Ulteig

Lincoln Road Corridor Study

prepared for

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

November 2011

Lincoln Road Corridor Study
Lincoln, North Dakota

Certification

I hereby certify that this report was prepared by me, or under my direct supervision, and that I am a duly registered professional engineer under the laws of the State of North Dakota.

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Lincoln Road Corridor Study

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1.0 Introduction

1.1 Study Background and Objective

Lincoln Road serves as much more than a mover of cars. It is part of the community's identity. It is a gathering place for walkers, joggers, bicyclists, horseback riders and others. And as the City of Lincoln is growing, activity on Lincoln Road has increased.

With increased traffic and general activity along Lincoln Road, traffic safety and congestion issues have become more pronounced. Burleigh County owns and maintains Lincoln Road. Therefore, both Burleigh County and the City of Lincoln have seen reason to place a high priority on making improvements to Lincoln Road.

At their request, the Bismarck-Mandan Metropolitan Planning Organization (MPO) has undertaken this Study. This study focuses on the two mile segment of Lincoln Road that extends from Airway Avenue to 66th Street. The objective of this Study is to identify recommendations to safely and efficiently move all modes of travel along and across the corridor, with specific focus on the Airway Avenue, 52nd Street SE and 66th Street SE intersections.

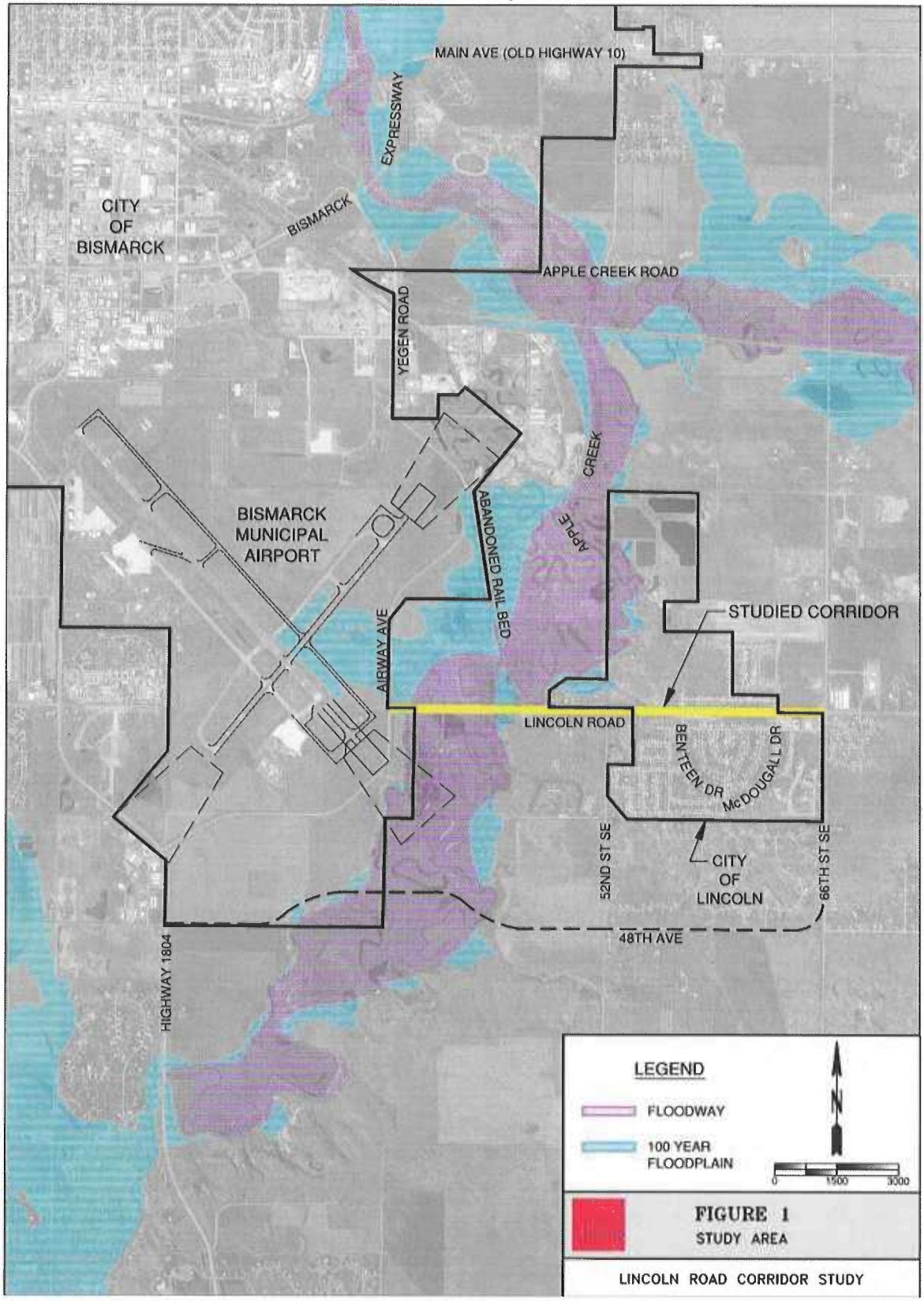
This study objective is consistent with the preliminary purpose and need for corridor improvements. The purpose of the future project is to improve key segments of Lincoln Road from Airway Avenue to 66th Street. The future project is needed to address intersection congestion issues at Airway Avenue and 52nd Street, upgrade the corridor to Burleigh County design standards, and provide adequate transportation facilities for other modes of travel.

1.2 Study Area

The two mile corridor of Lincoln Road from Airway Avenue to 66th Street SE is depicted in Figure 1. This corridor is classified as a minor arterial. As an arterial roadway, it serves as a major route for traffic moving east and west through the area. In addition, Lincoln Road provides important connectivity to 66th Street SE and Airway Avenue.

The east mile of Lincoln Road corridor is bounded primarily by residential property, with limited commercial property. The west mile is primarily undeveloped with a few farmsteads and farm buildings present along the corridor. Bismarck Municipal Airport is located off the west end of the corridor. The corridor is used by all modes of traffic; vehicle, pedestrian, all terrain, and even occasional horseback riders.

Figure 1 – Study Area



2.0 Previous Studies

2.1 Lincoln to Bismarck Roadway Connection Study, May 2006

In 2006, the MPO recognized the benefits of an improved connection from the City of Lincoln to the City of Bismarck. The study identified several options for an improved connection between these two communities. The options varied from improvements of existing roads to construction of new routes.

The final recommendations of the study were categorized by short-term (within 5 years) and long-term solutions (11 – 20+ years). The short-term improvements included the reconstruction of numerous existing intersections between the two cities and the long-term recommendation identified 66th Street as the recommended primary connection from the City of Lincoln to the City of Bismarck as it would be in accordance with the MPO's long range plan and is part of the future beltway around metropolitan area.

The 2006 study also recommended a geometric change to the Airway Avenue and Lincoln Road intersection to allow free movements from Lincoln Road to the north leg of Airway Avenue.

Neither, the 66th Street intersection reconstruction nor the Airway Avenue geometric change has been made to date. The complete Lincoln to Bismarck Roadway Connection Study can be found on the MPO's webpage.

2.2 Bismarck Airport Master Plan

The Bismarck Airport Master Plan includes the extension of their primary runway; Runway 31. This extension along with other airport improvements would require closure of Airway Avenue south of Lincoln Road (see Figure 1).

2.3 Long Range Transportation Plan

The MPO has identified transportation issues in the Lincoln area within the 2010 – 2035 Bismarck – Mandan Long Range Transportation Plan Report. Some of the more noteworthy issues identified within the report are listed below:

- There are concerns with safety, turning traffic and no shoulders on Lincoln Road between 52nd Street and 66th Street.
- Lincoln Road between 52nd Street and 66th Street was identified as a candidate for street reconstruction.
- 66th Street is identified as part of the future metropolitan beltway.
- A better connection is needed from the City of Lincoln to the City of Bismarck.
- A trail connection is needed between the City of Lincoln and the existing trail on Highway 1804. A trail connection to the City of Bismarck is also needed.

3.0 Existing Conditions

3.1 Street Cross Section and Pavement

Lincoln Road has a bituminous paved, two-lane rural section over its entire length. There are virtually no shoulders. A formal road surface condition survey was not conducted however from site observations; the road surface was noted to be in fair condition. Frequent areas of surface cracking and some bituminous deterioration were observed.

The ditch inslope varies from 4:1 to 3:1 in most locations. Some ditch locations drain poorly and would benefit from culvert additions or regrading. Ditch maintenance is compromised in some locations by the steep side slopes, poor drainage, and damage from off-road, motorized traffic.

The existing bridge over Apple Creek is structurally sound but has substandard shoulder width. The bridge guard rail may also be substandard. The hydraulic capacity of the bridge was not addressed by this study.

3.2 Access

The entire segment allows full access, though access along the corridor has been managed very well. The current access includes five (5) private drives and five (5) street intersections. The intersections are listed below from west to east:

- Airway Avenue
- 52nd Street SE
- Benteen Drive
- McDougall Drive
- 66th Street SE

3.3 Utilities

3.3.1 Existing Municipal Utilities

The City of Lincoln owns and operates its own water and sanitary sewer facilities. The City has installed PVC water and sewer lines within the Lincoln Road corridor over the past 30 years. The pipes are well within their useful lifespan and should not be impacted by construction of a new roadway. Hydrants and gate valve boxes will need to be relocated or adjusted.

There are storm water culvert crossings and laterals throughout this corridor. Additions, extensions and other modifications will be required when the corridor is upgraded.

3.3.2 Existing Street Lighting

This corridor does not have street lighting; with the exception of lighting at two of the local street intersections. The lighting units are approximately set-back 90 feet from Lincoln Road at both Benteen Drive and McDougal Drive.

3.3.3 Existing Overhead Power

There is an overhead power line that parallels the north side of Lincoln Road from Airway Avenue to 52nd Street SE. The majority of the power line is 35 to 40 feet north of the existing driving surface with the exception of when it nears 52nd Street SE. The distance in this location varies from 10 to 25 feet north of the existing driving surface.

There are three (3) overhead crossings; at the abandoned railroad bed, at the farmsteads east of Apple Creek and at the intersection of 52nd Street SE.

With street or trail improvements, the overhead power line near 52nd Street SE may require relocation.

3.3.4 Existing Drainage

The roadway drainage is provided by ditches of varying width on both sides. The runoff is conveyed to the north side ditch and is directed into an oxbow of Apple Creek. Surface drainage on the intersecting streets is captured by the curb and gutter on the side streets that outfalls to the ditches of Lincoln Road.

3.4 Sidewalks and Trails

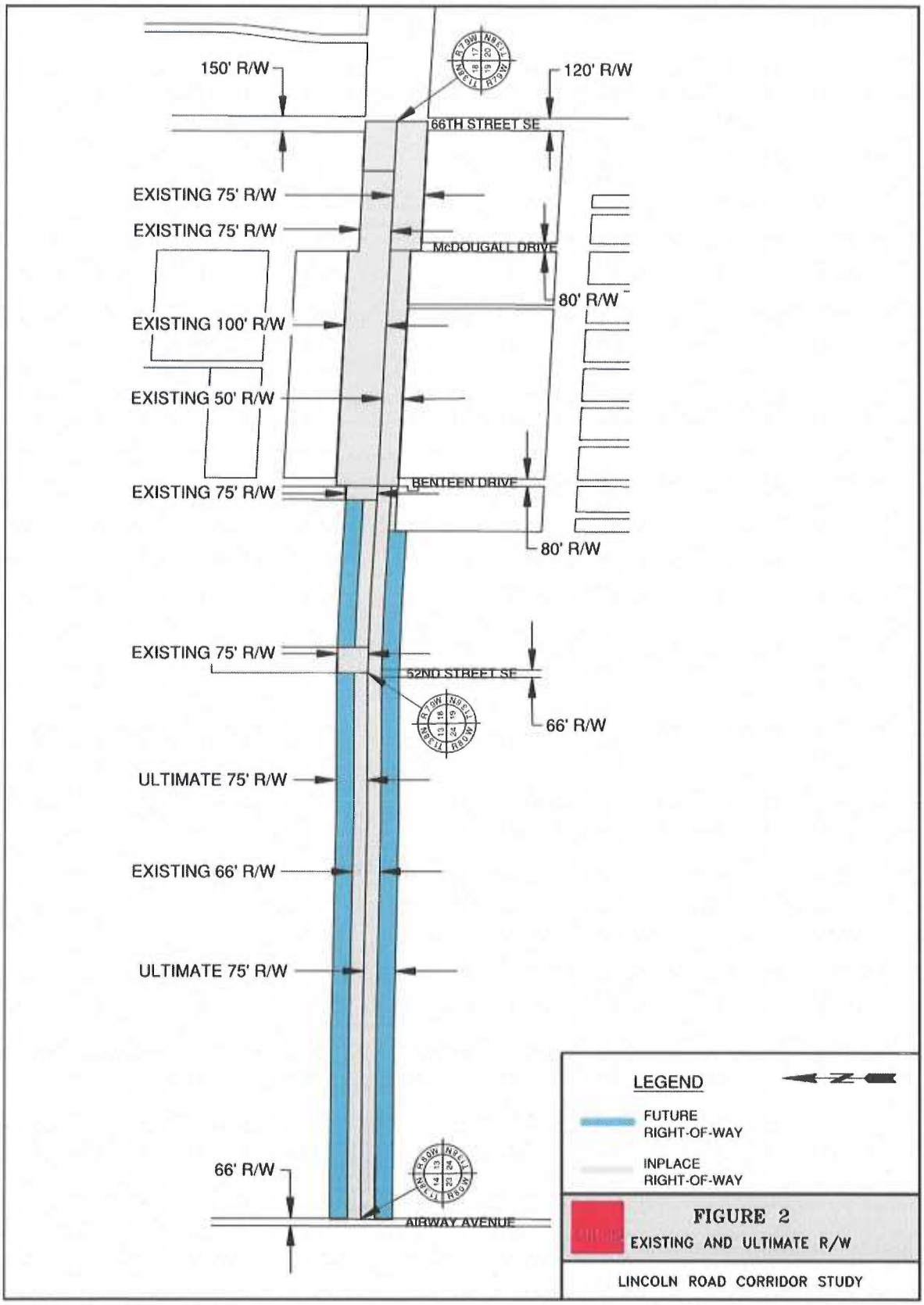
There are no pedestrian or bicycle facilities along Lincoln Road. A sidewalk exists along the west side of Benteen Drive that ends short of the Lincoln Road right-of-way.

There is an unimproved dirt path that lies primarily in the south ditch-bottom that has been established by use. The use includes pedestrians, all-terrain vehicles (ATVs), motorcycles, snowmobiles, and equestrians (horseback riders).

3.5 Right-of-Way

Based on available plats, the corridor west of Benteen Drive generally has a 66 foot right-of-way and the corridor east of Benteen Drive generally has a 150 foot right-of-way. Figure 2 illustrates the existing right-of-way within this corridor along with the recommended ultimate right-of-way which is discussed in a later section of this study.

Figure 2 – Existing and Ultimate Right-of-Way



3.6 Landscaping

A number of landscape elements already exist within the Lincoln Road corridor. Natural vegetation as well as some planned plantings are located throughout. In addition to the vegetation, other elements include small bench seating areas and several signs. A variety of different site conditions exist along and adjacent to the corridor. A more rural setting exists between Airway Avenue and 52nd Street. Between 52nd Street and Benteen Drive the corridor transitions from rural to urban settings. The more urban setting then continues to 66th Street.

Existing vegetation includes not only natural wooded areas and old farmstead shelterbelts, but also some recent plantings within the more urban corridor sections. One planting area is located adjacent to the park on the south side of the corridor between 52nd Street and Benteen Drive. Another is on the north side of the corridor between Benteen Drive and McDougall Drive. The trees in this area have been planted in a staggered pattern to accommodate a multi-use trail. The last section, from McDougall Drive to 66th Street, has some plantings on the south side of the corridor along the back of the adjacent properties. The church property on the north side of this segment also has some plantings.

One bench seating area is located in the northeast corner of the intersection with Benteen Drive. This area has a concrete pad and two concrete benches. A second seating area is located on the northwest corner at McDougall Drive. In addition to a concrete bench, this area has a flag pole and a small plaque with dedication signs. A number of commercial signs are located throughout the corridor. In additional to these signs are three wooden "Welcome to Lincoln" entry signs that are located on the south side of the roadway. The first is located on the west side of at Benteen Drive. Low landscaping surrounds it and it has a flag that is illuminated at night. The second entry sign is located on the east side of McDougall Drive. Some landscaping surrounds this one as well, however parts of the sign are concealed due to plant growth. The last City entry sign is located near the City shop on the west side of 66th Street. It also is surrounded by some landscaping.

4.0 Issues Identification

There were a number of issues along the Lincoln Road corridor that this Study needed to address. These issues were identified through feedback from the Study Review Committee and the general public (see Section 7.0), and from observations and the technical analysis that was completed. A listing and short explanation of each of the identified issues is provided in the paragraphs that follow.

4.1 Traffic Congestion and Travel Delays

Significant traffic congestion and associated travel delays have been observed at two locations:

- Westbound on Lincoln Road, long delays during the AM peak hour have been experienced at the Airway Avenue intersection. Traffic wanting to turn onto Airway Avenue has been known to queue all the way to 52nd Street SE.
- Northbound on 52nd Street SE, long queues form for traffic wanting to turn left onto Lincoln Road during the AM peak hour.

4.2 Traffic Safety

Traffic safety is a concern due to the lack of turn lanes, the narrow shoulders and bridge structure, and dips in the roadway profile on either side of the Apple Creek Bridge.

4.3 Pedestrian and Bicycle Travel

4.3.1 Travel Safety

With no off street facilities, pedestrian and bicyclist traffic commonly occurs on the existing dirt path used by ATV's or on the limited shoulders of the street. It is desirable, for safety reasons, to keep ATV's separate from pedestrians and bicyclists. With limited shoulder room, travel on the roadway is also hazardous.

4.3.2 Travel Mobility

Travel mobility is impaired given the presence of no facilities. The ATV dirt path in the bottom of the south ditch is not functional when the ditch bottom is wet. People with disabilities would need a constructed facility in order to travel along the corridor.

4.4 ATV and Motorcycle Safety and Noise

The ATV and motorcycle movements are primarily concentrated along the south ditch. Noise complaints have been received from residents whose property abuts the south roadway ditch. Vehicle/ATV visibility at intersections is limited. Additionally, pedestrians and bicycles commonly use the unimproved ATV trails. This shared use has raised safety concerns.

4.5 Equestrian Travel Safety

Equestrian movements primarily occur on the existing ATV trail.

4.6 Cross Section

The existing street cross section does not meet the current Burleigh County design standards. The shoulder width does not allow motorists a safe area to pull over. Additionally this limited shoulder does create unsafe pedestrian usages.

4.7 Apple Creek Floodplain

The western portion of the studied segment of Lincoln Road lies within the Apple Creek floodplain. During the times of high water, particularly during the spring melt, the roadway is often submerged and impassable. Approximately 2,500 feet of the roadway lies at an elevation within the 100-year flood floodplain. This is a regulated floodway; improvements within this area will likely require approval from the ND State Water Commission and a local non-building floodplain permit.

The Flood Insurance Rate Map (FIRM) for this area is included as part of Appendix 1.

4.8 Right-of-Way

The Lincoln Road right-of-way corridor varies significantly throughout the studied area. Consideration should be given to ultimately obtaining a consistent 150 foot right-of-way through this corridor if improvements are made. The following is a narrative summary of the right-of-way needs and inconsistencies:

- At Airway Avenue, the existing right-of-way (33 feet on south side and 75 feet on north side) is likely sufficient for the construction of an additional turn lane.
- The 66 foot right-of-way between Airway Avenue and 52nd Street SE is insufficient in width for reconstruction of Lincoln Road at an elevation in excess of the Apple Creek 100 year flood.
- Construction of intersection improvements at 52nd Street and at Airway Avenue may require additional right-of-way. The landowner of property along the north side of Lincoln Road through this area has expressed an unwillingness to dedicate the right-of-way that may be needed.
- The right-of-way from 52nd Street SE to Benteen Drive is insufficient for the construction of the proposed ATV and multi-use trails.
- The right-of-way between Benteen Drive and McDougall Drive is sufficient.
- The right-of-way between McDougall Drive and 66th Street is also sufficient however it is slightly offset from the right-of-way to the west.

Additionally, temporary easements in various locations throughout the corridor may be required for various construction purposes.

The recommended ultimate right-of-way is shown Figure 2.

4.9 Landscaping

Based on a review of current conditions, a number of issues have been identified:

- No corridor definition or identity: Some areas have landscaping while others have none. Areas that have landscaping have different styles (i.e. rows vs. staggered trees).
- No clear entry into the City of Lincoln: The City has three different signs and landscaping styles in three different locations.
- No Pedestrian facilities: Two small plazas with benches exist, however no sidewalk or trails lead to them. The path between them is inadequate and there is no connection to the nearby park.

The Lincoln Road corridor has constraints but offers a number of opportunities for future landscaping. The primary constraint to installing additional landscaping is available space. The proposed roadway, drainage ditches, pedestrian facility configurations, and utilities are key factors in determining preferred corridor landscaping. A unified look for the corridor can be achieved. Options for formal entries to the City can be evaluated and incorporated into the designs. Pedestrian connections with existing and potential future plazas may also be constructed.

4.10 Drainage and Utilities

Drainage within the existing ditches is poor in some locations. This issue may be improved by installing culverts at some of the cross-streets, as well as by regrading the ditch bottom in some locations. Some overhead power lines may need to be relocated if they are in impacted by the proposed improvements.

4.11 Bismarck Municipal Airport Runway 31 Extension

Improvement of the Lincoln Road/Airway Avenue intersection and the extension of 48th Avenue from Highway 1804 to 52nd Street could help to offset the impacts of runway extension.

Drainage within the existing ditches is poor in some locations and Lincoln Road is located within the floodway of Apple Creek. Any elevation change on Lincoln Road would need to be evaluated and mitigated to prevent the inundation of runways at Bismarck Municipal Airport.

Future street lighting at Airway Avenue would also need to be evaluated.

5.0 Analysis of Existing and Forecasted Traffic

5.1 Existing Traffic Volumes

According to the 2009 Traffic Volume Map prepared by the North Dakota Department of Transportation, the average daily traffic (ADT) on Lincoln Road (east to west) ranges from 1,605 to 3,775 vehicles per day.

AM and PM peak hour traffic and pedestrian counts were recorded during September of 2010 at the Lincoln Road intersections of 52nd Street SE, Benteen Drive, McDougall Drive, and 66th Street SE. These counts are summarized in Figures 3 and 4. The pedestrian counts may not be peak pedestrian volumes due to the weather conditions and the time of day that the counts were taken.

Figure 3 – September 2010 AM Traffic Counts

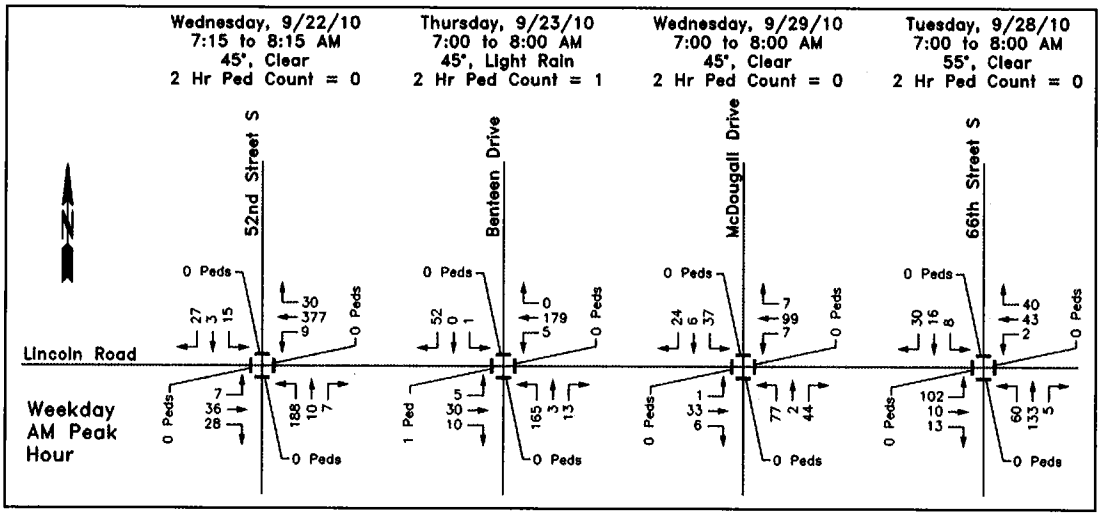
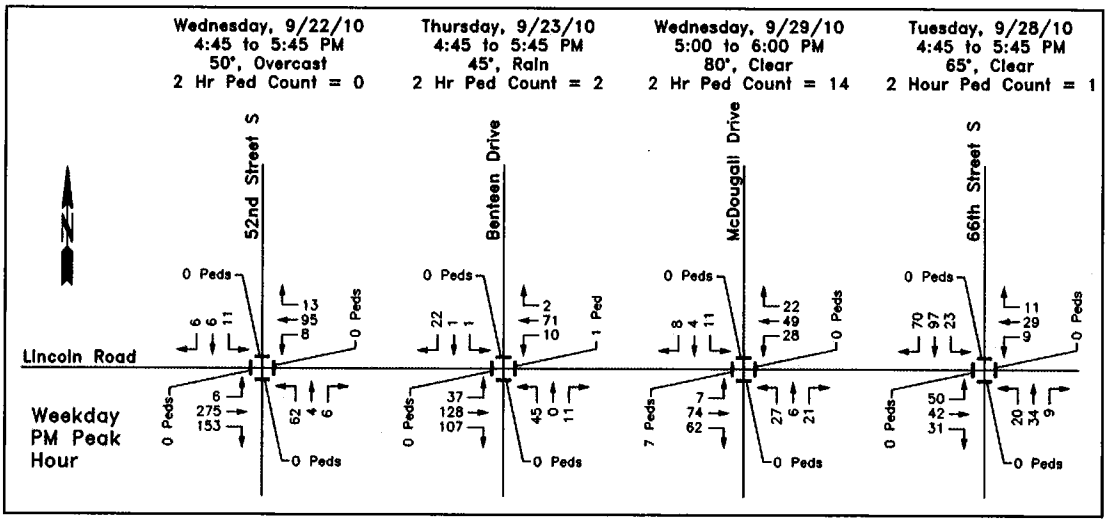


Figure 4 – September 2010 PM Traffic Counts



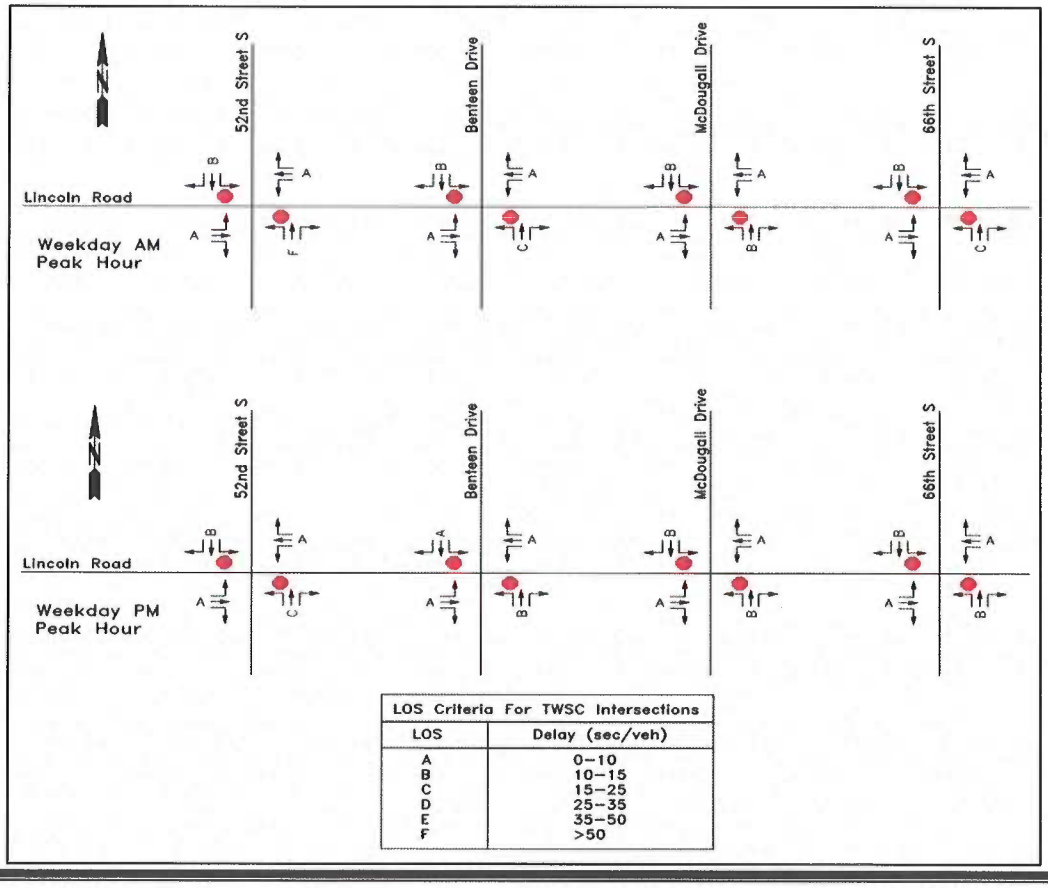
Supplemental traffic counts were conducted by Burleigh County (See Appendix 2) and by law enforcement at the Airway Avenue and 52nd Street intersections on March 29 and March 30, 2011 respectively:
Airway Avenue (east approach, 7:15-8:15 a.m.) – 363 left turns, 243 right turns
52nd Avenue (south approach, 7:15-8:15 a.m.) – 164 left turns, 3 straight, 13 right turns

5.2 Existing Level of Service Analysis

Level of Service (LOS) is divided into six categories denoted by letters A through F. LOS A suggests optimum traffic conditions with little or no delays, while LOS F suggests heavy traffic congestion with extremely long delays. Under LOS C, although longer delays may occur, vehicular progression is generally adequate with delays acceptable to most drivers. Signalized and un-signalized intersection LOS is based on the average delay per vehicle.

A traffic analysis software program, Synchro, was used to perform the LOS analysis. LOS analyses were conducted to identify areas of high congestion, and to determine the primary causes of congestion. The existing LOS analysis addressed intersection control, existing traffic volumes, and existing lane configurations. Existing LOS along Lincoln Road are provided in Figure 5. Full Synchro reports are included in Appendix 2.

Figure 5 – Existing LOS

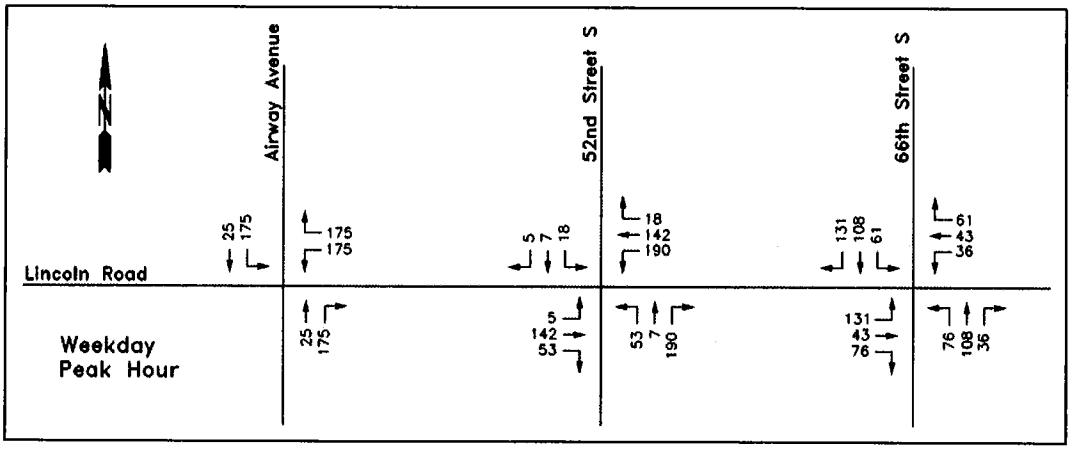


5.3 Forecasted Traffic Volumes

Considering the uncertainty of Airway Avenue, the Advanced Traffic Analysis Center (a program of the Upper Great Plains Transportation Institute) provided 2035 traffic projections for this area with two scenarios; with and without the 48th Avenue South connection between 66th Street and Highway 1804. Both scenarios assumed that Airway Avenue would not continue south of Lincoln Road.

The projected traffic volumes were used to analyze the Lincoln Road corridor. A "worse case" 2035 projection scenario was extrapolated from the scenarios with and without 48th Avenue. For the Airway Avenue intersection, the worst case includes the south approach to Airway Avenue remaining open, whereas for the 52 Street and 66th Street intersections, the worst case assumes the south approach for Airway Avenue being closed. The worst case projected turning movements are provided in Figure 6. The turning movement reports created by WinTurns software are included in Appendix 2. Benteen and McDougal intersections were not included in the forecasted traffic analysis since growth at those intersections is anticipated to be insignificant.

Figure 6 – Projected Turning Movements



5.4 Field Observations

According to the traffic counts conducted in 2010, the volumes on 66th Street are higher than the volumes on Lincoln Road at that intersection, yet the two-way stop control requires the 66th Street traffic to stop. It is recommended that the stop signs be moved to the Lincoln Road approaches.

Traffic delays along Lincoln Road primarily occur during the peak hours, especially the AM peak. During the AM peak, vehicles stack up on westbound Lincoln Road as they try to turn onto Airway Avenue. Although it is not to the same degree, vehicles also stack up during the AM peak at the 52nd Street SE and 66th Street SE intersections.

One of the main traffic issues is the congestion of westbound traffic at the Airway Avenue intersection. This approach currently consists of a single lane for right and left turning traffic. There is no westbound through traffic.

5.5 Queue Analysis

Queue length calculations were completed for the existing and future conditions as part of the LOS analysis. Queue lengths were checked to ensure that there were no conflicts with access points and nearby intersections.

Recommended turn lane storage lengths (not including the taper) are shown in Table 1. In summary, most of the lanes along the corridor appear to have sufficient storage. According to the field observations, one movement that has a significant queue (mainly during the AM peak) is the westbound movement at Airway Avenue. This approach currently shares one lane for both left and right movements. For future turn lanes, 200 foot minimum storage length should be provided where space is available.

Table 1 – Recommended Turn Lane Storage Lengths (excludes tapers)

Location	Approach	Existing Lane Use	Existing Storage (ft)*	Existing Queue (ft)**	Future Lane Use	Future Queue (ft)
Airway Avenue	North	Thru/Lt	>2,000	Not Measured	Thru/Lt	0
	East	Left/Right	1,230	Not Measured	Left	120
					Right	20
	South	Thru/Rt	1,600	Not Measured	Thru/Rt	20
52nd Street	North	Left/Thru/Rt	40	20	Roundabout	<100
	East	Left/Thru/Rt	580	20	Roundabout	<100
	South	Left/Thru/Rt	1,000	250	Roundabout	<100
	West	Left/Thru/Rt	350	20	Roundabout	<100
Benteen Drive	North	Lt/Thru/Rt	210	20	Lt/Thru/Rt	Not Analyzed
	East	Lt/Thru/Rt	2,200	20	Lt/Thru/Rt	Not Analyzed
	South	Lt/Thru/Rt	150	70	Lt/Thru/Rt	Not Analyzed
	West	Lt/Thru/Rt	1,140	20	Lt/Thru/Rt	Not Analyzed
McDougall Drive	North	Lt/Thru/Rt	120	20	Lt/Thru/Rt	Not Analyzed
	East	Left/Thru/Rt	1,140	20	Lt/Thru/Rt	Not Analyzed
	South	Left/Thru/Rt	90	20	Lt/Thru/Rt	Not Analyzed
	West	Left/Thru/Rt	2,200	20	Lt/Thru/Rt	Not Analyzed
66th Street	North	Lt/Thru/Rt	600	30	Thru/Lt	70
					Right	60
	East	Lt/Thru/Rt	500	20	Lt/Thru/Rt	60
	South	Lt/Thru/Rt	200	100	Lt/Thru/Rt	90
	West	Lt/Thru/Rt	1,140	20	Left	60
					Thru/Rt	50

*Storage is measured to the nearest intersection or access point
**Longest queue between AM and PM peak

5.6 Summary of Traffic Analysis

Based on our review of supplemental traffic data provided by Burleigh County and the City of Lincoln law enforcement, and on the traffic analysis conducted for the existing and future AM and PM peak hours, all traffic movements analyzed along the corridor currently operate at a LOS C or better, with the exceptions of the northbound movement at 52nd Street and the westbound movement at Airway Avenue. The level of service for Airway Avenue was not measured, though observations indicate that during the AM peak hour, the level of service on the east approach operates at LOS F.

According to the traffic model projections, minimal traffic growth is expected along this corridor in the next 25 years. Therefore, the forecast 2035 volumes do not warrant significant corridor capacity improvements beyond those that can be provided to improve the 52nd Street and Airway Avenue intersections.

5.7 Future Level of Service Analysis

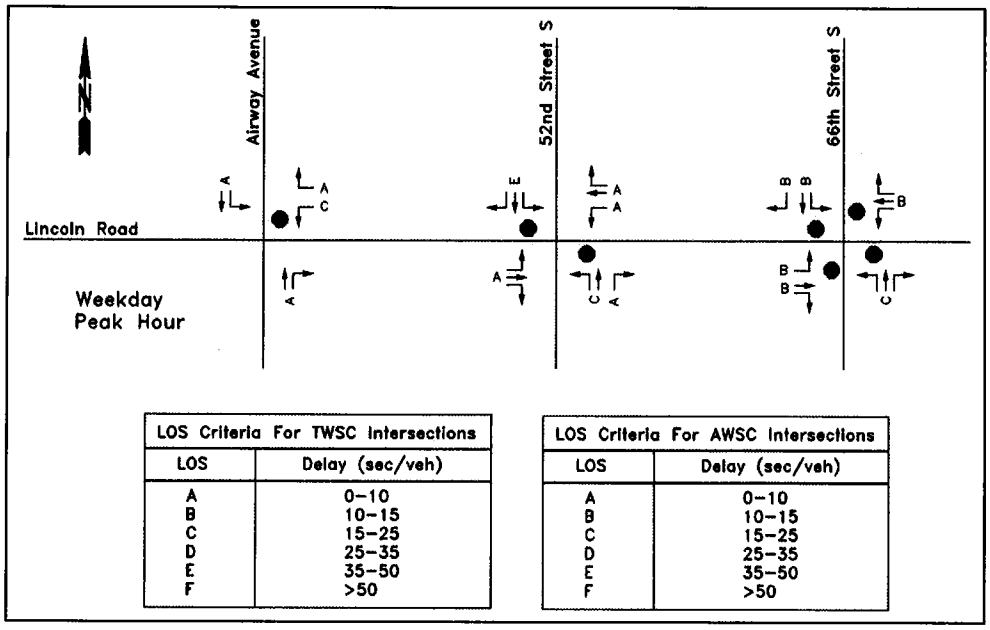
The future LOS analysis included optimized intersection control, projected traffic volumes, and proposed improvements. The future analysis identified the improvements which benefited traffic operations and these improvements include:

- Separate left and right turn lanes on Lincoln Road at Airway Avenue
- Left turn lanes on Lincoln Road at 52nd Street
- Left turn lanes on Lincoln Road at 66th Street
- Two-way, east-west stop control at Lincoln Road and 66th Street
- A right turn bay on 66th Street's north approach

The LOS for the future analysis along Lincoln Road is provided in Figure 7. The Synchro reports are included in Appendix 2.

