated more than 100 CNG compressors for fleets, municipalities and transit agencies across the United States. These stations provide CNG for a variety of customers, including delivery fleets, refuse trucks, transit agencies, airport shuttles, taxis and public fueling.

We operate a CNG compressor fleet totaling more than 35,000 horsepower and 100,000 scfm. Every year, we sell more than 45,000,000 gallons of fuel. Our turnkey CNG fueling station solutions are proven to provide reliable performance at all of our sites.

Office and Service Facility Locations

Trillium has national CNG operations. Our company headquarters are in Salt Lake City, UT, and we have regional offices in Green Bay, WI, Chicago, IL, and Midland, TX. In addition to our administrative offices, we operate service hubs in Los Angeles, Orange County, San Diego, and San Francisco, CA, New York City, NY, Ft. Worth, TX and Washington, DC.



On September 1, 2011, Trillium and Pinnacle CNG were acquired by the Integrys Energy Group (NYSE:TEG) and became part of Integrys Transportation Fuels, LLC, a subsidiary that is focused on national CNG infrastructure development.



Integrys is a \$9.8 billion Fortune® 500 company with a 150-year heritage and strong credit ratings headquartered in Chicago, Illinois. They currently manage assets of over \$10 billion in the energy industry. Integrys operates several regulated natural gas and electric utilities including Chicago Public Service. Integrys Energy Services is a retail supplier of natural gas and electricity currently serving markets throughout the northeast quadrant of the United States. In 2006, 2007, and 2009, Fortune has named our family of companies among the “Most Admired Energy Companies in America.”

The Integrys acquisition of Trillium has enabled us to expand our operations and develop a large range of products and services.

Lines of Business

Our lines of business extend beyond basic CNG construction. Trillium’s range of enhanced services fall into four major groups: supplying compression equipment, building and servicing CNG fueling facilities, creative procurement options for commodity products, and capital financing and equipment leasing. These elements provide our customers with a comprehensive, one-stop CNG fueling experience.

Quality Compression Equipment

- High capacity refueling products, manufactured in the USA
- Use of Ariel brand compressors
- Temporary and Portable CNG stations

CNG Fueling Facilities

- CNG station design, construction, engineering and permitting
- Station operations and maintenance, for new and existing stations
- Transaction management and billing, including fleet cards and major credit cards

Commodity Products and Services

- Full suite of financial instruments for gas purchasing including fixed pricing, cost collars, forward hedge instruments, and more

Capital Financing & Equipment Leasing

- Financing for CNG Station and Vehicle Conversion Purchases
- CNG Station Leasing

Relevant Experience and Project References

We’ve designed, built and maintained an array of CNG stations, the majority of which were designed for high-performance and high-volume fleets.





STATION	D/B	O/M	HP	BUILDING MODS
De Pere Superstore	X	X	400 HP	
Golden Eagle, Tucson	X	X	150 HP	
Golden Eagle, Casa Grande	X	X	200 HP	
United Parcel Service—Los Angeles	X	X	195 HP	
SoCal Gas—Anaheim Base	X	X	290 HP	
LA Unified School District	X	X	600 HP	
City of Berkeley	X	X	195 HP	
San Francisco Airport	X	X	390 HP	
City of Placentia	X	X	250 HP	
Fort Worth Transportation		X	2,000 HP	
WMATA—Four Mile Run		X	1,800HP	
WMATA—Bladensburg		X	1,800 HP	X
MTS—South Bay	X	X	2,200 HP	X
MTS—Imperial Avenue	X	X	1,600 HP	X
MTS—Kearney Mesa	X	X	1,700 HP	
North County Transit District - East		X	500 HP	
North County Transit District - West	X	X	800 HP	
OCTA—Garden Grove	X	X	1,800 HP	X
OCTA—Anaheim	X	X	1,800 HP	X
OCTA— Santa Ana	X	X	2,400 HP	X
MTA Bus Company—Spring Creek	X	X	1,350 HP	
MTA Bus Company—College Point	X	X	1,600 HP	
New York City Transit—West Farms	X	X	2,400 HP	X
New York City Transit —Jackie	X	X	2,500 HP	X

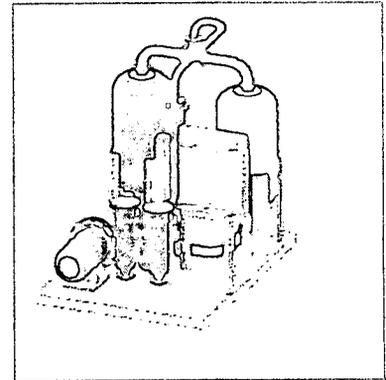


CNG Fuel Processing

Processing pipeline natural gas into CNG fuel is a safe and simple process. The gas runs through each fueling system element to generate clean high-quality fuel.

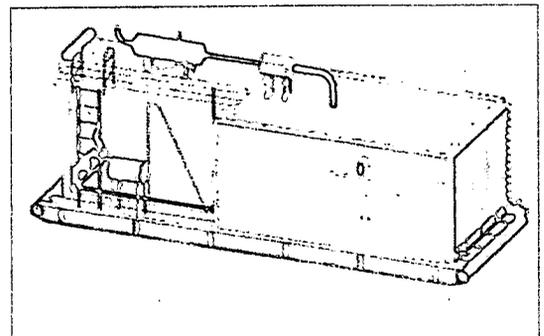
Dryer

After gas is delivered by the utility company, it will go through a gas dryer. In the dryer, gas flows through particulate filters and a desiccant bed that removes moisture and other contaminants from the gas stream. The dryer for the proposed configurations has a single desiccant tower. A well-maintained gas dryer is critical to ensure the quality of fuel for the Metropolitan Utilities District's fleet customers.



Compressor

After being dried and cleaned, the gas will flow to the compressor(s). The compressor is the workhorse of every CNG station, which is why Trillium installs reliable Ariel compressors in every configuration. They are used in the majority of CNG projects and have an unmatched record of service, long life and superior factory support. Trillium's CNG compressors are packaged into a complete system by J-W Operating Company of Longview, Texas. J-W Operating is a well-known and respected name in the oil and gas industry where they have supplied equipment for over fifty years. They build our compressor packages to withstand the rigors of heavy-duty daily use and we have had excellent success operating their equipment over the last 15 years.



Compressors are the workhorses of the station.

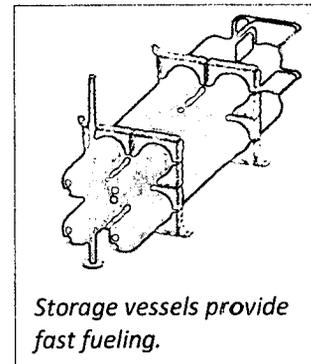
The compressors will be housed in sound-attenuated enclosures to minimize noise outside the compressor compound. Each compressor enclosure will also have a methane detection system that will indicate the presence of any gas leaks.

Controls and Storage

From the compressors, Trillium's advanced control system will manage the flow of gas and determine whether to send it to storage or to bypass storage sending the gas directly to the dispensers.

There will be three high-pressure storage vessels at the station. The **storage vessels hold compressed fuel so that it can be immediately accessed** when a vehicle arrives for fueling. When the pressure in storage gets low, the compressors will turn on to replenish it.

At times when vehicles are fueling in quick succession, the control system will send gas directly to the dispenser in order to provide fast fills. Only after the trucks are full will gas be re-directed to storage.



Controls are the key to meaningful system integration and efficiency. **Trillium has developed a custom control system based on industry standard control hardware and software with several advanced features** that translate into efficient station operation and provide important operational management data.

Key Control Features:

- Efficiently operate the optimum number of compressors based on fueling demand.
- Compressor lead/lag operations that balance usage of the equipment.
- Prioritize compressor flow to specific dispensing hoses. This provides the shortest fill times per truck and keeps the compressors running efficiently.
- Track and record management operation statistics including average fill times per truck and compressor starts.
- Automatically log all station alarms and shutdowns to a secure portion of Trillium's website.
- Provide detailed real time system and compressor information on Trillium's secure website that can be viewed via a standard web browser.

Trillium's controls will allow Metropolitan Utilities District to save on electrical usage, manage fueling operations and obtain important management and operational data. These advanced features will provide true value to Metropolitan Utilities District over the lifetime of the station.

Construction Standards

Trillium's construction standards are higher than other CNG companies. Some of the ways our quality stands out are organization of conduits and stub up points, simplified piping layouts, elimination of tripping hazards and layouts with sufficient clearance between equipment

components so that equipment can be easily serviced in the future. We also plan areas to store consumables like oil, waste materials like dryer effluent, and buildings to house on-site spare parts.

Comprehensive “Turnkey” Maintenance Plan

Many station builders offer a basic service plan, but few offer the level of expertise and value that is provided by Trillium.



Routine Maintenance

One of the certainties in operating CNG stations is that it is better to take the time to fix small issues to prevent them from becoming larger problems. That’s why we proactively manage our preventative maintenance schedules.

Trillium’s service program is based on scheduled maintenance intervals that are defined by the equipment manufacturers, as well as our own extensive experience in operating CNG stations. Each major component, like dryers, compressors, motors and dispensers have their own list of scheduled service items. **By staying up to date on planned maintenance, Trillium will reduce the need for unplanned work and maximize station reliability.**

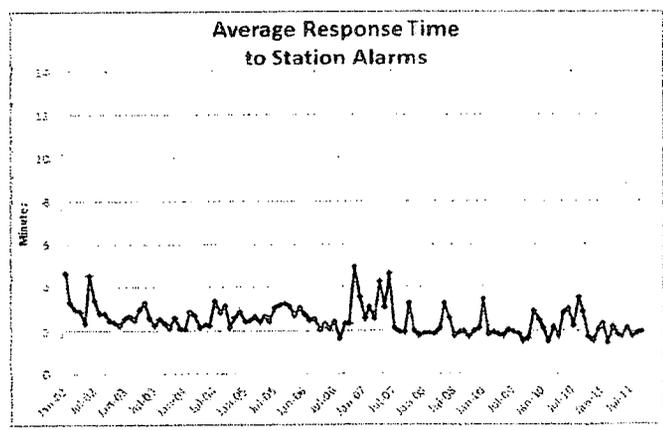
Ensuring that the schedule is followed is the responsibility of the entire Trillium service organization. The national office supports local and regional managers with sophisticated tools to track the service intervals. A calendar on our web-based service system employs schedule reminders for monthly, semi-annual and annual services. Our control system monitors the hours on major equipment and sends an alert to the technical team when runtime based service intervals are due. Together, these systems provide electronic reminders for our team of technicians and service managers. The system also alerts managers of any work that is not completed on schedule so that they can follow up with the local and regional service teams.



24/7 Monitoring and Support

Typically, service needs at the CNG station are addressed during the scheduled maintenance. At times, however, unexpected issues occur.

That’s why Trillium operates a robust remote monitoring program that supports customers across the country. **Monitoring operations alert us instantly about any equipment malfunction, and our team gets to work resolving them right away.**



Our service desk is staffed 24 hours a day, 7 days a week by a team of trained and capable Service Coordinators. The service coordinators' duties include visually monitoring Trillium stations, answering incoming calls to the service line, responding immediately to equipment faults and working with our local service teams to diagnose and repair equipment issues.

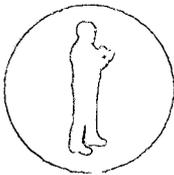
The result of these many controls and tools is simply outstanding customer service. For the last 9 years, Trillium has tracked the monthly performance of the 24/7 team. We have a company goal to respond within 15 minutes. Our team, however, has consistently outperformed. As the chart shows, alarms are consistently responded to and corrected in 2 or 3 minutes. **This fast response time means that our customers rarely experience any fueling inconveniences.**

All Trillium sites are equipped with internet communications. Real-time data from each of our stations is available constantly on monitoring screens at our Salt Lake City headquarters. As part of our scope of work on the Metropolitan Utilities District project, Trillium will install a DSL line to communicate with the station. **Your station information will be online and viewable via Trillium's secure website from any web browser. We will provide your staff with real-time access to the data.** If you'd like to set up a time to see how our system works, please contact us for a demonstration of the interface and its capabilities.



Unplanned Service

Occasionally, urgent issues arise at a CNG station which have the potential to impact fueling. When a station is partially or completely unavailable for fueling or a potentially unsafe condition exists, Trillium's team of technicians and 24/7 monitoring staff respond immediately. **Our technicians are guaranteed to respond onsite within four hours of an urgent customer call.** Technician response times, however, are often much quicker.



Qualified Team of Technicians

Maintenance practices and procedures are important, but our people make the difference. Trillium prides itself on having the highest customer satisfaction in the industry. The foundation for exceptional service is having trained, professional, and responsive personnel.



Hermes Angeles, lead mechanic, performing repair on electric motor.

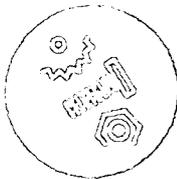
Trillium will provide a local technician to support Metropolitan Utilities District CNG Fueling Locations

All Trillium technicians are highly trained and stay up to date on new technologies and maintenance issues through regular team conference calls. They are trained in a variety of settings, including on-site learning, factory classroom facilities and locally organized classes. They are also engaged in continuing education and their skills are updated as technology changes.

Every Trillium mechanic is required to complete Ariel factory training as well as Trillium’s own CNG training program. Our mechanics are fully qualified to provide basic and advanced station maintenance.

In addition to the local technician, Metropolitan Utilities District’ CNG station will be supported by regional and national teams of technical experts. Trillium has an unparalleled team of knowledgeable mechanics that can step up and provide additional assistance, should it ever be needed.

Spare Parts



To ensure fast repairs and support our commitment to reliability, Trillium will provide Metropolitan Utilities District with a list of suggested spare parts to keep on hand. As illustrated in the table, the inventory will include preventative and corrective maintenance parts and consumables. Having these items on hand will allow Trillium’s service staff to keep the station operating smoothly and prevent unnecessary station downtime. In addition, the projects will be supported by fast access to our national inventory system.

All Trillium-owned spare parts are tracked and logged in our maintenance system. The use of any spare parts will also appear on the repair logs.

Typical Routine Maintenance Items	Typical Corrective Maintenance Items
<ul style="list-style-type: none"> •Lubricants •Fluids •O-rings •Filters •Fasteners •Fuses 	<ul style="list-style-type: none"> •Compressor Valves •Valve Repair Kits •Actuators •Lubricator Pumps •Lubricator Blocks •Fittings •Nozzles •Break-a-ways •Hoses •PLC replacement parts •PLC I/O Cards •Power supplies •Relays\Bases •Long lead time items



Maintenance Management System

Effective maintenance management includes keeping current information on services provided and their frequency. Trillium uses SharePoint technology to coordinate and track service at our stations. Through a single secure interface, our technicians and managers can view current station conditions, daily maintenance logs, maintenance calendars, spare parts inventory levels, manuals, drawings, photos, and contact information for site personnel and emergency contacts. By hosting all of this information in one place, our staff has convenient access to resources. In addition, the system can automatically send updates of the service logs to Metropolitan Utilities District staff via email.

An electronic database includes four types of reports that will be available:

- Log Report—records any activity by any Trillium employee or contractor by date
- Skid Statistic Reports—records key information such as equipment hours, operating temperatures, pressures and quantity of oil added and drained
- Station Statistic Report—records general station information such as gas meter readings, fill times, numbers of times the equipment started, dryer status and dispenser status
- Field Service Report—captures record of each equipment issue or repair, includes technician who is responsible, the status of the task, the priority of the task, and notes regarding the work to be performed

In summary, Trillium provides a proactive and technically advanced operation and maintenance plan. Thanks to remote access features, in depth management data and professional onsite technicians, Trillium's program leads the industry in station reliability and uninterrupted operations. We will ensure that Metropolitan Utilities District's CNG investment is properly cared for and will last for decades to come.

Trillium is pleased to offer Metropolitan Utilities District the full range of our company's expertise that we have accumulated over the last 20 years. We are focused on serving customers like you that need fast and reliable fueling.

ATTACHMENT “E”

TRAFFIC STUDY

**MUD CNG FILL STATION
TRAFFIC IMPACT ANALYSIS**

Prepared for:

JEO Consulting Group, Inc.
11717 Burt Street, Suite 210
Omaha, NE 68154

Prepared by:

Felsburg Holt & Ullevig
11422 Miracle Hills Drive, Suite 115
Omaha, NE 68154
402-445-4405

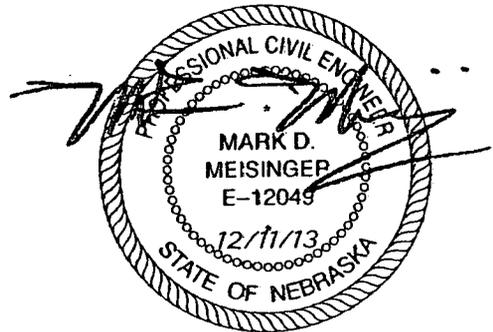
Project Engineer: Mark Meisinger, PE, PTOE
Adam Denney, EI

FHU Reference No. 13-366
December 2013

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I. INTRODUCTION

This is a traffic impact analysis (TIA) for proposed Metropolitan Utilities District (MUD) CNG Fill Station & Omaha Truck Center Facility located along 132nd Street and Cornhusker Road in Sarpy County, Nebraska. The location of the development in relation to the surrounding roadway network is shown on **Figure 1**. The site plan for the proposed development is shown on **Figure 2**.

The MUD CNG Fill Station is a proposed public-access CNG fueling facility and the Omaha Truck Center Facility will be a six bay service center that will specialize in alternative fuel vehicles. The proposed site is located on a tract of land to the south of Cornhusker Road between 132nd Street and 134th Street. The site will be constructed in two phases, Build and Future. The Build phase of the development, which consists of the MUD CNG Fill Station only, is anticipated to be completed by 2014. The Future phase is to be constructed by 2019 and will include the Omaha Truck Center Facility.

Access to the site will be provided at one location onto Cornhusker Road via North Site Drive, and at one location onto 132nd Street via East Site Drive. The North Site Drive will be a shared driveway with the Omaha Truck Center Facility.

Anticipated traffic operations with the proposed development were evaluated at the following intersections:

- 132nd Street and Cornhusker Road
- 132nd Street and East Site Drive
- Cornhusker Road and North Site Drive

The analysis evaluated the following time periods:

- Existing (2013) morning and evening peak hours
- Build year (2014) of the development for the morning and evening peak hours
- Future year (2019) for the morning and evening peak hours

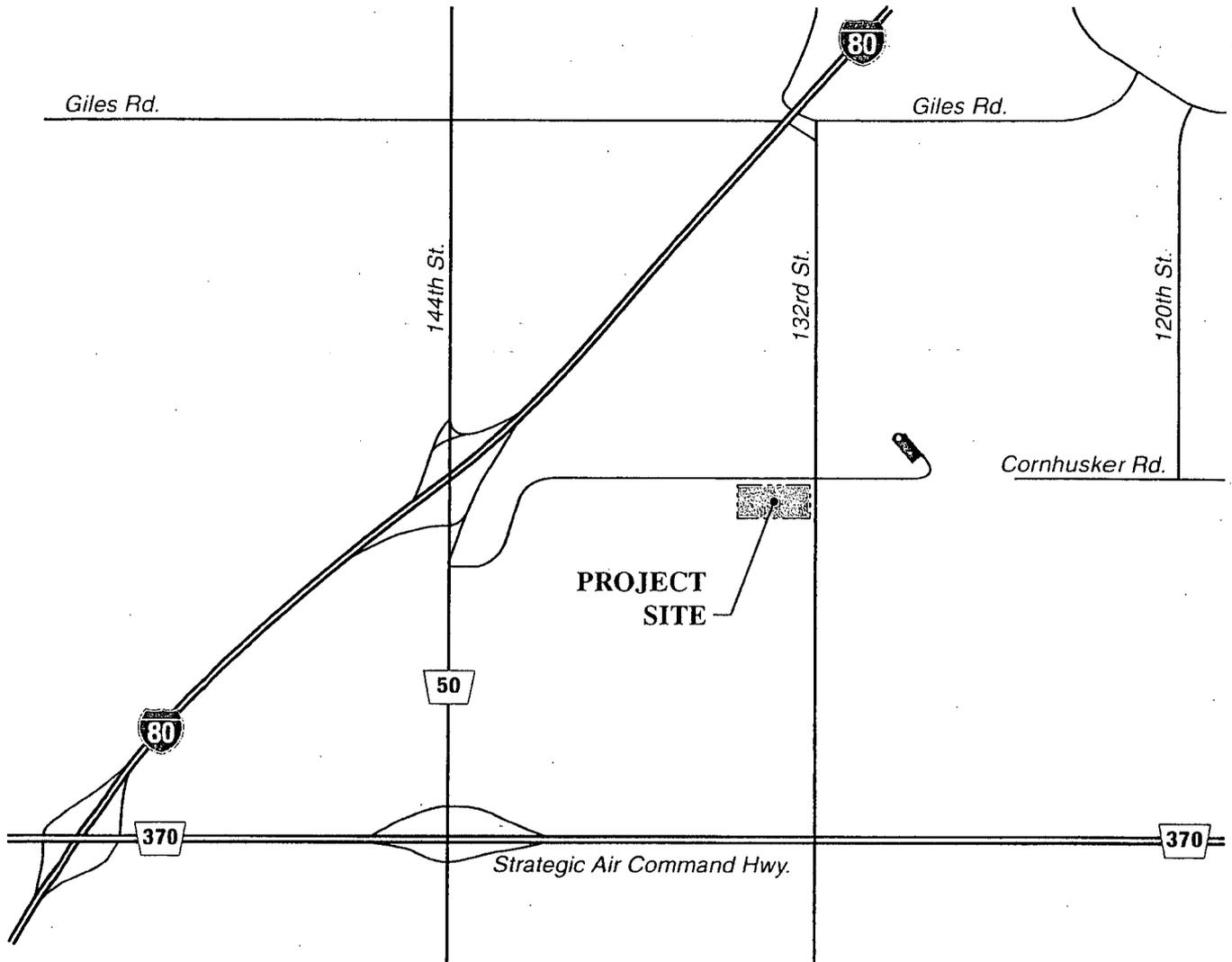


Figure 1
Vicinity Map

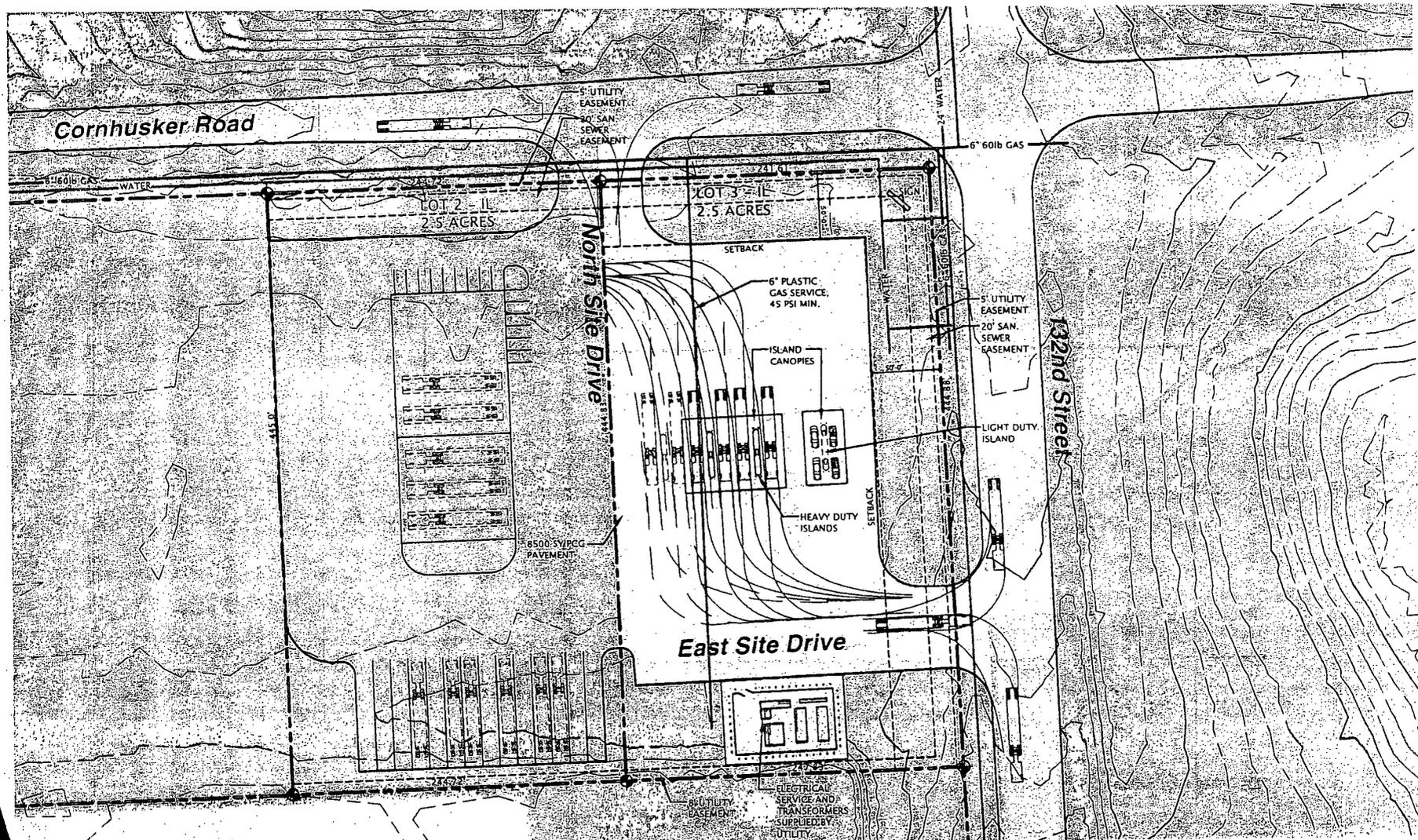


Figure 2
Site Plan

II. EXISTING CONDITIONS

A. Surrounding Land Uses

The development site is located between 132nd Street and 134th Street on the south side of Cornhusker Road and north of the Sergeant's Pet Care Products facility. The land use surrounding the proposed development is agriculture to the east with some light industrial to the north, south, and west of the site. The West Papillion Retention Basin 5 (WP-5) Lake and Dam site is currently under construction and located to the east of 132nd Street. The east leg of Cornhusker Road is no longer owned by Sarpy County and will serve as an access point to a boat ramp and parking.

B. Roadway Network

The existing roadway system in the study area includes the following primary facilities:

132nd Street. 132nd Street runs north-south along the east side of the proposed development, and is currently a two-lane undivided roadway. This road serves as a north-south route for commuting traffic accessing the industrial corridor along Interstate 80. The posted speed limit along 132nd Street in the study area is 45 mph.

Cornhusker Road. Cornhusker Road runs east-west, north of the proposed development. The roadway is a two-lane undivided roadway. At the intersection of 132nd Street with Cornhusker Road, exclusive left-turn lanes are provided on all approaches as well as a shared through-right lane. All approaches of the 132nd Street with Cornhusker Road intersection are stop-controlled. The posted speed limit along Cornhusker Road in the study area is 45 mph.

C. Existing 2013 Traffic Conditions

Peak period turning movement counts were conducted by FHU for the project on December 4, 2013. The counts were conducted for both the AM and PM peak periods at the intersection of 132nd Street with Cornhusker Road. The AM peak hour was determined to be 7:15 AM to 8:15 AM, and the PM peak hour was 4:30 PM to 5:30 PM. Existing 2013 traffic volumes are summarized on **Figure 3**. The traffic count data is included in the **Appendix**.

Traffic operations were analyzed for the study intersections using procedures documented in the *Highway Capacity Manual*, HCM 2010. From the analyses, a key measure or "level of service" rating of the traffic operational condition was obtained. In general, level of service (LOS) is a qualitative assessment of traffic operational conditions within a traffic stream in terms of the average stopped delay per vehicle at a controlled intersection. Levels of service are described by a letter designation of either A, B, C, D, E or F, with LOS A representing essentially uninterrupted flow, and LOS F representing a breakdown of traffic flow with noticeable congestion and delay. Unsignalized, or stop sign controlled, intersection capacity analyses produce LOS results for each movement which must yield to conflicting traffic at the intersection.

Table 1 summarizes LOS criteria for signalized and unsignalized (stop sign controlled) intersections.