With the projected traffic, proposed improvements and optimized intersection control included in the future analysis, during the peak hour all traffic movements analyzed along the corridor are expected to operate at a LOS C or better, with the exception of the southbound movement at 52nd Street (which is a very low volume movement).

Figure 7 – Future LOS



LOS Criteria For TWSC Intersections	
LOS	Delay (sec/veh)
A	0–10
B	10–15
C	15–25
D	25–35
E	35–50
F	>50

LOS Criteria For AWSC Intersections	
LOS	Delay (sec/veh)
A	0–10
B	10–15
C	15–25
D	25–35
E	35–50
F	>50

5.8 Crash Analysis Summary

Crash data was obtained from the NDDOT for the 3.5-year period between January 1, 2007 and June 30, 2010 for the Lincoln Road corridor between Airway Avenue and 66th Street. This crash data was then sorted by a variety of measures to determine the potential for safety improvements along the corridor. All of the crash analysis documentation can be found in Appendix 2.

The historical crash data does not indicate the presence of any existing major safety deficiencies. Slightly elevated crash rates at certain locations along the corridor may be a result of vehicle stacking at intersections. This is particularly the case at Airway Avenue, where 7 AM Peak crashes occurred during the 3.5-year interval.

While the historical crash data did not indicate the presence of significant existing vehicle safety issues, future changes in traffic patterns could lead to safety issues that may be preventable by making corridor improvements to aid traffic flow. An analysis of the corridor from a safety standpoint was conducted using empirical evidence and traffic engineering standards. The conclusions from this analysis are provided as follows:

- Corridor safety could be improved by reducing access to public or private drives.
- Addition of turn lanes along Lincoln Road would help manage turning volumes and provide additional storage.

6.0 Alternative Development and Analysis

Based on an examination of the corridor issues, and following analysis of the traffic conditions along Lincoln Road, the preliminary purpose and need for improvements became evident. The preliminary purpose of corridor improvements is to reconstruct Lincoln Road to address long range multi-modal transportation conditions along the corridor.

Improvements are needed to address identified substandard roadway geometrics, traffic congestion at the Airway Avenue and 52nd Street intersections, and pedestrian and bicycle safety and mobility. A possible project need would be to elevate Lincoln Road out of the 100 year floodplain to improve access and emergency services during major flood events.

For this study and the corresponding alternatives, Lincoln Road has been divided into two (2) segments; a western portion and an eastern portion. The division between the two segments was made at the point in which the road elevation enters the 100 year floodplain. This is near the abandoned rail bed west of 52nd Street. This division is also appropriate as the two segments generally lie within two distinctly different areas; the western half which is predominately rural and the eastern half which is within the City of Lincoln.

Costs were estimated for each alternative based on today's construction dollars. The estimates do not include engineering fees, permit fees, right-of-way acquisition costs, financing costs, costs to mitigate the impacts of fill in the floodway, or any other items not specifically addressed within this study. The estimated costs are independent of each other alternative. Alternatives can be selected and the total estimated project cost would be the sum of the selected alternates.

The remainder of this section of the Report describes the alternatives and sub-alternatives that were developed, analyzed and evaluated. They are organized as follows:

- Sections 6.1 and 6.2 – Lincoln Roadway Alternatives
- Section 6.3 – Multi-use Trail Alternatives
- Section 6.4 – ATV Trail Alternatives
- Section 6.5 – Airway Avenue Intersection Alternatives
- Section 6.6 – 52nd Street SE Intersection Alternatives
- Section 6.7 – McDougal Drive Intersection Alternatives
- Section 6.8 – 66th Street SE Intersection Alternatives
- Section 6.9 – Street Lighting Alternatives
- Section 6.10 – Landscaping Alternatives
- Section 6.11 – Other Considered Alternatives

6.1 Lincoln Road - Airway Avenue to Abandoned Rail Bed Alternatives

The City of Lincoln is sometimes impacted during flood season as the Apple Creek has on occasion overtopped the two most frequently used roadways to and from the City of Lincoln; Lincoln Road and 66th Street SE. The closures of these two roads results in a

significant increase in travel time for those travelling between Lincoln and Bismarck. This frustrates the residents of Lincoln and impacts safety as emergency response times are also significantly longer.

The build alternatives would impact the hydraulics of the Apple Creek by permanently placing fill in the floodway. Because this section of Lincoln Road is located in a regulated floodway, the requirements of CFR 60.3(d)(3) would need to be met. A Certified Floodplain Manager would be required to analyze the existing and proposed hydraulics if this alternative was selected, and no rise to the floodway would be allowed. Additionally, a permit may need to be obtained from the Bismarck Floodplain Administrator for these improvements.

If the No Build alternative would be selected, either 66th Street SE or 48th Avenue would need to be considered for a grade raise to provide the City of Lincoln access to and from the City of Bismarck during flood events.

The proposed typical section for Lincoln Road from Airway Avenue to the abandoned rail bed is shown in Figures 9 and 10.

6.1.1 No Build

The No Build Alternative would leave the Lincoln Road corridor from Airway Avenue to the abandoned railroad as is.

6.1.2 Alternative 1 - Grade Raise with 4-ft Shoulders

Alternative 1 includes raising the Lincoln Road surface elevation to give the City a direct connection with Bismarck even during high water times. Lincoln Road would be reconstructed with 2 12-ft lanes, 4-ft shoulders and a new bridge to match the new street width.

These improvements are illustrated in Figures 8, 9 and 10. The estimated construction cost for this alternative is $1,448,000.

6.1.3 Alternative 2 - Grade Raise with 8-ft Shoulders

This alternative is the same as Alternative 1, with the exception that an additional 4 feet of shoulder width would be provided. The wider shoulder would allow motorists additional room for error, it would allow sufficient space for a stalled vehicle while minimizing the impact to traffic flow, and would provide space for pedestrian and bicycle use.

These improvements are illustrated in Figures 8, 9 and 10. The estimated construction cost for this alternative is $1,704,000.

Figure 8 – Typical Sections

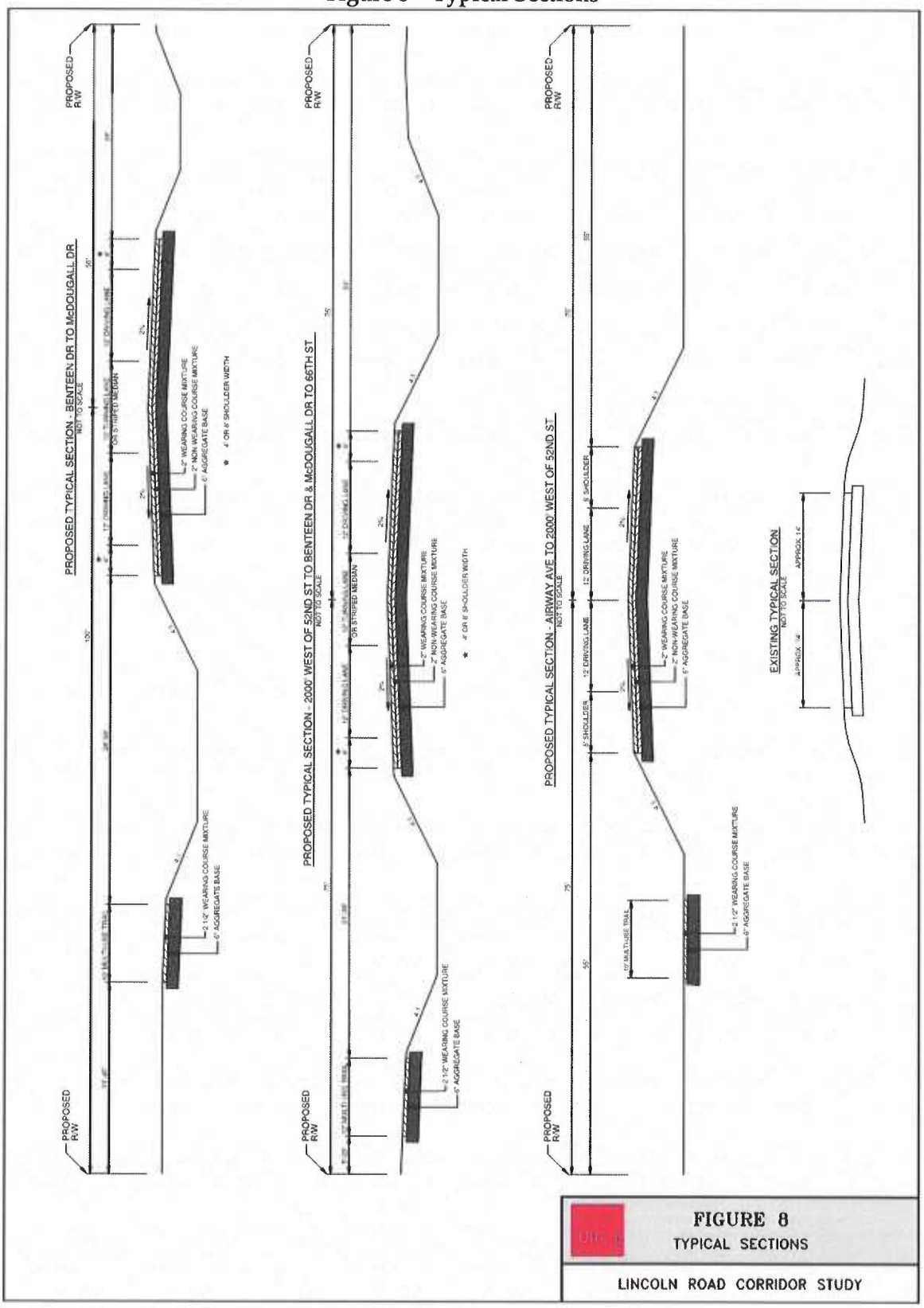


Figure 9 – Lincoln Road Alternatives – Airway Avenue to 52nd Street SE (1 of 2)

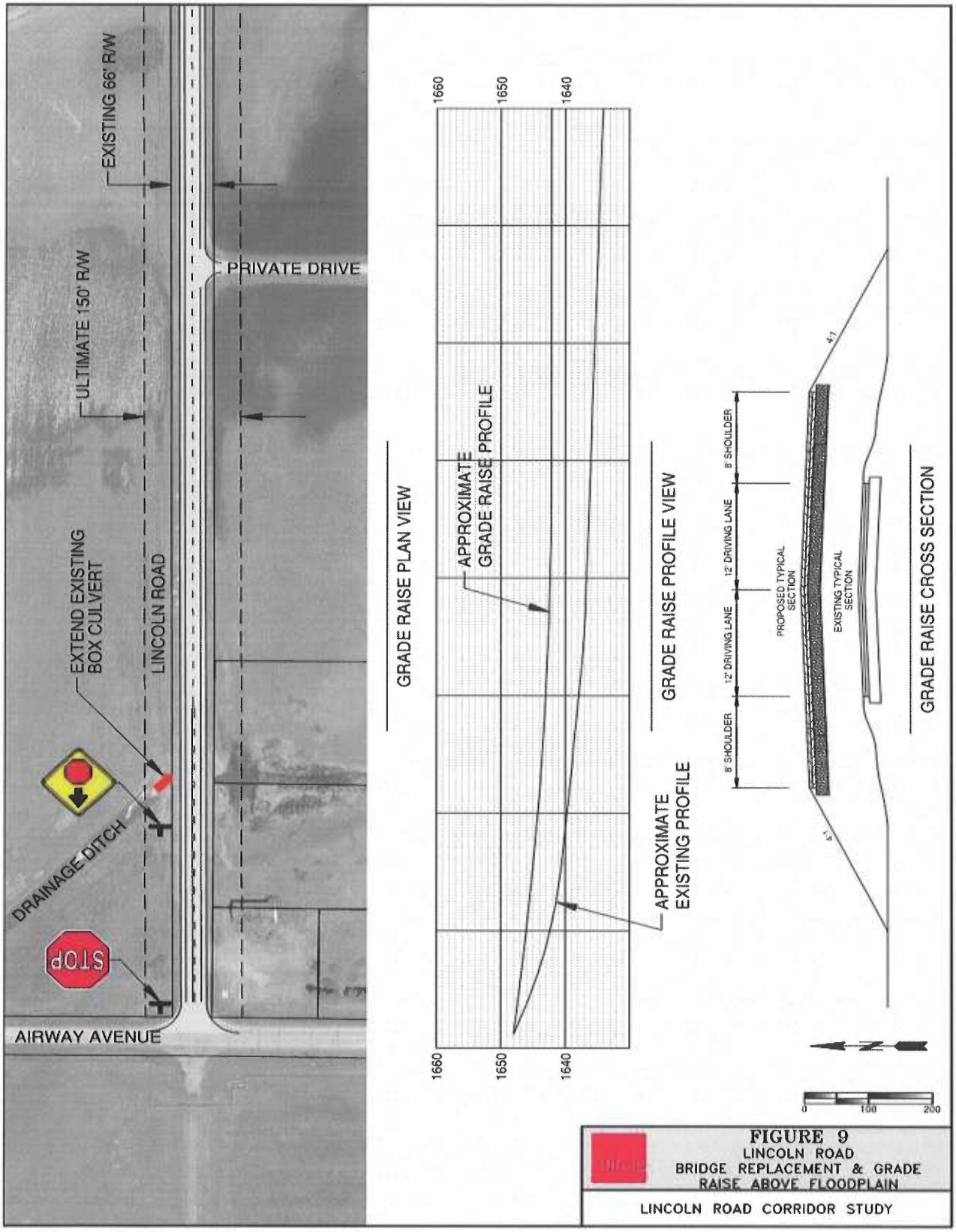
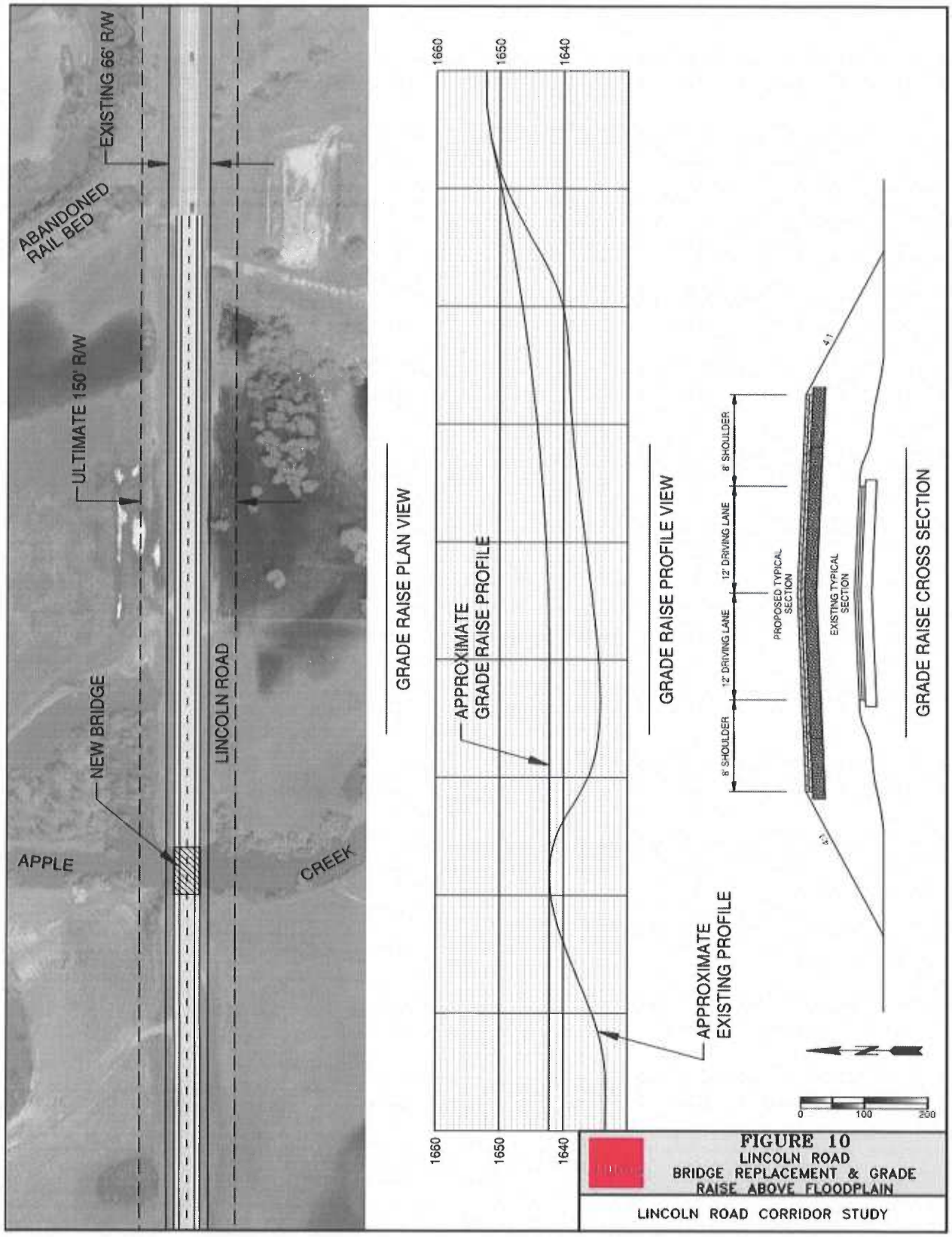


Figure 10 – Lincoln Road Alternatives – Airway Avenue to 52nd Street SE (2 of 2)



6.2 Lincoln Road - Abandoned Rail Bed to 66th Street SE Alternatives

6.2.1 No Build

The No Build Alternative would leave the Lincoln Road corridor from the abandoned rail bed to 66th Avenue SE in its current condition.

6.2.2 Alternative 1 - Build with 4-ft Shoulders and Turn Lanes

This alternative would include the reconstruction of Lincoln Road throughout the City of Lincoln. The proposed improvements to Lincoln Road would extend from the abandoned rail bed to 66th Street.

The existing corridor operates appropriately during most times and traffic congestion is limited to the peak traffic hours. Therefore, this alternative proposes a two-lane roadway with the addition of left turn lanes at the five (5) intersections. The left turn lanes would improve safety and reduce delay at all intersections within the City of Lincoln. The proposed cross section is shown in Figure 8.

With the addition of left turn lanes at the five intersections, a 44 foot roadway would be desired; 2-12 driving lanes, 1-12 foot turn lane, and 4 foot shoulders on both sides. The constant width street section is desirable for both constructability and aesthetic reasons.

North-south stop signs at the 52nd Street, Benteen Drive, and McDougall Drive intersections would remain. As modeled in a previous section, stop signs at the 66th Street intersection would change from north-south stop control to east-west stop control.

This alternative does not lie within the floodplain or would not be impacted by the airport extension plans. Drainage would continue with open ditches and periodic centerline culverts. New culverts would be constructed at cross streets as needed.

The conceptual plan layouts for these improvements are shown in Figures 11 through 14. The estimated construction cost for this alternative is $1,099,000.

6.2.3 Alternative 2 - Build with 8-ft Shoulders and Turn Lanes

This alternative is the same as Alternative 1, with the exception that an additional 4 feet of shoulder width would be provided. The wider shoulder would allow motorists additional room for error, it would allow sufficient space for a stalled vehicle while minimizing the impact to traffic flow, and would provide space for pedestrian and bicycle use. The estimated construction cost for this alternative is $1,255,000.

Figure 11 – Lincoln Road Alternatives – 52nd Street SE to 66th Street SE (1 of 4)

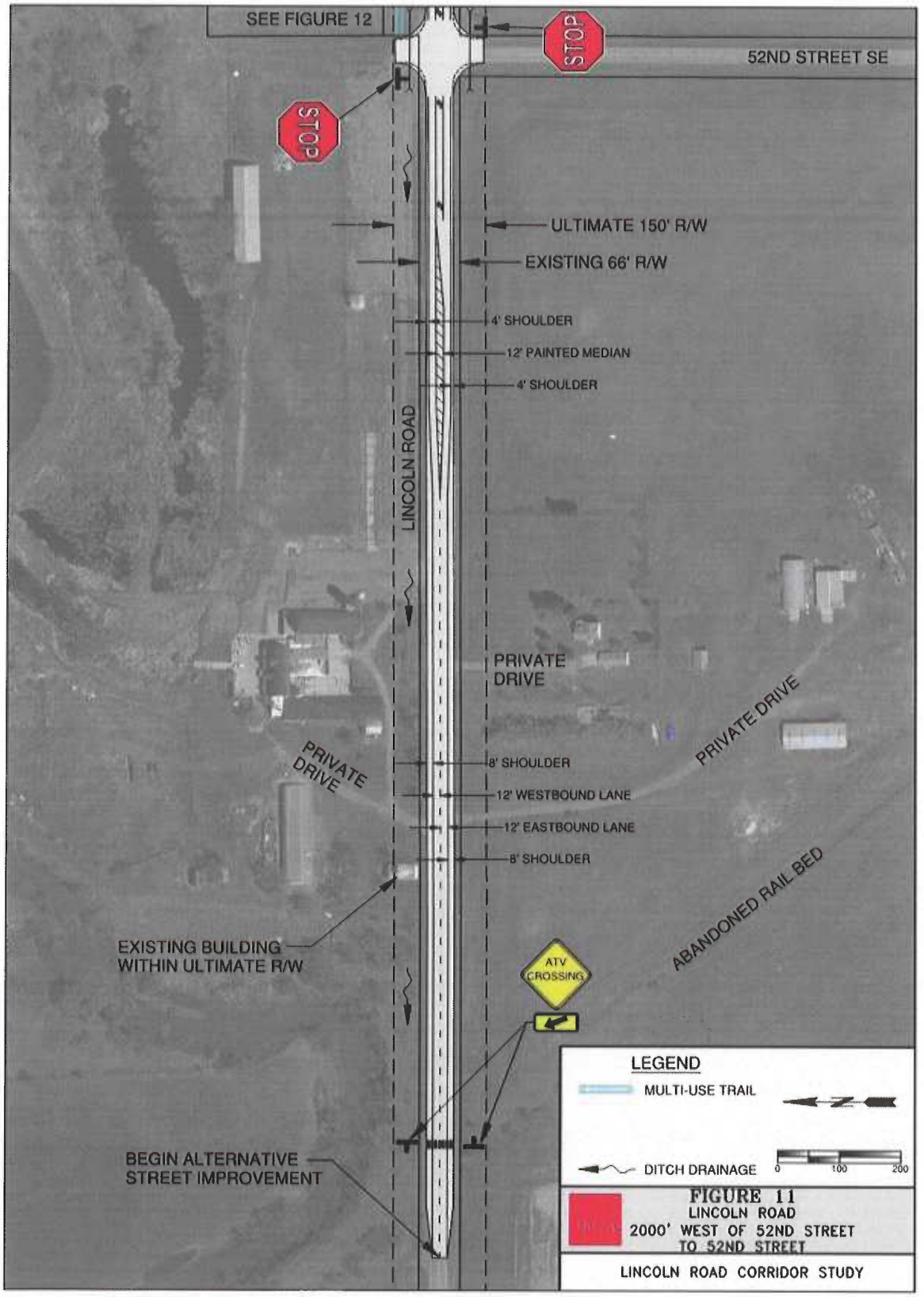


Figure 12 – Lincoln Road Alternatives – 52nd Street SE to 66th Street SE (2 of 4)

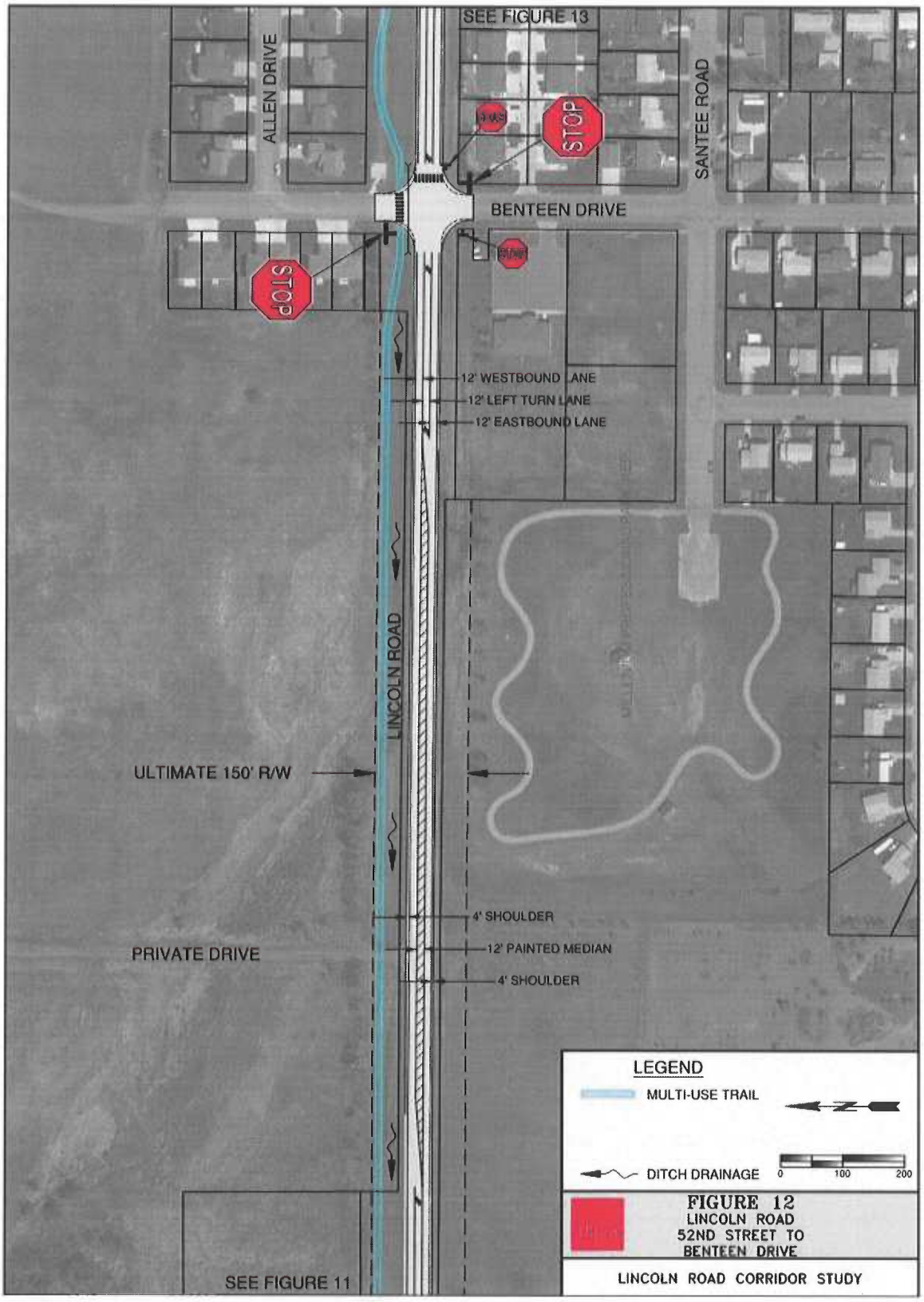


Figure 13 – Lincoln Road Alternatives – 52nd Street SE to 66th Street SE (3 of 4)

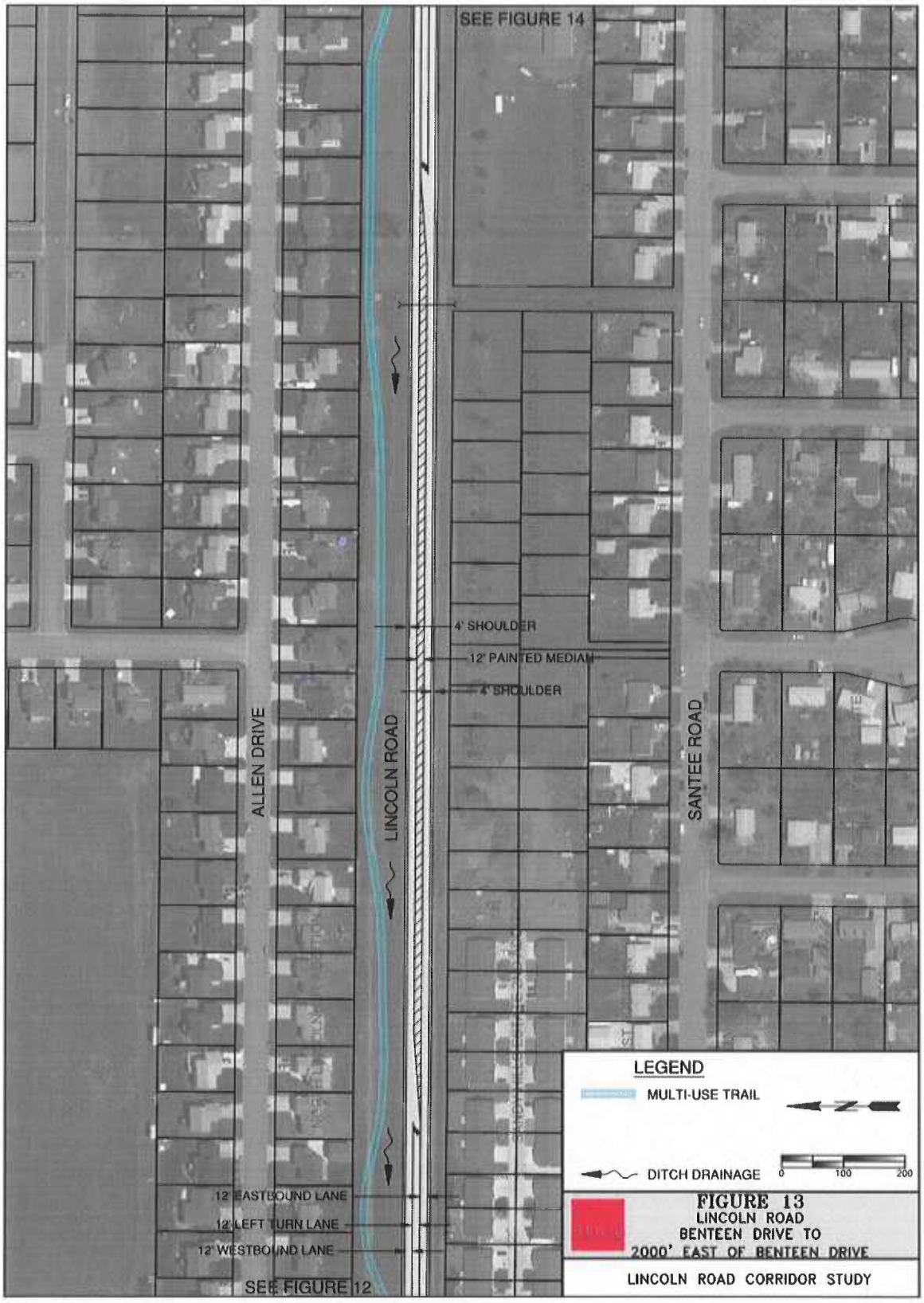
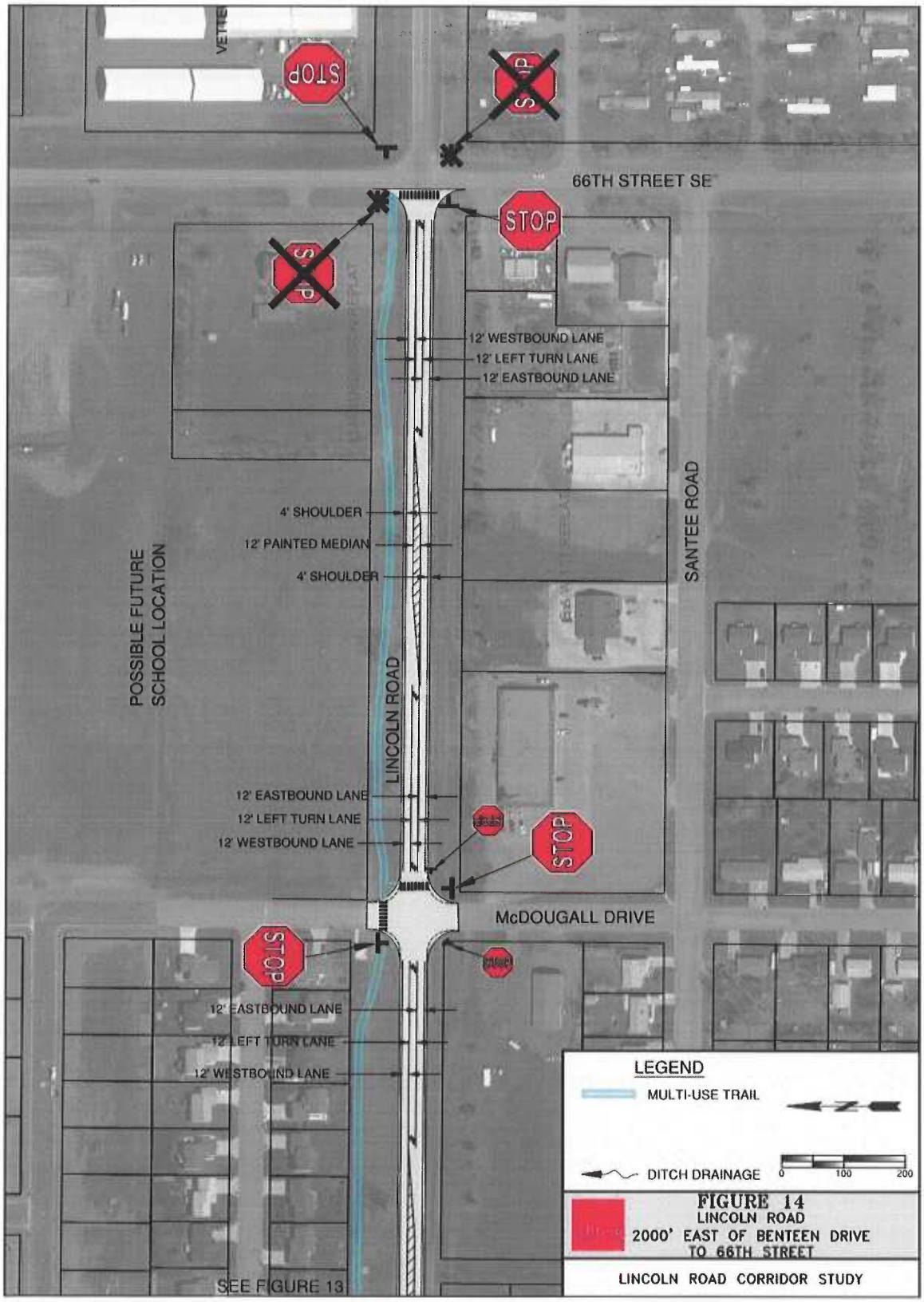


Figure 14 – Lincoln Road Alternatives – 52nd Street SE to 66th Street SE (4 of 4)



6.3 Multi-Use Trail Alternatives

The construction of a multi-use trail may be most economical if implemented concurrently with Lincoln Road street improvements. At a minimum, reconstruction of Lincoln Road should account for possible trail crossings of the side-streets.

There is a documented need for pedestrian and bicycle facilities, as a high level of activity along the corridor has been observed and no facilities currently exist. For safety purposes, pedestrian/bicycle traffic should be separated from ATV traffic.

6.3.1 No Build

No multi-use trail would be built under the No Build alternative.

6.3.2 Alternative 1 - Build from 52nd Street SE to 66th Street SE

This alternative includes construction of a ten (10) foot wide bituminous multi-use trail on the north side of Lincoln Road. The proposed trail would meander through the recently planted trees from 52nd Street to 66th Street. The trail could be constructed all at once or in segments depending on funding and local needs. It would serve pedestrians, bicycles and other non-motorized modes of travel.

An off-street trail would provide vehicle and pedestrian separation thereby resulting in much safer conditions for pedestrians. The north side of Lincoln Road appeared to make the most sense because there was more right of way available and adequate space existed along the back slope. Additionally, a new school along the north side of Lincoln Road has been planned and it would benefit from having the facility along its southern boundary. Placement of the trail on the south side of Lincoln Road was also considered but not selected because it would have to be placed in the ditch bottom and could not be adequately maintained.

This trail alternate is shown on Figures 11 through 14. The estimated construction cost for this alternative is $150,000.

6.4 ATV Trail Alternatives

The ND State Statutes appear to allow use of public right of way for ATV use. The construction of an ATV trail would be most economical if implemented concurrently with Lincoln Road street improvements. Given the level of ATV traffic that has been reported, there is a need for ATV facilities.

6.4.1 No Build

No ATV trail would be built under the No Build alternative. Use of Lincoln Road's ditches by ATV's would continue if allowed by City Ordinance.

6.4.2 Alternative 1 – Build (Abandoned Rail Bed to 66th Street SE)

This alternative would include the construction of a ten (10) foot wide ATV trail on the south side of Lincoln Road from the abandoned rail bed to 66th Street. It has been suggested that the Abandoned Rail Bed could serve as a good future ATV trail. If this were to occur, signing as shown in Figure 11 should be considered to highlight the crossing.

The trail surface material has not been determined, but would likely be an aggregate with properties that would improve riding conditions, allow continued drainage, and improve maintenance. Improvements could be made at the side street in-slopes to improve vehicle/ATV visibility at intersections.

The ideal location for the ATV trail has been a source of public and technical debate. Residents along the south side of Lincoln Road prefer it be placed along the north side where houses are further set back and noise would be less of an issue. Law enforcement indicated that both sides of Lincoln Road are used by ATV's to some degree and it may be difficult to enforce restrictions of travel to only one side of the corridor. The desire for a multi-use trail along the north side of Lincoln Road raises safety concerns over having the ATV trail parallel and in close proximity to the multi-use trail.

No precedence was found for constructing ATV trail improvements within the ditch of a public thoroughfare within the State of North Dakota. There have been discussions about a potential ATV trail within the abandoned rail bed corridor, but its construction remains in doubt. Therefore, whether the abandoned rail corridor is a logical end point for a future ATV trail would likely need to be decided at a later date.

Having checked with FHWA on funding eligibility, it was learned that Federal Recreational Trails funding may be used for such facilities, although Federal Transportation Enhancement funds may not. The estimated construction cost for this alternative is $83,000.

6.4.3 Alternative 2 – Build the ATV Trail Somewhere Else

Residents who live along Lincoln Road believe that noise from the existing ATV trail negatively impacts their quality of life. Within the City of Lincoln, the right-of-way is narrow and ATV riders and motorcyclists travel in the ditch bottom relatively close to nearby residences. Also, there are concerns of young drivers crossing Lincoln Road.

It is uncommon to have concentrated numbers of ATV drivers and motorcyclists traveling within ditches along residential properties. Perhaps a safer and more permanent off-road location can be identified and built in the future. If this alternative is selected, short to intermediate range ATV use would likely remain in the ditches.

6.5 Airway Avenue Intersection Alternatives

The primary deficiency at this intersection is excessive traffic delays for those entering Airway Avenue from Lincoln Road during the AM traffic peak. Alternatives that are available to improve this intersection are detailed as follows:

6.5.1 No Build

No intersection improvements would be made under the No Build alternative.

6.5.2 Alternative 1 - Turn Lane (See Figure 15)

The addition of a right turn lane on the east approach of this intersection would increase vehicle storage and separate left and right turning movements. The additional storage and separation of vehicle movements would reduce traffic delays during the AM peak, especially for the vehicles turning right to go northbound.

The proposed turn lane length is 1,300 feet. The traffic control for this alternative would remain as it now exists. Lincoln Road traffic would continue to stop for traffic on Airway Avenue. Turn lane construction would require the drainage ditch box culvert to be extended.

These improvements are shown in Figure 15. The estimated construction cost for this alternative is $140,000.

6.5.3 Alternative 2 - Turn Lane with Revised Stop Control (See Figure 16)

Alternative 2 would include the same improvements as described in Alternate 1 with the exception of the intersection control. This alternative would include an all way stop controlled intersection.

Local traffic would need to adjust as this alternative would significantly change traffic control patterns at this intersection. Alternative 2 would also require a stop control on the through legs of a tee intersection. This is an uncommon control and may be uncomfortable for traffic. Comfort levels among local traffic would gradually return and this may be a good solution to the AM congestion. The AM peak delays would be reduced significantly as westbound Lincoln Road would have greater opportunity to access onto Airway Avenue. This would have some impact on the PM peak as both the northbound and southbound Airway Avenue would be stop controlled. Based on the PM counts, the delays to be anticipated would occur at a comfortable and reasonable level.

These improvements are shown in Figure 16. The estimated construction cost for this alternative is $141,000.

6.5.4 Alternative 3 - Roundabout (See Figure 17)

The intersection of Lincoln Road and Airway Avenue would be a candidate for the consideration of a roundabout. Roundabouts are effective in reducing crash frequencies and traffic delays.

A roundabout at this intersection would improve both the AM and PM peak movements; however roundabouts are generally a more expense improvement. Given that one of the three legs may be closed when the airport is expanded, this may not be a wise investment.

The roundabout alternative at this location is shown in Figure 17. The estimated construction cost for this alternative is $750,000.

6.5.5 Alternative 4 - Geometric Change (See Figure 18)

The predominate traffic movements at the Airway Avenue and Lincoln Road intersection are north to east and west to south, thereby making the north leg of Airway Avenue the minor approach. However, a future geometric change was evaluated under the assumption that the north leg would become the major approach once the airport is expanded.

This alternative includes a geometric change at the Airway Avenue to allow the north and east legs of this intersection free movements. Portions of the existing Airway Avenue and Lincoln Road would be abandoned and a new alignment would be created. The south leg of Airway Avenue would be stop controlled.

Land acquisitions would be required as the existing right-of-way would be insufficient to accommodate the new alignment. A new box culvert would be required at the drainage ditch; the existing culvert may be salvageable.

This alternative would provide the highest LOS during the AM peak and would likely result in the most efficient PM peak. The only controlled movement during the PM peak would be the Airway Avenue northbound traffic, of which most turn right onto Lincoln Road. Additionally, investing in this improvement would not be impacted if the runway expansion project occurs. This would be the preferred alignment between these two street (Airway Avenue and Lincoln Road) if the south leg of Airway Avenue was closed due to airport expansion.

Figure 18 illustrates the proposed geometric changes at this intersection. The estimated construction cost for this alternative is $434,000.

Figure 15 - Airway Avenue Intersection Right Turn Lane

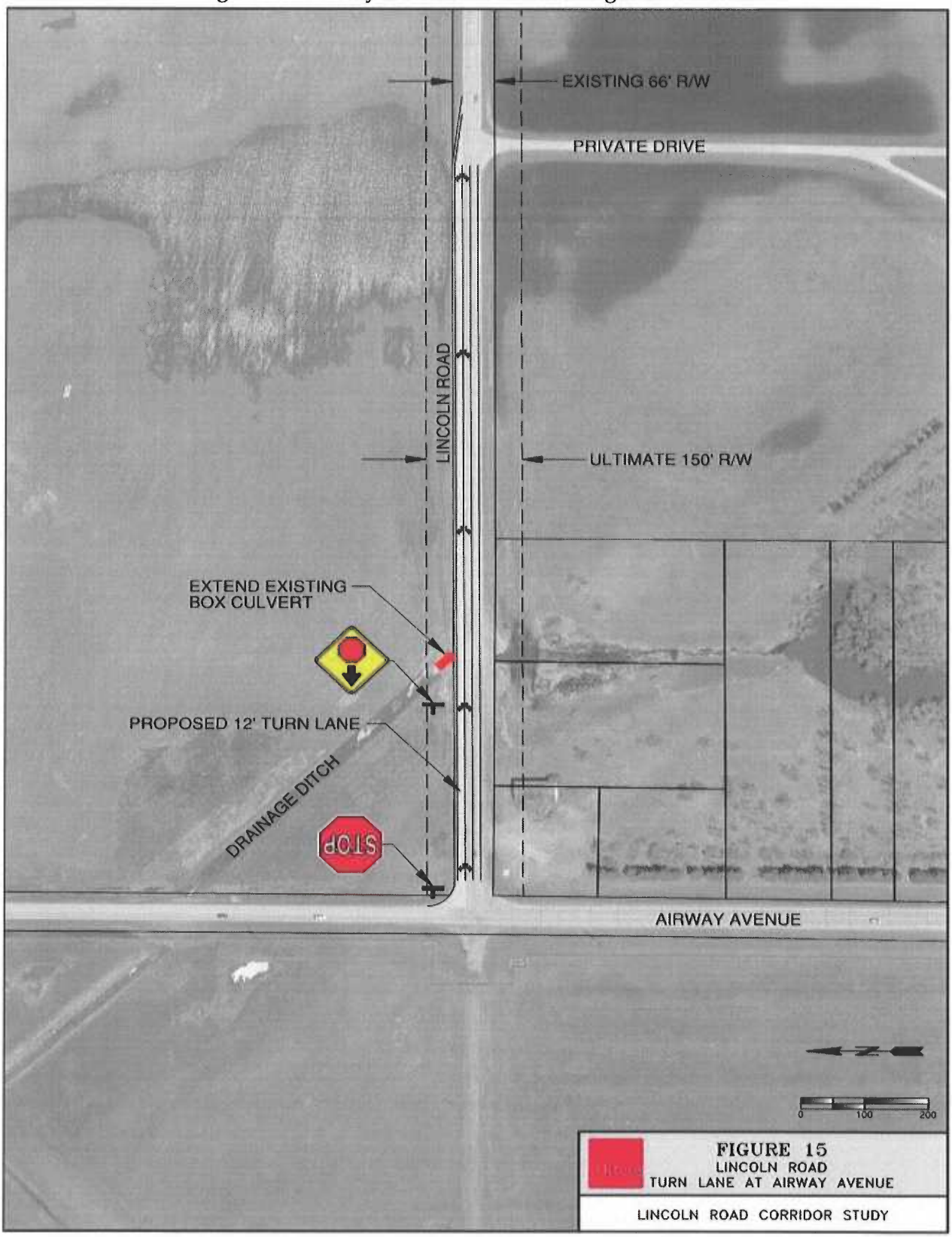


Figure 16 – Airway Avenue Turn Lane with Revised Stop Control

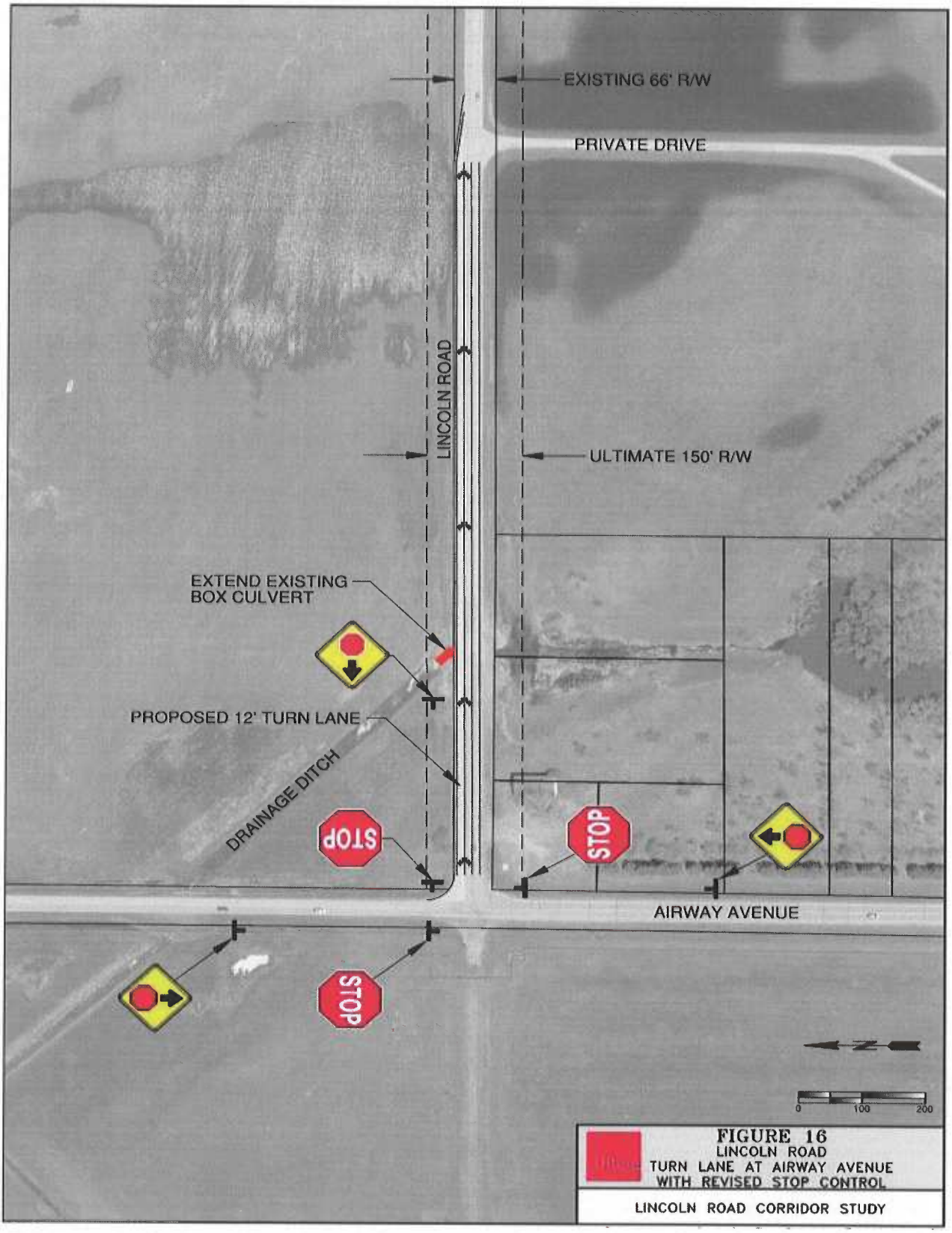


Figure 17 – Airway Avenue Roundabout

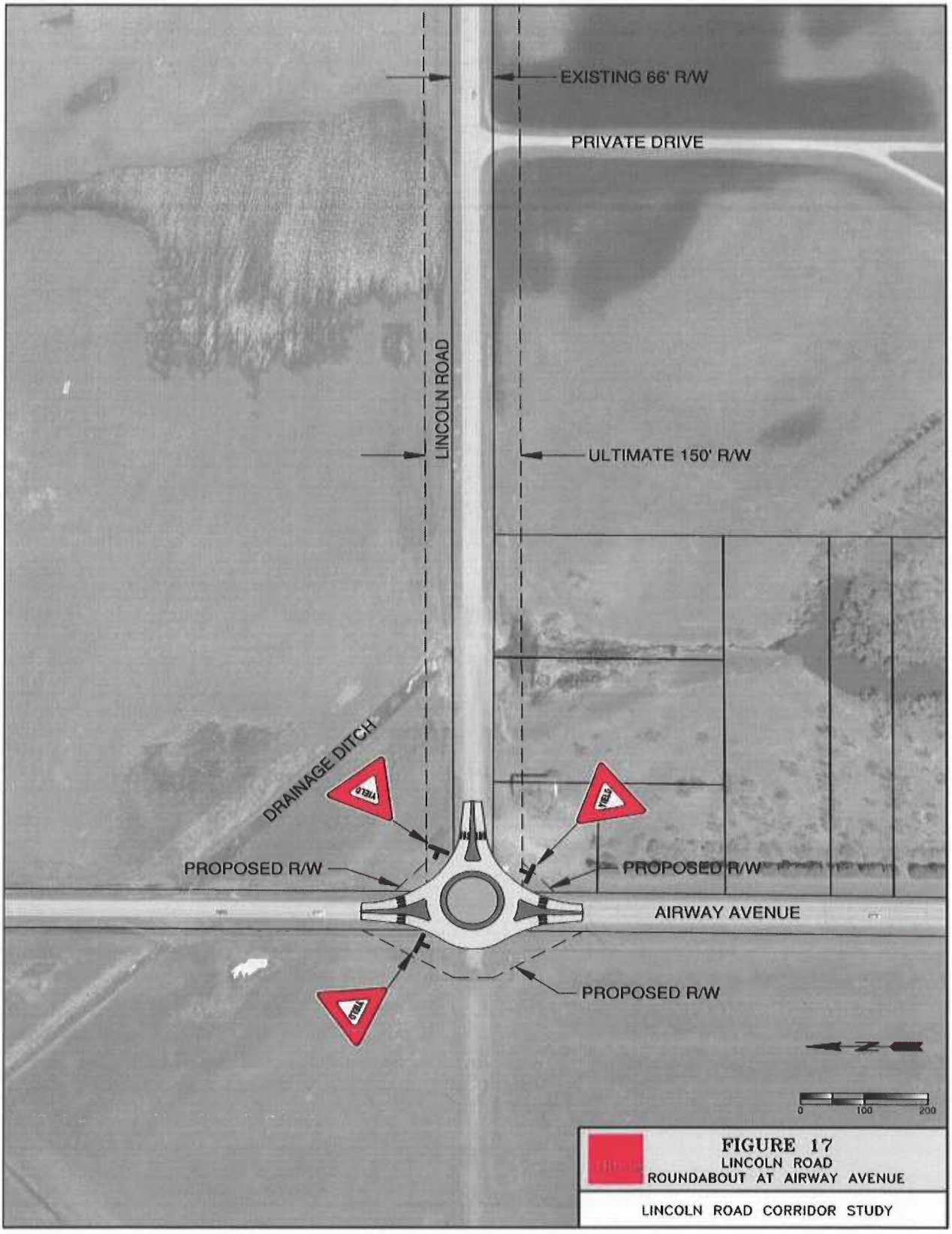
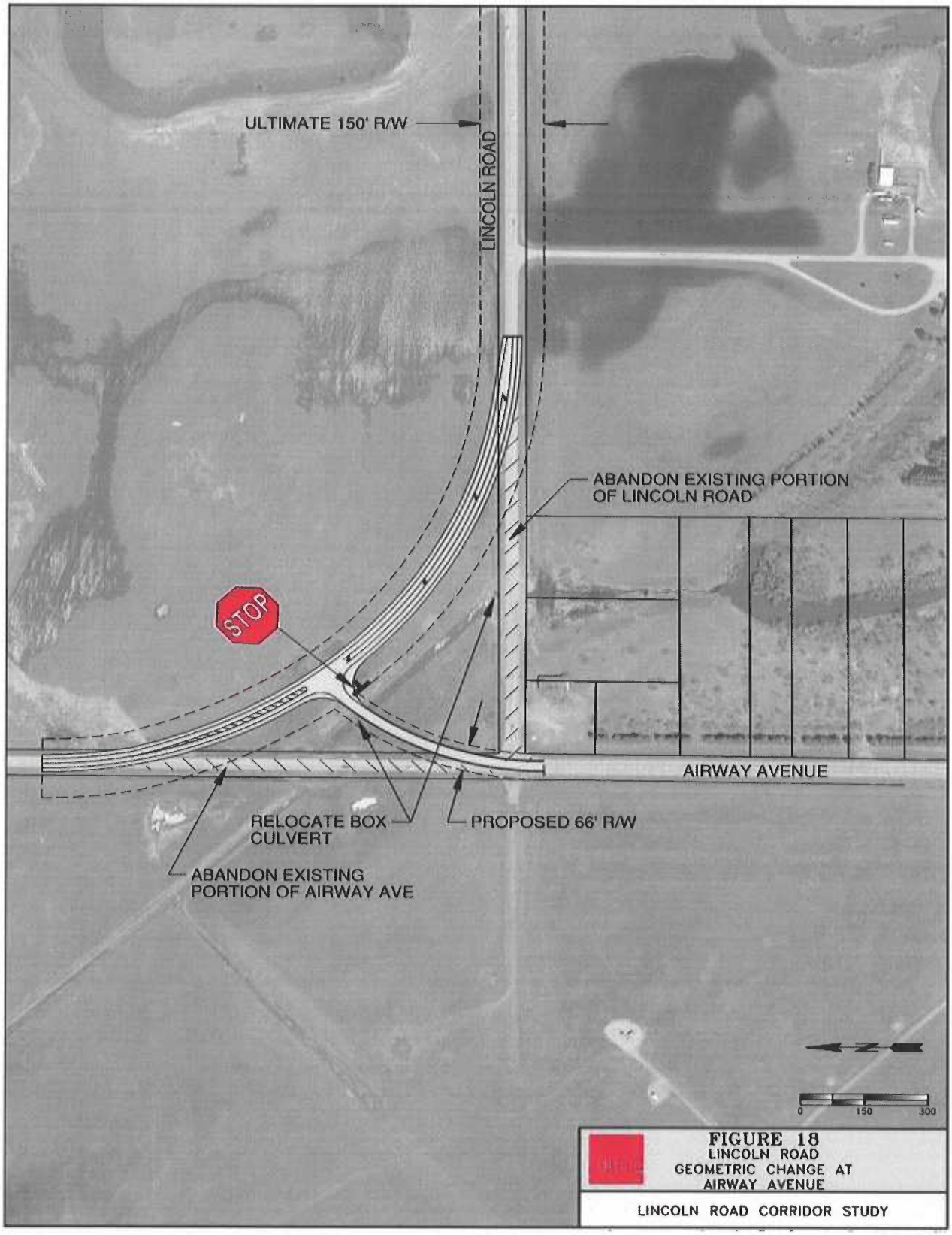


Figure 18 – Airway Avenue Geometric Change



6.6 52nd Street SE Intersection Alternatives

The primary deficiency at this intersection is delay for northbound traffic during the AM peak. Two alternatives have been developed that would provide improved LOS during this time. These alternatives would not preclude and would actually enhance possible future extension of the north approach, which could provide additional access between Lincoln and Bismarck. The 52nd Street intersection alternatives are summarized below.

6.6.1 No Build

No intersection improvements would be made under the No Build alternative.

6.6.2 Alternative 1 - Addition of Right Turn Lanes (See Figure 19)

Northbound 52nd Street SE experiences AM delays. The construction of an additional northbound lane would allow for the striping of a through/left turn lane and a right turn only lane.

This alternative would provide addition storage and would separate the vehicles by turning movement. This would reduce delays of the right turn movements at this intersection during the AM peak.

This improvement is shown in Figure 19. The estimated construction cost for this alternative is $37,000.

6.6.3 Alternative 2 - Roundabout (See Figure 20)

The intersection of Lincoln Road and 52nd Street is a good candidate for a roundabout. Challenges that may exist in providing optimum access to adjacent properties would need to be addressed during the design phase of the project.

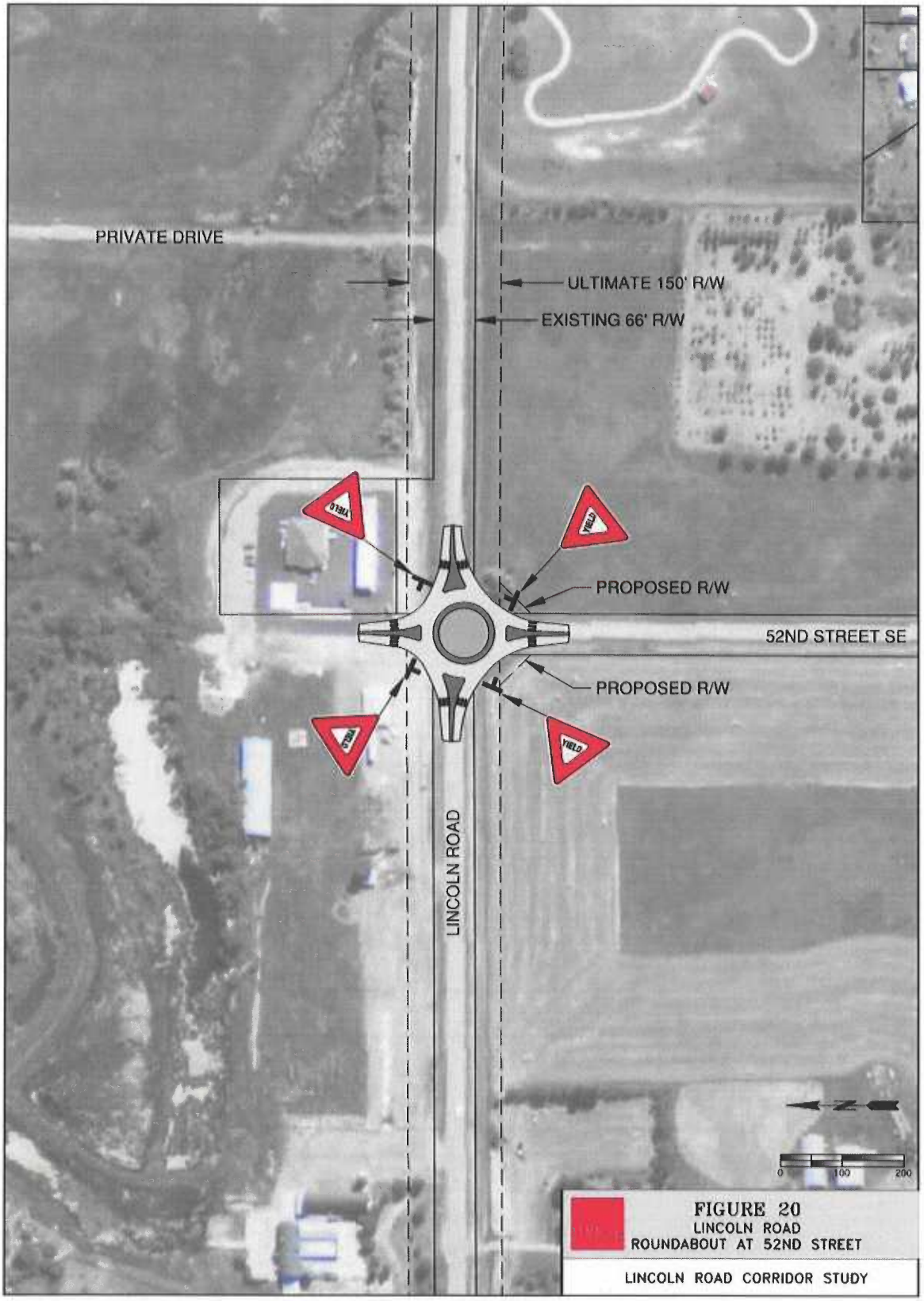
The construction of a roundabout at this intersection would improve safety and reduce the traffic delays that are experienced on the south leg of this intersection during the AM commute. It would also provide an opportunity for creating an entry feature into the City of Lincoln.

No other alternatives were identified that could effectively eliminate the traffic congestion issues prevalent during the a.m. peak hour. Most of the traffic coming from 52nd Street turns left, so adding a turn lane to remove right turning traffic would have little effect. Traffic signals are not warranted, and construction of 48th Avenue South to remove pressure from this intersection is likely a very expensive, long range solution.

A proposed roundabout is shown in Figure 20. The estimated construction cost for this alternative is $750,000.

Figure 19 – 52nd Street SE Addition of Right Turn Lane

Figure 20 – 52nd Street SE Roundabout



6.7 McDougall and Benteen Drive Intersection Alternatives

The peak hour traffic volumes that are experienced on Lincoln Road are elevated and pedestrian crossings without added control could be challenging during these times. With the proposed school construction north of Lincoln Avenue at McDougall Drive, consideration should be given to improving the pedestrian crosswalk at the Lincoln Road and McDougall Drive intersection. It would make sense to consider some of these potential improvements during the design phase for Lincoln Road. Since changes in traffic at Benteen Drive are projected to be minimal and since the intersection currently operates well, no intersection alternatives at Benteen Drive were prepared.

6.7.1 No Build

No intersection improvements would be made under the No Build alternative.

6.7.2 Alternative 1 -Enhanced Crosswalk Improvements (See Figure 21)

Pedestrian traffic crossing Lincoln Road at the McDougall intersection is anticipated to significantly increase when the future school is constructed. Considerations should be given to improving the safety of this crossing. An option for consideration would include the construction of a center median. A center median would allow school children to cross one lane of traffic at a time, resulting in a much safer crossing.

This alternative is shown in Figure 21. The estimated construction cost for this alternative is $118,000.

6.8 66th Street SE Intersection Alternatives

Both 66th Street and Lincoln Road experience moderate traffic levels and delays do occur during the peak hours. Below are two alternatives that would improve the LOS at this intersection.

6.8.1 No Build

No intersection improvements would be made under the No Build alternative.

6.8.2 Alternative 1 - Addition of Southbound Right Turn Lane (See Figure 22)

The construction of a southbound right turn lane on 66th Street would be beneficial for future traffic, especially if an interchange is constructed at I-94 in the future. Given the presence of low existing traffic volumes, this alternative could be implemented at a later date if so desired.

This alternative is shown in Figure 22.The estimated construction cost for this alternative is $55,000.

6.8.3 Alternative 2 - Roundabout (See Figure 23)

This alternative would include the construction of a roundabout at this intersection. This would dramatically improve the LOS vehicles during the peak hours.

Roundabouts are relatively expensive improvements and given the current traffic volumes, a roundabout at this time may not be warranted. When 66th Street SE does become part of the Bismarck Belt Way, a roundabout could be considered in addition to other alternatives.

The roundabout alternative is shown in Figure 23. The estimated construction cost for this alternative is $750,000

Figure 21 – McDougall Drive Enhanced Crosswalk Improvements

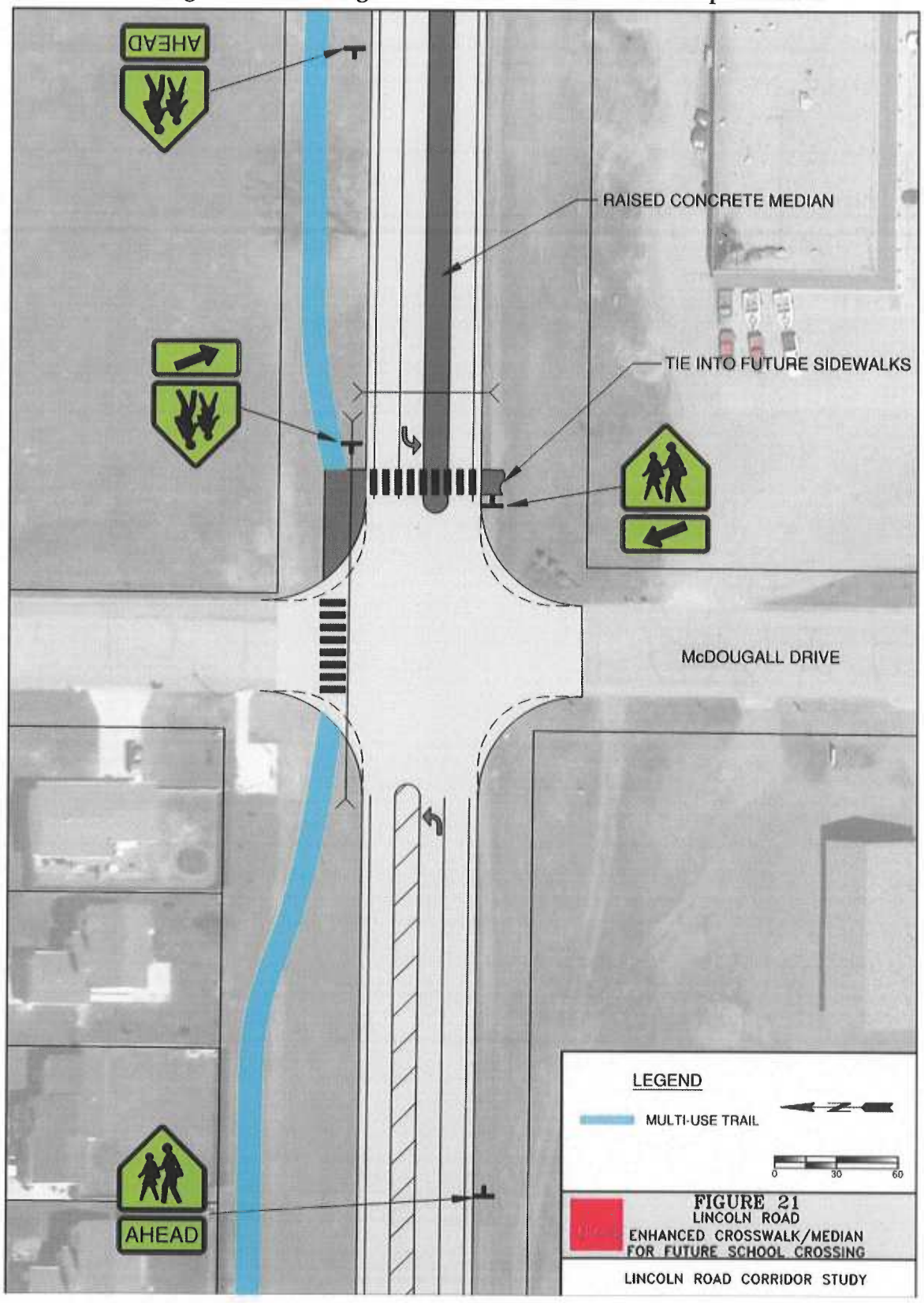


Figure 22 – 66th Street SE Addition of Southbound Right Turn Lane

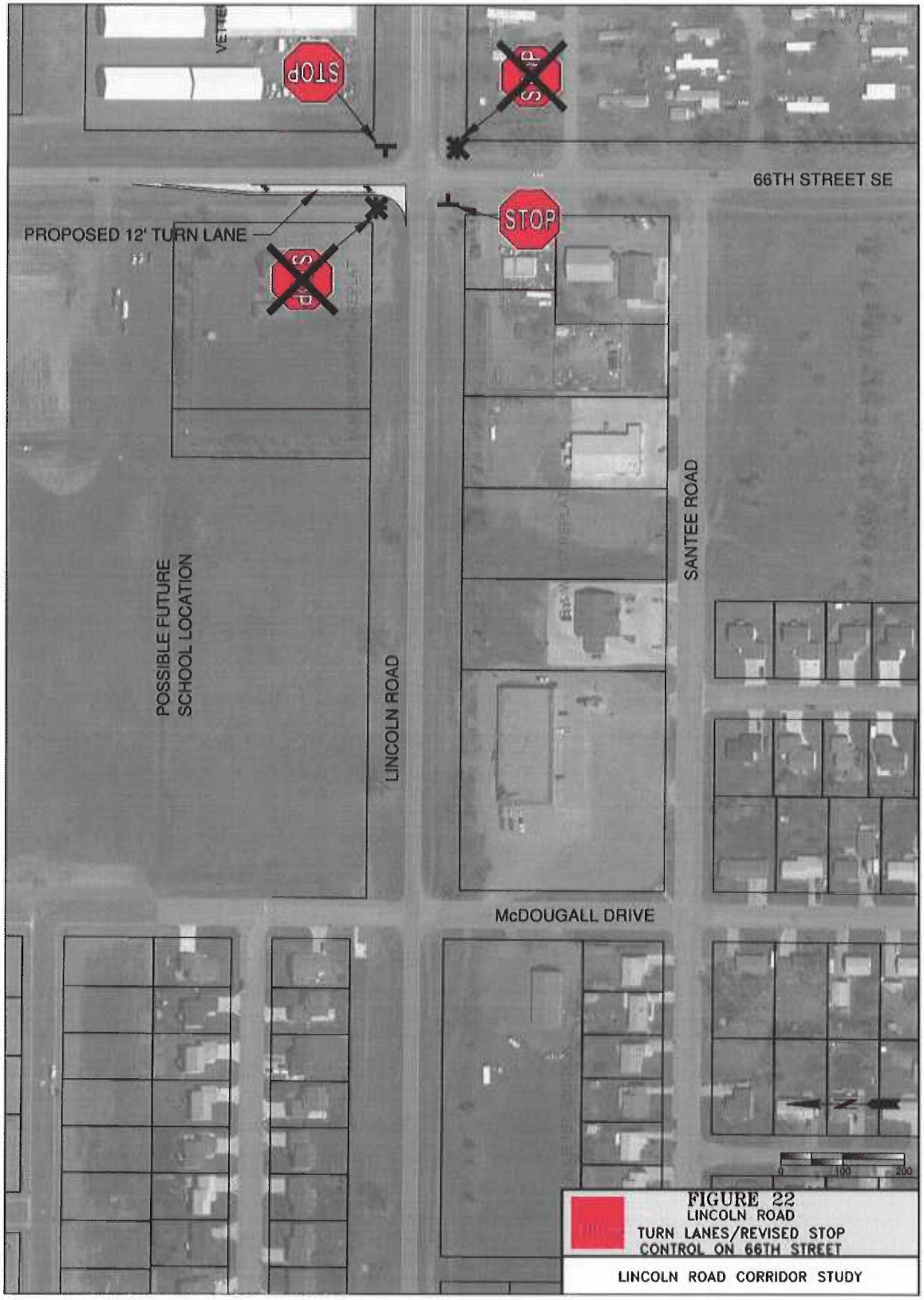
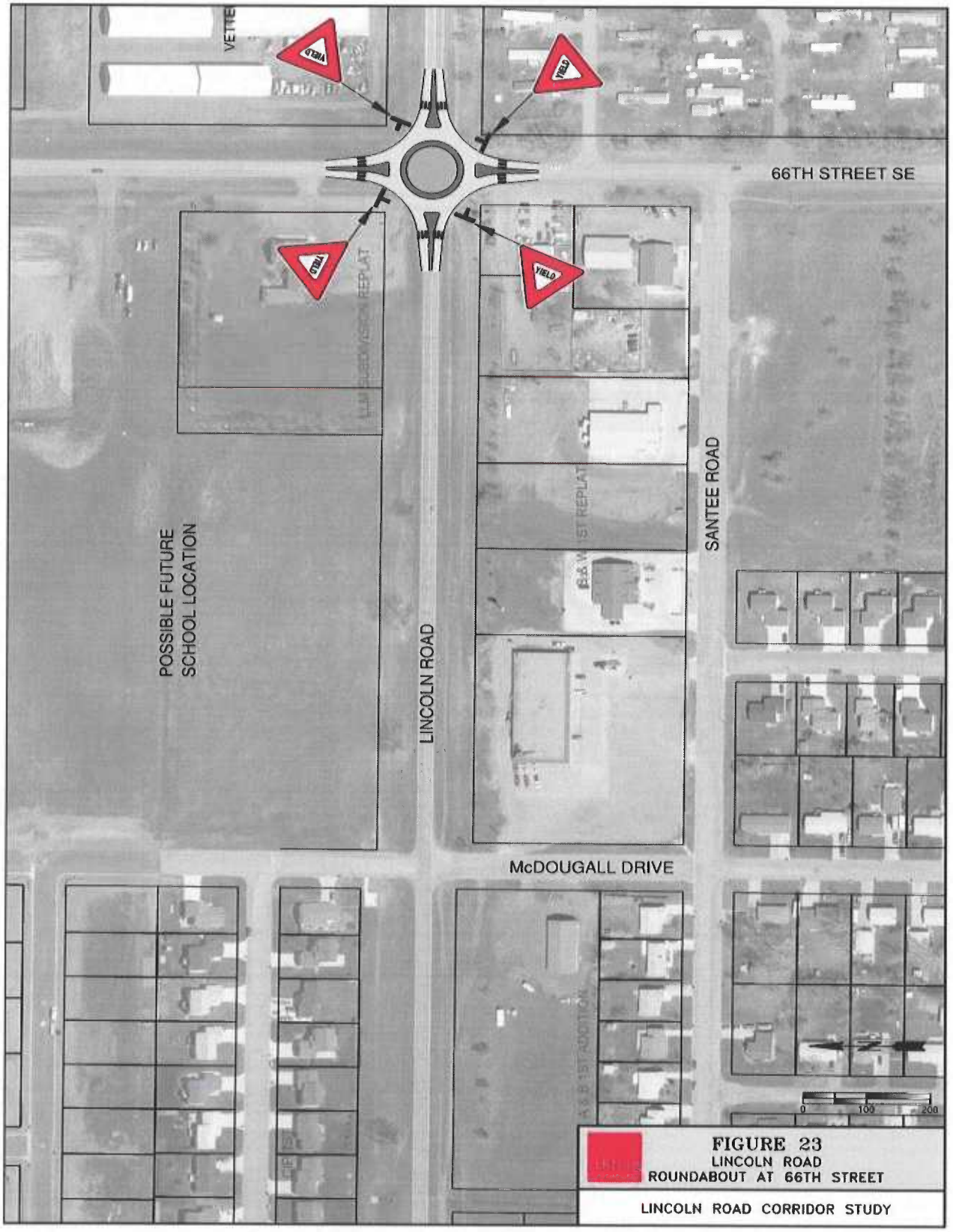


Figure 23 – 66th Street SE Roundabout



6.9 Street Lighting Alternatives

The western portion of this corridor is rural and not necessarily a viable candidate for street lighting. The eastern portion though, through the City is. An alternate was developed for lighting the segment from 52nd Street to 66th Street.

6.9.1 No Build

No lighting improvements would be made under the No Build alternative.

6.9.2 Alternative 1 - Street Lighting through City of Lincoln

This alternative includes the installation of street lights at a 200-ft interval on the north side of Lincoln Road from 52nd Street SE to 66th Street SE.

There are no street lighting guidelines for this type of road however the main collectors within city limits are commonly lit. This would improve vehicle and non-vehicle awareness during the night time hours and could benefit overall corridor safety.

The estimated construction cost for this alternative is $350,000.

6.10 Landscaping Alternatives

Key determining factors for the final landscape preferences include cost, available space due to road width and trail locations, location of proposed lighting features, and the level of uniformity desired throughout the corridor.

Development of new entrance signing for the City of Lincoln was beyond the scope of this study. Materials and style of the sign could range from a simple wooden structure (similar to those that are currently existing) to a more elaborate steel or concrete structure. Landscaping and lighting could accent the sign.