Table 1. Level of Service (LOS) Criteria

Level of Service	Average Control Delay per Vehicle (sec/veh)	
	Signalized Intersections	Stop Sign Controlled Intersections
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

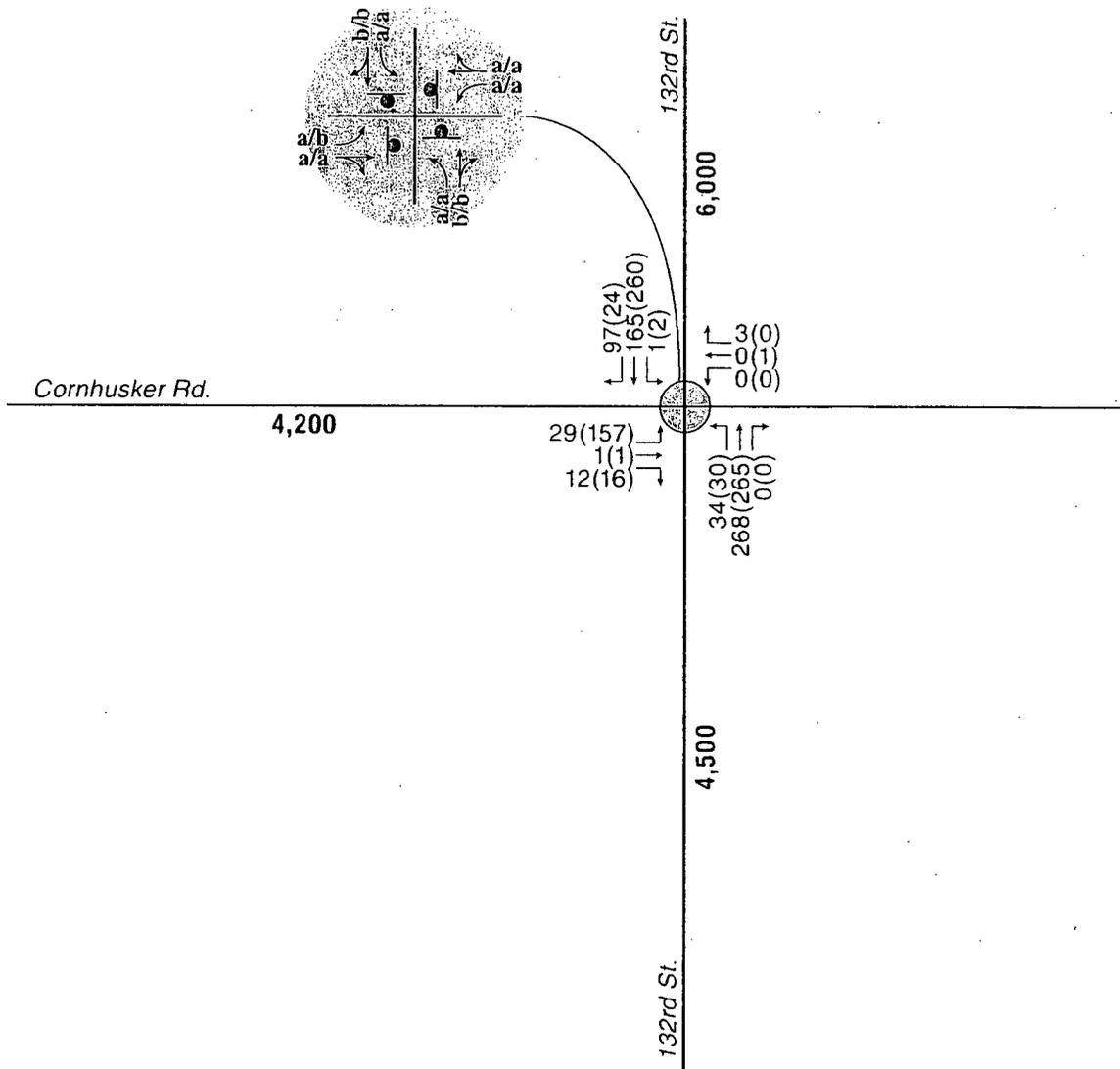
The Synchro traffic analysis software program was utilized to analyze traffic operations at the study intersections. **Figure 3** shows the lane geometry, traffic control, and levels of service for existing traffic conditions. At the stop-controlled intersection of 132nd Street with Cornhusker Road, all critical movements currently operate at LOS B or better in the AM and PM peak hours. Capacity analysis worksheets for existing traffic conditions are included in the **Appendix**.

MUTCD traffic signal warrants were analyzed for the intersection of the 132nd Street with Cornhusker Road. Under 2013 existing conditions, traffic volumes are not sufficient to warrant traffic signalization. Signal warrant worksheets are included in the **Appendix**.

D. Stop Sign Improvements

During data collection, several vehicles were observed running the stop signs at high speeds northbound and southbound on 132nd Street. Also, a significant number of rolling stops were observed on all legs of the intersection. The traffic control at the intersection is currently a four-way stop. Each sign assembly has a 30"x30" stop sign (R1-1) and a "4-WAY" supplementary plaque (R1-3) mounted on the post. Stop ahead signs (W3-1) are located 550 feet in advance of the stop sign on each approach of the intersection. The 2009 MUTCD specifies that W3-1 signs should be located at least 175 feet in advance of the stop sign for a roadway speed limit of 45 mph.

Countermeasures to stop sign running should be implemented. The current signage conforms to the 2009 MUTCD, however it is recommend that stop sign sizes at the intersection should be upgraded to 36"x36" to provide more visibility. Also, vertical retro reflective strips should be mounted on the posts and stop bars should be installed on all approaches.



LEGEND

- XXX(XXX) = AM(PM) Peak Hour Traffic Volumes
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
- XXXX = Average Daily Traffic
-  = Stop Sign

Figure 3
2013 Existing Traffic Conditions

III. TRAVEL DEMAND ANALYSIS

A. Site Trip Generation

JEO Consulting Group, Inc. provided FHU with the proposed site plan for the MUD CNG Fill Station & Omaha Truck Center Facility. Trip generation rates from the Institute of Transportation Engineers' (ITE) *Trip Generation*, Ninth Edition, 2012, were utilized to estimate the traffic generated by the site as well as from information provided by MUD. The proposed development is anticipated to be built in two phases, 2014 Build and 2019 Future.

The first phase (2014 Build) consists of only the MUD CNG Fill Station. Trip generation for this phase was developed utilizing data from the existing I-80 Fuel CNG Fill Station site located at 53rd & L Street and also from future projections provided by MUD. The projections stated that Werner trucking currently runs two CNG semis and are proposing an additional ten semis in the near future. Each semi will fuel up twice a day at the proposed MUD CNG Fill Station. These trips were assumed to occur during the AM and PM peak periods. It was also assumed that approximately twenty Happy Cab GNC powered taxis would also use the facility. As shown below, for 2014 Build, the project will generate approximately 148 vehicle-trips per day with a total of 44 vehicle-trips during the AM peak hour and 44 vehicle-trips during the PM peak.

A second future phase (2019 Future) is anticipated which will include completion of the adjacent Omaha Truck Center Facility. Trips for the Omaha Truck Center Facility were estimated using the Automobile Care Center (ITE Code 942) land use. The future projections provided by MUD stated that multiple other fleet operators in the vicinity are showing interesting in using CNG power vehicles and that three other fleets have already committed to purchasing a total of twenty five vehicles over a five year period. The twenty five additional semis were assumed to all be operational and utilizing the MUD CNG Fill Station by 2019. As shown below, for 2019 future, the project will generate approximately an additional 175 vehicle-trips per day with a total of 59 vehicle-trips during the AM peak hour and 63 vehicle-trips during the PM peak.

Upon completion of the development, the project will generate approximately 323 vehicle-trips per day with a total of 103 vehicle-trips during the AM peak hour and 107 vehicle-trips during the PM peak. **Table 2** summarizes the estimated vehicle-trips that would be generated by the proposed facility.

Table 2. MUD CNG Fill Station Site Trip Generation

Land Use Description	ITE Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Happy Cabs	-	20 CNG Cabs	100	10	10	20	10	10	20
Werner CNG Trucks	-	12 CNG Semis	48	12	12	24	12	12	24
2014 BUILD TOTALS			148	22	22	44	22	22	44
Automobile Care Center	942	6 Service Stalls	75	6	3	9	4	9	13
Other CNG Trucks	-	25 CNG Semis	100	25	25	50	25	25	50
2019 FUTURE TOTALS			175	31	28	59	29	34	63
PROJECT TOTAL			323	53	50	103	51	56	107

B. Trip Distribution and Traffic Assignment

For the 2014 Build phase, it was assumed that full access to the site will be provided at both site drives. The estimated distribution of site generated traffic was based upon existing traffic patterns, location of businesses, and projected growth in the project area. The following distribution percentages were used to assign site generated vehicle-trips to the adjacent roadway network for both the AM and PM peak periods:

- 5% oriented to/from the north via 132nd Street
- 25% oriented to/from the south via 132nd Street
- 70% oriented to/from the west via Cornhusker Road
- 0% oriented to/from the east via Cornhusker Road

It was assumed that the majority of truck traffic would arrive from the west on Cornhusker Road and enter via North Site Drive. The traffic would then exit via East Site Drive and proceed north on 132nd Street to go back to the west on Cornhusker Road. The trip distribution percentages identified above and traffic assignments are graphically shown on **Figure 4**. The site generated traffic volumes identified in **Table 2** were assigned to the study intersections according to these distribution patterns.

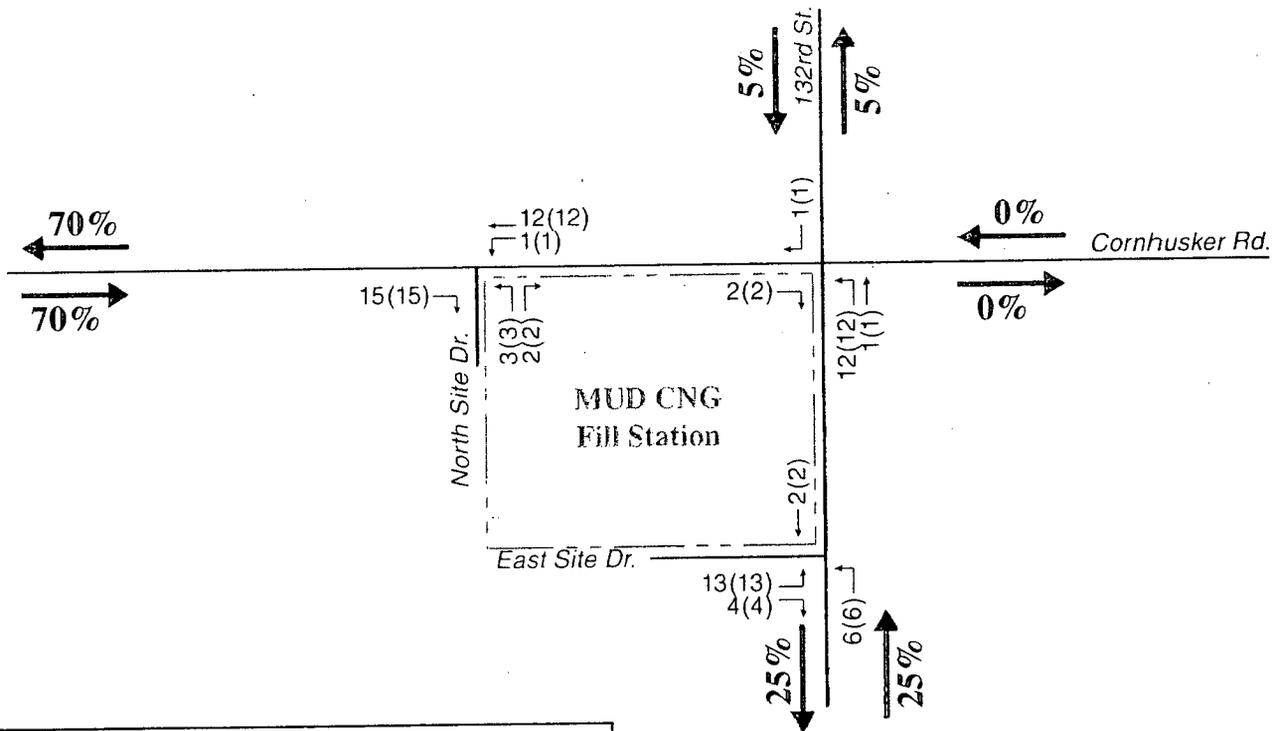
For the 2019 Future phase, two scenarios were developed. The first assumed full access would still be provided at both site drives. For this scenario (Full Access) the distribution percentages identified above were used.

The second scenario (RIRO Access) assumed that full access to the site will be provided via North Site Drive. However, only RIRO access would be allowed at the East Site Drive intersection with 132nd Street. The following distribution percentages were used to assign site generated vehicle-trips to the adjacent roadway network for both the AM and PM peak periods with RIRO Access:

- 5% in/out oriented to/from the north via 132nd Street
- 25% in oriented from the south via 132nd Street
- 70% in oriented from the west via Cornhusker Road
- 70% out oriented to the south via 132nd Street
- 25% out oriented to the west via Cornhusker Road
- 0% in/out oriented to/from the east via Cornhusker Road

With access being limited to RIRO at the East Site Drive, it was assumed that the majority of truck traffic would still arrive from the west on Cornhusker Road and enter via North Site Drive. Upon exiting the fill station using East Site Drive, traffic will be forced to turn right and head south on 132nd Street. The truck traffic would then use Highway 370 to head west. The trip distribution percentages identified above and traffic assignments are graphically shown on **Figure 5**. The site generated traffic volumes identified in **Table 2** were assigned to the study intersections according to these distribution patterns.

2014 Build Trip Generation and Distribution



LEGEND

XXX(XXX) = AM(PM) Site Generated Traffic Volumes

XX% → = Site Trip Distribution

2019 Future Trip Generation and Distribution

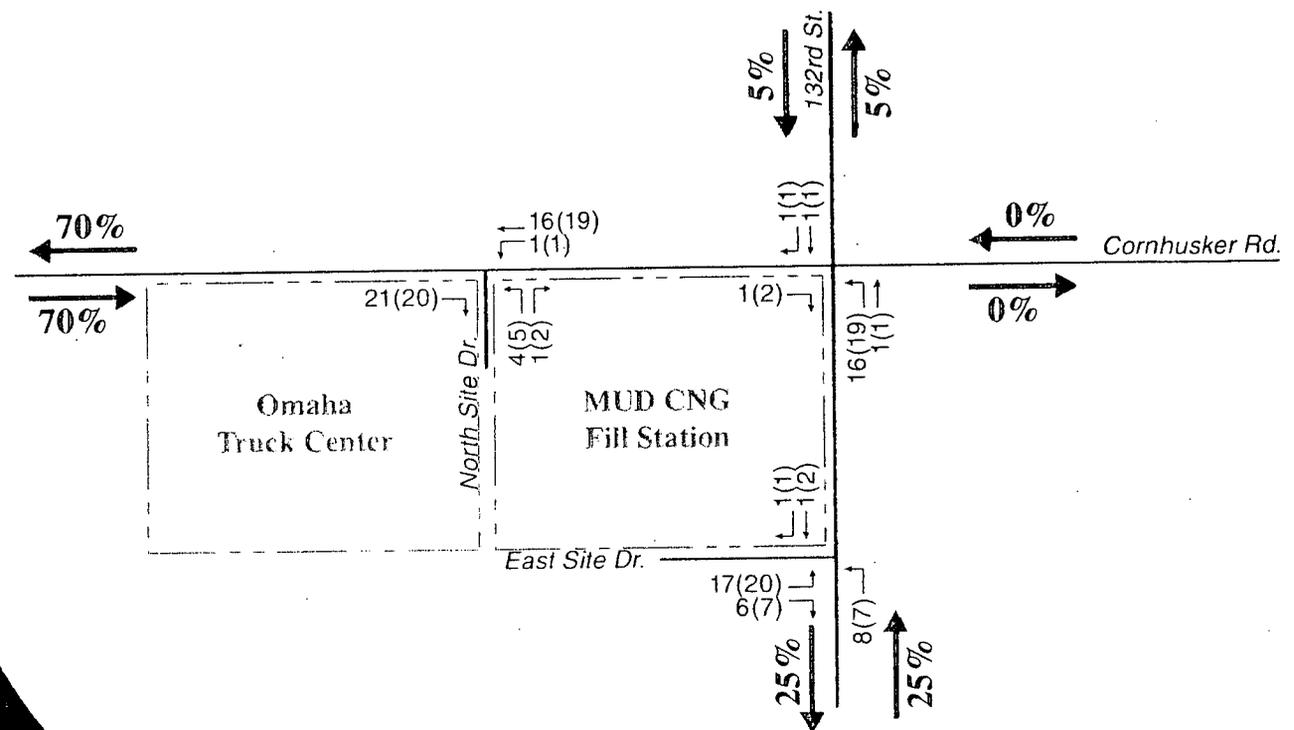
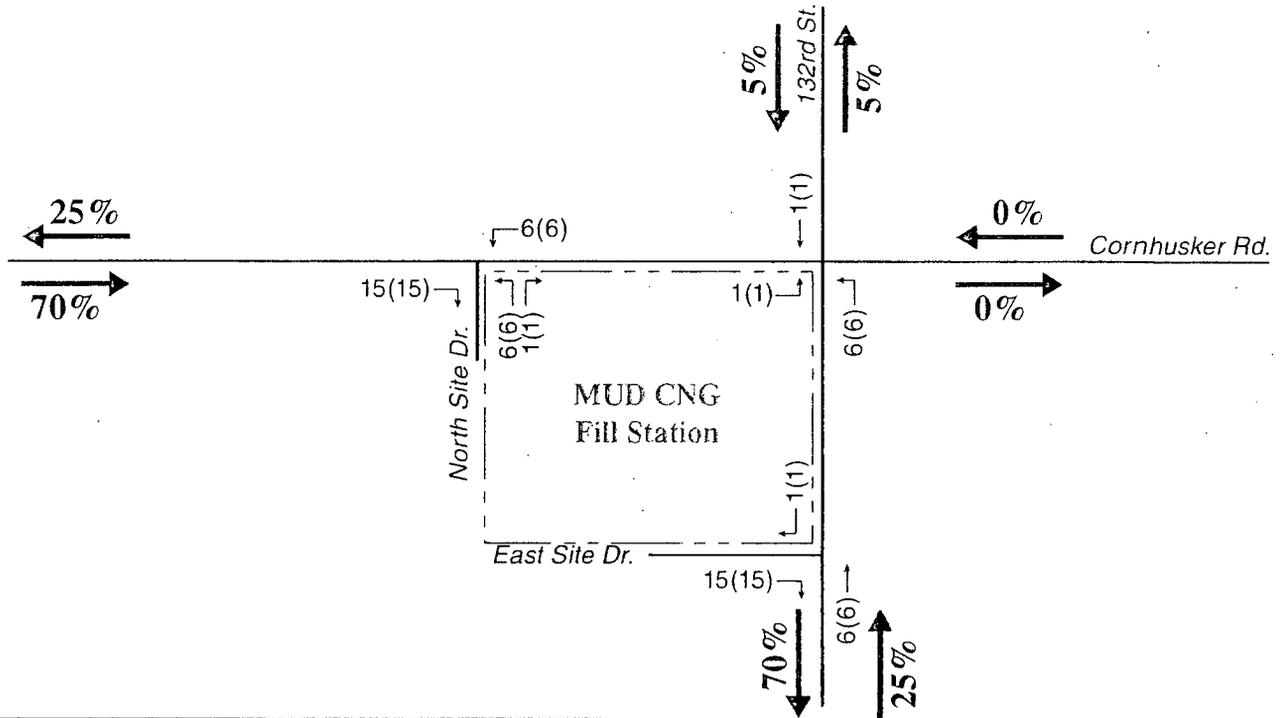


Figure 4

Full Access Site Generated Traffic Volumes

2014 Build Trip Generation and Distribution



LEGEND

XXX(XXX) = AM(PM) Site Generated Traffic Volumes

XX% → = Site Trip Distribution

2019 Future Trip Generation and Distribution

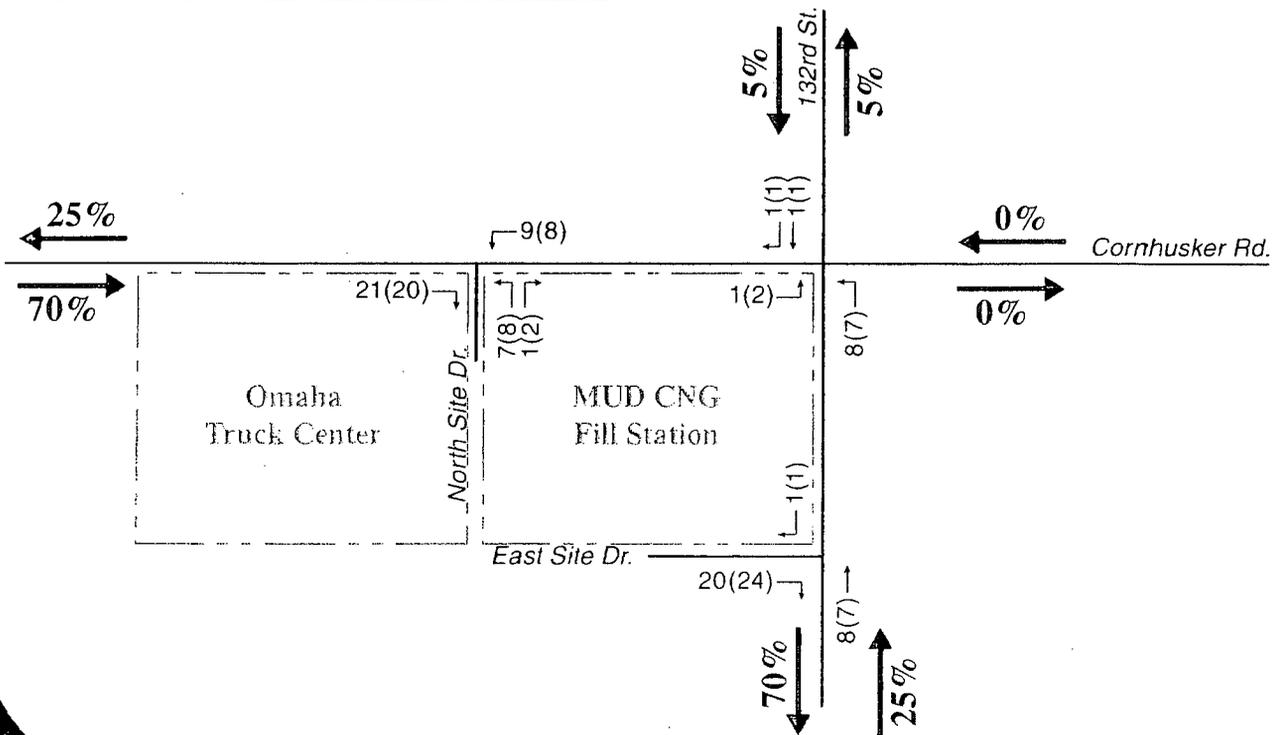


Figure 5

RIRO Access Site Generated Traffic Volumes

IV. 2014 BUILD TRAFFIC CONDITIONS

A. 2014 Build Traffic Conditions

It is anticipated that the first phase of the MUD CNG Fill Station development will be completed by the end of 2014. The 2014 Build site generated traffic in **Figure 4** was added to the 2013 existing traffic volumes in **Figure 3** to develop the 2014 Build Traffic Volumes as shown in **Figure 6**.

B. 2014 Build Traffic Operations

Figure 6 illustrates anticipated traffic operations at the study intersections with the 2014 Build scenario. The following intersection improvements should be implemented at the study intersections by 2014:

- At the stop-controlled intersection of 132nd Street with Cornhusker Road, all critical movements are anticipated to operate at LOS B or better in both the AM and PM peak hours. Stop sign improvements including upgrading to 36"x36" signs and vertical retro reflective strips mounted on the posts should be implemented prior to the MUD facility opening. Also, stop bars should be installed on all approaches. No additional improvements are needed by 2014.
- All other movements at the site drive intersections with 132nd Street and Cornhusker Road are anticipated to operate at LOS C or better in the AM and PM peak hours.
- MUTCD traffic signal warrants were analyzed for the intersection of 132nd Street with Cornhusker Road. Under 2014 Build conditions, traffic volumes are not sufficient to warrants traffic signalization. Signal warrant worksheets are included in the **Appendix**.

Capacity analysis worksheets for 2014 Build traffic conditions are included in the **Appendix**.

V. 2019 FUTURE TRAFFIC CONDITIONS

A. Future Roadway Improvements

According to the Metropolitan Area Planning Agency (MAPA) 2035 Long Range Transportation Plan (LRTP), 132nd Street is proposed to be widened to a new four-lane urban roadway from Highway 370 to Giles Road (LRTP_ID 307). This project is federal aid eligible for construction between years 2021-2025. There are no other improvements in the project area outlined in the 2035 LRTP.

Once improvements to the intersection of 132nd Street with Cornhusker Road or widening of 132nd Street are constructed, access to the East Site Drive would be limited to right-in/right-out (RIRO) movements only.

B. 2019 Future Traffic Volumes

Construction of the Omaha Truck Center Facility is anticipated to be completed by 2019. To adjust the traffic volumes for future year growth, straight line growth projections were used utilizing 2013 existing traffic volume and historic average daily traffic (ADT's) provided by MAPA. It was estimated that traffic volumes in the study area are projected to increase at a 2.0% annual growth rate. A straight-line projection was then performed by applying the 2.0% growth rate to all existing movements to obtain the 2019 background traffic volumes.

For this future year analysis, two scenarios were analyzed. One provided full access at East Site Drive and the other limiting access to RIRO.

Full Access

The 2014 Build and 2019 Future site generated traffic in **Figure 4** was then added to the 2019 background traffic volumes to develop the 2019 Future Traffic Volumes w/ Full Access as shown in **Figure 7**.

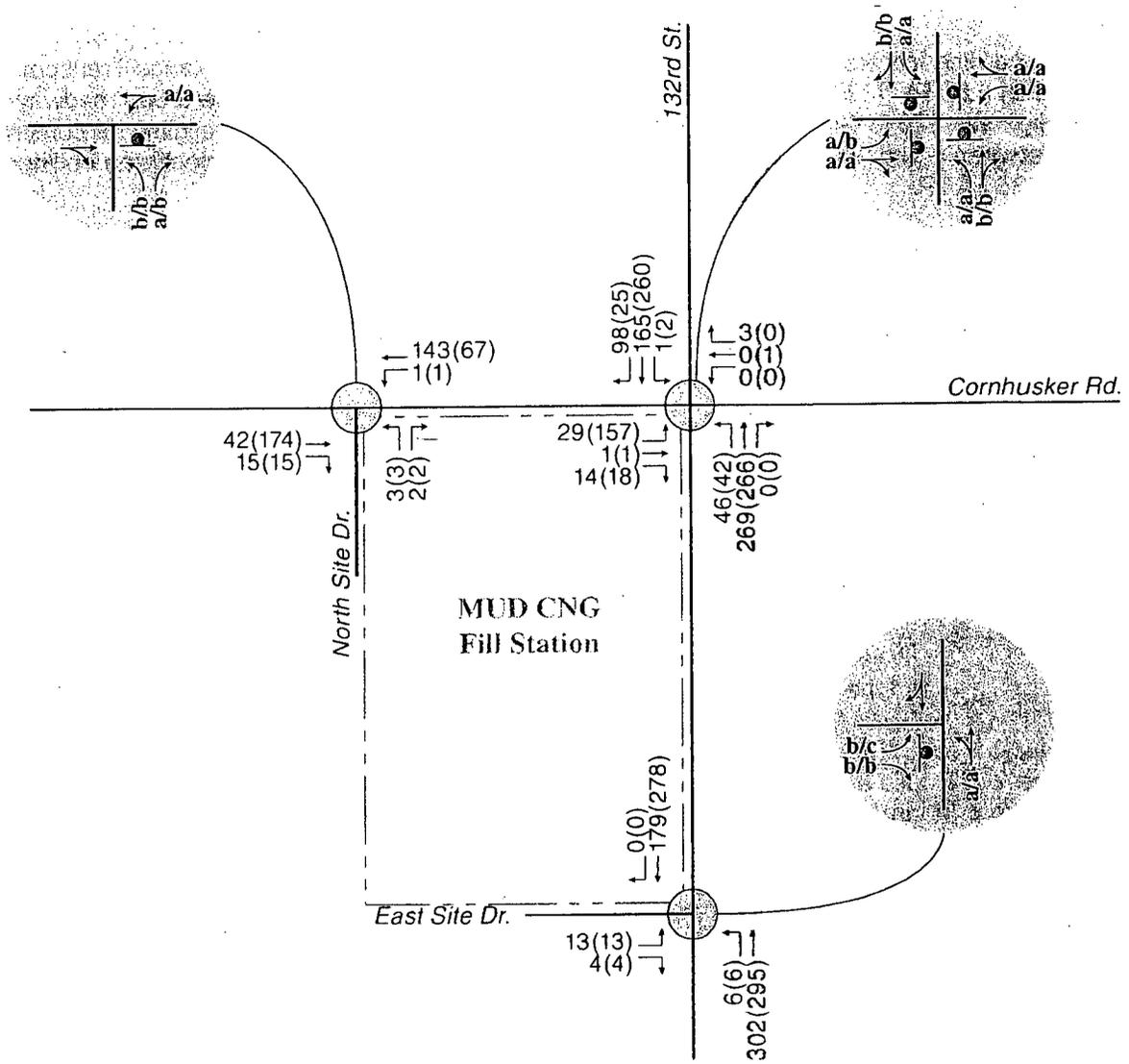
RIRO Access

The 2014 Build and 2019 Future site generated traffic in **Figure 5** was then added to the 2019 background traffic volumes to develop the 2019 Future Traffic Volumes w/ RIRO Access as shown in **Figure 8**.

C. 2019 Future Traffic Operations

Figure 7 and Figure 8 illustrate anticipated traffic operations at the study intersections with the 2019 Future build scenario. The following intersection improvements should be implemented at the study intersections by 2019:

- Under Full Access conditions, at the stop-controlled intersection of 132nd Street with Cornhusker Road, all critical movements are anticipated to operate at LOS C or better in both the AM and PM peak hours. All critical movements at both site drives are anticipated to operate at LOC C or better in both the AM and PM peak periods. No additional improvements are needed by 2019.