6.10.1 No Build

The No Build alternative would leave landscaping within the corridor as it exists. However, some simple maintenance items could be addressed to improve the visual quality of the corridor. These items include: tree pruning, re-painting the existing welcome signs, pruning and/or replacing some of the landscaping surrounding the signs, and removing any dead plant materials. Cost estimates reflect completion of these general maintenance items.

The estimated cost of the No Build alternative is $1,500 to $2,500.

6.10.2 Alternative 1 - Formal Corridor Plantings

This alternative would include typical boulevard trees and the eastern and western entry sign options.

Typical Boulevard Trees: Regularly spaced trees placed in a single row parallel to the roadway.

This option would create a uniform, formal look when applied to both boulevards. It would typically require the least amount of space within the right-of-way and would provide sufficient space for drainage ditches. Viewsheds for existing and proposed signs must be considered and could affect spacing of the trees.

Eastern Entry Sign: The recommended location would be the southwest corner of the intersection of 66th Street and Lincoln Road. Construction of a new entrance monument at this location would provide a defined easterly entrance to the City near City Hall.

Western Entry Sign: The recommended location could be the southeast corner of the intersection of 52nd Street and Lincoln Road or the south side of Lincoln Road near the abandoned railroad crossing. Construction of a new entrance monument at either of these locations would provide a defined westerly entrance to the City. The abandoned railroad location would allow future expansion and growth of the City even further westward, whereas the 52nd Street SE location may need to be relocated in the future.

The estimated cost of Alternative 1 is $130,000 to $175,000.

6.10.3 Alternative 2 – Informal Corridor Plantings

This alternative would include staggered tree plantings and eastern and western entry sign options.

Staggered Tree Plantings: This option would blend well with the existing landscapes since tree spacing would resemble the existing planting scheme between McDougall Drive and Benteen Drive. Plantings could be easily adapted to the available amount of space within the right-of-way. Viewsheds for existing and proposed signs must be considered and could affect spacing of the trees.

Eastern Entry Sign: The recommended location would be the southwest corner of the intersection of 66th Street and Lincoln Road. Construction of a new entrance monument at this location would provide a defined easterly entrance to the City near City Hall.

Western Entry Sign: The recommended location could be the southeast corner of the intersection of 52nd Street and Lincoln Road or the south side of Lincoln Road near the abandoned railroad crossing. Construction of a new entrance monument at either of these locations would provide a defined westerly entrance to the City. The abandoned

railroad location would allow future expansion and growth of the City even further westward, whereas the 52nd Street SE location may need to be relocated in the future.

The estimated cost of Alternative 2 is $180,000 to $225,000.

6.10.4 Alternative 3 – Roundabout Plantings

Roundabout landscape or hardscape options draw attention to the roundabout thereby providing a cue to approaching traffic. Landscaping in the roundabout circle can also be a wonderful visual amenity for the community. If a roundabout is constructed at an intersection designated to include an entry sign, the sign could be located within the center of the roundabout. Clear zones must be considered and will determine the applicability and/or size of the entry sign.

Alternative 3.1: Landscape Roundabout Area:

Roundabouts provide an opportunity for incorporating additional green space within a corridor. It could incorporate a specific style that is carried throughout the project and/or identifies a specific "district" of the City of Lincoln.

Landscaping of these types of features does require some maintenance of plant materials. The landscaped roundabout creates a number of challenges including watering and equipment access. The level of maintenance is dependent on the plant selections.

The preferred roadway configurations will determine the applicability of this option. The estimated cost for landscaping each corridor roundabout is $10,000 to $12,000.

Alternative 3.2: Hardscape Roundabout Area: Creates a focal point drawing attention to the roundabout thereby providing a cue to approaching traffic.

Roundabouts provide an opportunity to incorporate decorative hardscape elements (i.e. decorative concrete) within a corridor. Hardscape elements that remain within the ground plain would not provide the same visual cue that plant materials could, however they are typically easier to maintain. They also could incorporate a specific style that is carried throughout the project and/or identifies a specific "district" of the City of Lincoln.

The preferred roadway configurations will determine the applicability of this option. The estimated cost for hardscaping each corridor roundabout is $42,500.

6.11 Other Considered Alternatives

Some alternatives were reviewed but did not receive significant analysis. This occurred because it was determined that the alternative was unlikely, had significant technical

concerns, or was outside the focus of this study. The following alternatives were considered but are not included in the detailed analysis or the study recommendations:

6.11.1 52nd Street to Bismarck Connection

The Lincoln to Bismarck Roadway Connection Study considered an extension of 52nd Street from Lincoln Road to connections with Airway Avenue, Yegen Road and Bismarck Expressway (See graphic in Appendix 3). This roadway extension was not recommended in that study, as improvements to 66th Street were preferred.

There are a number of people in the Lincoln area who still favor this route. As can be seen from the public involvement documented in Appendix 2, this was a prevalent issue that came up numerous times during the Lincoln Road Corridor Study.

Further consideration of the 52nd Street connection to Bismarck was outside the scope of this Study, and it was explained to residents that this Study was focused only on Lincoln Road. However, some people raised concerns that if the County invested in Lincoln Road, it would be less likely the County would invest in an extension of 52nd Street.

None of the alternatives presented in the Lincoln Road Corridor Study preclude extension of 52nd Street.

6.11.2 Multi-Use Trail from Airway Avenue to 52nd Street

The alternative would include extension of the proposed multi-use trail as discussed in Alternative 1 from 52nd Street west to Airway Avenue. Significant fill throughout this segment would be required for the construction of this trail. Additionally, this alternative would require the construction of a bridge over Apple Creek.

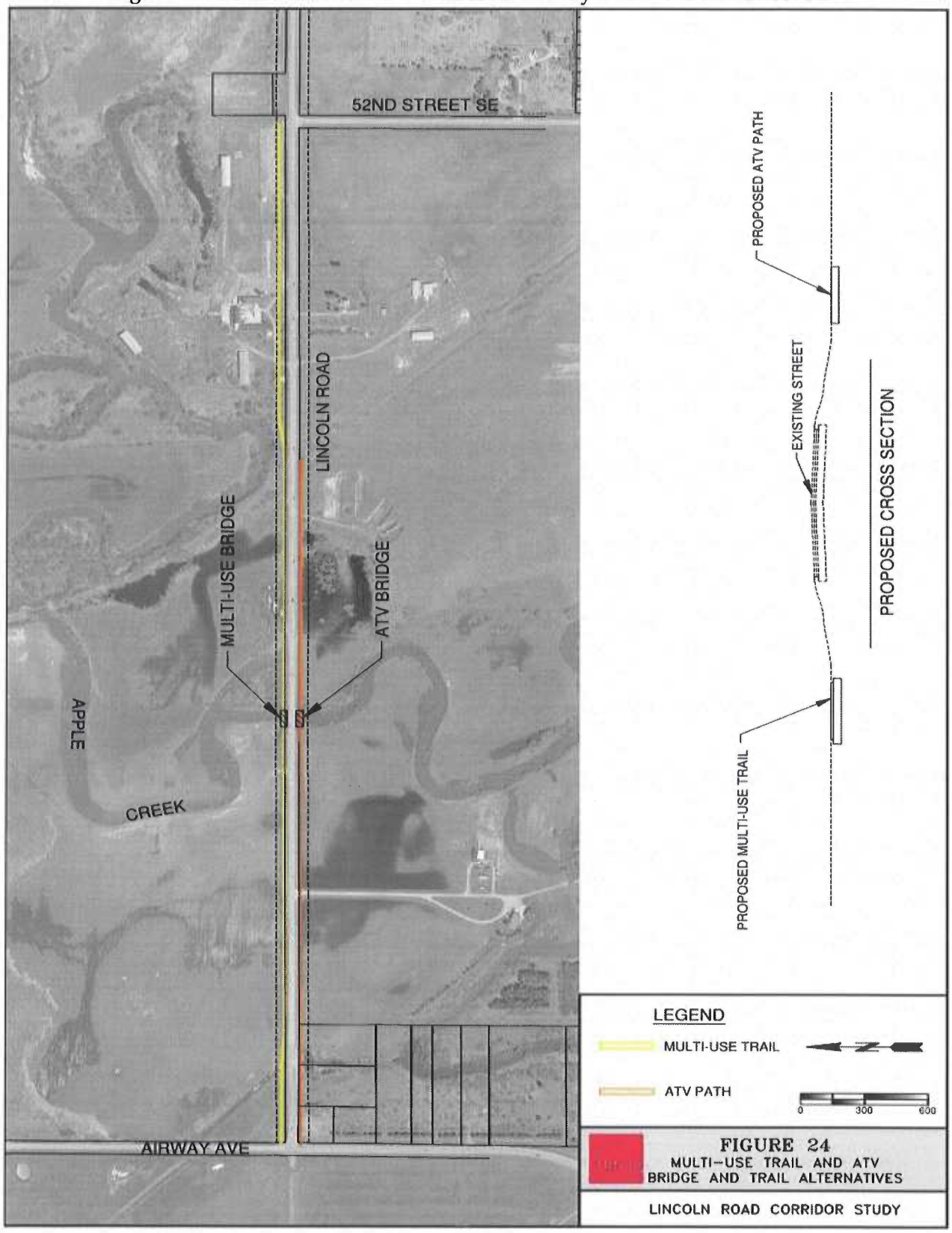
Some people suggested the City of Lincoln should have a connection with the existing trail on Highway 1804. The estimated construction cost for this alternative is $528,000.

6.11.3 ATV Trail from Airway Avenue to Abandoned Rail Bed

This alternative would include the extension of the ATV trail as described in the ATV trail Alternative 1 from the abandoned rail bed west to Airway Avenue. The existing bridge over the Apple Creek is insufficient in width to accommodate an ATV trail and therefore, the construction of separate ATV bridge structure would be required. Additionally, construction of a trail within this segment would require significant fill.

If there is a need to provide a maintainable ATV surface to Airway Avenue, this alternative should be considered. This alternative is shown in Figure 24. The estimated construction cost for this alternative is $477,000.

Figure 24 – Multi-Use and ATV Trail from Airway Avenue to 52nd Street SE



7.0 Study Review Committee and Public Involvement

A Study Review Committee (SRC) was formed to review study information and analysis, consider alternatives and study recommendations, and to provide insight into City and County needs. Three public input meetings and two public hearings have been scheduled to facilitate stakeholder involvement during the Study process. As of the submittal of this draft Report, two of those meetings have been held.

7.1 Study Review Committee (SRC) Meetings

Four meetings have been scheduled to occur over the course of the Study. Meetings that have been held to date are provided in Appendix 3. The SRC roster was as follows:

- Steve Saunders, MPO
- Ben Ehreth, MPO
- Marcus Hall, Burleigh County
- Robert Johnston, Lincoln Mayor
- Jon Hale, Lincoln Police Chief
- Marcel Sim, Lincoln Police
- Brad Krogstad, City Engineer
- Mark Berg, Bismarck Traffic
- Stacey Hanson, NDDOT
- Kevin Levi, NDDOT
- Stephanie Hickman, FHWA
- Steve Urlacher, Lincoln City Council
- Doug Schonert Burleigh County Commissioner
- Steve Grabill – Ex Officio
- Steve Windish – Ex Officio

7.2 November 2010 Public Meeting #1

A public information and input meeting was held on November 18, 2010 at the Lincoln City Hall. There were 36 people in attendance. The purpose of the meeting was to present the initial corridor improvement alternatives and receive public comment on the issues and needs. Following the presentation, several questions or comments were voiced. Generally speaking, the questions and comments fell within three common themes; the extreme morning delays for traffic entering Airway Avenue, the Apple Creek flooding, and the need for pedestrian facilities.

Notes that were compiled during that meeting are attached in Appendix 3.

7.3 March 2011 Public Meeting #2

A public information and input meeting was held on March 15, 2011 at the Lincoln City Hall. There were 23 people in attendance. The purpose of the meeting was to present the initial corridor improvement alternatives and receive public comment on the issues and needs. Following the presentation, several questions or comments were voiced. Generally speaking, the questions and comments fell within three common themes; the benefits and concerns about roundabouts, whether extension of 52nd Street should be addressed by the study, and safety and mobility at the 52nd Street and Airway Avenue intersection. Notes that were compiled during that meeting are attached in Appendix 3.

7.4 April 2011 NDDOT Management Meeting

A meeting with NDDOT management was held on April 20, 2011. The purpose of the meeting was to present the draft Report and to receive feedback. Most feedback pertained to the potential for an ATV trail along Lincoln Road, and the recommendation for a roundabout at 52nd Street. Meeting notes are attached in Appendix 3.

7.5 May 2011 Public Meeting #3

A public meeting was held at the Lincoln City Hall on May 12, 2011. The purpose of the meeting was to present the draft Report and to receive feedback. Opinions regarding possible study decisions were gathered at the meeting. Notes from the meeting are attached in Appendix 3.

7.6 Public Hearings

Public hearings were held at advertised Lincoln City Council and Burleigh County Commission meetings on June 30 and July 6, 2011 respectively. The purpose of the hearings was to receive final public comments and to receive City and County acceptance of the report. Summaries of these meetings are attached in Appendix 3.

8.0 Alternative Evaluation

The alternatives that were developed as part of this study have been evaluated based on the criteria identified in the Issues Identification. Estimated costs were developed for all of the alternatives. The estimated costs are based on today's construction costs. The estimates do not include engineering fees, right-of-way acquisition costs, financing costs, or any other items not specifically addressed within this study. The alternative evaluations are summarized below:

Alternative Description	Evaluation & Recommendations
Lincoln Road - Airway Avenue to Rail Bed No Build Alternative 1 – 4-ft Shoulders ($1,448,000) Alternative 2 – 8-ft Shoulders ($1,704,000)	The primary reason these improvements would be made is to get Lincoln Road out of the 100 year floodplain. Many people feel that this is not a good long range solution and that the money would be better spent raising 66th Street out of the floodplain or in building 48th Avenue South. **Recommendation: No build**
Lincoln Road - Rail Bed to 66th Street SE No Build Alternative 1 – Build w/4-ft Shoulders ($1,099,000) Alternative 2 – Build w/8-ft Shoulders ($1,255,000)	Reconstruction of this segment of Lincoln Road would include new turn lanes, shoulders and possible drainage improvements. The project would bring the roadway up to current design standards, improving overall safety and mobility. Wider shoulders would benefit ATV's, pedestrians and bicyclists, especially if other facilities are not provided. **Recommendation: Build with Wider Shoulders and Turn Lanes**

Multi-Use Trail Alternatives

No Build

Alternative 1 – From 52nd St to 66th St ($150,000)

A multi-use trail would benefit a proposed school and increase safety by separating other modes of travel from highway traffic.

Recommendation: Build a multi-use trail along the north side of Lincoln Road

ATV Trail Alternatives

No Build

Alternative 1 – From Rail Bed to 66th Street ($83,000)

Alternative 2 – ATV Trail Somewhere Else (unknown)

Some residents who attended the public meetings did not want the ATV trail to remain in the south ditch of Lincoln Road because of noise. Yet placing the trail on the north side was not desirable due to potential conflicts with the proposed multi-use trail, the school, and north-side residents. The best long term solution may be to promote ATV activity to occur elsewhere.

Recommendation: Build the ATV Trail somewhere else

Airway Avenue Intersection Alternatives

No Build

Alternative 1 - Turn Lane ($140,000)

Alternative 2 - Revised Stop Control ($141,000)

Alternative 3 - Roundabout ($750,000)

Alternative 4 - Geometric Change ($434,000)

Significant traffic congestion occurs during the A.M. peak. The best long term solution may be to change the geometrics per Alternative 4. However, the current landowner appears unwilling to provide adequate right of way. The City of Bismarck does not favor a 3-way stop. Adding a right turn lane may require some right of way from an unwilling landowner but could improve safety and traffic operations. The roundabout is very costly and is not justified given future closure of the south approach.

Recommendation: Construct the turn lane

52nd Street SE Intersection Alternatives

No Build

Alternative 1 - Turn Lane ($37,000)

Alternative 2 - Roundabout ($750,000)

Significant traffic congestion occurs during the AM peak. Signals are not warranted and addition of a right turn lane on 52nd Street SE would do little to correct the traffic congestion issue since most of the traffic turns left. The best long term solution from both a safety and mobility standpoint would be to construct a roundabout. However, there is some opposition to construction of a roundabout at this location.

Recommendation: Construct a roundabout

McDougall Drive Intersection Alternatives

No Build

Alternative 1 - Crosswalk Improvements ($118,000)

A future school has been proposed in the northeast quadrant of the McDougal Drive intersection. Corridor widening would allow placement of a painted median that could later be repleced with a raised median to enhance pedestrian safety. It might be cost effective to make this improvement when Lincoln Road is reconstructed as opposed to a later date.

Recommendation: Widen intersection for future enhanced crosswalk improvements

66th Street SE Intersection Alternatives No Build Alternative 1 - Turn Lanes ($55,000) Alternative 2 - Roundabout ($500,000)	With daily traffic now greater on 66th Street than on Lincoln Road, the stop signs should be switched to make Lincoln Road stop for 66th Street. Eventually, the intersection will need 4-way stops or traffic signals unless a roundabout is built. Since no congestion or safety issues were identified, and since turning volumes are low on 66th Street, implementation of the build alternatives may be delayed until a later date. **Recommendation: No build**
Street Lighting Alternatives No Build Alternative 1 - Street Lighting ($350,000)	Street lighting can add a measure of safety for vehicles and other modes of travel. Lighting can also accentuate landscaping along the corridor. **Recommendation: Construct street lights**
Landscaping Alternatives No Build ($1,500 - $2,500) Alternative 1 - Formal ($130,000 - $175,000) Alternative 2 – Informal ($180,000 - $225,000) Alternative 3.1 – Landscape Roundabout ($10,000-$12,000) Alternative 3.2 – Hardscape Roundabout ($42,500)	Landscaping can be an effective means of establishing community identity and can enhance the traveling experience. Much of the existing landscaping has followed an Informal Plantings arrangement. New landscaping opportunities will exist if any roundabout solutions are selected. **Recommendation: Construct informal plantings and roundabout plantings if applicable. Other options may also be considered to reduce cost.**

9.0 Conclusions

The objective of this Study was to identify recommendations to safely and efficiently move all modes of travel along and across the Lincoln Road corridor, with specific focus on the Airway Avenue, 52nd Street SE and 66th Street SE intersections. This objective has been completed.

Depending on which alternatives are selected, Burleigh County may or may not choose to use federal funding. If federal funding is used, up to 80% of the project cost could be eligible for federal funding.

This study sought some initial decisions from the City of Lincoln and Burleigh County regarding selection of alternatives. The intent of this effort is to assist Burleigh County engineering in programming and design of future improvements.

A timeline for future improvements to occur has not been established. At the time this study was prepared, it was estimated that the corridor improvements would be made within the next 2-5 years. This study will enable the City of Lincoln and Burleigh County to identify and program funding to cover the costs of future projects.

Table 2 presents the recommended alternatives and the associated costs. A detailed opinion of cost for each alternative is located in Appendix 4.

Table 2 – Recommended Alternatives & Costs

Recommended Alternatives	Costs
No Build from Airway Avenue to Abandoned Rail Bed	$0
Build with 4-ft Shoulders and Turn Lanes Abandoned Rail Bed to 66th Street SE	1,099,000
Build multi-use trail along north side of Lincoln Road	$150,000
Build ATV trail somewhere else	Unknown
Construct a turn lane at Airway Avenue	$140,000
Construct a roundabout at 52nd Street SE	$750,000
Widen intersection for future enhanced crosswalk improvements at McDougall Drive	$118,000
No Build at 66th Street SE Intersection	$0
Construct street lights	$350,000
Construct informal plantings and roundabout plantings if applicable	$190,000 - $245,000
Approximate Total Cost	**$2,900,000**

The Lincoln Road Corridor Study provides a number of recommendations that provide clear guidance for future project development. The Study Review Committee requested more specific feedback from elected officials on five alternatives considered within the study. Feedback that was recieved is summarized below. Individual completed questionnaires received from the elected officials are provided at the end of Appendix 3.

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

City Council Yes 1 No 4 Burleigh County Commission Yes 2 No 2

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

City Council Yes 3 No 2 Burleigh County Commission Yes 4 No 0

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

City Council Yes 3 No 2 Burleigh County Commission Yes 2 No 2

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?

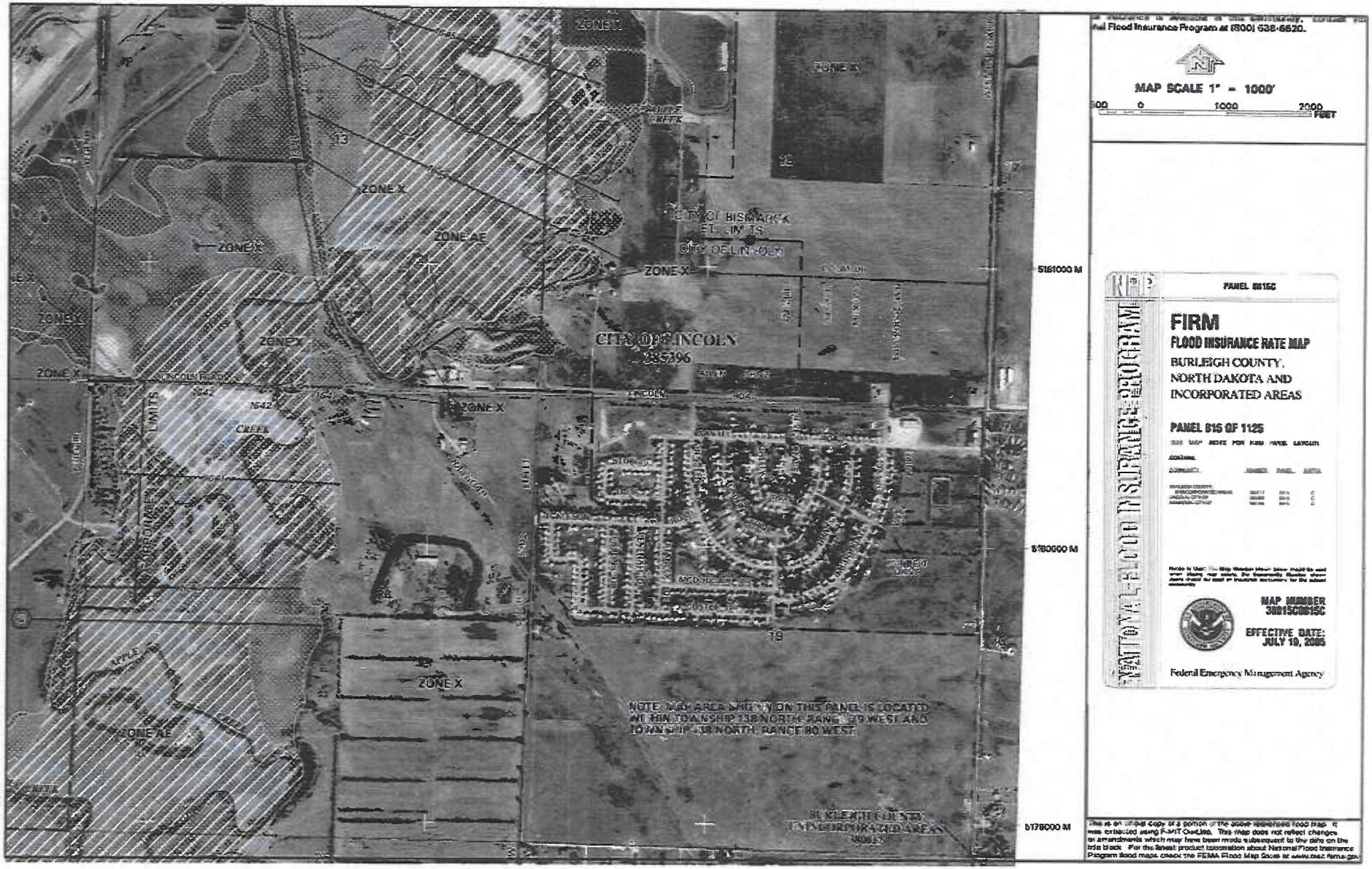
City Council Yes 4 No 1 Burleigh County Commission Yes 2 No 2

5. Should an estimated $130,000 - $225,000 be spent for landscaping along Lincoln Road?

City Council Yes 2 No 3 Burleigh County Commission Yes 2 No 2

Appendix 1

Miscellaneous Maps


ZONE X
ZONE AE
CITY OF BISMARCK
CITY OF LINCOLN
CITY OF LINCOLN
235396
ZONE X
ZONE X
ZONE X
ZONE X
ZONE X
ZONE AE
ZONE X
NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED
WITHIN TOWNSHIP 138 NORTH, RANGE 79 WEST AND
TOWNSHIP 138 NORTH, RANGE 80 WEST.
BURLEIGH COUNTY
UNINCORPORATED AREAS
5161000 M
5160000 M
5159000 M
Flood Insurance Program at (800) 638-6620.
MAP SCALE 1" = 1000'
1000 0 1000 2000
FEET
PANEL 0815C
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
BURLEIGH COUNTY,
NORTH DAKOTA AND
INCORPORATED AREAS
PANEL 815 OF 1125
MAP NUMBER
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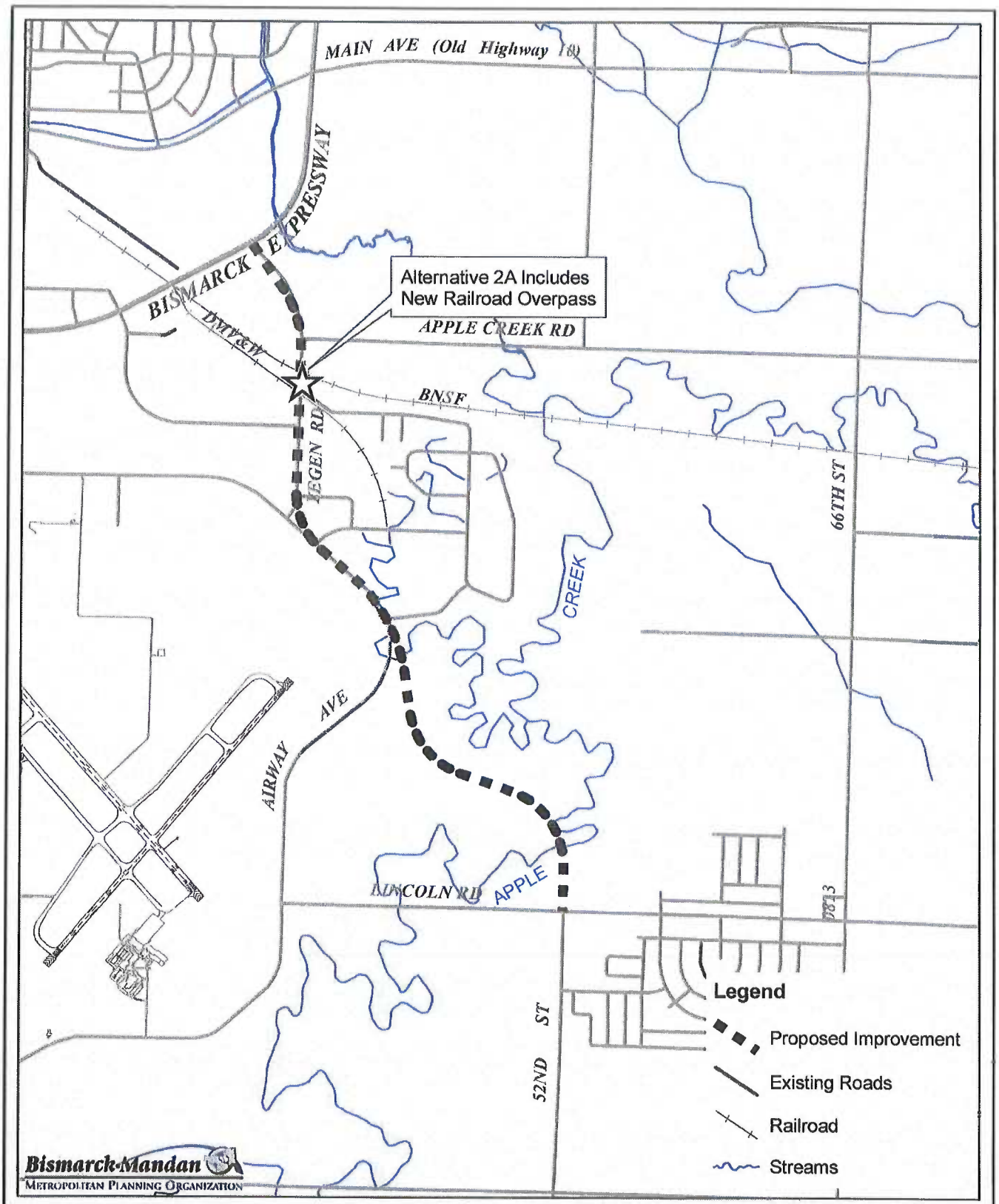
EFFECTIVE DATE:
JULY 19, 2005
Federal Emergency Management Agency



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www.sehinc.com

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ABISMA0502.00

DATE:
05/12/2006

ALTERNATIVE 2 AND 2A
52nd TO AIRWAY AVE

LINCOLN TO BISMARCK ROADWAY
CONNECTION STUDY
Bismarck/Mandan MPO

Figure
6

Map Document: (W:\AE\B\sma\050200\GIS\BW06_52ndToAirwayAve_85x11.mxd)
5/12/2006 -- 11:56:42 AM

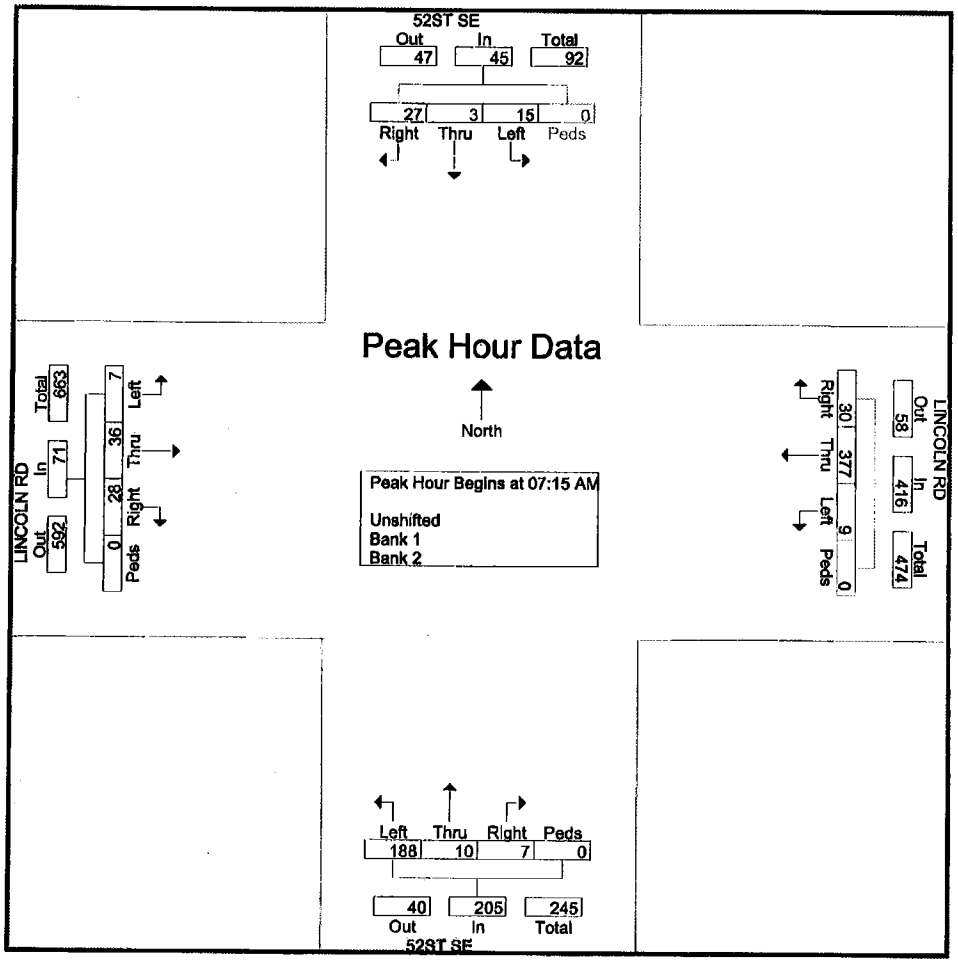
Appendix 2

Traffic Information

Lincoln Road & 52nd Street
Lincoln, ND

File Name : Lincoln Road & 52nd St - AM
Site Code : 00000000
Start Date : 9/22/2010
Page No : 3

	52ST SE From North					LINCOLN RD From East					52ST SE From South					LINCOLN RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:45 AM to 08:30 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	6	1	4	0	11	8	81	0	0	89	2	3	36	0	41	6	5	2	0	13	154
07:30 AM	10	0	4	0	14	7	138	5	0	150	1	4	73	0	78	9	7	1	0	17	259
07:45 AM	6	1	3	0	10	7	100	4	0	111	3	0	45	0	48	4	11	1	0	16	185
08:00 AM	5	1	4	0	10	8	58	0	0	66	1	3	34	0	38	9	13	3	0	25	139
Total Volume	27	3	15	0	45	30	377	9	0	416	7	10	188	0	205	28	36	7	0	71	737
% App. Total	60	6.7	33.3	0		7.2	90.6	2.2	0		3.4	4.9	91.7	0		39.4	50.7	9.9	0		
PHF	.675	.750	.938	.000	.804	.938	.683	.450	.000	.693	.583	.625	.644	.000	657	.778	.692	.583	.000	.710	.711



Lincoln Road & 52nd Street
Lincoln, ND

File Name : Lincoln Road & 52nd St - PM
Site Code : 00000000
Start Date : 9/22/2010
Page No : 3

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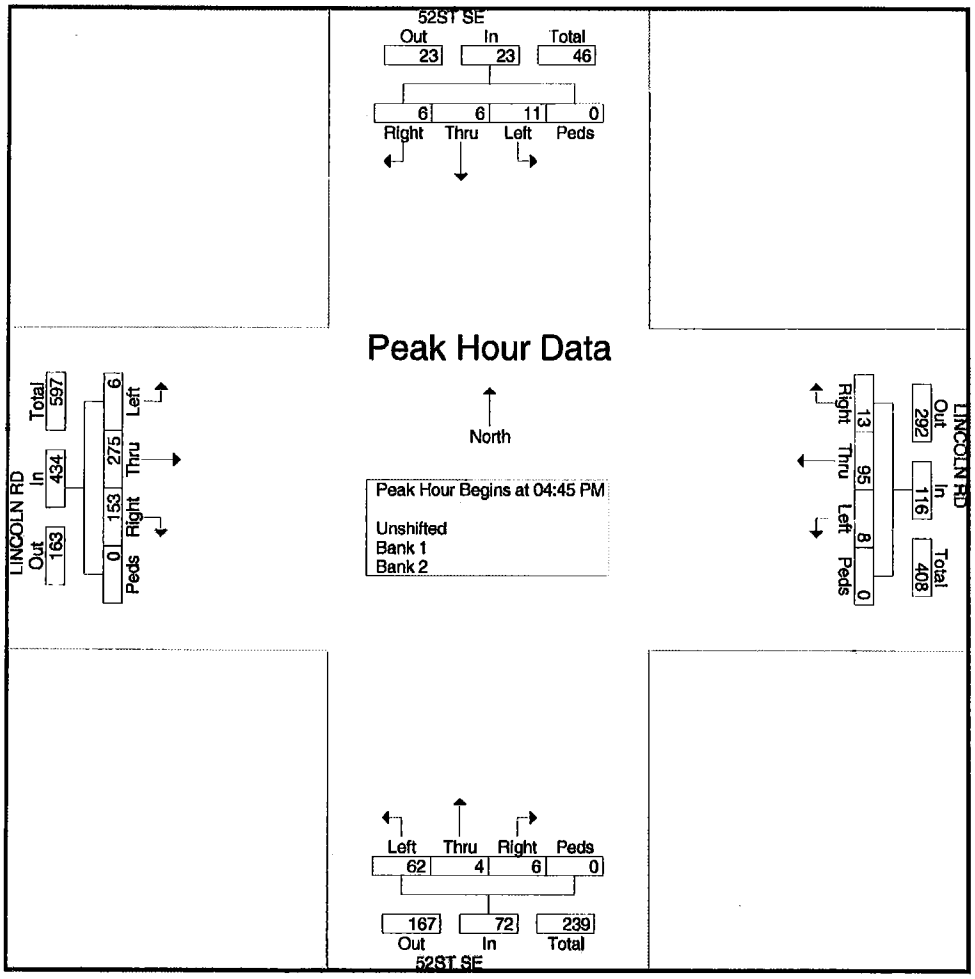
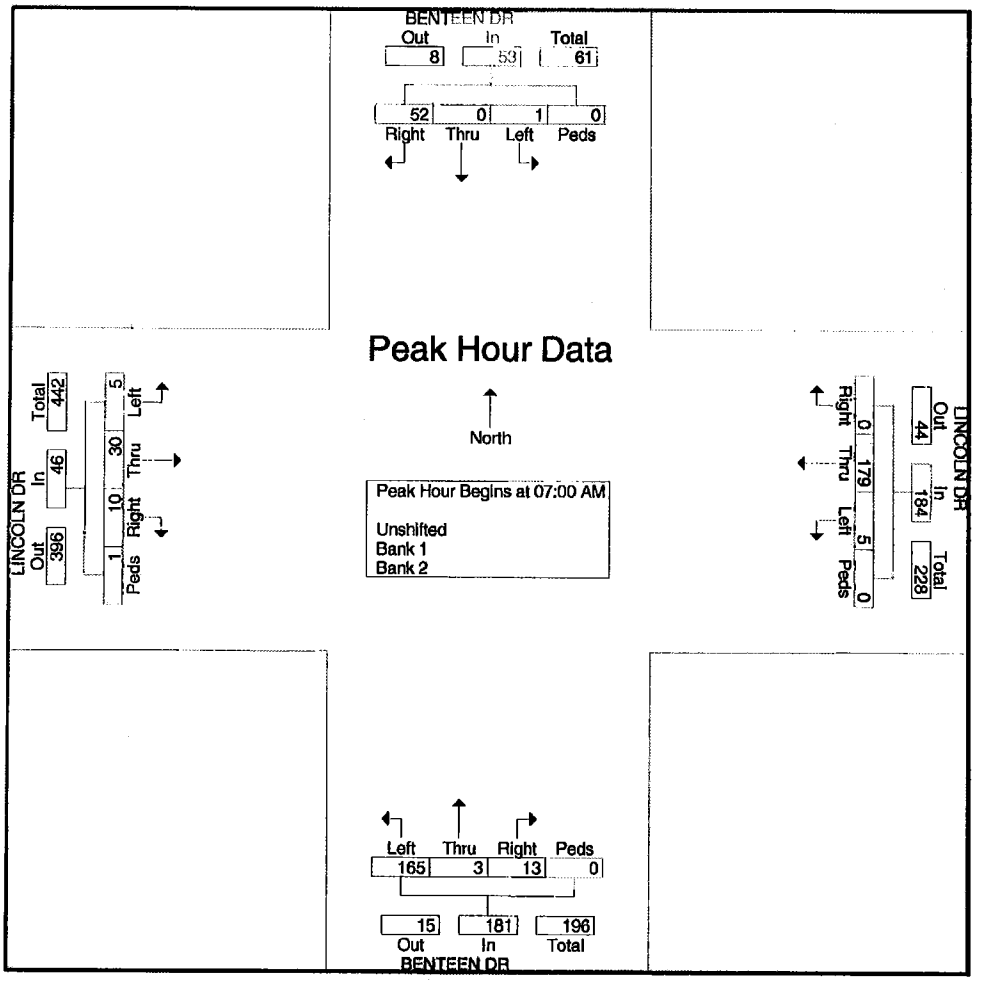
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	1	0	4	0	5	2	18	3	0	23	4	1	13	0	18	29	63	2	0	94	140
05:00 PM	1	2	1	0	4	2	24	2	0	28	0	1	19	0	20	44	56	3	0	103	155
05:15 PM	2	0	2	0	4	5	30	1	0	36	2	0	16	0	18	41	81	0	0	122	180
05:30 PM	2	4	4	0	10	4	23	2	0	29	0	2	14	0	16	39	75	1	0	115	170
Total Volume	6	6	11	0	23	13	95	8	0	116	6	4	62	0	72	153	275	6	0	434	645
% App. Total	26.1	26.1	47.8	0		11.2	81.9	6.9	0		8.3	5.6	86.1	0		35.3	63.4	1.4	0		
PHF	.750	.375	.688	.000	.575	.650	.792	.667	.000	.806	.375	.500	.816	.000	.900	.869	.849	.500	.000	.889	.896