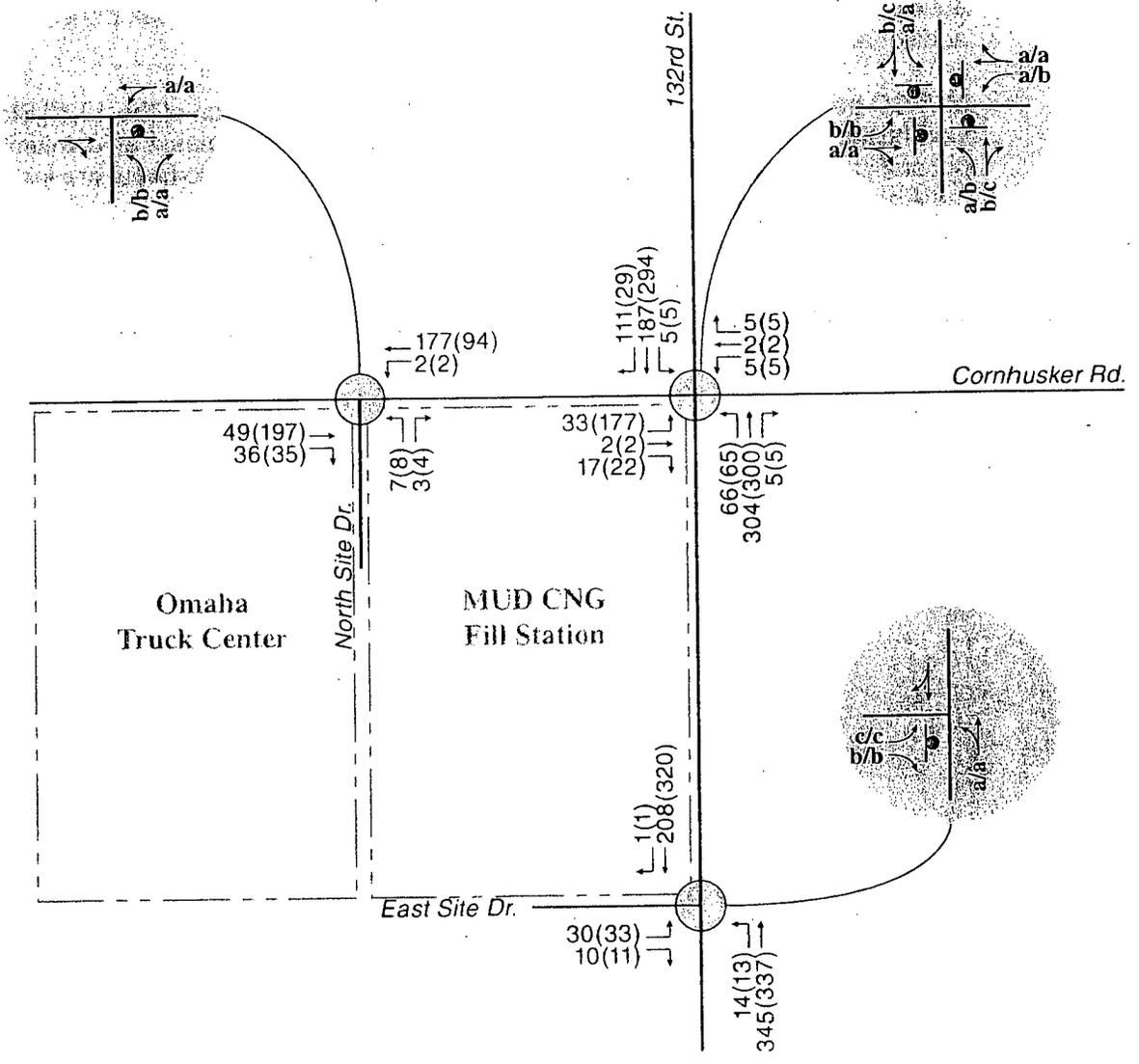
LEGEND

- XXX(XXX) = AM(PM) Peak Hour Traffic Volumes
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
- = Stop Sign

Figure 6
2014 Build Traffic Conditions

- Under RIRO Access conditions, at the stop-controlled intersection of 132nd Street with Cornhusker Road, all critical movements are anticipated to operate at LOS C or better in both the AM and PM peak hours. All critical movements at both site drives are anticipated to operate at LOC C or better in both the AM and PM peak periods. No additional improvements are needed by 2019.
- MUTCD traffic signal warrants were analyzed for the intersection of the 132nd Street with Cornhusker Road. Under 2019 Build conditions, for both scenarios, traffic volumes are not sufficient to warrants traffic signalization. Signal warrant worksheets are included in the **Appendix**.

Capacity analysis worksheets for 2019 Future traffic conditions are included in the **Appendix**.



LEGEND

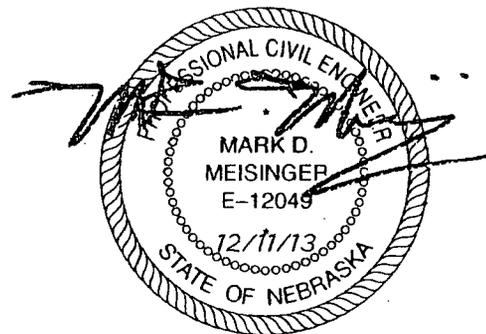
- xxx(xxx) = AM(PM) Peak Hour Traffic Volumes
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
- = Stop Sign

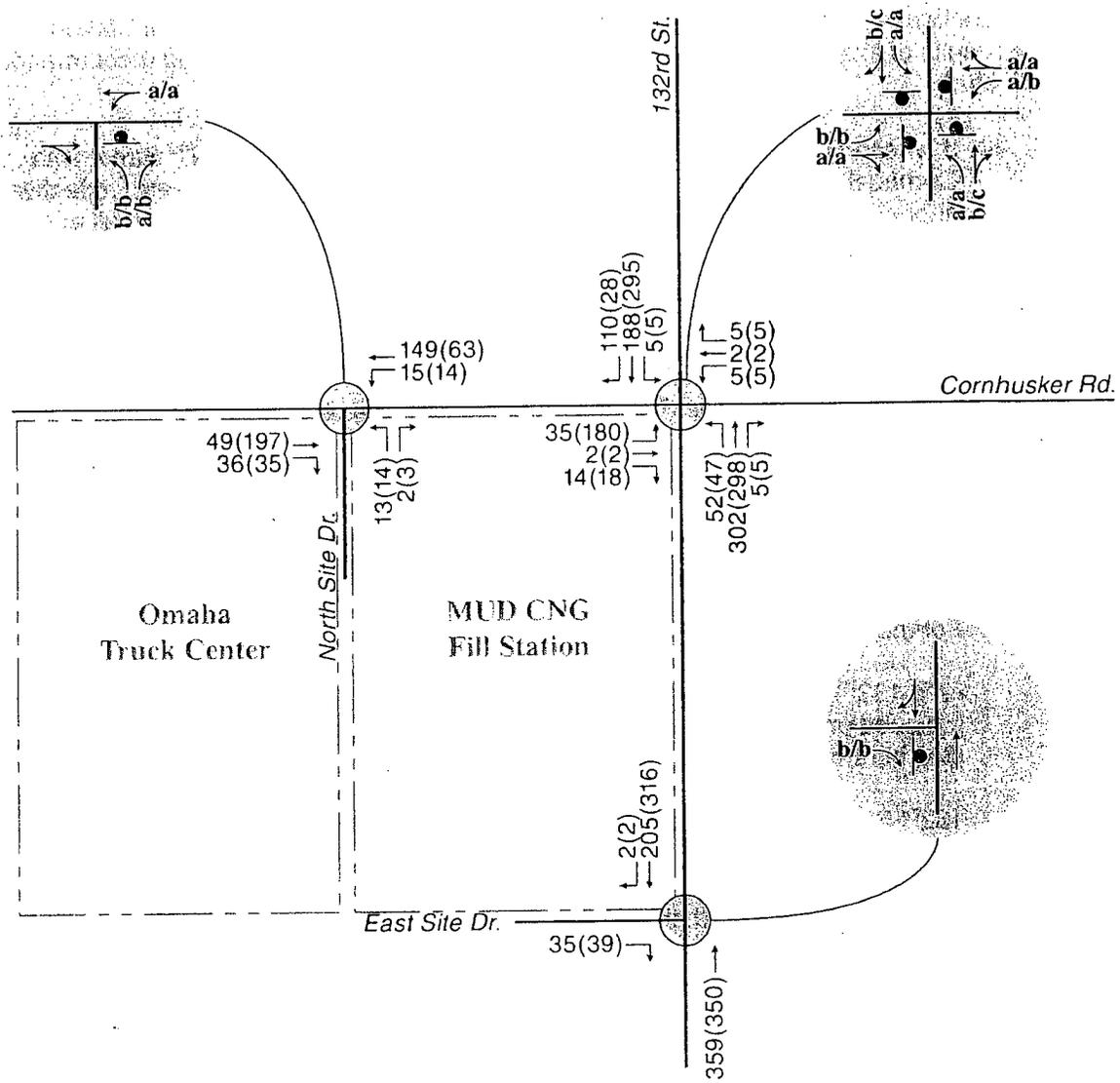
Figure 7
2019 Future Traffic Conditions
with Full Access

VI. SUMMARY AND RECOMMENDATIONS

The purpose of this traffic analysis is to determine the anticipated traffic operations at the intersections in the study area associated with the proposed MUD CNG Fill Station. Based on the results of this analysis, the following summarizes the key findings and recommendations of this study.

- It is recommended that stop sign sizes at the intersection of 132nd Street with Cornhusker Road should be upgraded to 36"x36". Also, vertical retro reflective strips should be mounted on the posts and stop bars should be installed on all approaches.
- Average trip rates documented in the ITE *Trip Generation* manual and future projections from MUD were used to estimate vehicle trips generated by the MUD CNG Fill Station. It is estimated that the 2014 Build phase of the project will generate approximately 148 vehicle-trips per day with a total of 44 vehicle-trips during the AM peak hour and 44 vehicle-trips during the PM peak. The 2019 Future phase, with the addition of the Omaha Truck Center Facility, the project will generate approximately an additional 175 vehicle-trips per day with a total of 59 vehicle-trips during the AM peak hour and 63 vehicle-trips during the PM peak. Upon full build-out of the development the site will generate approximately 323 vehicle-trips per day with a total of 103 vehicle-trips during the AM peak hour and 107 vehicle-trips during the PM peak hour.
- For the 2014 Build phase of the project, full access to the MUD CNG Fill Station will be provided at one location onto Cornhusker Road via North Site Drive, and at one location onto 132nd Street via East Site Drive. For the 2019 Future phase full access will be provided until improvements are made to the study area roadways. All site drives will be stop controlled.
- 132nd Street is planned to be improved to a four-lane urban roadway from Highway 370 to Giles Road per MAPA's 2035 Long-Range Transportation Plan (2021-2025). Once this improvement occurs or any improvement is made to the intersection of 132nd Street with Cornhusker Road, the East Site Drive intersection will be limited to RIRO access.
- Under 2014 Build and 2019 Future (Full Access and RIRO Access) traffic volumes, all critical movements at the study area intersections area anticipated to operate at acceptable levels of service. No additional improvements are needed by 2019 at the study area intersections.





LEGEND

- xxx(xxx) = AM(PM) Peak Hour Traffic Volumes
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
- = Stop Sign

Figure 8
2019 Future Traffic Conditions
with Right-In/Right-Out Access

APPENDIX

SIGNAL WARRANT WORKSHEETS
CAPACITY ANALYSIS WORKSHEETS

SIGNAL WARRANT WORKSHEETS

MUTCD Volume-based Warrant Evaluation - 2013 Existing
132nd Street with Cornhusker Road

Major Street: 132nd Street
Minor Street: Cornhusker Road

Critical Approach Speed: 45 MPH
Critical Approach Speed: 45 MPH



Classified as Rural Intersection (R)

WARRANT 1 - Condition A, Minimum Vehicular Volume

100 % Satisfied	YES	NO
80% Satisfied	YES	NO

APPROACH LANES	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
	1		2 or more									
	X	R	X	R								
Both Approchs. Major Street	500 (400)	350 (280)	600 (480)	420 (336)	581	545	510	474	439	403	367	332
Highest Apprch. Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	174	163	153	142	131	121	110	99

WARRANT 1, Condition B - Interruption of Continuous Traffic

100 % Satisfied	YES	NO
80% Satisfied	YES	NO

APPROACH LANES	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
	1		2 or more									
	X	R	X	R								
Both Approchs. Major Street	750 (600)	525 (420)	900 (720)	630 (504)	581	545	510	474	439	403	367	332
Highest Apprch. Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	174	163	153	142	131	121	110	99

WARRANT 2 - Four Hour Volume

100 % Satisfied	YES	NO
-----------------	-----	----

	Peak Hour	2nd Highest	3rd Highest	4th Highest	
Both Approchs. Major Street	581	545	510	474	132nd Street
Highest Apprch. Minor Street	174	163	153	142	Cornhusker Road

MUTCD Volume-based Warrant Evaluation - 2014 Build
132nd Street with Cornhusker Road

Major Street: 132nd Street
Minor Street: Cornhusker Road

Critical Approach Speed: 45 MPH
Critical Approach Speed: 45 MPH



Classified as Rural Intersection (R)

WARRANT 1 - Condition A, Minimum Vehicular Volume

100 % Satisfied	YES	NO
80% Satisfied	YES	NO

APPROACH LANES	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
	1		2 or more									
	X	R	X	R								
Both Apprchs. Major Street	600 (400)	350 (280)	600 (480)	420 (336)	595	559	522	486	449	413	376	340
Highest Apprch. Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	176	165	154	144	133	122	111	100

WARRANT 1, Condition B - Interruption of Continuous Traffic

100 % Satisfied	YES	NO
80% Satisfied	YES	NO

APPROACH LANES	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
	1		2 or more									
	X	R	X	R								
Both Apprchs. Major Street	750 (600)	525 (420)	900 (720)	630 (504)	595	559	522	486	449	413	376	340
Highest Apprch. Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	176	165	154	144	133	122	111	100

WARRANT 2 - Four Hour Volume

100 % Satisfied	YES	NO
-----------------	-----	----

	Peak Hour	2nd Highest	3rd Highest	4th Highest	
Both Apprchs. Major Street	595	559	522	486	132nd Street
Highest Apprch. Minor Street	176	165	154	144	Cornhusker Road

MUTCD Volume-based Warrant Evaluation - 2019 Future w/ Full Access
132nd Street with Cornhusker Road

Major Street: 132nd Street
Minor Street: Cornhusker Road

Critical Approach Speed: 45 MPH
Critical Approach Speed: 45 MPH



Classified as Rural Intersection (R)

WARRANT 1 - Condition A, Minimum Vehicular Volume

100 % Satisfied	YES	NO
80% Satisfied	YES	NO

APPROACH LANES	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
	1		2 or more									
	X	R	X	R								
Both Apprchs. Major Street	500 (400)	350 (280)	600 (480)	420 (336)	698	655	612	570	527	484	441	399
Highest Apprch. Minor Street	150 (120)	100 (84)	300 (160)	140 (112)	201	189	176	164	152	139	127	115

WARRANT 1, Condition B - Interruption of Continuous Traffic

100 % Satisfied	YES	NO
80% Satisfied	YES	NO

APPROACH LANES	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
	1		2 or more									
	X	R	X	R								
Both Apprchs. Major Street	750 (600)	525 (420)	900 (720)	630 (504)	698	655	612	570	527	484	441	399
Highest Apprch. Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	201	189	176	164	152	139	127	115

WARRANT 2 - Four Hour Volume

100 % Satisfied	YES	NO
-----------------	-----	----

	Peak Hour	2nd Highest	3rd Highest	4th Highest	
Both Apprchs. Major Street	698	655	612	570	132nd Street
Highest Apprch. Minor Street	201	189	176	164	Cornhusker Road

MUTCD Volume-based Warrant Evaluation - 2019 Future w/ RIRO Access
 132nd Street with Cornhusker Road

Major Street: 132nd Street
 Minor Street: Cornhusker Road

Critical Approach Speed: 45 MPH
 Critical Approach Speed: 45 MPH



Classified as Rural Intersection (R)

WARRANT 1 - Condition A, Minimum Vehicular Volume

100 % Satisfied	YES	NO
80% Satisfied	YES	NO

APPROACH LANES	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
	U	R	U	R								
	1		2 or more									
Both Apprchs. Major Street	500 (400)	350 (280)	600 (480)	420 (336)	678	636	595	553	512	470	429	387
Highest Apprch. Minor Street	150 (120)	108 (84)	200 (160)	140 (112)	200	188	175	163	151	139	126	114

WARRANT 1, Condition B - Interruption of Continuous Traffic

100 % Satisfied	YES	NO
80% Satisfied	YES	NO

APPROACH LANES	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
	U	R	U	R								
	1		2 or more									
Both Apprchs. Major Street	750 (600)	525 (420)	900 (720)	630 (504)	678	636	595	553	512	470	429	387
Highest Apprch. Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	200	188	175	163	151	139	126	114

WARRANT 2 - Four Hour Volume

100 % Satisfied	YES	NO
-----------------	-----	----

	Peak Hour	2nd Highest	3rd Highest	4th Highest	
Both Apprchs. Major Street	678	636	595	553	132nd Street
Highest Apprch. Minor Street	200	188	175	163	Cornhusker Road

CAPACITY ANALYSIS WORKSHEETS

Intersection												
Intersection Delay, s/veh	10.4											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	29	1	12	0	0	3	34	268	0	1	165	97
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
Heavy Vehicles, %	10	4	4	4	4	4	10	4	4	4	4	10
Mvmt Flow	32	1	13	0	0	3	37	291	0	1	179	105
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.3	8.1	10.6	10.3
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	8%	100%	0%	0%	63%
Vol Right, %	0%	0%	0%	92%	0%	100%	0%	37%
Sign Control	Stop							
Traffic Vol by Lane	34	268	29	13	0	3	1	262
LT Vol	0	268	0	1	0	0	0	165
Through Vol	0	0	0	12	0	3	0	97
RT Vol	34	0	29	0	0	0	1	0
Lane Flow Rate	37	291	32	14	0	3	1	285
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.057	0.399	0.058	0.021	0	0.005	0.002	0.374
Departure Headway (Hd)	5.533	4.928	6.601	5.342	6.079	5.371	5.488	4.726
Convergence, Y/N	Yes							
Cap	649	731	542	669	0	664	653	763
Service Time	3.256	2.651	4.345	3.085	3.829	3.121	3.212	2.45
HCM Lane V/C Ratio	0.057	0.398	0.059	0.021	0	0.005	0.002	0.374
HCM Control Delay	8.6	10.9	9.8	8.2	8.8	8.1	8.2	10.3
HCM Lane LOS	A	B	A	A	N	A	A	B
HCM 95th-tile Q	0.2	1.9	0.2	0.1	0	0	0	1.7

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	157	1	16	0	1	0	30	265	0	2	260	24
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
Heavy Vehicles, %	10	4	4	4	4	4	10	4	4	4	4	10
Mvmt Flow	171	1	17	0	1	0	33	288	0	2	283	26
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.5	9.4	12.4	13.1
HCM LOS	B	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	6%	100%	100%	0%	92%
Vol Right, %	0%	0%	0%	94%	0%	0%	0%	8%
Sign Control	Stop							
Traffic Vol by Lane	30	265	157	17	0	1	2	284
LT Vol	0	265	0	1	0	1	0	260
Through Vol	0	0	0	16	0	0	0	24
RT Vol	30	0	157	0	0	0	2	0
Lane Flow Rate	33	288	171	18	0	1	2	309
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.055	0.442	0.326	0.029	0	0.002	0.004	0.47
Departure Headway (Hd)	6.236	5.628	6.867	5.592	6.698	6.698	6.153	5.588
Convergence, Y/N	Yes							
Cap	578	645	527	644	0	537	585	648
Service Time	3.936	3.328	4.567	3.292	4.408	4.408	3.853	3.288
HCM Lane V/C Ratio	0.057	0.447	0.324	0.028	0	0.002	0.003	0.477
HCM Control Delay	9.3	12.7	12.9	8.5	9.4	9.4	8.9	13.1
HCM Lane LOS	A	B	B	A	N	A	A	B
HCM 95th-tile Q	0.2	2.3	1.4	0.1	0	0	0	2.5

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 10.4
Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	29	1	14	0	0	3	46	269	0	1	165	98
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
Heavy Vehicles, %	10	4	4	4	4	4	10	4	4	4	4	10
Mvmt Flow	32	1	15	0	0	3	50	292	0	1	179	107
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.3	8.2	10.6	10.3
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	7%	100%	0%	0%	63%
Vol Right, %	0%	0%	0%	93%	0%	100%	0%	37%
Sign Control	Stop							
Traffic Vol by Lane	46	269	29	15	0	3	1	263
LT Vol	0	269	0	1	0	0	0	165
Through Vol	0	0	0	14	0	3	0	98
RT Vol	46	0	29	0	0	0	1	0
Lane Flow Rate	50	292	32	16	0	3	1	286
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.077	0.401	0.058	0.024	0	0.005	0.002	0.377
Departure Headway (Hd)	5.54	4.936	6.633	5.367	6.115	5.407	5.512	4.748
Convergence, Y/N	Yes							
Cap	648	731	540	666	0	660	650	758
Service Time	3.264	2.66	4.378	3.111	3.866	3.158	3.236	2.472
HCM Lane V/C Ratio	0.077	0.399	0.059	0.024	0	0.005	0.002	0.377
HCM Control Delay	8.7	10.9	9.8	8.2	8.9	8.2	8.2	10.3
HCM Lane LOS	A	B	A	A	N	A	A	B
HCM 95th-tile Q	0.2	1.9	0.2	0.1	0	0	0	1.8

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	42	15	1	143	3	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	70	70	4	70	70
Mvmt Flow	46	16	1	155	3	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	62
Stage 1	-	-	-
Stage 2	-	-	-
Follow-up Headway	-	-	2.83
Pot Capacity-1 Maneuver	-	-	1200
Stage 1	-	-	-
Stage 2	-	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	-	-	1200
Mov Capacity-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	645	851	-	-	1200	-
HCM Lane V/C-Ratio	0.005	0.003	-	-	0.001	-
HCM Control Delay (s)	10.6	9.2	-	-	8.003	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.015	0.008	-	-	0.003	-

Notes
 ~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	13	4	6	302	179	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	70	70	70	4	4	70
Mvmt Flow	14	4	7	328	195	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	536	195	195
Stage 1	195	-	-
Stage 2	341	-	-
Follow-up Headway	4.13	3.93	2.83
Pot Capacity-1 Maneuver	405	700	1058
Stage 1	699	-	-
Stage 2	591	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	402	700	1058
Mov Capacity-2 Maneuver	402	-	-
Stage 1	699	-	-
Stage 2	586	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13	0	0

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1058	-	402	700	-	-
HCM Lane V/C Ratio	0.006	-	0.035	0.006	-	-
HCM Control Delay (s)	8.424	0	14.3	10.2	-	-
HCM Lane LOS	A	A	B	B	-	-
HCM 95th %tile Q(veh)	0.019	-	0.109	0.019	-	-

Notes
 ~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	157	1	18	0	1	0	42	266	0	2	260	25
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
Heavy Vehicles, %	10	4	4	4	4	4	10	4	4	4	4	10
Mvmt Flow	171	1	20	0	1	0	46	289	0	2	283	27
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.4	9.5	12.4	13.3
HCM LOS	B	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	5%	100%	100%	0%	91%
Vol Right, %	0%	0%	0%	95%	0%	0%	0%	9%
Sign Control	Stop							
Traffic Vol by Lane	42	266	157	19	0	1	2	285
LT Vol	0	266	0	1	0	1	0	260
Through Vol	0	0	0	18	0	0	0	25
RT Vol	42	0	157	0	0	0	2	0
Lane Flow Rate	46	289	171	21	0	1	2	310
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.078	0.444	0.327	0.032	0	0.002	0.004	0.473
Departure Headway (Hd)	6.246	5.638	6.902	5.622	6.743	6.743	6.181	5.614
Convergence, Y/N	Yes							
Cap	577	642	524	641	0	533	582	647
Service Time	3.946	3.338	4.602	3.322	4.45	4.45	3.881	3.314
HCM Lane V/C Ratio	0.08	0.45	0.326	0.033	0	0.002	0.003	0.479
HCM Control Delay	9.5	12.8	12.9	8.5	9.5	9.5	8.9	13.3
HCM Lane LOS	A	B	B	A	N	A	A	B
HCM 95th-tile Q	0.3	2.3	1.4	0.1	0	0	0	2.5

Notes
 ~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	174	15	1	67	3	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	70	70	4	70	70
Mvmt Flow	189	16	1	73	3	2

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	205	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Follow-up Headway	-	-	2.83	-
Pot Capacity-1 Maneuver	-	-	1048	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Time blocked-Platoon, %	-	-	-	-
Mov Capacity-1 Maneuver	-	-	1048	-
Mov Capacity-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11

Minor Lane/ Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	592	698	-	-	1048	-
HCM Lane V/C Ratio	0.006	0.003	-	-	0.001	-
HCM Control Delay (s)	11.1	10.2	-	-	8.439	0
HCM Lane LOS	B	B	-	-	A	A
HCM 95th %tile Q(veh)	0.017	0.009	-	-	0.003	-

Notes
 ~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	13	4	6	295	278	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	70	70	70	4	4	70
Mvmt Flow	14	4	7	321	302	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	636	302	302	0	0
Stage 1	302	-	-	-	-
Stage 2	334	-	-	-	-
Follow-up Headway	4.13	3.93	2.83	-	-
Pot Capacity-1 Maneuver	350	603	955	-	-
Stage 1	618	-	-	-	-
Stage 2	596	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-
Mov Capacity-1 Maneuver	347	603	955	-	-
Mov Capacity-2 Maneuver	347	-	-	-	-
Stage 1	618	-	-	-	-
Stage 2	591	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	0	0

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	955	-	347	603	-	-
HCM Lane V/C Ratio	0.007	-	0.041	0.007	-	-
HCM Control Delay (s)	8.796	0	15.8	11	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0.021	-	0.127	0.022	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	33	2	17	5	2	5	66	304	5	5	187	111
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
Heavy Vehicles, %	10	4	4	4	4	4	10	4	4	4	4	10
Mvmt Flow	36	2	18	5	2	5	72	330	5	5	203	121
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.6	9.1	11.7	11.4
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	98%	0%	11%	0%	29%	0%	63%
Vol Right, %	0%	2%	0%	89%	0%	71%	0%	37%
Sign Control	Stop							
Traffic Vol by Lane	66	309	33	19	5	7	5	298
LT Vol	0	304	0	2	0	2	0	187
Through Vol	0	5	0	17	0	5	0	111
RT Vol	66	0	33	0	5	0	5	0
Lane Flow Rate	72	336	36	21	5	8	5	324
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.113	0.469	0.069	0.032	0.01	0.012	0.009	0.44
Departure Headway (Hd)	5.648	5.032	6.898	5.654	6.883	5.869	5.65	4.885
Convergence, Y/N	Yes							
Cap	634	715	517	629	517	605	633	735
Service Time	3.384	2.768	4.666	3.421	4.664	3.649	3.386	2.622
HCM Lane V/C Ratio	0.114	0.47	0.07	0.033	0.01	0.013	0.008	0.441
HCM Control Delay	9.1	12.2	10.2	8.6	9.7	8.7	8.4	11.4
HCM Lane LOS	A	B	B	A	A	A	A	B
HCM 95th-tile Q	0.4	2.5	0.2	0.1	0	0	0	2.3

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	49	36	2	177	7	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	70	70	4	70	70
Mvmt Flow	53	39	2	192	8	3

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	92
Stage 1	-	-	-
Stage 2	-	-	-
Follow-up Headway	-	-	2.83
Pot Capacity-1 Maneuver	-	-	1166
Stage 1	-	-	-
Stage 2	-	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	-	-	1166
Mov Capacity-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	594	829	-	-	1166	-
HCM Lane V/C Ratio	0.013	0.004	-	-	0.002	-
HCM Control Delay (s)	11.1	9.4	-	-	8.093	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.039	0.012	-	-	0.006	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	30	10	14	345	208	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	70	70	70	4	4	70
Mvmt Flow	33	11	15	375	226	1

Major/Minor	Minor2	Major1		Major2
Conflicting Flow All	632	227	227	0
Stage 1	227	-	-	-
Stage 2	405	-	-	-
Follow-up Headway	4.13	3.93	2.83	-
Pot Capacity-1 Maneuver	352	669	1026	-
Stage 1	674	-	-	-
Stage 2	549	-	-	-
Time blocked-Platoon, %	-	-	-	-
Mov Capacity-1 Maneuver	346	669	1026	-
Mov Capacity-2 Maneuver	346	-	-	-
Stage 1	674	-	-	-
Stage 2	539	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	0	0