Lincoln Road & Benteen
Lincoln, ND

File Name : Lincoln Road & Benteen - AM
Site Code : 00000000
Start Date : 9/23/2010
Page No : 3

	BENTEEN DR From North					LINCOLN DR From East					BENTEEN DR From South					LINCOLN DR From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	5	0	0	0	5	0	27	1	0	28	4	1	25	0	30	2	7	1	0	10	73
07:15 AM	9	0	0	0	9	0	45	**2**	0	47	1	0	36	0	37	**4**	4	1	0	9	102
07:30 AM	17	0	**1**	0	18	0	**65**	2	0	**67**	**6**	0	**59**	0	**65**	3	5	**2**	**1**	11	**161**
07:45 AM	**21**	0	0	0	**21**	0	42	0	0	42	2	**2**	45	0	49	1	**14**	1	0	**16**	128
Total Volume	52	0	1	0	53	0	179	5	0	184	13	3	165	0	181	10	30	5	1	46	464
% App. Total	98.1	0	1.9	0		0	97.3	2.7	0		7.2	1.7	91.2	0		21.7	65.2	10.9	2.2		
PHF	.619	.000	.250	.000	.631	.000	.688	.625	.000	.687	.542	.375	.699	.000	.696	.625	.536	.625	.250	.719	.720



Lincoln Road & Benteen
Lincoln, ND

File Name : Lincoln Road & Benteen - PM
Site Code : 00000000
Start Date : 9/23/2010
Page No : 3

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Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
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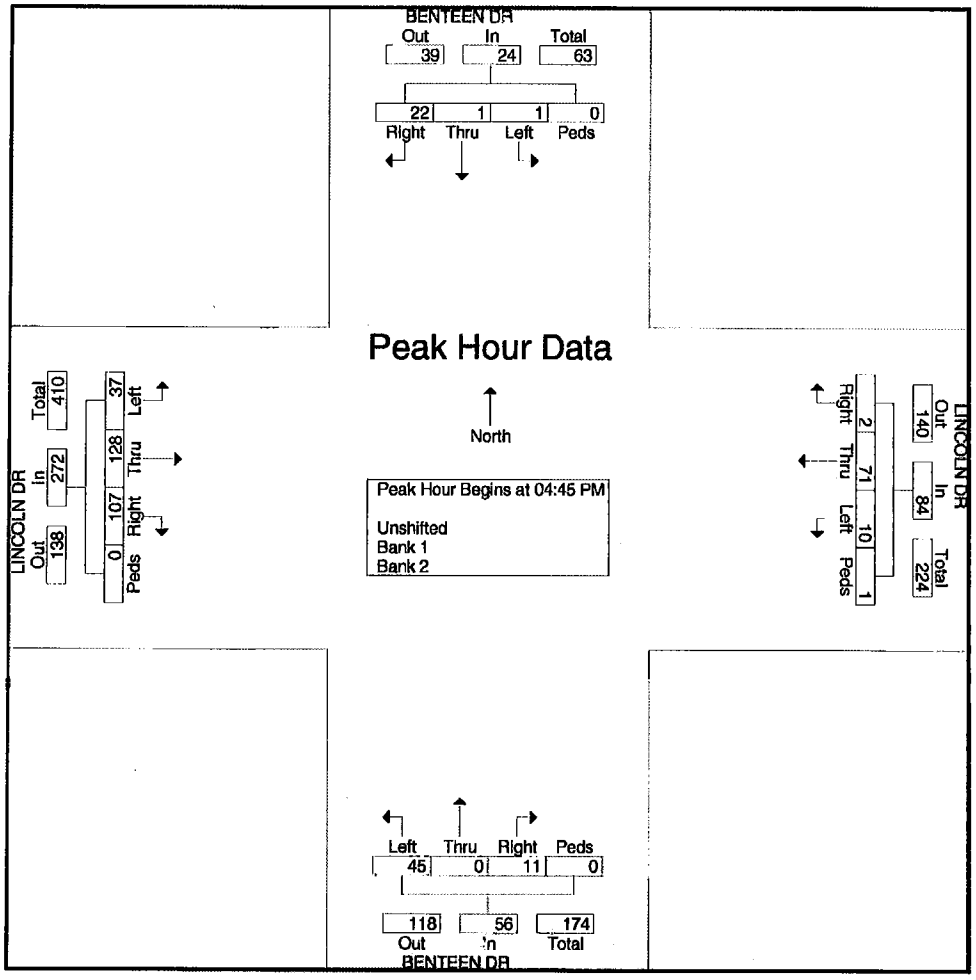
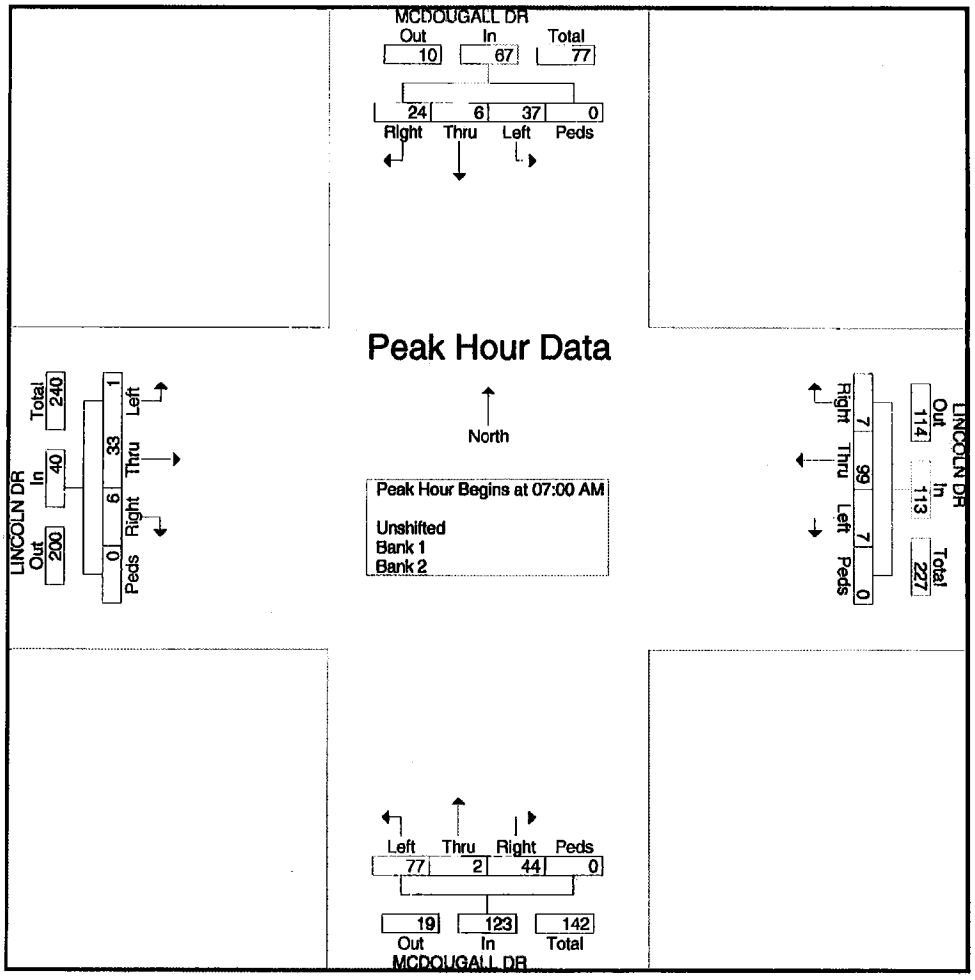
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	6	0	0	0	6	0	19	2	0	21	2	0	**15**	0	**17**	26	30	9	0	65	109
05:00 PM	6	0	0	0	6	**2**	**20**	**5**	**1**	**28**	**3**	0	8	0	11	24	29	8	0	61	106
05:15 PM	3	0	**1**	0	4	0	16	3	0	19	3	0	8	0	11	**32**	**36**	**13**	0	**81**	**115**
05:30 PM	**7**	**1**	0	0	**8**	0	16	0	0	16	3	0	14	0	17	25	33	7	0	65	106
Total Volume	22	1	1	0	24	2	71	10	1	84	11	0	45	0	56	107	128	37	0	272	436
% App. Total	91.7	4.2	4.2	0		2.4	84.5	11.9	1.2		19.6	0	80.4	0		39.3	47.1	13.6	0		
PHF	.786	.250	.250	.000	.750	.250	.888	.500	.250	.750	.917	.000	.750	.000	.824	.836	.889	.712	.000	.840	.948



Lincoln Road & McDougall
Lincoln, ND

File Name : Lincoln Road & McDougall - AM
Site Code : 00000000
Start Date : 9/29/2010
Page No : 3

	MCDOUGALL DR From North					LINCOLN DR From East					MCDOUGALL DR From South					LINCOLN DR From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	2	2	8	0	12	0	18	1	0	19	9	0	14	0	23	1	9	0	0	10	64
07:15 AM	9	0	7	0	16	1	23	**2**	0	26	10	0	15	0	25	**2**	7	0	0	9	76
07:30 AM	**11**	1	**18**	0	**30**	**5**	**35**	2	0	**42**	12	0	**32**	0	**44**	2	**13**	**1**	0	**16**	**132**
07:45 AM	2	**3**	4	0	9	1	23	2	0	26	**13**	**2**	16	0	31	1	4	0	0	5	71
Total Volume	24	6	37	0	67	7	99	7	0	113	44	2	77	0	123	6	33	1	0	40	343
% App. Total	35.8	9	55.2	0		6.2	87.6	6.2	0		35.8	1.6	62.6	0		15	82.5	2.5	0		
PHF	.545	.500	.514	.000	.558	.350	.707	.875	.000	.673	.846	.250	.602	.000	.699	.750	.635	.250	.000	.625	.650



Lincoln Road & McDougall
Lincoln, ND

File Name : Lincoln Road & McDougall - PM
Site Code : 00000000
Start Date : 9/29/2010
Page No : 3

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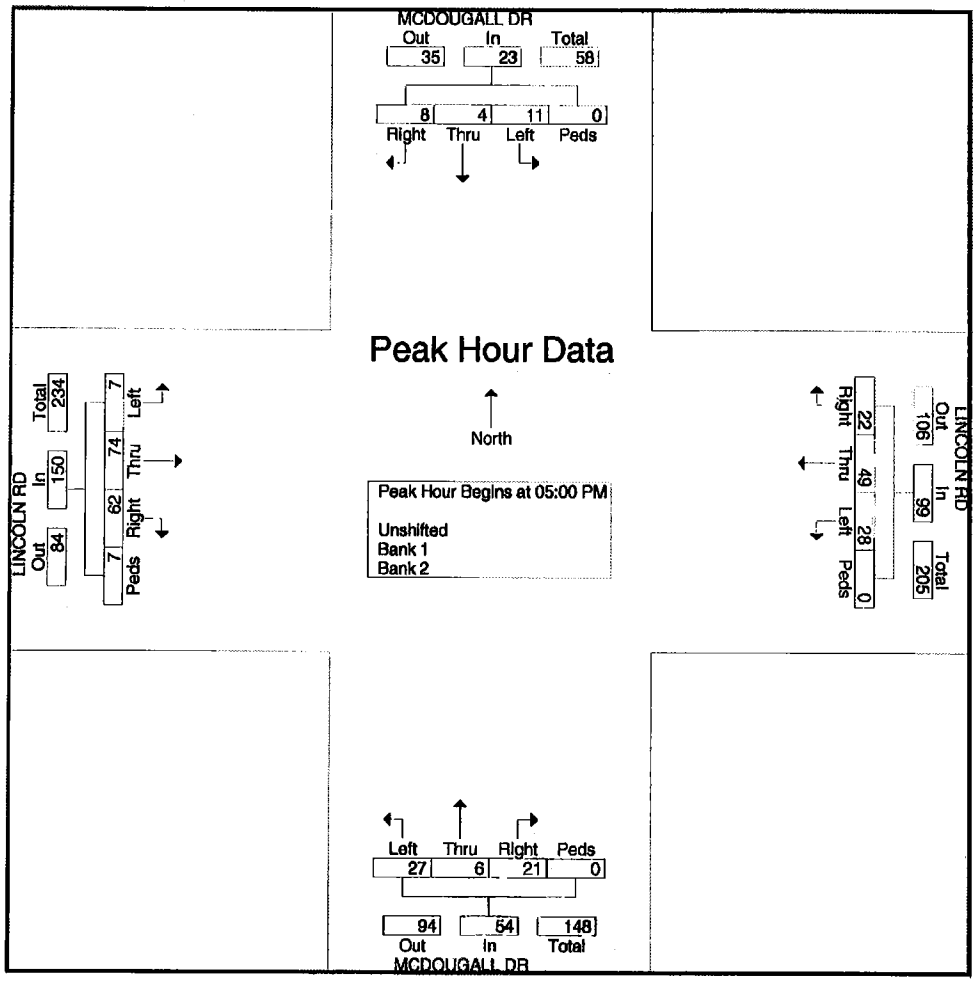
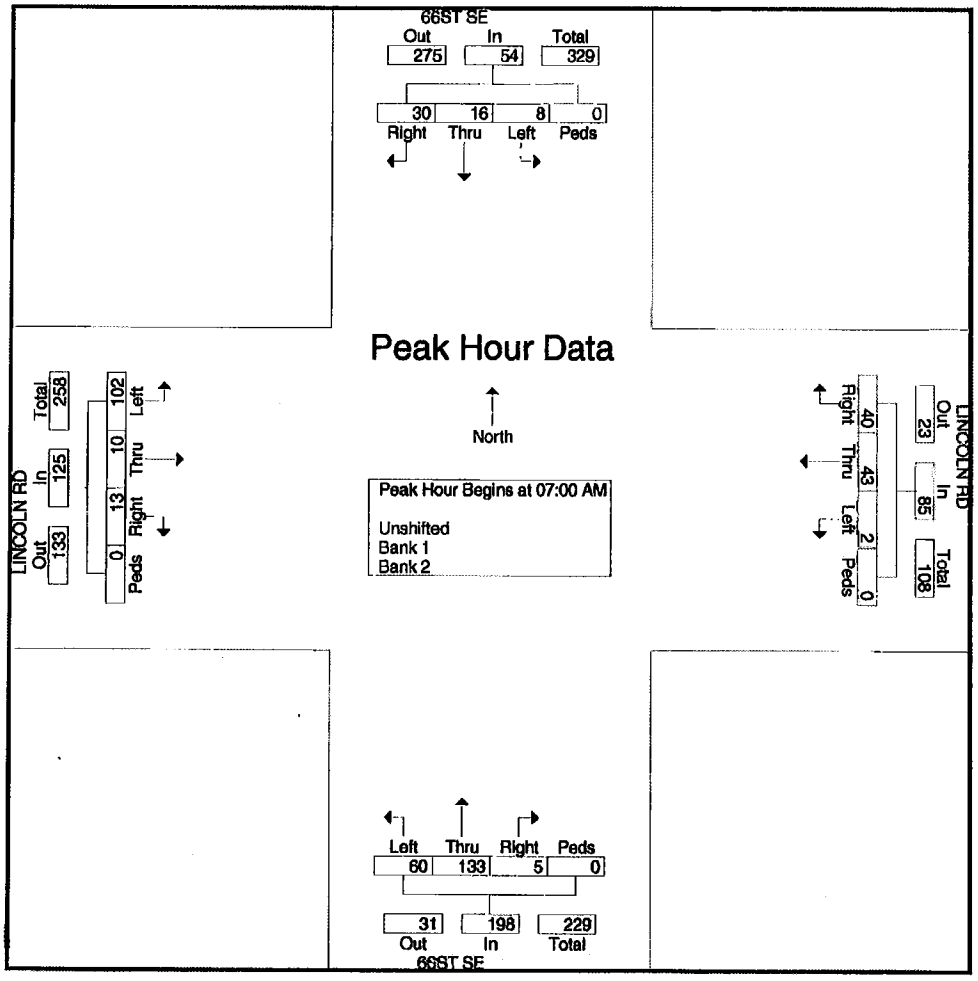
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	3	0	4	0	7	6	16	4	0	26	5	2	5	0	12	17	17	3	0	37	82
05:15 PM	0	1	3	0	4	5	10	8	0	23	4	2	6	0	12	12	16	2	5	35	74
05:30 PM	1	1	0	0	2	8	13	10	0	31	5	0	8	0	13	16	22	2	1	41	87
05:45 PM	4	2	4	0	10	3	10	6	0	19	7	2	8	0	17	17	19	0	1	37	83
Total Volume	8	4	11	0	23	22	49	28	0	99	21	6	27	0	54	62	74	7	7	150	326
% App. Total	34.8	17.4	47.8	0		22.2	49.5	28.3	0		38.9	11.1	50	0		41.3	49.3	4.7	4.7		
PHF	.500	.500	.688	.000	.575	.688	.766	.700	.000	.798	.750	.750	.844	.000	.794	.912	.841	.583	.350	.915	.937



Lincoln Road & 66th Street
Lincoln, ND

File Name : Lincoln Road & 66th St - AM
Site Code : 00000000
Start Date : 9/28/2010
Page No : 3

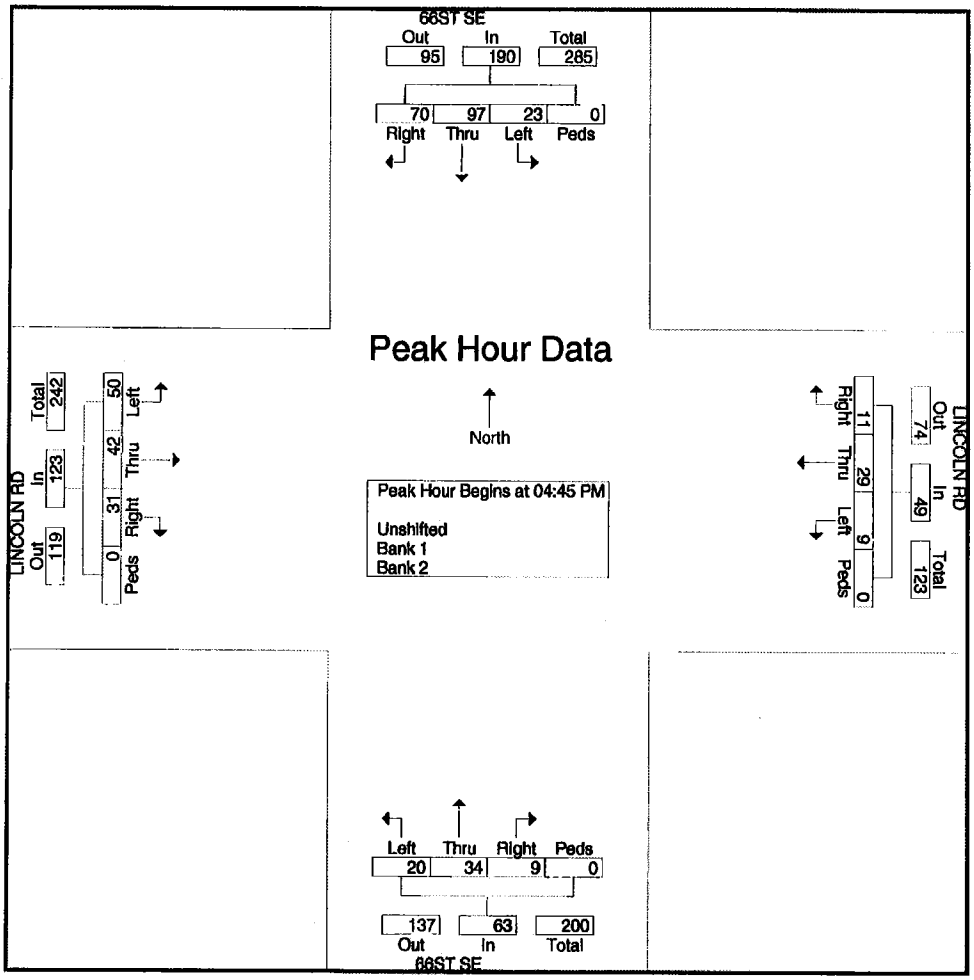
	66ST SE From North					LINCOLN RD From East					66ST SE From South					LINCOLN RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	4	1	**5**	0	10	12	9	0	0	21	0	19	5	0	24	0	2	21	0	23	78
07:15 AM	7	6	0	0	13	**13**	10	**1**	0	**24**	**5**	40	12	0	57	**6**	2	27	0	35	129
07:30 AM	9	**8**	0	0	**17**	9	11	1	0	21	0	**52**	**27**	0	**79**	2	**5**	**32**	0	**39**	**156**
07:45 AM	**10**	1	3	0	14	6	**13**	0	0	19	0	22	16	0	38	5	1	22	0	28	99
Total Volume	30	16	8	0	54	40	43	2	0	85	5	133	60	0	198	13	10	102	0	125	462
% App. Total	55.6	29.6	14.8	0		47.1	50.6	2.4	0		2.5	67.2	30.3	0		10.4	8	81.6	0		
PHF	.750	.500	.400	.000	.794	.769	.827	.500	.000	.885	.250	.639	.556	.000	.627	.542	.500	.797	.000	.801	.740



Lincoln Road & 66th Street
Lincoln, ND

File Name : Lincoln Road & 66th St - PM
Site Code : 00000000
Start Date : 9/28/2010
Page No : 3

	66ST SE From North					LINCOLN RD From East					66ST SE From South					LINCOLN RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	18	21	6	0	45	2	7	3	0	12	1	6	6	0	13	3	12	12	0	27	97
05:00 PM	17	17	5	0	39	4	6	1	0	11	2	3	4	0	9	6	7	17	0	30	89
05:15 PM	19	28	7	0	54	3	4	2	0	9	2	12	3	0	17	12	12	8	0	32	112
05:30 PM	16	31	5	0	52	2	12	3	0	17	4	13	7	0	24	10	11	13	0	34	127
Total Volume	70	97	23	0	190	11	29	9	0	49	9	34	20	0	63	31	42	50	0	123	425
% App. Total	36.8	51.1	12.1	0		22.4	59.2	18.4	0		14.3	54	31.7	0		25.2	34.1	40.7	0		
PHF	.921	.782	.821	.000	.880	.688	.604	.750	.000	.721	.563	.654	.714	.000	.656	.646	.875	.735	.000	.904	.837



HCM Unsignalized Intersection Capacity Analysis
1: Lincoln Road & 52nd Street S

10/4/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	7	36	28	9	377	30	188	10	7	15	3	27
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.69	0.69	0.69	0.66	0.66	0.66	0.80	0.80	0.80
Hourly flow rate (vph)	10	51	39	13	546	43	285	15	11	19	4	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	590			90			720	706	70	703	704	568
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	590			90			720	706	70	703	704	568
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			10	96	99	94	99	94
cM capacity (veh/h)	961			1511			315	355	995	334	356	524

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	100	603	311	56
Volume Left	10	13	285	19
Volume Right	39	43	11	34
cSH	961	1511	324	429
Volume to Capacity	0.01	0.01	0.96	0.13
Queue Length 95th (ft)	1	1	249	11
Control Delay (s)	1.0	0.3	76.3	14.7
Lane LOS	A	A	F	B
Approach Delay (s)	1.0	0.3	76.3	14.7
Approach LOS			F	B

Intersection Summary				
Average Delay	23.2			
Intersection Capacity Utilization	48.2%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
1: Lincoln Road & 52nd STREET

10/4/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	6	275	153	8	95	13	62	4	6	11	6	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.81	0.81	0.81	0.90	0.90	0.90	0.58	0.58	0.58
Hourly flow rate (vph)	7	309	172	10	117	16	69	4	7	19	10	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	133			481			569	562	395	562	639	125
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	133			481			569	562	395	562	639	125
tC, single (s)	4.1			4.1			7.1	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.5	3.5	4.0	3.3
p0 queue free %	100			99			83	99	99	96	97	99
cM capacity (veh/h)	1439			1087			415	432	613	426	384	928

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	488	143	80	40
Volume Left	7	10	69	19
Volume Right	172	16	7	10
cSH	1439	1087	427	480
Volume to Capacity	0.00	0.01	0.19	0.08
Queue Length 95th (ft)	0	1	17	7
Control Delay (s)	0.2	0.7	15.4	13.2
Lane LOS	A	A	C	B
Approach Delay (s)	0.2	0.7	15.4	13.2
Approach LOS			C	B

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	38.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	5	30	10	5	179	0	165	3	13	1	0	52
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.69	0.69	0.69	0.70	0.70	0.70	0.63	0.63	0.63
Hourly flow rate (vph)	7	42	14	7	259	0	236	4	19	2	0	83
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	259			56			419	336	49	357	343	259
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	259			56			419	336	49	357	343	259
tC, single (s)	4.2			4.1			7.1	6.8	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.2	3.3	3.5	4.0	3.3
p0 queue free %	99			100			51	99	98	100	100	89
cM capacity (veh/h)	1255			1556			485	543	1023	581	575	782

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	62	267	259	84
Volume Left	7	7	236	2
Volume Right	14	0	19	83
cSH	1255	1556	505	777
Volume to Capacity	0.01	0.00	0.51	0.11
Queue Length 95th (ft)	0	0	72	9
Control Delay (s)	0.9	0.2	19.4	10.2
Lane LOS	A	A	C	B
Approach Delay (s)	0.9	0.2	19.4	10.2
Approach LOS			C	B

Intersection Summary				
Average Delay	8.9			
Intersection Capacity Utilization	33.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	37	128	107	10	71	2	45	0	11	1	1	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.75	0.75	0.75	0.82	0.82	0.82	0.75	0.75	0.75
Hourly flow rate (vph)	44	152	127	13	95	3	55	0	13	1	1	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	97			280			457	428	216	440	491	96
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	97			280			457	428	216	440	491	96
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.8	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.3	3.3
p0 queue free %	97			99			89	100	98	100	100	97
cM capacity (veh/h)	1502			1271			484	500	826	505	419	963

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	324	111	68	32
Volume Left	44	13	55	1
Volume Right	127	3	13	29
cSH	1502	1271	527	882
Volume to Capacity	0.03	0.01	0.13	0.04
Queue Length 95th (ft)	2	1	11	3
Control Delay (s)	1.2	1.0	12.9	9.2
Lane LOS	A	A	B	A
Approach Delay (s)	1.2	1.0	12.9	9.2
Approach LOS			B	A

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	37.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	1	33	6	7	99	7	77	2	44	37	6	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.63	0.63	0.63	0.67	0.67	0.67	0.70	0.70	0.70	0.56	0.56	0.56
Hourly flow rate (vph)	2	52	10	10	148	10	110	3	63	66	11	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	158			62			282	239	57	298	239	153
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	158			62			282	239	57	298	239	153
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.9	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.3	3.3
p0 queue free %	100			99			82	100	94	89	98	95
cM capacity (veh/h)	1427			1548			622	658	1012	607	600	896

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	63	169	176	120
Volume Left	2	10	110	66
Volume Right	10	10	63	43
cSH	1427	1548	722	686
Volume to Capacity	0.00	0.01	0.24	0.17
Queue Length 95th (ft)	0	1	24	16
Control Delay (s)	0.2	0.5	11.6	11.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.2	0.5	11.6	11.4
Approach LOS			B	B

Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	24.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	7	74	62	28	49	22	27	6	21	11	4	8
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.80	0.80	0.80	0.79	0.79	0.79	0.58	0.58	0.58
Hourly flow rate (vph)	8	80	67	35	61	28	34	8	27	19	7	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	89			148			292	288	114	305	308	75
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	89			148			292	288	114	305	308	75
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			95	99	97	97	99	99
cM capacity (veh/h)	1513			1440			633	605	941	604	590	989

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	155	124	68	40
Volume Left	8	35	34	19
Volume Right	67	28	27	14
cSH	1513	1440	721	695
Volume to Capacity	0.01	0.02	0.09	0.06
Queue Length 95th (ft)	0	2	8	5
Control Delay (s)	0.4	2.3	10.5	10.5
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	2.3	10.5	10.5
Approach LOS			B	B

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	26.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	102	10	13	2	43	40	60	133	5	8	16	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.63	0.63	0.63	0.79	0.79	0.79
Hourly flow rate (vph)	128	12	16	2	48	45	95	211	8	10	20	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	93			29			399	373	21	464	359	71
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	93			29			399	373	21	464	359	71
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.7	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.2	3.4
p0 queue free %	91			100			81	59	99	97	96	96
cM capacity (veh/h)	1495			1591			490	510	1060	322	497	975

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	156	96	314	68
Volume Left	128	2	95	10
Volume Right	16	45	8	38
cSH	1495	1591	511	615
Volume to Capacity	0.09	0.00	0.62	0.11
Queue Length 95th (ft)	7	0	103	9
Control Delay (s)	6.4	0.2	22.7	11.6
Lane LOS	A	A	C	B
Approach Delay (s)	6.4	0.2	22.7	11.6
Approach LOS			C	B

Intersection Summary				
Average Delay	14.1			
Intersection Capacity Utilization	37.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	50	42	31	9	29	11	20	34	9	23	97	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.72	0.72	0.72	0.66	0.66	0.66	0.88	0.88	0.88
Hourly flow rate (vph)	56	47	34	12	40	15	30	52	14	26	110	80
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	56			81			383	256	64	287	265	48
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	56			81			383	256	64	287	265	48
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.3
p0 queue free %	96			99			93	92	99	96	82	92
cM capacity (veh/h)	1530			1523			444	611	1003	588	614	1024

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	137	68	95	216
Volume Left	56	12	30	26
Volume Right	34	15	14	80
cSH	1530	1523	575	715
Volume to Capacity	0.04	0.01	0.17	0.30
Queue Length 95th (ft)	3	1	15	32
Control Delay (s)	3.2	1.4	12.5	12.2
Lane LOS	A	A	B	B
Approach Delay (s)	3.2	1.4	12.5	12.2
Approach LOS			B	B

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

1: Lincoln Road & 52nd Street S Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.0	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Delay / Veh (s)	2.1	0.4	0.2	1.6	3.0	1.3	11.5	12.0	5.5	8.3	7.0	5.5

1: Lincoln Road & 52nd Street S Performance by movement

Movement	All
Total Delay (hr)	0.5
Delay / Veh (s)	5.1

2: Lincoln Road & Benteen Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.3
Delay / Veh (s)	2.2	0.5	0.4	1.5	1.5	7.3	21.5	3.8	3.7	3.7

3: Lincoln Road & McDougall Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Delay / Veh (s)		0.4	0.3	1.0	0.9	0.7	5.6	4.3	3.6	5.2	6.0	3.2

3: Lincoln Road & McDougall Drive Performance by movement

Movement	All
Total Delay (hr)	0.1
Delay / Veh (s)	2.8

4: Lincoln Road & 66th Street SE Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Delay / Veh (s)	1.6	1.7	0.7		0.4	0.1	6.7	7.7	3.1	7.2	7.4	3.5

4: Lincoln Road & 66th Street SE Performance by movement

Movement	All
Total Delay (hr)	0.3
Delay / Veh (s)	4.2

Total Network Performance

Total Delay (hr)	1.3
Delay / Veh (s)	8.4

Intersection: 1: Lincoln Road & 52nd Street S

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	20	127	48
Average Queue (ft)	3	61	26
95th Queue (ft)	15	106	49
Link Distance (ft)	573	584	594
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Lincoln Road & Benteen Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LR
Maximum Queue (ft)	7	7	103	48
Average Queue (ft)	0	0	49	27
95th Queue (ft)	6	6	84	49
Link Distance (ft)	1792	2212	600	572
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Lincoln Road & McDougall Drive

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	7	63	50
Average Queue (ft)	0	39	27
95th Queue (ft)	6	63	52
Link Distance (ft)	1158	612	580
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Lincoln Road & 66th Street SE

Movement	EB1	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	36	90	58
Average Queue (ft)	8	49	28
95th Queue (ft)	31	78	57
Link Distance (ft)	1158	634	579
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

1: Lincoln Road & 52nd Street S Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Delay / Veh (s)	1.7	2.0	0.9	2.9	1.3	0.5	7.2	8.9	4.1	6.9	8.4	3.6

1: Lincoln Road & 52nd Street S Performance by movement

Movement	All
Total Delay (hr)	0.2
Delay / Veh (s)	2.4

2: Lincoln Road & Benteen Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Delay / Veh (s)	2.5	2.9	1.6	1.5	0.8	0.5	6.3	4.7	5.1	4.2	3.4	2.6	

3: Lincoln Road & McDougall Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay / Veh (s)	1.1	1.9	1.2	1.7	0.8	0.4	5.1	5.2	2.5	4.8	8.6	2.6

3: Lincoln Road & McDougall Drive Performance by movement

Movement	All
Total Delay (hr)	0.1
Delay / Veh (s)	1.9

4: Lincoln Road & 66th Street SE Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Delay / Veh (s)	1.4	1.5	0.8	0.8	0.5	0.1	6.2	6.2	2.8	6.6	7.5	3.6

4: Lincoln Road & 66th Street SE Performance by movement

Movement	All
Total Delay (hr)	0.2
Delay / Veh (s)	3.8

Total Network Performance

Total Delay (hr)	0.8
Delay / Veh (s)	5.5

Intersection: 1: Lincoln Road & 52nd Street S

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	7	27	73	31
Average Queue (ft)	0	4	33	14
95th Queue (ft)	6	19	63	39
Link Distance (ft)	573	1792	584	594
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Lincoln Road & Benteen Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LR	LTR
Maximum Queue (ft)	21	13	53	36
Average Queue (ft)	2	1	25	21
95th Queue (ft)	13	11	51	45
Link Distance (ft)	1792	2212	600	572
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Lincoln Road & McDougall Drive

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	20	31	54
Average Queue (ft)	3	25	15
95th Queue (ft)	17	44	46
Link Distance (ft)	1158	612	580
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Lincoln Road & 66th Street SE

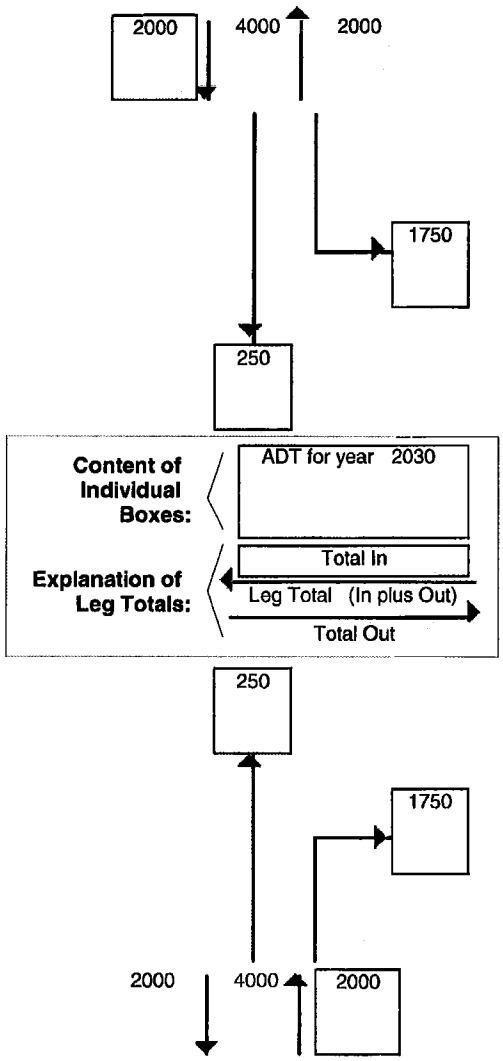
Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	13	6	47	71
Average Queue (ft)	1	0	30	41
95th Queue (ft)	9	6	50	64
Link Distance (ft)	1158	572	634	579
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