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1026	-	346	669	-	-
HCM Lane W/C Ratio	0.015	-	0.094	0.016	-	-
HCM Control Delay (s)	8.562	0	16.5	10.5	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %ile Q(veh)	0.045	-	0.31	0.05	-	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	177	2	22	5	2	5	65	300	5	5	294	29
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
Heavy Vehicles, %	10	4	4	4	4	4	10	4	4	4	4	10
Mvmt Flow	192	2	24	5	2	5	71	326	5	5	320	32
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	13.9	10	14.5	16.2
HCM LOS	B	A	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	98%	0%	8%	0%	29%	0%	91%
Vol Right, %	0%	2%	0%	92%	0%	71%	0%	9%
Sign Control	Stop							
Traffic Vol by Lane	65	305	177	24	5	7	5	323
LT Vol	0	300	0	2	0	2	0	294
Through Vol	0	5	0	22	0	5	0	29
RT Vol	65	0	177	0	5	0	5	0
Lane Flow Rate	71	332	192	26	5	8	5	351
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.127	0.541	0.388	0.043	0.012	0.014	0.01	0.574
Departure Headway (Hd)	6.493	5.872	7.259	5.994	7.709	6.685	6.456	5.886
Convergence, Y/N	Yes							
Cap	552	613	496	597	463	533	554	614
Service Time	4.231	3.61	5.004	3.739	5.476	4.452	4.196	3.626
HCM Lane V/C Ratio	0.129	0.542	0.387	0.044	0.011	0.015	0.009	0.572
HCM Control Delay	10.2	15.4	14.6	9	10.6	9.5	9.3	16.3
HCM Lane LOS	B	C	B	A	B	A	A	C
HCM 95th-tile Q	0.4	3.2	1.8	0.1	0	0	0	3.6

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	197	35	2	94	8	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	70	70	4	70	70
Mvmt Flow	214	38	2	102	9	4

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	252	0
Stage 1	-	-	-	233
Stage 2	-	-	-	107
Follow-up Headway	-	-	2.83	-
Pot Capacity-1 Maneuver	-	-	1002	-
Stage 1	-	-	-	669
Stage 2	-	-	-	773
Time blocked-Platoon, %	-	-	-	-
Mov Capacity-1 Maneuver	-	-	1002	-
Mov Capacity-2 Maneuver	-	-	-	537
Stage 1	-	-	-	669
Stage 2	-	-	-	771

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	537	664	-	-	1002	-
HCM Lane V/C Ratio	0.016	0.007	-	-	0.002	-
HCM Control Delay (s)	11.8	10.5	-	-	8.601	0
HCM Lane LOS	B	B	-	-	A	A
HCM 95th %tile Q(veh)	0.049	0.02	-	-	0.007	-

Notes
 ~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	33	11	13	337	320	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	70	70	70	4	4	70
Mvmt Flow	36	12	14	366	348	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	743	348	349	0	0
Stage 1	348	-	-	-	-
Stage 2	395	-	-	-	-
Follow-up Headway	4.13	3.93	2.83	-	-
Pot Capacity-1 Maneuver	299	565	913	-	-
Stage 1	586	-	-	-	-
Stage 2	555	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-
Mov Capacity-1 Maneuver	293	565	913	-	-
Mov Capacity-2 Maneuver	293	-	-	-	-
Stage 1	586	-	-	-	-
Stage 2	544	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17	0	0

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	913	-	293	565	-	-
HCM Lane V/C Ratio	0.015	-	0.122	0.021	-	-
HCM Control Delay (s)	9.005	0	19	11.5	-	-
HCM Lane LOS	A	A	C	B	-	-
HCM 95th %tile Q(veh)	0.047	-	0.413	0.065	-	-

Notes
 ~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection												
Intersection Delay, s/veh	11.3											
Intersection LOS	B											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	35	2	14	5	2	5	52	302	5	5	188	110
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
Heavy Vehicles, %	10	4	4	4	4	4	10	4	4	4	4	10
Mvmt Flow	38	2	15	5	2	5	57	328	5	5	204	120
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.7	9.1	11.6	11.4
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	98%	0%	12%	0%	29%	0%	63%
Vol Right, %	0%	2%	0%	88%	0%	71%	0%	37%
Sign Control	Stop							
Traffic Vol by Lane	52	307	35	16	5	7	5	298
LT Vol	0	302	0	2	0	2	0	188
Through Vol	0	5	0	14	0	5	0	110
RT Vol	52	0	35	0	5	0	5	0
Lane Flow Rate	57	334	38	17	5	8	5	324
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.089	0.466	0.073	0.027	0.01	0.012	0.008	0.438
Departure Headway (Hd)	5.645	5.029	6.864	5.634	6.849	5.836	5.627	4.865
Convergence, Y/N	Yes							
Cap	635	717	520	632	520	609	636	739
Service Time	3.38	2.764	4.63	3.399	4.626	3.611	3.363	2.6
HCM Lane V/C Ratio	0.09	0.466	0.073	0.027	0.01	0.013	0.008	0.438
HCM Control Delay	8.9	12.1	10.2	8.6	9.7	8.7	8.4	11.4
HCM Lane LOS	A	B	B	A	A	A	A	B
HCM 95th-tile Q	0.3	2.5	0.2	0.1	0	0	0	2.2

Notes
 ~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection:

Intersection Delay, s/veh 1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	49	36	15	149	13	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	70	70	4	70	70
Mvmt Flow	53	39	16	162	14	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	92
Stage 1	-	-	-
Stage 2	-	-	-
Follow-up Headway	-	-	2.83
Pot Capacity-1 Maneuver	-	-	1166
Stage 1	-	-	-
Stage 2	-	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	-	-	1166
Mov Capacity-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	11

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	588	829	-	-	1166	-
HCM Lane V/C Ratio	0.024	0.003	-	-	0.014	-
HCM Control Delay (s)	11.3	9.4	-	-	8.131	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0.074	0.008	-	-	0.043	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	35	0	359	205	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	70	70	4	4	70
Mvmt Flow	0	38	0	390	223	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	614	224	225	0	0
Stage 1	224	-	-	-	-
Stage 2	390	-	-	-	-
Follow-up Headway	3.536	3.93	2.83	-	-
Pot Capacity-1 Maneuver	452	672	1028	-	-
Stage 1	809	-	-	-	-
Stage 2	680	-	-	-	-
Time blocked-Platoon, %	-	-	-	-	-
Mov Capacity-1 Maneuver	452	672	1028	-	-
Mov Capacity-2 Maneuver	452	-	-	-	-
Stage 1	809	-	-	-	-
Stage 2	680	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0	0

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1028	-	672	-	-
HCM Lane V/C Ratio	-	-	0.057	-	-
HCM Control Delay (s)	0	-	10.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.18	-	-

Notes
 ~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	180	2	18	5	2	5	47	298	5	5	295	28
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
Heavy Vehicles, %	10	4	4	4	4	4	10	4	4	4	4	10
Mvmt Flow	196	2	20	5	2	5	51	324	5	5	321	30
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	14	9.9	14.5	16
HCM LOS	B	A	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	98%	0%	10%	0%	29%	0%	91%
Vol Right, %	0%	2%	0%	90%	0%	71%	0%	9%
Sign Control	Stop							
Traffic Vol by Lane	47	303	180	20	5	7	5	323
LT Vol	0	298	0	2	0	2	0	295
Through Vol	0	5	0	18	0	5	0	28
RT Vol	47	0	180	0	5	0	5	0
Lane Flow Rate	51	329	196	22	5	8	5	351
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.092	0.536	0.392	0.036	0.012	0.014	0.01	0.571
Departure Headway (Hd)	6.485	5.864	7.212	5.96	7.658	6.634	6.42	5.853
Convergence, Y/N	Yes							
Cap	552	616	499	600	466	537	557	618
Service Time	4.227	3.606	4.958	3.705	5.424	4.4	4.16	3.593
HCM Lane V/C Ratio	0.092	0.534	0.393	0.037	0.011	0.015	0.009	0.568
HCM Control Delay	9.9	15.2	14.6	8.9	10.5	9.5	9.2	16.1
HCM Lane LOS	A	C	B	A	B	A	A	C
HCM 95th-tile Q	0.3	3.2	1.8	0.1	0	0	0	3.6

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	197	35	14	63	14	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	70	70	4	70	70
Mvmt Flow	214	38	15	68	15	3

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	252
Stage 1	-	-	-
Stage 2	-	-	-
Follow-up Headway	-	-	2.83
Pot Capacity-1 Maneuver	-	-	1002
Stage 1	-	-	-
Stage 2	-	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	-	-	1002
Mov Capacity-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	12

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	536	664	-	-	1002	-
HCM Lane V/C Ratio	0.028	0.005	-	-	0.015	-
HCM Control Delay (s)	11.9	10.4	-	-	8.648	0
HCM Lane LOS	B	B	-	-	A	A
HCM 95th %tile Q(veh)	0.088	0.015	-	-	0.046	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	39	0	350	316	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	70	70	70	4	4	70
Mvmt Flow	0	42	0	380	343	2

Major/Minor	Minor 2	Major 1	Major 2
Conflicting Flow All	725	345	346
Stage 1	345	-	-
Stage 2	380	-	-
Follow-up Headway	4.13	3.93	2.83
Pot Capacity-1 Maneuver	307	567	916
Stage 1	588	-	-
Stage 2	565	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	307	567	916
Mov Capacity-2 Maneuver	307	-	-
Stage 1	588	-	-
Stage 2	565	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	0	0

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	916	-	567	-	-
HCM Lane V/C Ratio	-	-	0.075	-	-
HCM Control Delay (s)	0	-	11.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.242	-	-

Notes
 ~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

ATTACHMENT "F"

**MEMO FROM SARPY COUNTY ENGINEER'S
OFFICE REGARDING THEIR REVIEW OF THE
TRAFFIC STUDY**



SARPY COUNTY

Dennis L. Wilson, P.E., PhD
Sarpy County Engineer

PUBLIC WORKS DEPARTMENT
15100 South 84th Street • Papillion, NE 68046-2895
Phone (402) 537-6900 • FAX (402) 537-6955 • www.sarpy.com

MEMO

TO: Bruce Fountain, Planning Director

FROM: Patrick M. Dowse, P.E., Engineering Manager *PMO*

DATE: December 12, 2013

RE: MUD CNG Fill Station and Omaha Truck Center Site – Traffic Study

Public Works has the following comments in regards to the proposed MUD CNG and Omaha Truck Center site generally located on the southwest corner of 132nd Street and Cornhusker Road:

TRAFFIC IMPACT STUDY

Public Works has reviewed the Traffic Impact Analysis completed by Felsburg, Holt & Ullevig (FHU) and generally agrees with the findings and recommendations published in the report. Public Works does not anticipate any additional required improvements from the development once the facility is fully built-out.

Public Works will take into advisement the recommend traffic control enhancements to increase the conspicuity of the 4-Way Stop, to reduce the rolling stops and the high speed running of the stops signs at the intersection.

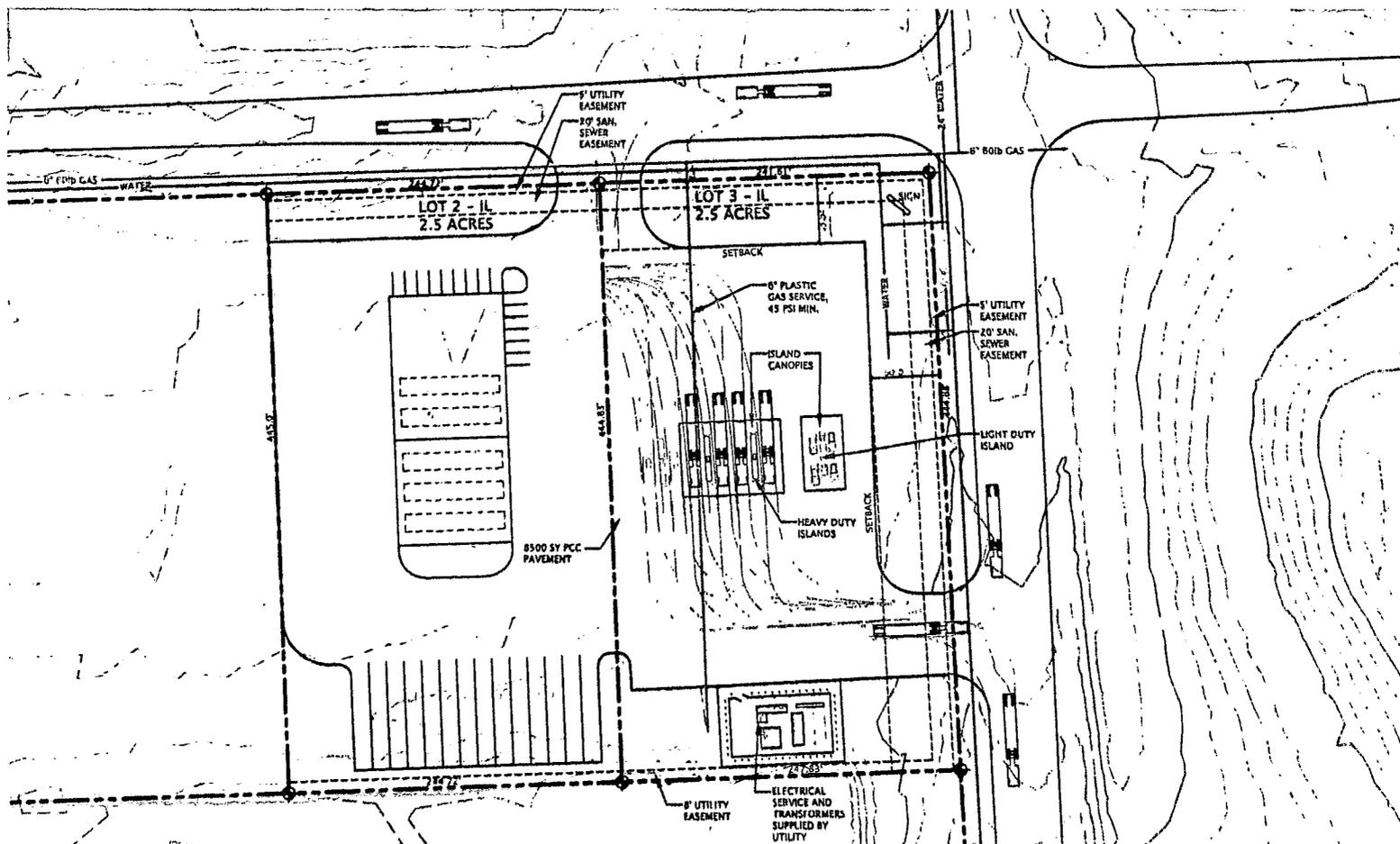
ATTACHMENT “G”

REVISED CONCEPTUAL SITE PLAN OPTIONS

- **ORIGINAL SITE PLAN – dated 10/9/13**
- **PLAN 1 – Rotating original site plan 90 degrees and replatting property**
- **PLAN 2 – Moving storage tanks and equipment to the northeast corner of the existing lot**
- **FUEL STATION CANOPY EXAMPLE**

□

Engineering ■ Architecture ■ Planning ■ Surveying



CNG Fill Station - RFP Site Plan
 Scale: 1" = 80'-0"

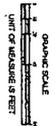
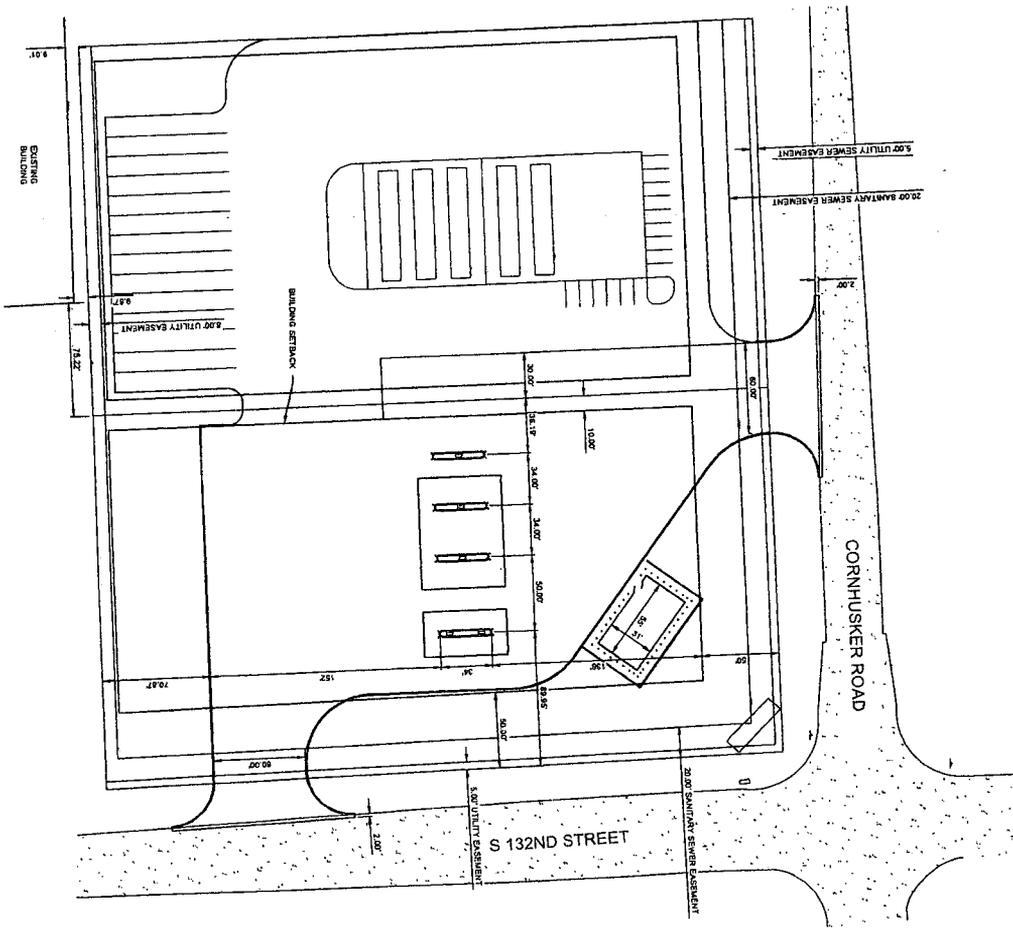
ORIGINAL SITE PLAN



© JEO Consulting Group, Inc.

MUD - RFP Site Plan □
 October 08, 2013

Project No. 130993.00



PREPARED BY: [Name]
 NOT FOR CONSTRUCTION
 DATE: 12/4/2013
 PROJECT: 132003.00
 DATE: 12/4/2013
 DRAWN BY: DMH
 CHECKED BY: [Name]
 PROJECT: 132003.00
 DATE: 12/4/2013
 DRAWN BY: DMH
 CHECKED BY: [Name]

PLAN 2

2013
 CNG FUEL STATION
 METROPOLITAN UTILITIES DISTRICT
 132ND & CORNHUSKER ROAD
 SARPY COUNTY, NEBRASKA



FUEL STATION CANOPY EXAMPLE

SPECIAL USE PERMIT APPLICATION: COMPRESSED NATURAL GAS FUEL STATION

NOTES:

1. SUPPORTING PILLARS SHALL HAVE MASONRY, BRICK OR STONE BASES A MINIMUM OF FOUR (4) FEET IN HEIGHT.
2. EQUIPMENT ENCLOSURE WALL SHALL BE EIGHT (8) FEET IN HEIGHT OF SIMILAR MATERIAL AS SUPPORTING PILLARS AND SHALL HAVE A GATE TO PROVIDE ACCESS TO EQUIPMENT FOR MAINTENANCE.



**NOTICE OF PUBLIC HEARING
SARPY COUNTY PLANNING
COMMISSION**

Notice is hereby given that a regular meeting of the Sarpy County Planning Commission will be held on **Tuesday, November 19, 2013**, at 7:00 P.M. in the Sarpy County Board Room, Sarpy County Administration Bldg., 1210 Golden Gate Drive, Papillion, NE.

Richard & Donna Krambeck have submitted applications for consideration of a Change of Zone from AG to IL on property legally described as Tax Lot 8 in Section 35, Township 14N, Range 11E (29.55 AC) of the 6th P.M. Sarpy County, NE. Generally located Northeast of 156th Street and Schram Road.

Scott Kennedy has submitted applications for consideration of a Change of Zone from AG to RG-15 and Preliminary and Final Plats of a subdivision to be known as Springhill Ridge Replat 5 Lot 1 being a replating of Lot 2, Springhill Ridge Replat 4, and part of Tax Lot 5B, situate in the Southeast ¼ of Section 15, Township 14N, Range 11E of the 6th P.M. Sarpy County, NE. Generally located Northwest of 156th Street and Giles Road.

Metropolitan Utilities District has submitted an application for consideration of a Text Amendment to Section 23.3 in Sarpy County Zoning Regulations to add Compressed Natural Gas (CNG) Fueling Station without convenience store as a Permitted Special Use in IL (Light Industrial District).

Metropolitan Utilities District has submitted an application for consideration of a Special Use Permit to allow a compressed natural gas fuel station that includes fuel pumps, storage equipment, fuel pump canopy, equipment enclosure, pavement and utility service improvements on property legally described as Lot 3, Hilltop Industrial Park Replat 13 (a proposed administrative replat of Lots 1 & 2, Hilltop Industrial Park Replat 1), Sarpy County, NE. Generally located southwest of 132nd Street & Cornhusker Road.

Harold & Susan Keefer have submitted an application for consideration of an extension of a previously approved Special Use Permit allowing open and enclosed storage of recreational vehicles and trailers on property at 10302 Platteview Road, and legally described as E ½ of SW ¼ all in Section 16, Township 13N, Range 12E of the 6th P.M. Sarpy County, NE.

Sarpy County Planning Department requests approval of text amendments to Section 40 of the Sarpy County Zoning Regulations concerning signage regulations to be more consistent with design standards and to correct clerical errors.

Sarpy County Planning Department requests approval of text amendments to several sections of the Sarpy County Zoning Regulations concerning sexually oriented businesses. The proposed amendments include adding Section 45 - Sexually Oriented Business Zoning Regulations and amending Section 9 - Agricultural Farming District, Section 23 - Light Industrial District, and Section 24 - General Manufacturing District to add Sexually Oriented Businesses as Permitted Special Uses. The proposed amendments will be available on the Sarpy County Planning Department website when the agenda and staff reports are posted.

An agenda for the meeting, kept continually current, is available for inspection at the Sarpy County Planning Department office.

11-6-13

**THE DAILY RECORD
OF OMAHA**

**LYNDA K. HENNINGSEN, Publisher
PROOF OF PUBLICATION**

**UNITED STATES OF AMERICA,
The State of Nebraska,
District of Nebraska,
County of Douglas,
City of Omaha,** } ss.

J. BOYD

being duly sworn, deposes and says that she is

LEGAL EDITOR

of THE DAILY RECORD, of Omaha, a legal newspaper, printed and published daily in the English language, having a bona fide paid circulation in Douglas County in excess of 300 copies, printed in Omaha, in said County of Douglas, for more than fifty-two weeks last past; that the printed notice hereto attached was published in THE

DAILY RECORD, of Omaha, on
November 6, 2013

That said Newspaper during that time was regularly published and in general circulation in the County of Douglas, and State of Nebraska.

GENERAL NOTARY - State of Nebraska
CONNIE L. NOVACEK
My Comm. Exp. November 16, 2013

Subscribed in my presence and sworn to before

Publisher's Fee \$ 55.70 me this 6th day of

Additional Copies \$ _____ November 20¹³

Total \$ 55.70

Connie Novacek
Notary Public in and for Douglas County,
State of Nebraska

AFFIDAVIT OF PUBLICATION

STATE OF NEBRASKA }
} SS.
County of Sarpy }

Being duly sworn, upon oath, Shon Barenklau deposes and says that he is the Publisher or Anne Lee deposes and says that he is the Business Manager of the Bellevue Leader, Papillion Times, Gretna Breeze and Springfield Monitor, legal newspapers of general circulation in Sarpy County, Nebraska, and published herein; that said newspaper has been established for more than one year last past; that it has a bona-fide paid subscription list of more than three hundred; that to this personal knowledge, the advertisement, a copy of which is hereto attached, was printed in the said newspaper once each week, the first insertion having been on:

Wednesday, November 6, 2013 Bellevue Leader
Gretna Breeze
Papillion Times
Springfield Monitor

And that said newspaper is a legal newspaper under the statutes of the State of Nebraska. The above facts are within my personal knowledge.

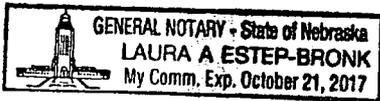
Handwritten signatures of Shon Barenklau and Anne Lee.

Shon Barenklau OR Anne Lee
Publisher Business Manager

Date 11-05-2013
Signed in my presence and sworn to before me:

Handwritten signature of the Notary Public.

Notary Public



Printer's Fee \$ 37.84
Customer Number: 40638
Order Number: 0001696888

NOTICE OF PUBLIC HEARING
SARPY COUNTY PLANNING
COMMISSION

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An agenda for the meeting, kept continually current, is available for inspection at the Sarpy County Planning Department office.
1696888; 11/6

11-13-13 9:09 RCVD

**NOTICE OF PUBLIC HEARING
SARPY COUNTY BOARD OF
COMMISSIONERS**

Notice is hereby given that a regular meeting of the Sarpy County Board of Commissioners will be held on **Tuesday, January 28, 2014**, at 3:00 P.M. in the Sarpy County Board Room, Sarpy County Administration Building, 1210 Golden Gate Drive, Papillion, NE.

Metropolitan Utilities District has submitted an application for consideration of a Text Amendment to Section 23.3 in Sarpy County Zoning Regulations to add Compressed Natural Gas (CNG) Fueling Station without convenience store as a Permitted Special Use in IL (Light Industrial District).

Metropolitan Utilities District has submitted an application for consideration of a Special Use Permit to allow a compressed natural gas fuel station that includes fuel pumps, storage equipment, fuel pump canopy, equipment enclosure, pavement and utility service improvements on property legally described as Lot 3, Hilltop Industrial Park Replat 13 (a proposed administrative replat of Lots 1 & 2, Hilltop Industrial Park Replat 1), Sarpy County, NE. Generally located southwest of 132nd Street & Cornhusker Road.

An agenda for the meeting, kept continually current, is available for inspection at the Sarpy County Planning Department, Sarpy County Administration Bldg., 1210 Golden Gate Drive, Papillion, NE.
1-15-14

**THE DAILY RECORD
OF OMAHA**

**LYNDA K. HENNINGSEN, Publisher
PROOF OF PUBLICATION**

UNITED STATES OF AMERICA,
The State of Nebraska,
District of Nebraska,
County of Douglas,
City of Omaha, } ss.

J. BOYD

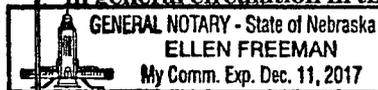
being duly sworn, deposes and says that she is

LEGAL EDITOR

of **THE DAILY RECORD**, of Omaha, a legal newspaper, printed and published daily in the English language, having a bona fide paid circulation in Douglas County in excess of 300 copies, printed in Omaha, in said County of Douglas, for more than fifty-two weeks last past; that the printed notice hereto attached was published in **THE DAILY RECORD**, of Omaha, on _____

January 15, 2014

That said Newspaper during that time was regularly published and in general circulation in the County of Douglas, and State of Nebraska.



Publisher's Fee \$28.10
Additional Copies \$ _____
Total \$28.10

Subscribed in my presence and sworn to before
me this 15th day of
January 20¹⁴

Notary Public in and for Douglas County,
State of Nebraska

01-21-14A11:39 RCVL

AFFIDAVIT OF PUBLICATION

STATE OF NEBRASKA }
 } SS.
County of Sarpy }

Being duly sworn, upon oath, Shon Barenklau deposes and says that he is the Publisher or Anne Lee deposes and says that he is the Business Manager of the **Bellevue Leader, Papillion Times, Gretna Breeze and Springfield Monitor**, legal newspapers of general circulation in Sarpy County, Nebraska, and published therein; that said newspaper has been established for more than one year last past; that it has a bona-fide paid subscription list of more than three hundred; that to this personal knowledge, the advertisement, a copy of which is hereto attached, was printed in the said newspaper once each week, the first insertion having been on:

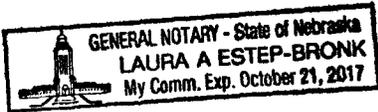
Wednesday, January 15, 2014
Bellevue Leader
Gretna Breeze
Papillion Times
Springfield Monitor

And that said newspaper is a legal newspaper under the statutes of the State of Nebraska. The above facts are within my personal knowledge.

Shon Barenklau OR Anne Lee
Publisher Business Manager

Today's Date 01-14-2014
Signed in my presence and sworn to before me:

Notary Public



Printer's Fee \$ 16.34
Customer Number: 40638
Order Number: 0001716358

**NOTICE OF PUBLIC HEARING
SARPY COUNTY BOARD OF
COMMISSIONERS**

Notice is hereby given that a regular meeting of the Sarpy County Board of Commissioners will be held on Tuesday, January 28, 2014, at 3:00 P.M. in the Sarpy County Board Room, Sarpy County Administration Building, 1210 Golden Gate Drive, Papillion, NE.

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An agenda for the meeting, kept continually current, is available for inspection at the Sarpy County Planning Department, Sarpy County Administration Bldg., 1210 Golden Gate Drive, Papillion, NE.
1716358: 1/15

01-29-14P01:56 RCVD