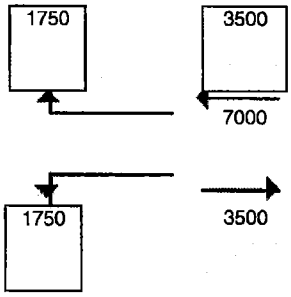
Network Summary

Network wide Queuing Penalty: 0

Location: Intersection of Airway Ave _Lincoln Road

Prepared for: Ulteig Engineers

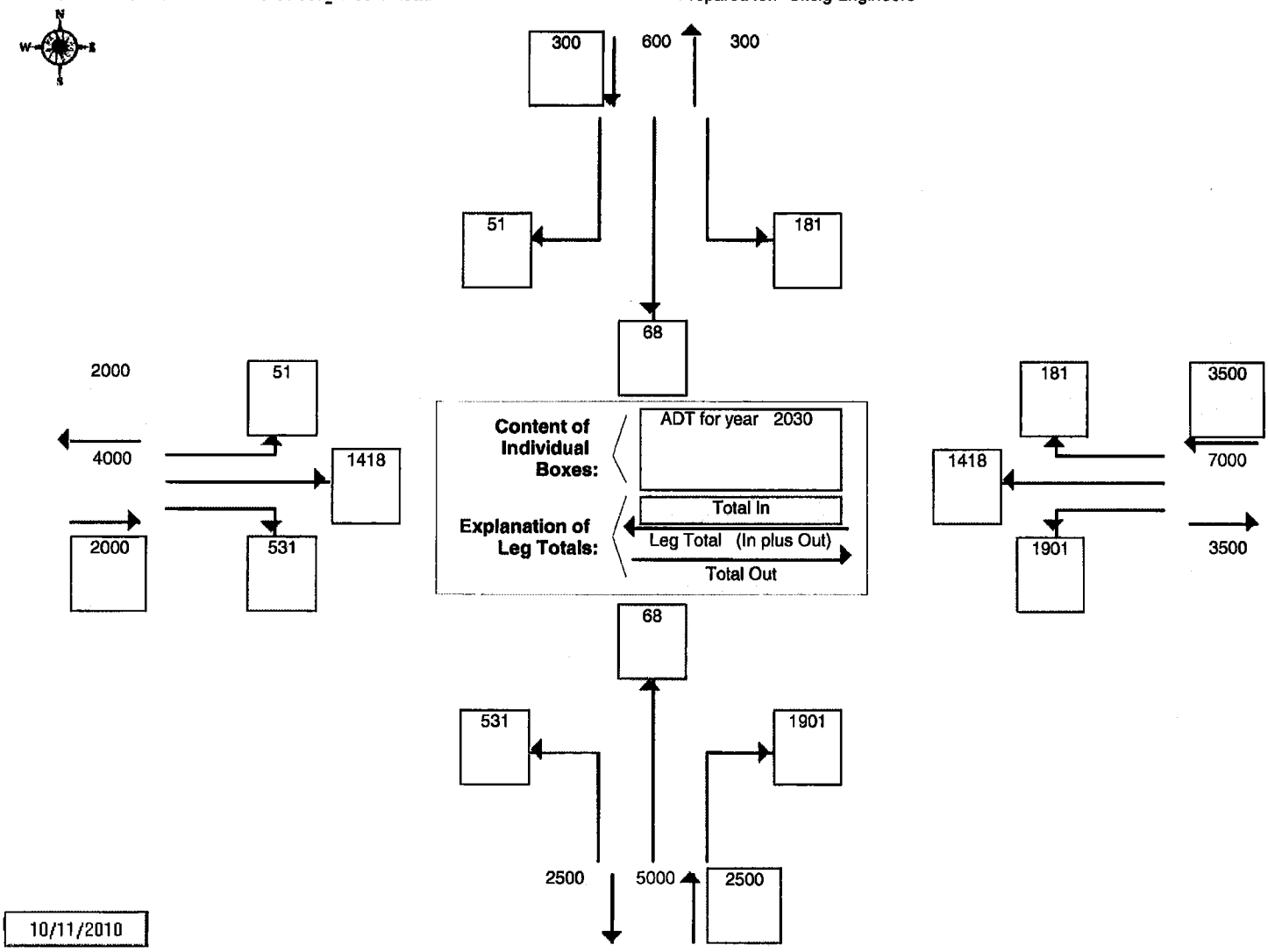




10/11/2010

Location: Intersection of 52nd Street _Lincoln Road

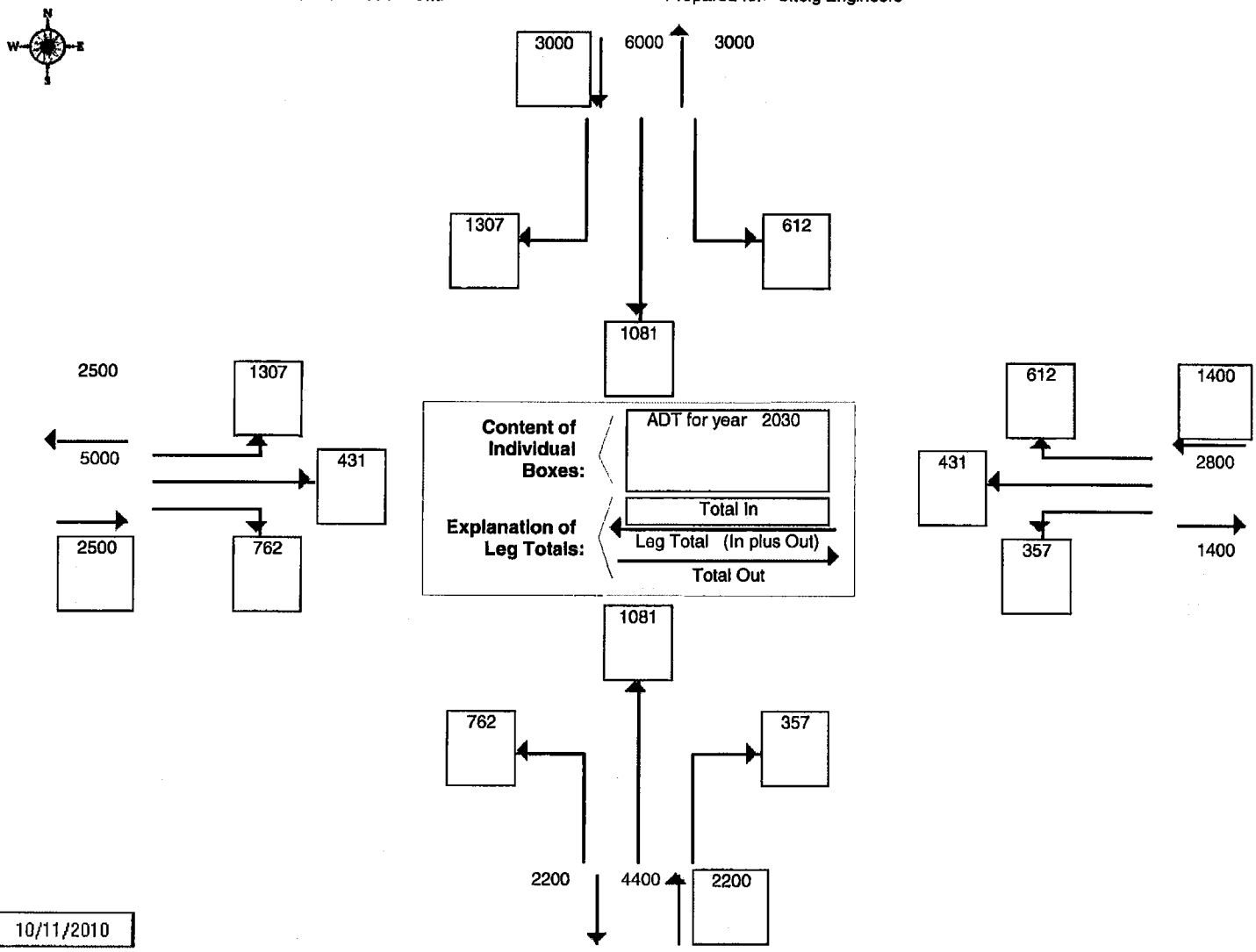
Prepared for: Ulteig Engineers



10/11/2010

Location: Intersection of 66th Street and Lincoln Road

Prepared for: Ulteig Engineers



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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	175	175	25	175	175	25
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	233	233	33	233	233	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	650	150			267	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	650	150			267	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	34	74			82	
cM capacity (veh/h)	356	896			1297	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	467	267	267
Volume Left	233	0	233
Volume Right	233	233	0
cSH	711	1700	1297
Volume to Capacity	0.66	0.16	0.18
Queue Length 95th (ft)	123	0	16
Control Delay (s)	21.4	0.0	7.5
Lane LOS	C		A
Approach Delay (s)	21.4	0.0	7.5
Approach LOS	C		

Intersection Summary			
Average Delay	12.0		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
1: Lincoln Road & 52nd Street S

10/11/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↰	↑			↑	↱		↔	
Volume (veh/h)	5	142	53	190	142	18	53	7	190	18	7	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.69	0.69	0.69	0.66	0.66	0.66	0.80	0.80	0.80
Hourly flow rate (vph)	7	200	75	275	206	26	80	11	288	22	9	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									6			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	232			275			1019	1034	237	1170	1058	219
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	232			275			1019	1034	237	1170	1058	219
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			79			53	94	64	74	95	99
cM capacity (veh/h)	1307			1294			172	183	804	87	177	823

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	282	275	232	379	38
Volume Left	7	275	0	80	22
Volume Right	75	0	26	288	6
cSH	1307	1294	1700	723	119
Volume to Capacity	0.01	0.21	0.14	0.52	0.31
Queue Length 95th (ft)	0	20	0	77	31
Control Delay (s)	0.2	8.5	0.0	20.3	48.6
Lane LOS	A	A		C	E
Approach Delay (s)	0.2	4.6		20.3	48.6
Approach LOS				C	E

Intersection Summary				
Average Delay	9.9			
Intersection Capacity Utilization	39.8%	ICU Level of Service		A
Analysis Period (min)	15			

HCM Unsignalized Intersection Capacity Analysis
4: Lincoln Road & 66th Street SE

10/11/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	131	43	76	36	43	61	76	108	36	61	108	131
Peak Hour Factor	0.80	0.80	0.80	0.89	0.89	0.89	0.63	0.63	0.63	0.79	0.79	0.79
Hourly flow rate (vph)	164	54	95	40	48	69	121	171	57	77	137	166

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	164	149	157	349	214	166
Volume Left (vph)	164	0	40	121	77	0
Volume Right (vph)	0	95	69	57	0	166
Hadj (s)	0.55	-0.40	-0.19	-0.01	0.37	-0.56
Departure Headway (s)	7.7	6.7	7.3	6.8	7.2	6.2
Degree Utilization, x	0.35	0.28	0.32	0.66	0.43	0.29
Capacity (veh/h)	436	495	441	510	476	544
Control Delay (s)	13.6	11.1	13.8	21.8	14.3	10.5
Approach Delay (s)	12.4		13.8	21.8	12.6	
Approach LOS	B		B	C	B	

Intersection Summary				
Delay	15.4			
HCM Level of Service	C			
Intersection Capacity Utilization	40.1%	ICU Level of Service	A	
Analysis Period (min)	15			

1: Lincoln Road & 52nd Street S Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.3	0.0	0.0	0.0
Delay / Veh (s)	3.3	1.4	1.0	5.9	3.6	3.4	9.6	9.5	9.5	10.2	12.4	2.5

1: Lincoln Road & 52nd Street S Performance by movement

Movement	All
Total Delay (hr)	0.7
Delay / Veh (s)	5.0

4: Lincoln Road & 66th Street SE Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay (hr)	0.2	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.2
Delay / Veh (s)	8.4	4.2	5.9	5.3	8.9	3.7	7.5	8.5	5.3	7.1	8.6	8.7

4: Lincoln Road & 66th Street SE Performance by movement

Movement	All
Total Delay (hr)	1.0
Delay / Veh (s)	7.1

5: Lincoln Road & Airway Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Total Delay (hr)	0.3	0.1	0.0	0.0	0.1	0.0	0.5
Delay / Veh (s)	10.3	6.2	1.9	0.5	2.6	1.0	4.8

Total Network Performance

Total Delay (hr)	2.4
Delay / Veh (s)	10.6

Intersection: 1: Lincoln Road & 52nd Street S

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	L	LT	R	LTR
Maximum Queue (ft)	20	48	54	74	48
Average Queue (ft)	1	22	31	43	23
95th Queue (ft)	14	49	50	67	49
Link Distance (ft)	2067		578		588
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		150		150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Lincoln Road & 66th Street SE

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LTR	LT	R
Maximum Queue (ft)	65	58	71	96	76	70
Average Queue (ft)	36	26	38	54	48	39
95th Queue (ft)	59	48	60	86	74	62
Link Distance (ft)		5248	572	628	573	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150					150
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: Lincoln Road & Airway Avenue

Movement	WB	WB	NB	SB
Directions Served	L	R	TR	LT
Maximum Queue (ft)	95	58	16	64
Average Queue (ft)	52	34	3	24
95th Queue (ft)	86	49	15	54
Link Distance (ft)	2067		404	425
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		200		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Lincoln Road Crash Data & Analysis

Historical Crash Data

Crash data was obtained from the NDDOT for the 3.5-year period between January 1, 2007 and June 30, 2010 for the Lincoln Road corridor between Airway Avenue and 66th Street. This crash data was then sorted by a variety of measures to determine the potential for safety improvements along the corridor.

Since North Dakota does not maintain crash statistical information, information obtained by MnDOT (Traffic Safety Fundamentals Handbook published in 2008) was used as the basis for crash statistics.

1. Intersection Crash Rate

A Critical Crash Rate was calculated for each intersection. The intersection crash rates are expressed as the number of crashes per million entering vehicles (MEV). The Critical Crash Rate accounts for the key variables that have an impact on safety, including the following:

- Intersection control (2-way stop, 4-way stop or signalized)
- Actual intersection exposure (sum of entering traffic for all approaches)
- Speed of the facility (< or > 45 mph)
- Random nature of crashes

Of the five intersections studied, only Airway Avenue has a crash rate that exceeds the calculated Critical Crash Rate which means there are an elevated numbers of crashes in comparison to the amount of traffic.

Table 1 – Intersection Crash Rates

Intersection	Avg. Crashes per Year	Crash Rate (Crash/MEV)	Critical Crash Rate (Crash/MEV)	Critical Crash Rate Exceeded
Airway Avenue	2.0	1.11	0.74	Yes
52nd Street SE	0.9	0.50	0.75	No
Benteen Drive	0.6	0.43	0.82	No
McDougall Drive	0.3	0.26	0.88	No
66th Street SE	0.9	0.61	0.81	No

2. Intersection Crash Severity

In addition to the rate of crashes, the severity of crashes was also studied to identify intersections experiencing more severe crashes than expected. An expected severity rate was calculated for each intersection based on the following factors:

- Intersection control (2-way stop, 4-way stop or signalized)
- Amount of exposure (< or > 15,000 MEV)
- Speed of the facility (< or > 45 mph)

The expected severity rate is based on the following percentages:

	Fatalities	Injury	Property Damage
Two-Way Stop Control	1.2%	35.8%	63.0%

Of the five intersections studied, two had a severity rate that exceeded the expected severity rate. The severity rate at Benteen Drive was slightly elevated because one of the two crashes recorded involved an injury. At 66th Street, the severity rate was slightly elevated because two of the three recorded crashes recorded involved injuries. There were no fatalities along the corridor in the 3.5-year period that was analyzed.

Table 2 – Intersection Crash Severity Rates

Intersection	Property Damage	Injury	Fatality	Severity Rate	Expected Severity Rate	Severity Rate Exceeded
Airway Avenue	5	2	0	1.74	2.05	No
52nd Street SE	2	0	0	0.33	0.92	No
Benteen Drive	1	1	0	0.86	0.79	Yes
McDougall Drive	1	0	0	0.26	0.47	No
66th Street SE	1	2	0	1.42	1.13	Yes

3. Intersection Crash Type

After identifying the intersections where crash rate or severity is elevated, the next step is to conduct supplemental analyses to better understand the nature of the crash activity and to help develop appropriate mitigation strategies. The expected distribution of crash type at any intersection is primarily a function of the type of intersection control.

Table 3 – Intersection Crash Type

Intersection	Rear End	Angle	Other
Airway Avenue	5		2
52nd Street SE	1		2
Benteen Drive		1	1
McDougall Drive	1		
66th Street SE	1	2	

The Airway Avenue intersection has a high percentage of rear end crashes. Based on the detailed crash reports all of these crashes were on the westbound approach and were

during the AM peak. Reducing the peak hour queues on this approach may decrease the number of rear end crashes.

4. Segment Crash Rate

Only two roadway segments between intersections along the corridor had reported crashes. A critical crash rate was calculated for each segment taking into account the same factors as the intersection crash rate, along with the length of the segment. The segment crash rates are expressed as the number of crashes per million vehicle miles (MVM).

None of the segments studied had crash rates that exceeded the critical crash rate.

Table 4 – Segment Crash Rates

Segment	Avg. Crashes per Year	Crash Rate (Crash/MEV)	Critical Crash Rate (Crash/MEV)	Critical Crash Rate Exceeded
Airway Avenue to 52nd Street SE	230	1.39	1.50	No
52nd Street SE to Benteen Drive	0.6	1.28	2.30	No
Benteen Drive to McDougall Drive	0	--	--	--
McDougall Drive to 66th Street SE	0	--	--	--

5. Crash Costs to Society

One of the most complex and sensitive measures in safety analysis is determining the monetary cost to society of crashes. However, by monetizing the impacts of each crash, it allows roadway agencies the ability to best allocate resources to provide the greatest benefit. For this analysis, the following cost breakdown was used:

- Property Damage Only - $12,000 per crash
- Injury Crashes - $256,000 per crash
- Fatal Crashes - $6,800,000 per crash

Table 5 – Annual Crash Rate Costs

Intersection	Approximate Annual Crash Costs		Segment	Approximate Annual Crash Costs
Airway Avenue	$163,000		Airway Avenue to 52nd Street SE	$27,000
52nd Street SE	$10,000		52nd Street SE to Benteen	$7,000

		Drive	
Benteen Drive	$77,000	Benteen Drive to McDougall Drive	$0
McDougall Drive	$3,000	McDougall Drive to 66th Street SE	$0
66th Street SE	$150,000	**Total**	**$34,000**
Total	**$403,000**		

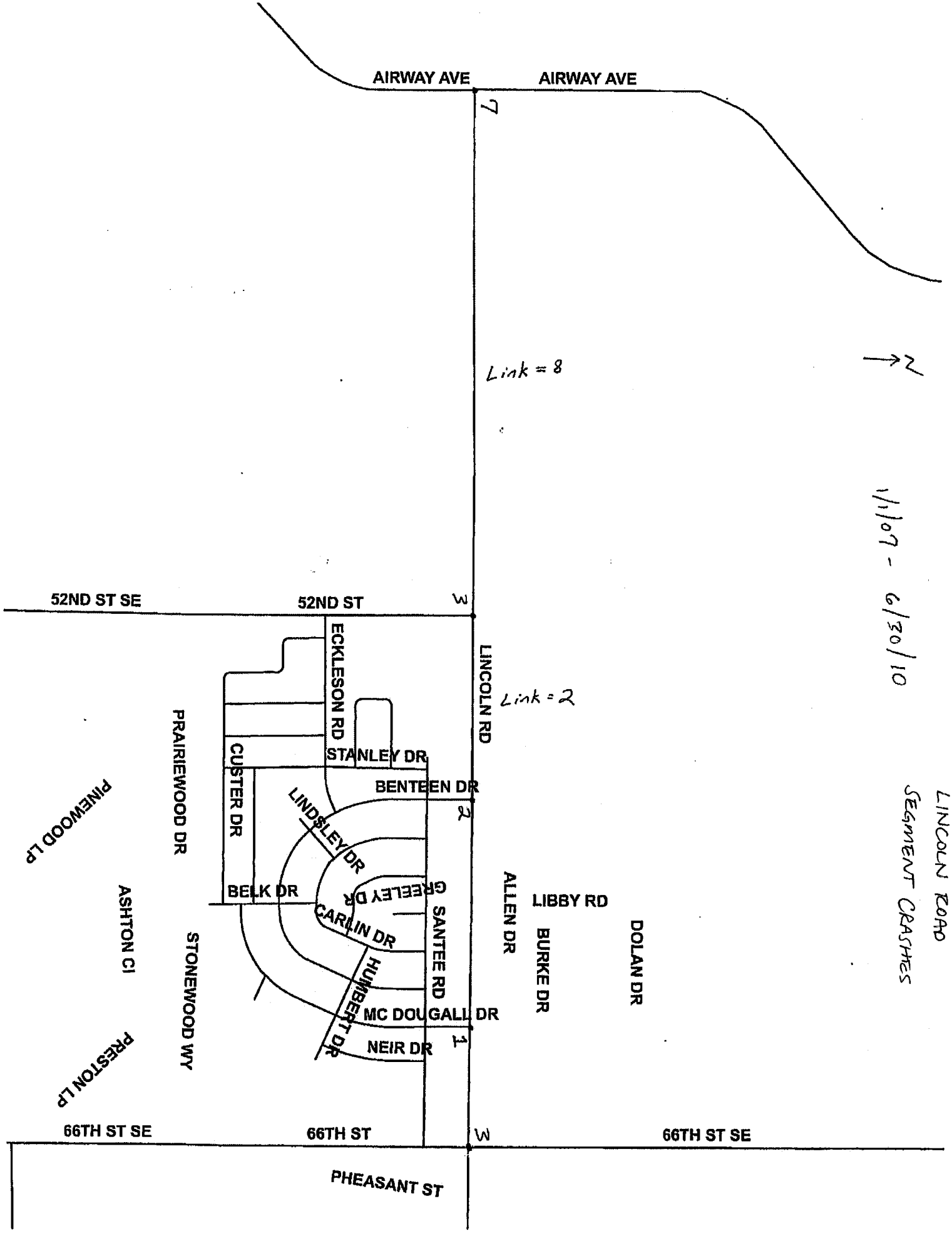
The total average annual crash cost to society for the entire corridor is $437,000 (based on 3.5 years of data).

Crash Summary Analysis

The historical crash data does not indicate the presence of any existing major safety deficiencies. Slightly elevated crash rates at certain locations along the corridor may be a result of vehicle stacking at intersections.

While the historical crash data did not indicate the presence of significant existing vehicle safety issues, future changes in traffic patterns could lead to safety issues that may be preventable by making corridor improvements to aid traffic flow. An analysis of the corridor from a safety standpoint was conducted using empirical evidence and traffic engineering standards. The conclusions from this analysis are provided as follows:

- Corridor safety could be improved by reducing access to public or private drives.
- Addition of turn lanes along Lincoln Road would help to manage turning volumes and provide additional storage.


AIRWAY AVE
AIRWAY AVE
7
Link = 8
N
1/1/07 - 6/30/10
LINCOLN ROAD
SEGMENT CRASHES
52ND ST SE
52ND ST
3
LINCOLN RD
Link = 2
ECKLESON RD
STANLEY DR
CUSTER DR
PRAIRIEWOOD DR
PINEWOOD LP
BENTEEN DR
2
LINDSLEY DR
BELK DR
GREELEY DR
CARLIN DR
SANTEE RD
ALLEN DR
LIBBY RD
BURKE DR
DOLAN DR
ASHTON CI
STONEWOOD WY
HUMBERT DR
MC DOUGALL DR
NEIR DR
1
PRESTON LP
66TH ST SE
66TH ST
W
66TH ST SE
PHEASANT ST

Crashes by Road Conditions

Intersection	Surface	# of Crashes	Dry	Ice	Wet	Slush/Snow
Lincoln Road & Airway Avenue		**7**	57%	29%	14%	0%
	Dry	4	4			
	Ice	2		2		
	Wet	1			1	
Lincoln Road & 52nd Street		**3**	33%	33%	0%	33%
	Dry	1	1			
	Ice	1		1		
	Slush/Snow	1				1
Lincoln Road & Benteen Drive		**2**	50%	0%	0%	50%
	Dry	1	1			
	Slush/Snow	1				1
Lincoln Road & McDougall Drive		**1**	100%	0%	0%	0%
	Dry	1	1			
Lincoln Road & 66th Street		**3**	100%	0%	0%	0%
	Dry	3	3			
Grand Total		16	10	3	1	2
		Expected Percent*	**68%**	**9%**	**14%**	**7%**

*From MNDOT's 2008 Trafic Safety Fundamental Handbook - page A-12

Segment	Surface	# of Crashes	Dry	Ice	Wet	Slush/Snow
Airway Avenue to 52nd Street		**8**	75%	25%	0%	0%
	Dry	6	6			
	Ice	2		2		
52nd Street to Benteen Drive		**2**	100%	0%	0%	0%
	Dry	2	2			
Grand Total		10	8	2	0	0
		Expected Percent*	**68%**	**9%**	**14%**	**7%**

*From MNDOT's 2008 Trafic Safety Fundamental Handbook - page A-12

Crashes by Lighting Conditions

Intersection	Light	# of Crashes	Light	Dark	Dawn/Dusk	Dark w/ Lights
Lincoln Road & Airway Avenue		7	43%	14%	43%	0%
	Dark	1		1		
	Light	3	3			
	Dawn/Dusk	3			3	
Lincoln Road & 52nd Street		3	33%	67%	0%	0%
	Dark	2		2		
	Light	1	1			
Lincoln Road & Benteen Drive		2	50%	0%	0%	50%
	Light	1	1			
	Dark w/ Lights	1				1
Lincoln Road & McDougall Drive		1	100%	0%	0%	0%
	Light	1	1			
Lincoln Road & 66th Street		3	100%	0%	0%	0%
	Light	3	3			
Grand Total		16	9	3	3	1
	Expected Percent*		**66%**	**11%**	**5%**	**16%**

*From MNDOT's 2008 Trafic Safety Fundamental Handbook - page A-12

Segment	Light	# of Crashes	Light	Dark	Dawn/Dusk	Dark w/ Lights
Airway Avenue to 52nd Street		8	25%	38%	38%	0%
	Dark	3		3		
	Light	2	2			
	Dawn/Dusk	3			3	
52nd Street to Benteen Drive		2	0%	50%	0%	50%
	Dark	1		1		
	Dark w/ Lights	1				1
Grand Total		10	2	4	3	1
	Expected Percent*		**66%**	**11%**	**5%**	**16%**

*From MNDOT's 2008 Trafic Safety Fundamental Handbook - page A-12

Crashes by Crash Type

Intersection	Type	# of Crashes	Other	Angle	Rear-End
Lincoln Road & Airway Avenue		**7**	29%	0%	71%
	Other	2	2		
	Rear-End	5			5
Lincoln Road & 52nd Street		**3**	67%	0%	33%
	Other	2	2		
	Rear-End	1			1
Lincoln Road & Benteen Drive		**2**	50%	50%	0%
	Other	1	1		
	Angle	1		1	
Lincoln Road & McDougall Drive		**1**	0%	0%	100%
	Rear-End	1			1
Lincoln Road & 66th Street		**3**	0%	67%	33%
	Angle	2		2	
	Rear-End	1			1
Grand Total		16	5	3	8
	Expected Percent*		**53%**	**26%**	**17%**

*For a Rural Intersection with Thru/Stop Control - MNDOT 2008 Traffic Safety Fundamental Handbook - page

Segment	Type	# of Crashes	Other	Deer	Run-Off
Airway Avenue to 52nd Street		**8**	13%	63%	25%
	Other	1	1		
	Deer	5		5	
	Run-Off	2			2
52nd Street to Benteen Drive		**2**	0%	100%	0%
	Deer	2		2	
Grand Total		10	1	7	2
	Expected Percent*		**25%**	**31%**	**15%**

*For a Rural Roadway Segment - MNDOT 2008 Traffic Safety Fundamental Handbook - page A-20

Crashes by Year

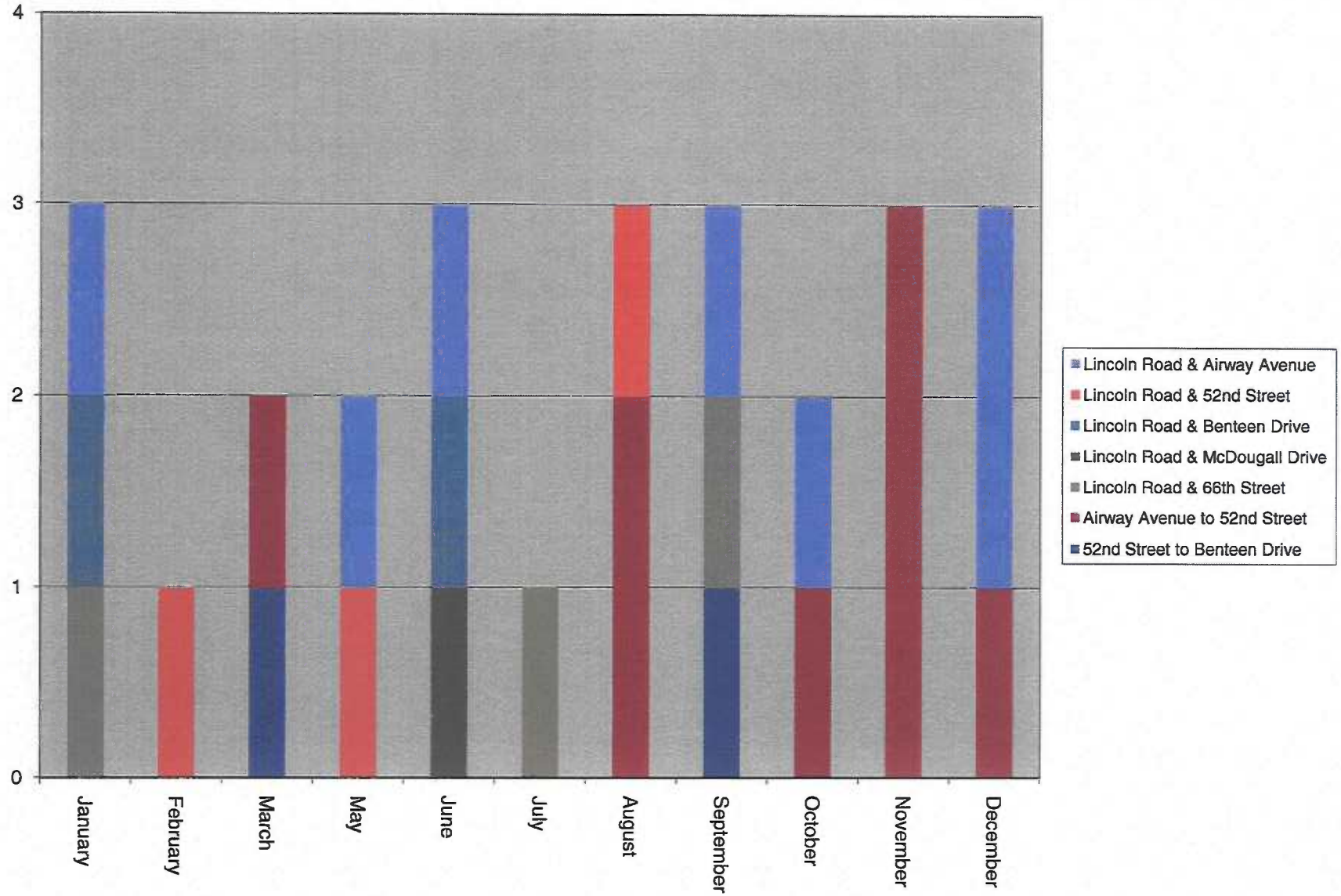
Intersection	# of Crashes	2007	2008	2009	2010*
Lincoln Road & Airway Avenue	7	3	2	2	0
Lincoln Road & 52nd Street	3	0	1	2	0
Lincoln Road & Benteen Drive	2	0	1	0	1
Lincoln Road & McDougall Drive	1	0	1	0	0
Lincoln Road & 66th Street	3	1	0	2	0
Grand Total	16	4	5	6	1

*6 Months (From January 1st to June 30th)

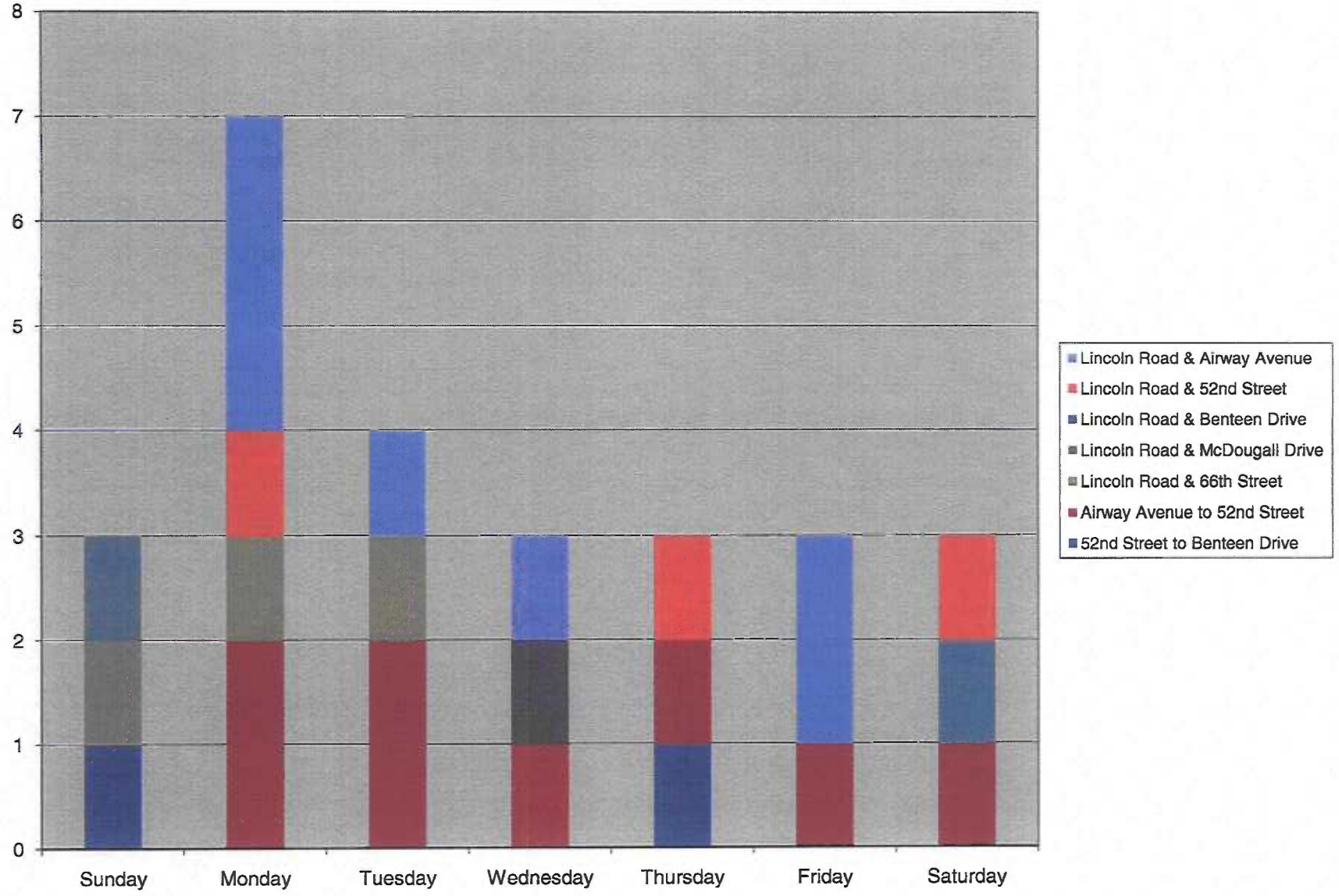
Segment	# of Crashes	2007	2008	2009	2010*
Airway Avenue to 52nd Street	8	1	3	4	0
52nd Street to Benteen Drive	2	0	0	2	0
Grand Total	10	1	3	6	0

*6 Months (From January 1st to June 30th)

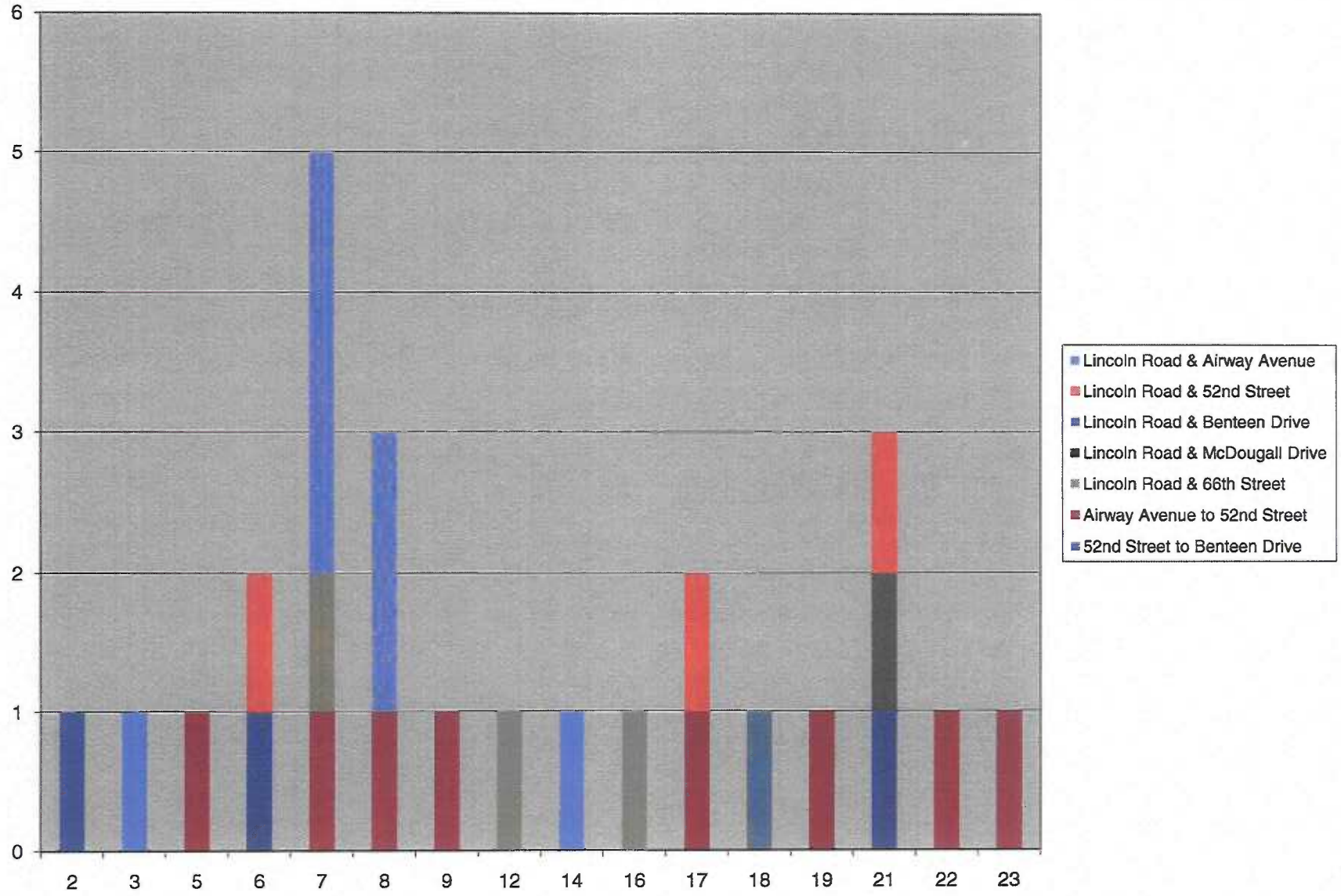
Crashes by Month



Crashes by Day



Crashes by Hour



Printed: 05/23/11 at 08:44
WinTally v2.5.0.2

Burleigh County Hwy Dept
Standard Report

Location: Airway Ave & Lincoln Rd
Unit ID:
Study Date: Thursday May 19, 2011
Interval: 15 minutes

Vehicles

	Southbound			Westbound			Northbound			Grand
	Left	Thru	Total	Left	Right	Total	Thru	Right	Total	Total
06:00	1	1	2	13	11	24	0	1	1	27
06:15	6	3	9	28	24	52	3	4	7	68
06:30	3	10	13	39	42	81	5	0	5	99
06:45	9	9	18	44	44	88	5	9	14	120
Subtotal	**19**	**23**	**42**	**124**	**121**	**245**	**13**	**14**	**27**	**314**
07:00	9	6	15	55	41	96	4	4	8	119
07:15	8	5	13	70	56	126	7	2	9	148
07:30	12	3	15	102	73	175	12	11	23	213
07:45	13	10	23	110	56	166	2	13	15	204
Subtotal	**42**	**24**	**66**	**337**	**226**	**563**	**25**	**30**	**55**	**684**
08:00	10	8	18	64	35	99	4	11	15	132
08:15	7	3	10	43	29	72	5	16	21	103
08:30	11	5	16	27	19	46	2	11	13	75
08:45	8	2	10	21	17	38	3	10	13	61
Subtotal	**36**	**18**	**54**	**155**	**100**	**255**	**14**	**48**	**62**	**371**
09:00	12	7	19	13	19	32	2	10	12	63
09:15	10	3	13	12	12	24	1	9	10	47
09:30	7	1	8	13	15	28	4	5	9	45
09:45	11	3	14	18	10	28	0	11	11	53
Subtotal	**40**	**14**	**54**	**56**	**56**	**112**	**7**	**35**	**42**	**208**
10:00	9	4	13	8	18	26	1	9	10	49
10:15	7	1	8	13	20	33	3	10	13	54
10:30	14	1	15	15	9	24	2	8	10	49
10:45	9	2	11	11	16	27	1	9	10	48
Subtotal	**39**	**8**	**47**	**47**	**63**	**110**	**7**	**36**	**43**	**200**
11:00	15	3	18	15	14	29	1	10	11	58
11:15	11	3	14	16	12	27	3	13	16	57
11:30	20	2	22	12	18	30	6	12	18	70
11:45	13	7	20	11	16	27	5	20	25	72
Subtotal	**59**	**15**	**74**	**53**	**60**	**113**	**15**	**55**	**70**	**257**
12:00	13	7	20	7	19	26	1	7	8	54
12:15	19	4	23	16	22	37	4	13	17	77
12:30	12	2	14	17	14	31	1	15	16	61
12:45	17	6	23	21	25	46	4	15	19	88
Subtotal	**61**	**19**	**80**	**60**	**80**	**140**	**10**	**50**	**60**	**280**
13:00	11	4	15	12	15	27	6	10	16	58
13:15	17	5	22	11	21	32	4	21	25	79
13:30	12	2	14	17	18	35	18	13	31	80
13:45	24	1	25	19	33	52	17	17	34	111
Subtotal	**64**	**12**	**76**	**59**	**87**	**146**	**45**	**61**	**106**	**328**
14:00	16	4	20	18	12	30	13	24	37	87
14:15	17	3	20	15	13	28	6	22	28	76
14:30	23	5	28	12	21	33	4	22	26	87
14:45	30	8	38	25	19	44	5	22	27	109

C:\Documents and Settings\brianf\My Documents\WinTally Data\Airway Ave - Lincoln Rd.wtd

Printed: 05/23/11 at 08:44
WinTally v2.5.0.2

Burleigh County Hwy Dept
Standard Report

Location: Airway Ave & Lincoln Rd
Unit ID:
Study Date: Thursday May 19, 2011
Interval: 15 minutes

Vehicles

	Southbound			Westbound			Northbound			Grand
	Left	Thru	Total	Left	Right	Total	Thru	Right	Total	Total
Subtotal	**86**	**20**	**106**	**70**	**65**	**135**	**28**	**90**	**118**	**359**
15:00	19	7	26	16	17	33	9	26	35	94
15:15	21	3	24	21	6	27	7	34	41	92
15:30	30	6	36	20	19	39	9	45	54	129
15:45	44	4	48	18	20	38	3	39	42	128
Subtotal	**114**	**20**	**134**	**75**	**62**	**137**	**28**	**144**	**172**	**443**
16:00	30	2	32	9	27	36	10	33	43	111
16:15	30	6	36	18	19	37	9	42	51	124
16:30	32	3	35	31	24	55	7	40	47	137
16:45	58	10	68	23	19	42	5	47	52	162
Subtotal	**150**	**21**	**171**	**81**	**89**	**170**	**31**	**162**	**193**	**534**
17:00	48	12	60	18	13	31	2	57	59	150
17:15	62	9	71	20	41	61	6	59	65	197
17:30	56	5	61	25	32	57	4	46	50	168
17:45	45	6	51	29	15	44	2	47	49	144
Subtotal	**211**	**32**	**243**	**92**	**101**	**193**	**14**	**209**	**223**	**659**
18:00	3	0	3	2	2	4	0	3	3	10
Total	**924**	**226**	**1150**	**1211**	**1112**	**2323**	**237**	**937**	**1174**	**4647**
Intersection %	19.9	4.9	24.7	26.1	23.9	50.0	5.1	20.2	25.3	100.0
Approach %	80.3	19.7	100.0	52.1	47.9	100.0	20.2	79.8	100.0	-
Total Approach %	80.3	19.7	100.0	52.1	47.9	100.0	20.2	79.8	100.0	-
Peak Hour	16:45	16:45	16:45	07:15	07:00	07:15	13:30	16:45	16:45	07:15
Peak Total	224	36	260	346	226	566	54	209	226	697
Peak Factor (PHF)	0.9	0.8	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.5

Directional -

Jennifer Hanley

From: Johnston, Robert W. <rjohnsto@nd.gov>
Sent: Monday, May 23, 2011 11:11 AM
To: Hall, Marcus J.; Steve Grabill; Ehreth, Ben J.; Brad Krogstad; Doug Shconert; John Hale; Levi, Kevin J.; Berg, Mark A.; Robert Johnston ; Hanson, Stacey M.; Stephanie Hickman; Saunders, Steve L.; Steven Urlacher
Cc: Steve Windish
Subject: RE: Lincoln Road Corridor Study

Categories: Filed by Newforma

OK. Thank you.

Bob

From: Hall, Marcus J.
Sent: Monday, May 23, 2011 10:31 AM
To: 'Steve Grabill'; Ehreth, Ben J.; Brad Krogstad; Doug Shconert; John Hale; Levi, Kevin J.; Berg, Mark A.; Robert Johnston ; Johnston, Robert W.; Hanson, Stacey M.; Stephanie Hickman; Saunders, Steve L.; Steven Urlacher
Cc: Steve Windish
Subject: RE: Lincoln Road Corridor Study

I just wanted to pass the following information along to all of you. On Thursday May 19 Burleigh County conducted a 12hr turn movement count at the intersection of Airway Ave and Lincoln Road. The one big question that I had was regarding the right and left turn movement from westbound Lincoln Road on to Airway Ave.

The answer to that question is 52.1% turn left (and go south) and 47.9% turn right (and go north). With this in mind putting extended right and left turn lanes at this intersection appears to be the right way to go.

Marcus J. Hall P.E.
Burleigh County Engineer
701-221-6870

Appendix 3

Public and Agency Involvement

Project Scoping Meeting Summary
Bismarck Mandan MPO
Lincoln Road Corridor Study
October 6, 2010
4:15 p.m.

Attendees

Ben Ehreth, Bismarck-Mandan MPO
Robert Johnston, Lincoln Mayor
Jon Hale, Lincoln Police Chief
Marcus Hall, Burleigh County Engineer
Dennis Johnson, NDDOT
Stacey Hanson, NDDOT
Stephanie Hickman, FHWA
Steve Windish and Steve Grabill, Ulteig Engineers

Meeting Summary

The meeting was scheduled to obtain initial project input from Committee members, and to coordinate early project activities. Project tasks and the levels of effort were reviewed in order to clarify Committee expectations and to promote a solid start to the project. Project start-up efforts were reviewed with Committee members. Meeting handouts are attached.

1. Introductions

Mr. Windish opened the meeting at 4:20 p.m. and introductions were made. Mr. Grabill attended via video conference.

2. Discuss Key Project Goals and Desired Outcomes
    a. Multimodal Facilities

    Discussion focused primarily on pedestrian and bicycle needs. It appears that at the time of the traffic counting, pedestrian traffic has been considerably reduced from peak summer time. The majority of pedestrian/bicycle movements along the corridor are to and from the new Cenex convenience store. The existing roadway does not have adequate facilities. The group consensus is to have pedestrians separated from the vehicular traffic. Though maybe wider shoulders should be considered for bikeways.

    ATV traffic has been considerably reduced. ATV traffic is in the south ditch. The primary concern of ATV traffic is maintenance of the trail surface.

b. How to Address Future Development

Future growth of Lincoln is to the north and northeast. There are rural subdivisions to the south and east, which restricts city growth in those directions. It is not anticipated that the rural subdivisions will request annexation in the foreseeable future. Vehicle traffic may go north on 66th Street, however, the intersections of 66th Street with Apple Creek Road and Highway 10 are difficult.

It is anticipated that a school, elementary and maybe middle, will be constructed near the northeast quadrant of McDougal and Lincoln Road. Busing, parent drop off, and pedestrian movements will be included in the "future traffic" analysis.

c. Flooding Analysis

Impacts to the floodway of Apple Creek will be include in the analysis.

d. City Utility and Drainage Issues

There is no street flooding issues within the city of Lincoln. City utilities cross the corridor at right angles and should not be affected. Ulteig will coordinate with KL&J, City of Lincoln engineers.

3. Review Study Area History & Past Studies

a. Discuss Past & Potential Public Involvement Issues

There was not expected to be a major influence from the Lincoln to Bismarck connection study.

b. Platting

See Item 2.b above.

4. Review October 6, 2010 Project Progress Report

a. Traffic Data Collection and Analysis

Traffic data was collected and the raw data reviewed. Traffic counts match anecdotal evidence. Police Chief Hale mentioned that he has observed northbound traffic on 52nd Street stacking to Eckelson Road, approximately ¼ mile. Also westbound traffic can stack from Airway Avenue to the Apple Creek bridge, approximately ½ mile. Level of service was discussed. All intersections are currently functioning adequately, with northbound 52nd Street the exception. AM peak level of service is F, though not totally unacceptable for stop conditions on two legs and two legs free flow.

b. Website and City Newsletter Information
Information is to be submitted to the city clerk for inclusion in the newsletter and website. MS Word documents are preferred.

c. Preliminary Typical Sections
It is anticipated that a two lane section with turn lanes will perform adequately, including future conditions. The location of the pedestrian facilities should be separated from the vehicle traffic.

5. Review Scope of Services and Project Schedule

a.	Public Input Meeting 1	11/18
b.	Lincoln City Council	12/2
c.	Burleigh County Commission	12/6

The decision was made to keep the schedule as is. If it needs to be extended in the future, the schedule will be addressed at that time

6. Other Business
Copper Ridge Subdivision, south of Lincoln, could possibly be added to the mailing list. Ulteig is to develop a map indicating an expanded mailing list request and estimated costs submit to MPO for approval.

7. Adjourn

With no further business, the meeting was adjourned at 5:45 p.m.

Respectfully Submitted,

Steve A. Grabill

Steve A. Grabill, PE, PTOE
Ass't Project Manager

Ulteig

PLEASE PRINT

ATTENDANCE ROSTER

PROJECT Lincoln Road Corridor Study – Project Scoping Meeting

MEETING LOCATION Bismarck Planning Conference Room, Bismarck North Dakota

DATE/TIME Wednesday, August 25, 2010 4:15 PM

Name	Representing
Steve Grabill	Ulteig
Steve Windish	Ulteig
BOB JOHNSTON	LINCOLN
Steve Saunders	MPO
Marcus J. Hall	Burleigh County
BEN EHRETH	BISMARCK-MANDAN MTPO

PUBLIC INPUT MEETING

CONDUCTED BY ULTEIG ENGINEERS

on behalf of the

Bismarck-Mandan Metropolitan Planning Organization

WHEN?

Thursday, November 18, 5:30 – 7:30 p.m.
Open House at 5:30 p.m.
Formal presentation at 5:45 p.m.

WHERE?

Lincoln City Hall
74 Santee Road
Lincoln, ND

WHY?

To discuss the Lincoln Road Corridor Study

This Study of the Lincoln Road corridor between Airway Avenue and 66th Street began in September 2010. The study is scheduled to be completed by July 1, 2011. It will consider corridor issues and needs, identify improvement alternatives, examine costs and funding opportunities, and recommend short and long range solutions. The Study will plan for corridor improvements, addressing auto, pedestrian, bicycle, off-highway vehicle, and horse travel along the route. Roadway flooding will also be discussed.

City, County, and Ulteig representatives will be on hand to discuss the study and receive your input. The public is invited to attend the meeting, comment on issues and needs, and review initial corridor improvement alternatives. As the study progresses, more information will be available on the city website: http://www.cityoflincolnnd.com.

Requests for special facilities to assist persons with disabilities in the meeting should be received by November 15, 2010. WRITTEN STATEMENTS or comments about this project may be sent by December 2, 2010 to J. Steven Windish, PE, Ulteig Engineers, 1412 Basin Avenue, Bismarck, ND 58504, phone 701-355-2333, email: Steve.Windish@Ulteig.com.

AGENDA

Lincoln Road Corridor Study
Bismarck-Mandan
Metropolitan Planning Organization

Public Input Meeting 1
5:30 PM, November 18, 2010
Lincoln City Hall

1. Open House 5:30 p.m.
2. Introductions 5:45 p.m.
3. Review Key Project Goals and Desired Outcomes
   a. Multimodal Facilities
   b. How to Address Future Development
   c. Prepare for Future Roadway Improvements
   d. Flooding Analysis
   e. City Utility and Drainage Issues
4. Discuss Past Study
   a. "This is not another Lincoln to Bismarck Roadway Connection Study"
5. Review Project Status
   a. Traffic Data Collection and Analysis
   b. Website and City Newsletter Information
6. Review Project Schedule

a. Public Input Meeting 1	Tonight
b. Burleigh County Commission	12/6/10
c. Lincoln City Council	12/9/10
d. Draft Report	3/15/11
e. Final Report	7/1/11

7. PowerPoint Presentation
8. Questions and Answers 6:15 p.m.
9. Open House 6:45 p.m.
10. Adjourn 7:30 p.m.

To: File
From: Sarah Rixen
CC: Steve Windish, Steve Grabill
Date: November 23, 2010

Re: Lincoln Road Corridor Study
Summary of Public Input Meeting
November 18, 2010

A public input meeting was held November 18, 2010 at Lincoln City Hall. The meeting began at 5:30 pm with an open house. Attendees reviewed project displays and discussed project issues with staff. 36 property owners and business representatives were in attendance. The purpose of this public input meeting was to review initial corridor improvement alternatives and receive public feedback on issues and needs.

The formal presentation began at 5:45 pm. Steve Grabill opened the meeting with introductions. Mr. Grabill and Mr. Windish conducted the rest of the meeting. A PowerPoint presentation was used to present the following:

a. Multimodal Facilities
b. How to Address Future Development
c. Prepare for Future Roadway Improvements
d. Technical Responses to Past Input
e. Flooding Analysis
f. City Utility and Drainage Issues

The meeting was then opened to questions and comments from the public. The following questions or comments were made:

1. Will farm implements be able to get through roundabouts?
   We have a computer program that simulates semis going through. A roundabout would be designed to handle large truck movements.

2. Have you talked with Bismarck Parks and Rec and State Parks and Rec for a trail grant?
   Yes; we understand they are submitting a grant application. We will be contacting them to make sure we won't be planning facilities inconsistent with their plans.

3. How much is Apple Creek already exacerbating flooding?
   We haven't studied what is causing the backup. The Highway 1804 bridge narrows the channel.

4. What is your elevation going to be and where are you going to borrow dirt to finish the project?
   Elevation of the roadway hasn't been determined. The size of the bridge has not been determined. We have not done the hydrology on it; we probably won't do that detailed a hydrology study for this study. Our expectation is to give the City of Lincoln and Burleigh County level of scope and cost information to help in their decision-making, budgeting and project programming processes.

5. You're required to make a study of that for flood and present that to the water commission.
   That will be necessary when they decide to replace the bridge. But don't assume that the road will be elevated and the bridge will go in because that hasn't been determined.

6. Since the last flood, the culvert has been expanded. The new culvert hasn't been tested as far as how that flows right now anyway.
   They've put in a bigger box culvert on the west end; and it hasn't been tested. That would be done in the hydraulics study.

7. Leave the bridge and put in another culvert.

8. When that flooded, there were walls from the old lumberyard that blocked the culverts and were obstructing the flow of that bridge.

9. Take out the railroad bridge and open up the flow.
   The railroad bridge to the north is beyond the scope of this study. We can't complete an analysis of every "what if."

10. Paths, trails and plants need to sustain being under water for 2-3 weeks every year in the spring.
    If it's in the bottom of the ditch, we agree.

11. Will you put an order of magnitude in this project? What would be the cost share?
    Burleigh County will most likely be paying for most of it. We don't know if there will be an agreement between the City and Burleigh County to share costs. This study will help them move forward.

12. How much further out beyond your right-of-way does the roundabout go?
    A lot that we have been planning and designing have been fitting into 120 feet of the right-of-way. There could be some corners where you might get outside that. It depends on elevations and geometrics. It's a good question that we don't have an answer for.

13. We had a lot of shortcut problems with roundabouts in Wisconsin. Had to do some policing.

14. Is there a possibility that the south side path that will be put in will be a pedestrian path instead of ATV? Right now some go too fast (dangerous)
    Our desire is to come back with more specifics next time as to what alternatives are being considered. Ideally, we would like to have an ATV trail on the back slope further from Lincoln road because of safety issues.

15. The Lincoln Park Board would be willing to work with you on this project. We did a study in the fall of 2008 that determined the #1 priority of residents is safe multi-use trails. We ask you to take a look at multi-season use trails.
    ATVs and snowmobiles would be better on gravel surface. We want to keep pedestrians/bicycles separate from ATVs/snowmobiles.

16. The last seven words of a dying project are: "We never did it this way before." I urge you to get a sign at each end of the project saying "Ulteig Engineering – making Progress in Lincoln" so people see something is being done.

17. This should have been started 15 years ago. I constantly dodge pedestrian traffic between here and Cenex (bus driver). One of these days someone will get hurt.
    There may be some things we can recommend for immediate options; some short range options - 1-5 years; and long range.

18. Walking paths should be connected to Highway 1804 because a lot of summer school students ride their bikes to class.

19. We are in need of a walking path that's going to connect with the path from the U of Mary to Bismarck. Year after year it seems like we're always the ones left out.
    We know that a project like this is a community amenity, and it's important to us to find things the community will stand behind.

20. This is not just Lincoln's project. Also Burleigh County and the City of Bismarck have to get involved to tie it all together.

21. The Bismarck Park District is running out of places for paths in Bismarck. He should be able to put one out here.

22. I see kids pop up from underneath the bridge (fishing). Would that be encouraged or discouraged? Is it an attraction point? It's a safety issue since they're coming out of nowhere.
    Until there are improvements to the bridge, some of these things (getting facilities to Highway 1804 and elsewhere) can't happen without a pinch-point. That would be the time to address that kind of issue. Whether or not there are some short range solutions, we're all ears and we'll take this back to the committee.

23. The bottlenecks are at opposite end of the bridge (Airport Road)
    The bridge is narrow – no shoulder, no slopes. It's something we'll have to look at.

24. When the bridge went in, it was a standard county bridge. Why didn't the county put in a turning lane when they put in the box culvert? The biggest bottleneck is at the west end.

25. Will you need to reconstruct the bridge?
    It might be a phasing issue. It may not happen all at once. We are going to examine the need for facilities from 66th Street to Airway Ave.

26. Has the airport abandoned its plans to expand the runway to the southeast?
    No.

27. It's not uncommon to stop on the bridge or behind the bridge (b/c of bottleneck)

28. Give Lincoln Road the right of way. Not uncommon to have four tenths of a mile backup.
    We're hearing that too.

29. Traffic problems start when school starts.

30. What was the traffic count at the stop sign?
    Don't have that information right now. We are going to look at stop control at Airway Avenue and provide a recommendation.

31. Lincoln road will be dead just like the road to the airport. We need a permanent fix; not a bandage. How about a life-time bandage? The airport is a big issue in this whole project.

32. Is the new corridor plan to go south of Lincoln?
    That's a separate project.
33. It's foolish to put in a new bridge. That was one of the biggest issues that stopped that corridor study in its tracks 5 years ago wasn't it?
    I think it was adopted in 2006.

34. It's silly to push us out that way.
    That's what we're looking for. If you've got those kinds of feelings, it's good, because we are taking the notes but it helps if you put those in writing because that's what the County needs in its decision process.

35. Lincoln needs a wide enough road to bring traffic into town. Diversify traffic in all directions. You're only looking at one piece. What happens if that all disappears in 10 years? We're spending all this money, paying taxes again on something that's worthless.

36. Why can't they just build a road to Bismarck?

37. How soon will Lincoln build a school? Any news on that? That will affect this project.

38. Bismarck is playing a game with the City of Lincoln, bringing buses out here to fill up their schools.
    It's very likely that a school will be going up at some point. We can't do everything around the school decision. It does affect our decision-making that there's no school there now.

39. Where are they thinking of putting the school?
    At the northeast corner of McDougall Street and Lincoln Road.

40. What were the planning assumptions as far as airport runway expansion?
    That will likely happen in the future. Not tied to a timeframe – tied to an industry that needs a longer runway. We don't know when.
41. Will you be making recommendations for access points from Lincoln to Bismarck?
    No. This is just a Lincoln Road study.

42. Don't waste the money. Put a turn lane by Airport Road.

43. With the culverts on the north side and not the south side, water backs up into the ditch. Whose responsibility is it to do something to make the water drain out?
    The City of Lincoln is dealing with Burleigh County on this.

Ulteig

PLEASE PRINT

ATTENDANCE ROSTER

PROJECT: Lincoln Road Corridor Study

MEETING LOCATION: Lincoln City Hall, Lincoln, North Dakota

DATE/TIME: Thursday, November 18, 2010 @ 5:30 PM

Name	Address
WAYNE ZAHNER	59 HAWOOD DR.
Sean Johnson	6405 Preston Ln
Helen Magilke	13 Jeremiah Blvd. Lincoln
Sonia Nygaard	48 Santee Rd
Nadine Noguchi	Apple Creek Trailer Ct
Robert Rowan	34 Santee Road Lincoln ND 58504-9180
Robert Nelson	40 McDougall Lincoln
BOB JOHNSTON	21 CARLIN DRIVE

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Name	Address
Rick + Donalda Fischer	73 McDougall - Lincoln
Curt & CARMEN Wiedmeier	5355 PRAIRIEWOOD DR. Bismarck, N.D.
Dick Leftler	3131 Sussex Dr "
Greta Johnson	7160 62nd Ave SE Bis
BEN EHRETH	BISMARCK - MANDAN MPO
KAREN DALY	3 Santee
Jon Collado	5845 Prairiewood Dr
Bonnie & Leonard Bub	Bismarck
Mike Boutros	Bismarck 1151 Line Rd
KEN ROSE	Bismarck
Terry Alveshere	5315 prairiewood Bismarck
REED WESTERHAUS	47 CARLTON LINCOLN
Annette Behan-Caldwell	1003 W. St Benedict Dr - Bismarck

This information will be part of the public record included in the study report

PLEASE PRINT

Name	Address
TIM THOSEN	PO Box 991 Bismarck, ND 58502
BARRY LESMEISTER	4403 LINCOLN RD BIS N.D.
DENNY JOHNSON	NDDOT - BISMARCK
Chandra Schmidt (Cenex)	5200 Lincoln Rd.
John F Lengenfelder	4781-66 St SE Bismarck 58504
Heather Lemoine	17 McDougall Drive, Lincoln
Lance Hagen	6420 Copper Ridge Lane 58504
ROBERTA UNTIEDT	47 Carlin Dr
Michele Mindt	1108 Lakota Lane Lincoln, ND

13

This information will be part of the public record included in the study report

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Name	Address
Sara Cahlin	69 Haywood Dr
Adam Cahlin	69 HAYWOOD Dr
BRAD KRISTAD	~~[illegible]~~ 318 Duchess Dr. ~~[illegible]~~.
[signature]	8L McDonald Dr.

4

This information will be part of the public record included in the study report

Ulteig

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

November 18, 2010

COMMENT CARD
(Please return by December 2, 2010)

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Kathleen Mindt

ADDRESS (please print): 1110 Lakota Lane Lincoln, ND 58504

(Comments may also be submitted by email to: Steve.Windish@ulteig.com

I wish to offer the following comments: I would like to request that a pedestrian - bike trail be put on the South side of Lincoln Road.

If there has to be a trail for ATV's, snowmobiles, or dirt bikes it should be on the North side of Lincoln road. The houses on that side are farther away from the ditch.

We live on the South side of Lincoln road and there is so much noise from all the ATV's, dirt bikes,

over

Name and address are optional. This sheet will become part of the public record included in the Report. Please leave your comment sheet with us tonight or mail your comments by December 2, 2010 to:

J. Steven Windish, P.E.
Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

15

and snowmobiles going by in the ditch.

We can't enjoy being outside in the back yard or in front of our house because of all this noise going by in the ditch.

We also need a culvert put in the ditch on the South side of Lincoln Boulder Benton Street. the water backs up when the snow melts. It can run into the back yards. If we have a large amount of rain, the same thing can happen.

thank you.

Kathleen Mudt

Ulteig

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

November 18, 2010

COMMENT CARD
(Please return by December 2, 2010)

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Myron Mindt

ADDRESS (please print): 1110 Lakota Lane

(Comments may also be submitted by email to: Steve.Windish@ulteig.com

I wish to offer the following comments: I understand that the Lincoln road is going to be rebuilt. If it is rebuilt put a walking path on the south side so that the prople have a place to ride thier bikes and walk. Right now there is a dirt trail on the south side of the road that dirt motorcycles use. They drive for to fast and do tricks with them also, they're tearing up the ditch and making so much noise that I can not ejoy my back yard or even talk to someone in the front yard. If you need a path for the motorcycles put it on the north side of the road, the houses are farther from the road and the noise would be less.

If you rebuild the road put a cubbert in the south side of the intersection of Lincoln road and Benteen road

over

Name and address are optional. This sheet will become part of the public record included in the Report. Please leave your comment sheet with us tonight or mail your comments by December 2, 2010 to:

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Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

17

there is no way for the run off water in the ditch to go except two yards that flood by the intersection. If we get a summer down pour the houses might get water inside.

It is good for a mosquito breeding ground in this big puddle. I ask you to consider these ideas because they would make Lakota Lane a more pleasant place to live.

Myron Mindt

Ulteig

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

RECEIVED BY
NOV 22 2010
ULTEIG ENGINEERS

November 18, 2010

COMMENT CARD
(Please return by December 2, 2010)

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Robert H. ROWAN, Jr.

ADDRESS (please print): 34 Sautee Road, Lincoln, ND 58504-9180

(Comments may also be submitted by email to: **Steve.Windish@ulteig.com**

I wish to offer the following comments: Thanks for a great informative meeting this evening.

First, Lincoln Road is a very fine & well maintained Burleigh County Roadway. It serves many 1000 various type of motorized vehicles daily. Let us be thankful for Lincoln Road!

Next, the purpose of the meeting was well accomplished. There was great input.

Lincoln Road serves it's distance between Bismarck's Airway Drive & U.S. Hwy. 83 S. of Sterling. The short distance between Airway Drive & 66th St. S.E. requires modification & updating to meet present & future motor vehicular movement. This (over)

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J. Steven Windish, P.E.
Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

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project, not only will serve Lincoln City, but a fairly large geographical area.

I have a great respect for the Engineers who are exercising their great responsibility.

- Surface drainage
- Underground water flow
- buried water & sewer piping
- buried electrical & communication wires
- buried gas lines
- & more.

- The grade
- The intersections
- The off & on ramps
- The surfacing
- The traffic control signs & devices
- & more

BUILD THE ROAD!

Here is my suggestion: Please consider putting up a ULTEIG ENGINEERING SIGN at each end of the proposed project soon. The sign will inform the Lincoln geographical area that updating & improvement is in progress right now.

Ulteig

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

November 18, 2010

COMMENT CARD
(Please return by December 2, 2010)

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Michele Mindt

ADDRESS (please print): 1108 Lakota Lane, Lincoln, ND 58504

(Comments may also be submitted by email to: Steve.Windish@ulteig.com

I wish to offer the following comments: I live on the south side of Lincoln Road. Please put a pedestrian / bike path trail on the South side of Lincoln Road. I am really tired of dirtbikes, 4-wheelers, and snowmobiles driving 75-85 mph in the ditch. I have even seen drivers that are so reckless on these dirtbikes that they chase by driving on only one wheel. One of these days somebody's going to lose control. If I'm working in my backyard when they do I hope I don't get runned over. I can't even enjoy being in my backyard or front yard because these disrespectful people rev and roar their engines so loud that I can't even have a conversation with another person. You can't even hear each other talk. If there has to be a trail for ATV's, snowmobiles, (over)

Name and address are optional. This sheet will become part of the public record included in the Report. Please leave your comment sheet with us tonight or mail your comments by December 2, 2010 to:

J. Steven Windish, P.E.
Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

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and dirt bikes it should be on the North side of Lincoln Road. The houses on that side are farther away from the ditch.

As for the drainage on Lincoln Road there is a culvert on the North Side of Lincoln Road under Benteen St. There is no culvert on the south side of Lincoln Road under Benteen St. If we have a lot of snow the houses beside Benteen have had to pumper water away from their houses when the snow melts in the spring. The water backs up in the ditch because there is no culvert, Then it runs into people's back yards. When we get rain in the summer time there is a small lake on the east sid of Benteen. It's nothing but a Mosquito breeding area. I would like a culvert put in, so water can drain away.

Thank-you. Mukl Mu

Ulteig

1. Seems to be a lot of support for ped/bike/ATV trails. Some want ATV's on south side of Lincoln Road due to noise

2. Some people believe it would be a waste of money to replace the bridge & elevate Lincoln Road. (Airport Expansion)

3. Interest from the Lincoln Park Board - coordination is needed. (Their 2008 Study)

4. Interest in correcting walking path to Hwy 1804.

5. Concern over Airway Avenue Queues. + hard to get on at 52nd Street.

6. Airport is a big issue. - Is Lincoln Road a permanent fix? Improve 66th St or 48th Ave. S. instead.

7. Concerns with water backing up in ditches.

Steve Grabill

From: Steve Windish
Sent: Friday, November 19, 2010 7:33 AM
To: Steve Grabill
Subject: FW: Lincoln Road Corridor Study on Nov. 18, 2010

J. Steven Windish, PE
Associate Vice President
1412 Basin Avenue • Bismarck, ND 58504
Direct: (701)355-2333 • Mobile: (701)333-8794
Steve.Windish@Ulteig.com
http://www.ulteig.com

From: Carmen Wiedmeier [mailto:wiedmeier@bis.midco.net]
Sent: Thursday, November 18, 2010 7:38 PM
To: Steve Windish
Subject: Lincoln Road Corridor Study on Nov. 18, 2010

The following are our comments: We feel replacing the Apple Creek bridge on the West end of Lincoln Road would not be a permanent solution if and when the Airport decides to do their expansion project and therefore would be a waste of taxpayers dollars. However we would like to see a turning lane for a right turn on Lincoln Road and Airway. Improve Lincoln Road from Cenex to 66th. Put a turning Lane off of 52nd St. to make a right turn on to Lincoln Road and bullt Round abouts on Lincoln Road to 66th. We would see pedestrian walkways on Lincoln Road. Lincoln Road should be a wider Road with shoulders and turning lanes for traffic to go north and south.

My comments relate to the fact that we have been living in the Prairiewood Subdivision since the year 2000. We were the third house in this division and have seen it develop to its capacity which is about 80 to 85 homes. Also now we have another subdivision called Copper Ridge further south of us on 52nd which to my understanding when fully developed will have about 400 homes. Please consider these facts when making a decision on this project.

24

In September 2008, the Lincoln Park District surveyed residents to identify priorities as related to parks and recreation in Lincoln. The number one priority that residents expressed was for paved walking and biking trails. Residents strongly advocated these multi-use trails for purpose of safety, recreation and quality of life in Lincoln.

According to the most recent census estimates, the percentage of families in Lincoln is 20% higher than the state average. The population within city-limits alone has grown 66% since 2000 without the infrastructure to support that growth.

One of the priorities for the Park District is paving the trail in Millennium Park. However, the estimate for this is more than $88,000 – which is more than double the Park District's total annual disbursement and revenue.

It is our priority to have accessible, safe recreation spaces available in Lincoln. We are trying to work with land owners in order to secure park space north of Lincoln Road, but we feel it is essential that future plans for Lincoln Road also keep in mind resident's number one priority for recreation: safe paved walking and biking trails.

Heather Hauschild LeMoine
Member of the Lincoln Park District

17 McDougall Drive
Lincoln, ND

(701) 258-3122 home
(701) 328-5372 daytime

Lincoln Park District – 2009 Parks & Recreation Survey

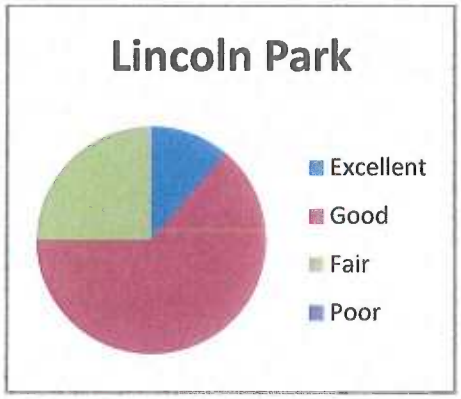
Purpose and Methodology

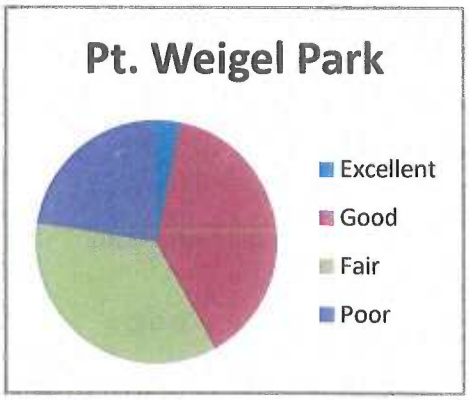
September 2008, the Lincoln Park District included a resident survey with the water billing. Approximately 800 surveys were mailed and 45 paper surveys were returned including one letter and there were two online responses. This is a 5.8% participation average. (Responses of 5-10% are typical for non-incentivized surveys.)

The purpose of this survey was to identify resident priorities as related to parks and recreation in Lincoln. Information will be used for the 2010 strategic plan of the Lincoln Park District.

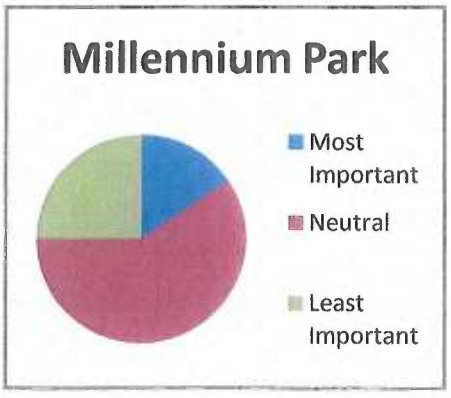
Results

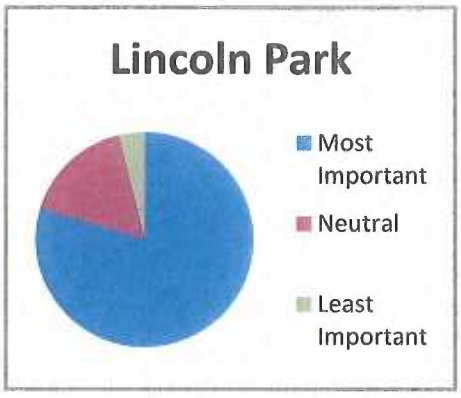
Rate Lincoln's park facilities

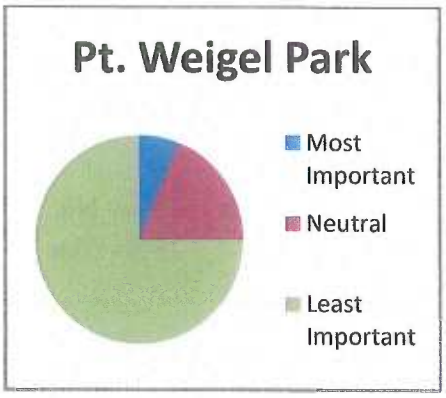




Rank importance of park facilities

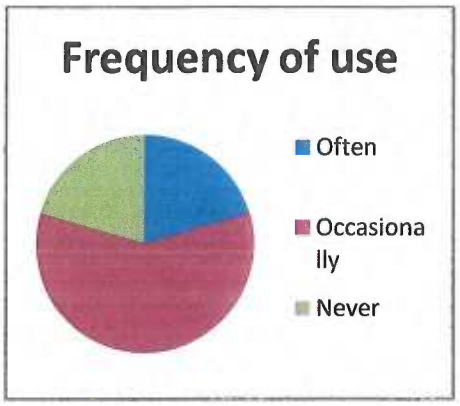






Needs assessment

1. Paving the walking/bike path in Millennium Park
2. Swimming pool
3. Playground equipment for young children; playground in Millennium Park
4. Safety in the parks
5. Recreation (things to do)
6. Monitoring and repairing broken equipment; maintenance of grounds; update old playground equipment
7. Invest in Millennium Park – soccer/football field, volleyball court
8. Frisbee golf course signage
9. A park north of Lincoln Road
10. Basketball court/net on slab in Pt. Weigel Park
11. New bags for softball infield
12. Resurface basketball court in Lincoln Park
13. Ice skating rink
14. Outdoor archery range
15. Tables and chairs in the Millennium Park gazebo
16. Dog park



Past participation

Within the past year	72% - No
	28% - Yes
Horseshoes	12%
Karate	6.3%
Softball	42%
Other	walking and activities outside of Lincoln listed

Top Five Priorities

1. Walking/jogging paths
2. Playground equipment for toddlers/young children
3. Playground equipment for youth/older children
4. Indoor facilities
5. Teen programs

Needs assessment

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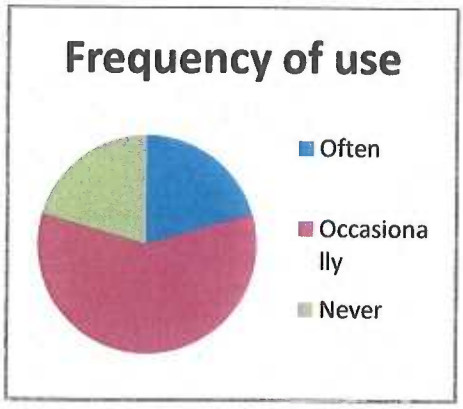

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Top Five Priorities

1. Walking/jogging paths
2. Playground equipment for toddlers/young children
3. Playground equipment for youth/older children
4. Indoor facilities
5. Teen programs

Top Five Interests

1. Fitness classes
2. Family game night
3. Hunting clinic
4. Photography workshop
5. Softball tournament

Demographics of Lincoln		**Of Survey**
2008 population:	2,733	
Median age:	27.4 (state average 36.2)	26.8
Average household size:	3.3	2.85
Family households:	85.8% (state average is 64.6%)	

July 2009 = 2,876

+ 166.2% since 2000

Josh Kueber

From: sales@openroad-honda.com
Sent: Friday, November 19, 2010 12:20 PM
To: Steve Windish
Cc: Brian Bitner
Subject: Lincoln road Corridor Study
Attachments: Annette Behm-Caldwell.vcf

Categories: Filed by Newforma

Good Afternoon Steve -

I attended the public hearing last night but was unable to stay after 7 pm to submit my comments.

Burleigh County Commissioner Brian Bitner and myself are the coordinators of the OHV/Snowmobile park that is under development at the Missouri Valley fairgrounds. As was noted at the meeting, phase 2 of the park will be connecting trails from the fairground riding area to Lincoln. We are aware that there are some ATV issues in Lincoln and want to direct the ATV/dirt bike traffice to an organized riding area away from homes.

We would welcome the opportunity to be part of the Lincoln Road Study. It's in the best interest to create OHV trails that can be sustained and help improve the safety of all those who use that travel corridor.

Please let me know what information you need for the study.

Thanks

Annette Behm-Caldwell
Open Road Honda
701-663-4023
Sales@OpenRoad-Honda.com

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Josh Kueber

From: Jon Collado <jkca@bis.midco.net>
Sent: Saturday, November 20, 2010 6:45 PM
To: Steve Windish
Subject: Lincoln Road Corridor Study

Categories: Filed by Newforma

Thank you for the opportunity to comment on the Lincoln Road Corridor Study.
I support the concept of additional turn lanes in order to reduce delays and improve safety. I also support creating bike paths. I bicycle on Lincoln road in order to get to the Hwy 1804 bike path and into Bismarck.

Jon Collado
5845 Prairiewood Drive
Bismarck ND, 58504

31

Josh Kueber

From: Tim Thorsen <tthorsen@nd.gov>
Sent: Wednesday, November 24, 2010 10:25 AM
To: Steve Windish
Cc: 'Gregory Haug'; 'Galvan, Melissa A.'; 'Daniel Rak'
Subject: Comments: Lincoln Road Corridor Study

Categories: Filed by Newforma

Steve:
I attended the input meeting November 18, 2010. The purpose of this email is to provide input to the Lincoln Road Corridor Study. Our comments:

- Any adjustments to Lincoln Road including the bridge must be implemented so that that backup flood water from Apple Creek does not increase the volume of flood water backing up onto Bismarck Airport. Ideally, improvements would improve water flow and reduce backup of water North of Lincoln road.
- Please include Bismarck Airport in any discussion or proposal that impacts right of way on or across airport property.
- Please include Bismarck Airport on your invite list for future public meetings.

TN
Timothy J. Thorsen
Airport Operations Manager
Bismarck Airport
PO Box 991
Bismarck, ND 58502
Phone: (701) 355-1808
Fax: (701) 221-6886
E-mail: tthorsen@nd.gov

32

Josh Kueber

From: Tim Thorsen <tthorsen@nd.gov>
Sent: Wednesday, November 24, 2010 1:49 PM
To: Steve Windish
Subject: RE: Flood map

Categories: Filed by Newforma

Steve:
If you are willing to show them to the public in a public meeting I am not sure why you will not provide them to me after the fact. What to do?
TN

Timothy J. Thorsen
Airport Operations Manager
Bismarck Airport
PO Box 991
Bismarck, ND 58502
Phone: (701) 355-1808
Fax: (701) 221-6886
E-mail: tthorsen@nd.gov

From: Steve Windish [mailto:Steve.Windish@ulteig.com]
Sent: Wednesday, November 24, 2010 10:36 AM
To: 'Tim Thorsen'
Cc: Steve Grabill
Subject: RE: Flood map

Tim

Those images are more "for informational purposes" only. The actual elevations where not calculated. And the flood elevation is dependent on the channel slope, all we were showing were lines of equal elevation. They are generally close, but not close enough. To be accurate, the Corps of Engineers model would have to be run to give accurate flood elevations.

J. Steven Windish, PE
Associate Vice President
1412 Basin Avenue • Bismarck, ND 58504
Direct: (701)355-2333 • Mobile: (701)333-8794
Steve.Windish@Ulteig.com
http://www.ulteig.com

From: Tim Thorsen [mailto:tthorsen@nd.gov]
Sent: Wednesday, November 24, 2010 10:28 AM
To: Steve Windish
Subject: Flood map

33

Steve:
During your Lincoln Road Presentation you showed 3 slides of flooding north of Lincoln Road. Can you send me those points or the whole presentation slide file so I can look at those slides.

TN
Timothy J. Thorsen
Airport Operations Manager
Bismarck Airport
PO Box 991
Bismarck, ND 58502
Phone: (701) 355-1808
Fax: (701) 221-6886
E-mail: tthorsen@nd.gov

Josh Kueber

From: Johnson, Sean M. <smjohnson@nd.gov>
Sent: Friday, December 03, 2010 1:00 PM
To: Steve Grabill
Cc: Bitner, Brian D.
Subject: Lincoln Road Study Comments

Categories: Filed by Newforma

Steve-

Thank you for an excellent presentation on the Lincoln Road study last month. Below are my comments for consideration:

- The primary focus of any corridor change needs to be ensuring access during flooding. This is a matter of Public Safety.
  - When Apple Creek floods, it cuts off 66th St near Apple Creek Rd, much of Apple Creek Rd between 66th and 82nd, in addition to Lincoln Road.
  - It is not feasible to ensure fold access on all these routes, but what would work during the limited times when the creek is flooding is ensuring Lincoln Rd access to Airway.
  - Traffic from the east normally using Apple Creek Rd can divert down 92nd to Lincoln Rd and in.
  - Traffic normally going north on 66th can also detour down Lincoln Rd
- The issues of congestion on Lincoln Rd I feel are a little overly dramatized.
  - I have driven this road at all hours of commute times and they in no way compare to what true traffic jams are in an urban area. Major changes in road widths are not warranted for this reason alone
  - The idea of a roundabout can help keep traffic moving during times of higher usage. I have used these in Europe, they don't take long to get used to, and they keep traffic (often much more congested than here) flowing nicely and safely.
    - I agree with one for the Lincoln Rd-52nd St intersection, as detailed in your presentation
    - I think they should also be considered at Lincoln Rd and Airway, as well as 66th and Lincoln Rd. One at Airway specifically would most likely relieve the congestion concerns of users in a very cost effective manner and with minimal corridor changes
- Airport runway expansion concerns as they pertain to eliminating Airway Ave
  - In reality, this is a red herring.
  - Any runway expansion will need to be justified, and they only justification would be larger aircraft needing to access the NPCC
  - The NPCC is a bust, and unfortunately the taxpayers of Bismarck are paying for this failure (a matter for another forum)... but it is not going to be what it was ever envisioned to be by the economic development crowd
  - Future aircraft designs (be they passenger or cargo) will most likely need the same or less runway as aeronautical engineering continues to evolve.
  - Bottom line.... there is no justifiable reason for the airport to expand their runway now or in the foreseeable future. Holding Airway Ave (and thus Lincoln Rd) "hostage" as a future planning concern no longer is justified either
- Storm water drainage from developments south of Lincoln through the city and into ditches, terminating at Apple Creek
  - Currently the drainage for storm water (specifically snowmelt) out of Prairiewood 2nd Estates partially enters the City of Lincoln drainage system and terminates at Apple Creek via ditches along Lincoln Rd

- This system is extremely insufficient in that the culvert sizes in PW2 cannot efficiently move runoff. The county is considering upsizing these culverts out of necessity. Any Lincoln Rd study issues as they pertain to flooding and drainage need to take into account this need and the possibility for larger culverts in the south

Thx again for a very informative presentation!

Sean M. Johnson
6405 Preston Loop
Bismarck, ND 58504
701-391-5326

"One man with courage is a majority"
Thomas Jefferson

Lincoln debates using roundabout

- Story
- Discussion

By LEANN ECKROTH Bismarck Tribune | Posted: Saturday, January 9, 2010 2:00 am | (9) Comments

Font Size:

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Larger font size

The Lincoln City Council this week weighed using a roundabout for 52nd Street and Lincoln Road

Steve Windish of Ulteig Engineers presented the concept Thursday after Mayor Glenn Christmann invited him. Discussion of its use is in the early stages.

According to Windish, a roundabout is a circular intersection where vehicles travel around a center island in a counter-clockwise direction.

Steve Grabill of Ulteig said the roundabouts are typically safer than the typical intersection. "They are shown to reduce fatal crashes," he said.

Windish said with roundabouts, traffic simply merges to the right.

"They are designed to reduce the number and severity of collisions, as well as provide traffic operational efficiencies," Windish said.

Some council members were uncertain how the design would fit if the Bismarck Airport were to expand.

They are not found often in central and western North Dakota, but are beginning to appear in Grand Forks and Fargo, and Minnesota.

"I think it would be viable if there is a traffic flow need for it. If they're going to close the roads eventually with an airport expansion, is it worth putting money into that spot now?" council member Steve Urlacher asked.

"The only issue I am aware of is the Cenex Store going in there and 52nd Street and the .. . development south of Lincoln ... There is a lot more traffic coming in there. With a service station there, you're going to have traffic three ways trying to head west," he said.

Urlacher said if a roundabout is placed there, he wants it well lit and to have visible signs explaining it.

Christmann was absent from Thursday's meeting.

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Windish said the amount of right of way needed to construct a roundabout varies from site to site. "In some cases, they require more space ; in other locations, they need fewer lanes and leave more room for boulevard improvements," he said.

Windish said other states have favored the design because:

n They are safer for motorists and pedestrians.

n They slow intersection speeds.

n There is better sight distance.

n Drivers only need to look in one direction.

n They result in fewer collisions.

n There are fewer injuries and fatalities.

n There is less property damage.

Windish and Grabill said studies show roundabouts calm drivers, reduce vehicle delays from 62 percent to 74 percent, and are "greener" because motorists use less fuel and are delayed less.

He said replacing traffic signals and stop signs with roundabouts cuts emissions from 32 percent to 42 percent.

Windish said roundabouts have been discussed for the intersection of 71st Avenue and 66th Street and 43rd Avenue and Washington Street.

Ben Ehreth, planner for the Bismarck-Mandan Metropolitan Planning Organization, said Friday said the MPO Policy Board will be asked to pursue a roundabout study for Lincoln through Burleigh County.

"We're willing to look at it. It needs more analysis," Ehreth said. "They're not for everywhere." He said no funding has been dedicated to roundabouts in a study at this time.

Utility rates

In separate action, the city council increased water rates from $3.35 to $3.50 per thousand gallons. They will help pay for water rate increases incurred from Bismarck. The city provides water for Lincoln.

Street lights rates were reduced from $2.55 to $1.75 per month.

Deputy city auditor Roberta Unterseher said the city council temporarily raised the rates from $1.55 to $2.55 per month for one year to build up its street light fund for future projects.

(Reach reporter LeAnn Eckroth at 250-8264 or leann.eckroth@bismarcktribune.com)

Posted in Local on *Saturday, January 9, 2010 2:00 am*

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BURLEIGH COUNTY COMMISSION

Lincoln, Ft. Rice, Riverview, Burnt Creek, Lyman and Phoenix Unorganized Townships

MEETING AGENDA

DECEMBER 6, 2010

BAKER MEETING ROOM

CITY\COUNTY OFFICE BUILDING

5:00 P.M. Invocation by Law Enforcement Chaplain

1) Call to order, approval of the November meeting minutes, vouchers, journal vouchers, and filing fee reports.

2) Scott Wegner, Bond Attorney -Cook Wegner PC, regarding 2007 Bismarck Cancer Center MIDA Bond - Loan Agreement Amendment.

3) Dave Patience, Swenson & Hagen Co., regarding request of Burleigh County to "Quit Claim" any interest Ottawa Street right of way adjacent to Sonnet Heights 5th Replat to the City of Bismarck.

4) Steve Windish, Ulteig Engineers, regarding Bismarck-Mandan MPO update of Lincoln Road Corridor Study.

5) Community Development Director Hokenstad:
   a) Consideration of request of Burleigh County Highway Dept for a zoning change from A-Agricultural to P-Public for the SE1/4, Sec4, T139N, R79W (Gibbs Twp).

6) County Engineer Hall:
   a) Monthly report.

7) Sheriff Heinert authorization to purchase patrol cars from state bid.

8) Auditor\Treasurer Glatt:
   a) Introduction of Deputy Auditor\Tax Director Vietmeier,
   b) Abatements for the Board's consideration.

9) Other Business:
   a) Re -appointment of County Appointed Officials/ Department Heads:
   County Physician\County Coroner, Veterans Service Officer, Tax Equalization Director/County Assessor, County Engineer, County Road Superintendent, County Agent, Safety/Risk Management Director/Human Resource Director, Disaster Preparedness Director, Social Service Director,
   b) Consideration of BOARD APPOINTMENTS:
      Region VII Human Service Council (2) - 2yr terms,
      County Weed Board (1) - 4yr term,
      Dakota Prairie RDC (1) – 1 yr term.

10) Consent Agenda: Lost Instrument Surety Bonds \ Raffle permit application(s).

11) Adjourn.

Sincerely,

Kevin J. Glatt
Burleigh County Auditor\Treasurer

BismarckTribune.com

Corridor options considered

LeAnn Eckroth/Bismarck Tribune | Posted: Wednesday, December 8, 2010 12:27 pm

Work continues on the Lincoln Road Corridor Study from Airway Avenue to 66th Street. It is intended to help ease traffic congestion for commuters, tackle flooding issues and improve pedestrian access for the next 25 years and beyond.

A study update will be given the Lincoln City Council at 7 Thursday night at the Lincoln City Hall.

The $110,000 study's cost is being paid with 80 percent of federal transportation dollars given to the Bismarck-Mandan Metropolitan Planning Organization, and 20 percent shared by Burleigh County and the city of Lincoln.

Steve Grabill, senior transportation engineer for Ulteig Engineers, briefed the Burleigh County Commission this week about what changes people want on the corridor.

He expects to hold another public input meeting about improvement options in mid-February. Ulteig will continue to develop alternatives through July.

Grabill found most attending input meetings were concerned about traffic congestion from Airway Avenue at the bridge crossing. "We've observed some traffic backups at 52nd Avenue, trying to get onto Lincoln Road," Grabill said.

At this time, the study does not recommend a new road to ease traffic, Grabill said. "We're looking at the addition of turn lanes at Airway Avenue, 66th Street and certain intersections."

He said many opposed an option to raise the road out of the flood plain bridge west to Airway Avenue. "We had talked about perhaps raising the bridge over Apple Creek, elevating the west end of Lincoln Road so when it floods they would have access using that corridor," he said.

At the input meetings, he found people were concerned about the Bismarck Airport expanding in the future and if raising the road was practical if those plans proceed. Grabill said there are no immediate plans to grow the airport, but expansion is identified in a master plan.

"They said investing in another long-term corridor for the city of Lincoln would be better," Grabill said. "Most thought improvements to Lincoln Road were needed on the east end."

He said many at input meetings wanted pedestrian-bicycle and ATV facilities for that section of road. "We have plans to meet with individuals who want to plan an ATV trail along the railroad bed that crosses Lincoln Road," Grabill said.

He said pedestrian access would be a bigger priority along existing Lincoln city boundaries between 66th and 52nd streets. These are a higher priority than bike paths to comply with federal Americans with Disability Act requirements. Bike paths might be eligible for federal Transportation Enhancement funds in the future, Grabill said.

Commissioner Doug Schonert asked about a roundabout considered for the 66th Street-Lincoln intersection. Grabill said if one is placed there, its right-of-way would be able to handle farm implements and semis coming through the corridor.

Burleigh County and Lincoln city officials will decide what road improvements will be made, Grabill said.

To view study updates, go to www.cityoflincolnnd.com or call Steve Windish at the Bismarck Ulteig office at 355-2333.

(Reach reporter LeAnn Eckroth at 250-8264 or leann.eckroth@bismarcktribune.com)

Josh Kueber

From: Brad Krogstad <brad.krogstad@kljeng.com>
Sent: Tuesday, January 04, 2011 2:03 PM
To: Steve Windish
Cc: Steve Grabill; Jon Olson
Subject: RE: Lincoln Road Corridor Study
Attachments: 20100104-LincolnRdCorridor-Utilities-toUlteig.pdf

Categories: Filed by Newforma

Steve,

Attached is the map that Jon requested this afternoon. Some of the information on it has been surveyed, some is from engineering plans, and some is from field visits. It would not be good enough information to design off of but should be acceptable for your planning purposes.

Thanks,

Brad Krogstad, PE
Kadrmas, Lee, & Jackson, Inc.
701-355-8437

From: Steve Windish [mailto:Steve.Windish@ulteig.com]
Sent: Tuesday, January 04, 2011 11:27 AM
To: Brad Krogstad
Cc: Steve Grabill; Jon Olson
Subject: Lincoln Road Corridor Study

Brad

Do you have any information regarding city utilities and right of way/plats in regard to the corridor study?

Thank you

J. Steven Windish, PE
Associate Vice President
1412 Basin Avenue • Bismarck, ND 58504
Direct: (701)355-2333 • Mobile: (701)333-8794
www.ulteig.com

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AGENDA

Lincoln Road Corridor Study
Bismarck-Mandan
Metropolitan Planning Organization

Study Review Committee
4:00 PM, February 9, 2011
Ulteig Engineers Bismarck Office

1. Introductions
2. Discuss Project Status and Alternatives (PowerPoint)
3. Review Preliminary Cost Estimates
4. Review Scope of Services and Project Schedule
5. Consider Date, Time and Advertisement for 2nd Public Meeting
    a. Information for City Newsletter
6. Other Business
7. Adjourn

Ulteig

PLEASE PRINT

ATTENDANCE ROSTER

PROJECT Lincoln Road Corridor Study – Project Steering Committee Meeting

MEETING LOCATION 1st Floor Conference Room, City/County Building Bismarck North Dakota

DATE/TIME Wednesday, February 9, 2011 4:00 PM

Name	Representing
Steve Grabill	Ulteig
Steve Windisch	Ulteig
Mark A Berg	City Bismarck
Steve Saunders	MPO
Marcus J. Hall	Burleigh County
BEN EHLERT	BISMARCK-MANDAN MPO
MARCEC SIM	LINCOLN PD
J.J. Hall	Lincoln PD
BRAD KRECKSTAD	LINCOLN CITY ENGR.
Stacey Hanson	NDDOT
BOB JOHNSTON	LINCOLN MAYOR

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Steve Grabill

From: Steve Windish
Sent: Tuesday, February 22, 2011 7:39 AM
To: Steve Grabill
Subject: Lincoln road corridor study, Bismarck tribune today

Lincoln Corridor Study meeting scheduled

By LEANN ECKROTH/ Bismarck Tribune | Posted: Monday, February 21, 2011 3:18 pm

A study under way intended to ease traffic congestion along the Lincoln Road will get another look by the residents it would impact most.

A public input meeting about the Lincoln Corridor Study will be held March 15 at the Lincoln City Hall. The event, hosted by Ulteig Engineers, will begin at 5:30 p.m.

Steve Grabill, lead transportation planner for Ulteig, said documents listing possible options for corridor upgrades will be posted Friday at www.cityoflincolnnd.com.

Despite heavy weekday traffic congestion, Grabill said there are no plans to add another roadway in the five -to 20-year study of traffic alternatives. "The study is to look at Lincoln Road," Grabill said.

He said the study will "look at intersection improvements, sidewalks, and bicycle and ATV trail improvements."

"We are looking at potentially adding turn lanes along intersections along the corridor. Traffic controls or roundabouts are being considered at Airway Avenue, 52nd Street and 66th Street intersections," he said.

Another option would add a curve for throughway traffic for Airway Avenue, Grabill said.

Input so far doesn't favor raising the road out of the flood plain between Apple Creek Bridge and Airway Avenue, said Grabill. He said residents believe the Bismarck Airport runway will be extended in the future and mean closing parts of Airway Avenue to traffic. "The public felt there were better improvements to make," Grabill said.

The $110,000 study is being funded through 80 percent federal dollars given through Bismarck Metropolitan Planning Organization and the balance shared between Burleigh County and the city of Lincoln.

He said other public input meetings will be announced before the final draft is presented to the county, city of Lincoln and the MPO.

Ulteig
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Associate Vice President
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Direct: (701)355-2333 • Mobile: (701)333-8794
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State of North Dakota) SS County of Burleigh
Before me, a Notary Public for the State of North Dakota personally appeared CK who being duly sworn, deposes and says that he (she) is the Clerk of Bismarck Tribune Co., and that the publication (s) were made through the Bismarck Tribune on the following dates: 2/28. Signed Cathie Hunt
sworn and subscribed to before me this 4th day of March 20 11
Notary Public in and for the State of North Dakota

GREGORY P. ZIEGLER
Notary Public
State of North Dakota
My Commission Expires July 22, 2015

PUBLIC INPUT MEETING

MEETING TOPIC
Lincoln Road Corridor Study
Preliminary Corridor Alternatives

WHEN?
Tuesday, March 15, 5:30 – 7:30 p.m.
Open House at 5:30 p.m.
Formal presentation at 5:45 p.m.

WHERE?
Lincoln City Hall
74 Santee Road
Lincoln, ND

This Study is being conducted by Ulteig Engineers on behalf of the Bismarck-Mandan Metropolitan Planning Organization. It addresses the Lincoln Road corridor between Airway Avenue and 66th Street and is scheduled to be completed in July 2011. It will consider corridor issues and needs, identify improvement alternatives, examine costs and funding opportunities, and recommend short and long range solutions. The Study will plan for corridor improvements, considering auto, pedestrian, bicycle, off-highway vehicle, and horse travel along the route.

City, County, and Ulteig representatives will be on hand to discuss preliminary corridor improvement alternatives and to receive your input. The public is invited to attend the meeting and comment on the alternatives. Pictures of the alternatives are available on the city website http://www.cityoflincolnnd.com.

Requests for special facilities to assist persons with disabilities in the meeting should be received by March 8, 2011. **WRITTEN STATEMENTS** or comments about this project may be sent by March 21, 2011 to J. Steven Windish, PE, Ulteig Engineers, 1412 Basin Avenue, Bismarck, ND 58504, phone 701-355-2333, email Steve.Windish@Ulteig.com.

2/28 - 606396

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Date_____
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AGENDA

Lincoln Road Corridor Study
Bismarck-Mandan
Metropolitan Planning Organization

Public Input Meeting 2
5:30 PM, March 15, 2011
Lincoln City Hall

1. Open House 5:30 p.m.

2. Introductions 5:45 p.m.

3. Review Input From 1st Public Meeting (Sampling of Feedback)
   a. Improvements needed at Airway Avenue
   b. Improvements needed at 52nd Street
   c. Concerns were raised regarding possible roundabout alternatives
   d. Most people opposed to Lincoln Road grade raise
   e. Varied opinions pertaining to bridge replacement
   f. ATV's cause noise issues – move ATV trail to north side of road
   g. Walking path along Lincoln Road is needed
   h. How much will it cost and who will pay for it?
   i. People need to see evidence things are being done – signing?

4. PowerPoint Presentation

   a. Review Preliminary Alternatives

   b. Review Project Schedule

      i. Public Input Meeting 2 — Tonight
      ii. Draft Report on Website — Late April
      iii. Public Input Meeting 3 — Early May
         1. Review Draft Report
      iv. Lincoln City Council Hearing — June
      v. Burleigh County Commission Hearing — June
      vi. MPO Acceptance — June

5. Questions and Answers 6:15 p.m.

6. Open House 6:45 p.m.

7. Adjourn 7:30 p.m.

City Website: www.cityoflincolnnd.com

To: File
From: Jessica Keller
CC: Steve Windish, Steve Grabill
Date: March 23, 2011

Re: Lincoln Road Corridor Study
Summary of Public Input Meeting #2
March 15, 2011

A public input meeting was held March 15, 2011 at Lincoln City Hall. An open house was conducted at 5:30 followed by a formal presentation at 5:45 p.m. Introductions were made. Mr. Grabill and Mr. Windish conducted the rest of the meeting. A PowerPoint presentation was provided. Mr. Grabill reviewed the following comments received from the 1st public meeting:

a. Improve intersection of Airway Ave.
b. 52nd St. intersection traffic delays
c. Not really sure if they like roundabouts
d. Not best investment for County to raise Lincoln Road out of Flood Plan
e. Bridge issues
f. ATV trail on south side – move to north side
g. Better walking/bicycling along the corridor
h. Concern about costs
i. Need evidence that things are going to be done

The meeting was then opened to questions and comments from the public at 6:15pm. The following questions or comments were made (responses are in *italic*):

1. What condition is the bridge in?
   Marcus Hall, County Engineer stated the bridge is not structurally in need of replacement.

2. But there are width issues?
   Yes, it has no shoulders and vertical sight distance is an issue.

3. Oppositions to roundabouts were mentioned earlier in the presentation; what are they?
   How well they operate in heavy snow. Single lane works very well, multi-lane a little less.

4. They (roundabouts) seem to work well.
   For the traffic volumes we are looking at they could work better than signals. Signals require people to stop whereas roundabouts typically allow more steady traffic flow.

5. When is doing what's right the most important factor?
   Technical staff looked at what is technically best. It is often difficult to weigh public comments into the technical decision. That is often addressed by the elected officials.

6. How are you going to weigh alternatives? In some cases you aren't showing any alternatives.

City/County priorities – how does the project fit into the budgets & priorities. Need to take into account public comments as well as technical.

7. Why is the alternative to dead end into the airport or go north? It's quicker to go south to get to south Bismarck.
   Runway extension will be shown in the report; the sweeping curve may be presented as either a short range or a long range option.

8. Why take traffic all the way to the airport? Why not cut across at 52nd or somewhere else?
   Other alternatives could be looked at again at a later date. This study is only for the Lincoln Road corridor.

9. What does it cost?
   That information is to come later. The alternatives need to be developed first, which is what we are doing tonight.

10. Are there facts & figures for accidents going around the airport?
    There are issues along all the corridors in all directions. We are only looking at Lincoln Road.

11. The study should do a cost analysis for this project and for a different route (SEH study). The SEH report said another route was not cost effective because of a bridge. We need a road on this other corridor as well. We will give ROW along 52nd St. north to a better connection to Bismarck.
    It was decided that this project was just to look at Lincoln Road.

12. Always has been a band aid since 1990. Need something between 52nd & 66th. Look at something other than Lincoln Road & Airway Ave.

13. We can fix Lincoln Road, but that will not fix bad access to Bismarck.
    We need to hear your comments regarding what the Lincoln Road project should consist of.

14. What did the study cost?
    $110,000.00

15. Are there other studies?
    Yes

16. So in the end there is no new alternative to get to Bismarck.

17. What are the traffic counts?
    Mr. Grabill reported the counts. He displayed AM & PM peak count graphics on the PowerPoint

18. I would rather see the roundabout at Cenex.

19. When are the peak hours?

The peak hours are in the 8:00 am time frame and the 4:00 pm time frame. Traffic counts were taken for a two hour period to make sure we caught the peak hour.

20. You mentioned raising the road 10', why?
    It's an approximation. We used the top of the bridge and it is probably closer to 2'-6' in most places.

21. The City of Bismarck should be included, we have not heard from them.
    They have been involved on the Study Review Committee.

22. Mayor Johnston – The purpose of the study is to address significant traffic congestion and stacking at 52nd Street and at Airway Avenue. We also need to look at the pedestrians especially kids and how they are accessing the convenience store. This study will not address access to Bismarck.

23. Do another study on 52nd Street. Prove it is cost prohibitive.

24. Why can't stop lights be installed at 52nd, etc.?
    Steve Grabill explained federal traffic warrants keep delays to a minimum. It is a bad idea to exchange one crash type for another. Other things can be done to improve traffic & avoid liability issues.

25. Significant delays exist at 52nd Street and at Airway Avenue.
    Yes, it was observed and that's why we have prepared alternatives to address the situation.

26. Path of least resistance – if someone gets killed things will be reviewed.
    An un-warranted signal is a major liability issue.

27. At Airway Avenue, could the right turn lane be changed to a short curve?
    The steering committee looked at it and drew it up, but it was rejected. It was felt that this intersection layout would not perform safely.

Comments ended at 6:55PM. Mr. Grabill reconvened the open house. The meeting ended at 7:30 p.m.

Lincoln corridor meeting

Continued from 1B

the flood plain between Apple Creek Bridge and Airway Avenue, Grabill said. Residents believe the Bismarck Airport runway will be extended in the future, closing parts of Airway Avenue to traffic.

"The public felt there were better improvements to make," Grabill said.

The $110,000 study is being funded through 80 percent federal dollars given through Bismarck Metropolitan Planning Organization, with the balance shared between Burleigh County and the city of Lincoln.

He said other public meetings will be announced before the final draft is presented to the county, city of Lincoln and the MPO.

(Reach reporter LeAnn Eckroth at 250-8264 or leann.eckroth@bismarcktribune.com.)

Meeting set on Lincoln corridor

By LEANN ECKROTH
Bismarck Tribune

A study intended to ease traffic congestion along the Lincoln Road will get another look by the residents it would impact most.

A public meeting about the Lincoln Corridor Study will be held March 15 at the Lincoln City Hall. The event, hosted by Ulteig Engineers, will begin at 5:30 p.m.

Steve Grabill, lead transportation planner for the Ulteig firm, said documents listing possible options for corridor upgrades will be posted Friday at www.cityoflincolnnd.com.

Despite heavy weekday traffic congestion, Grabill said, there are no plans to add another roadway in the five- to 20-year study of traffic alternatives. "The study is to look at Lincoln Road," Grabill said.

The study will "look at intersection improvements, sidewalks, and bicycle and ATV trail improvements," he said.

"We are looking at potentially adding turn lanes along intersections in the corridor. Traffic controls or roundabouts are being considered at Airway Avenue, 52nd Street and 66th Street intersections," he said.

Another option would add a curve for throughway traffic for Airway Avenue, Grabill said.

Comments on the plan so far don't favor raising the road out of

Continued on 6B

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Ulteig

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ATTENDANCE ROSTER

PROJECT: Lincoln Road Corridor Study

MEETING LOCATION: Lincoln City Hall, Lincoln, North Dakota

DATE/TIME: Tuesday, March 15, 2011 @ 5:30 PM

Name	Address
Tim Myers	6400 Reilly Road
Doug Schwert	Burleigh County Comm.
Donna Held	LINCOLN
Anna Marie Backhaus	1120 Lakota Lane
Myron Mindt	1110 Lakota Lane
Bob Wilcox	83 Benteen Dr. Lincoln
BOB JOHNSTON	21 CARLIN DRIVE
Karen Daly	3 Santee

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This information will be part of the public record included in the study report

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Name	Address
Lance Hagen	6420 Copper Ridge
Donalda Fischer	73 McDougall Dr.
[illegible]	73 McDougall Dr.
DAVE SENGER	25 CARLIN DR
Nancy Schmidt	71 Berteen Dr.

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This information will be part of the public record included in the study report

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Name	Address
Gary Emineth	50 Yegen Place - Lincoln Rd
BRAD KROGSTAD	CITY ENGR - KLJ
FRED UNTERSEHER	LINCOLN
Chandra Schmidt	5200 Lincoln Rd.
Joe Herbert	5200 Lincoln Rd
City Fire	520 Lincoln Rd
Mike Helmsohn	108 N McDougall Dr
Stacey Hanson	NDDOT - Bismarck
Michele Mindt	
Mary Schmidt	71 Bentley Dr

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This information will be part of the public record included in the study report

Ulteig

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

March 15, 2011

COMMENT CARD
(Please return by March 21, 2011)

RECEIVED BY
MAR 18 2011
ULTEIG ENGINEERS

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Bob Urlacher

ADDRESS (please print): 83 Benteen Dr. Lincoln, N.D.

(Comments may also be submitted by email to: **Steve.Windish@ulteig.com**

I wish to offer the following comments: I Am In Favor of the following improvements:

I. 66th St. & Lincoln Road:

1. Stop signs on Lincoln Road, 66th become a through street. (This will help with future bypass flows)

2. Left hand turnlanes added.

3. Lighting at Intersection

II. McDougal & Lincoln Road:

1. Left hand turn lanes which include future School Crossing Plans.

2. Lighting at Intersection

III. Benteen Dr. & Lincoln Road:

1. Left hand turn Lanes

2. Lighting at Intersection

OVER

Name and address are optional. This sheet will become part of the public record included in the Report. Please leave your comment sheet with us tonight or mail your comments by March 21, 2011 to:

J. Steven Windish, P.E.
Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

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Cont.

- IV. 52nd and Lincoln Rd.:
  1. Add left hand Turn lanes.
  2. Add 4 way stop.
  3. Lighting at intersection.
  4. Persue Construction of a New Road To Bismarck Continuing North on 53rd St.

- V. Airway Ave. & Lincoln Road:
  1. Add left hand Turn lanes

  -(If a new Road North of 52nd Street is not pursued)-

  2. Add Curve and remove current intersection.

- VI. Lincoln Road:
  1. Widen and add Shoulders.
  2. Soften ditch Angles
  3. ~~End~~ Install New Box Culvert North of Milennium Park, To improve drainage
  4. Add Left hand Turn lanes.

- I am Not in favor of the Round-abouts because:
  1. Snow blockage resulting from heavy driftings.
  2. Increased Time and difficulty for County Snow Plows to Clear and manuver around.
  3. Would have to be removed, especially at 66th St. for future bypass development.

Thank you for this opportunity to Express my interests and comments.

Ulteig

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

March 15, 2011

COMMENT CARD
(Please return by March 21, 2011)

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Marvin + Nancy Schmidt

ADDRESS (please print): 71 Benton Ave.

(Comments may also be submitted by email to: **Steve.Windish@ulteig.com**

I wish to offer the following comments:

The roundabout on Airway Ave seems to be good option. Most cost effiecent, good traffic flow.

Name and address are optional. This sheet will become part of the public record included in the Report. Please leave your comment sheet with us tonight or mail your comments by March 21, 2011 to:

J. Steven Windish, P.E.
Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

58

Ulteig

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

March 15, 2011

COMMENT CARD
(Please return by March 21, 2011)

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Gary Emineth

ADDRESS (please print): 50 Yegen Plaza 5401 Yegen Pkwy

(Comments may also be submitted by email to: **Steve.Windish@ulteig.com**

I wish to offer the following comments:

Opposed to ATV - North side
opposed to going Eastward Have about
1,000' - North side
- Developing property + will stop my project
Traffic being forced on airway
going north is Not solving problem
but creating a - condemn +
Exasperates the problem -

Name and address are optional. This sheet will become part of the public record included in the Report. Please leave your comment sheet with us tonight or mail your comments by March 21, 2011 to:

J. Steven Windish, P.E.
Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

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Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

March 15, 2011

COMMENT CARD
(Please return by March 21, 2011)

RECEIVED BY
MAR 21 2011
ULTEIG ENGINEERS

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Myron Mindt

ADDRESS (please print): 1110 Lakota Lane

(Comments may also be submitted by email to: Steve.Windish@ulteig.com

I wish to offer the following comments: I attended the Lincoln Road Corridor road meeting and asked you to put a culvert in the south side of the cross roads of Benton and Lincoln roads. The south ditch is full of water today March 19. If we get a down pour of rain in the summer, two homes will be flooded. Please put a culvert in if the road is built. I would also like to have the ATV road put on the North side of Lincoln road. the noise and speed now is terrible loud, we can't sit and enjoy the back yard with all the noise. Put the walking path on ~~the~~ the south side, I would appreciate the quiet.

Name and address are optional. This sheet will become part of the public record included in the Report. Please leave your comment sheet with us tonight or mail your comments by March 21, 2011 to:

J. Steven Windish, P.E.
Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

60

Ulteig

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

March 15, 2011

COMMENT CARD
(Please return by March 21, 2011)

RECEIVED BY
MAR 2[illegible] 2011
ULTEIG [illegible]

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Michele Mindt

ADDRESS (please print): 1108 Lakota Lane, Lincoln

(Comments may also be submitted by email to: Steve.Windish@ulteig.com

I wish to offer the following comments: Again I do not want an ATV path running beside my house on the south side of Lincoln Road. Right now the ATV's, Dirt bikes, and snow mobiles are loud, chasing way too fast, and roaring their engines. If you widen Lincoln road, they are going to get even closer to my house. I can't even enjoy or visit with people in my back yard the way it is. These "vehicles" should not even be allowed in city limits. If people want to roar and chase, they should load them up and go someplace other than behind my house.

Another comment I have is why does Lincoln have to be Bismarck's playground? Why do I have to pay to make and maintain an ATV path so people from Bismarck

(over)

Name and address are optional. This sheet will become part of the public record included in the Report. Please leave your comment sheet with us tonight or mail your comments by March 21, 2011 to:

J. Steven Windish, P.E.
Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

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can come out here and tear around. When I drive on Airway Avenue, (804, and Burleigh Ave there is a pedestrian walking path). On all 3 roads there is no ATV trail. Why doesn't Bismarck and Burleigh county put an ATV path in those areas? The reason why is because the people in Bismarck are smart. They know that there will be disrespectful people that rip and tear around. The peace and tranquility they enjoy will be gone.

As far as the Lincoln Road study, the whole thing should be scrapped. We need a good 4-lane road that goes straight to Bismarck, just like the road that goes out to University of Mary. If the air port expands, the changes that would be made would be a waste of money. If the bridge is fine we don't need a new bridge. There is no sense in changing Lincoln Road when Airway Avenue is full of curves and has an extremely wicked curve where you have to slow down to 15 mph by Anderson/Western There should also be an overpass over the railroad crossing so Lincoln has good access to ambulance and fire.

I'm all for a pedestrian/ bike path that would run from Cenex to 66th st and beyond or along 66th St South.

Steve Grabill

From: Ben Ehreth <bjehreth@nd.gov>
Sent: Tuesday, March 22, 2011 11:48 AM
To: Steve Grabill; Steve Windish
Cc: 'Steve Saunders'; 'Marcus J. Hall'; 'Johnston, Robert W.'
Subject: FW: Lincoln Corridor Study

Greetings,

I received the following comment from a concerned citizen regarding the Lincoln Road Corridor Study. He indicated he was at the first public meeting and expressed the same concerns. Please ensure his comments are included with the public comment in the document for consideration.

Thanks,
Ben

From: michael boutrous [mailto:michael@boutrous.com]
Sent: Tuesday, March 22, 2011 11:29 AM
To: bjehreth@nd.gov
Subject: Lincoln Corridor Study

My Family owns a home @ 5151 Lincoln Rd, Bismarck, ND.

I am **opposed** to any government financed encouragement, or accommodation, of an ATV trail on either side of Lincoln Rd.

It is my opinion that in the future, if this area experiences growth , and progresses , that the existing ATV traffic would eventually be phased out by local ordinances.

My opinion is that the main focus of the Lincoln Corridor Study should be for the improvement of the existing road, traffic flow, safety , flooding etc...

I am not opposed to a walking/ bike trail within the corridor.

I am not opposed to trees and other landscaping in appropriate places within the corridor.

Thank you,

Mike Boutrous

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Suggestions made for traffic through Lincoln Corridor plan

By LEANN ECKROTH
Bismarck Tribune

A recent meeting on a Lincoln Corridor Study moved the process forward to help unclog commuter and other traffic over the next 20 years.

Steve Grabill, lead transportation planner for Ulteig, said the meeting resulted in "varying levels of interest in which alternatives would be preferred."

One attendee suggested extending 52nd Street north of Lincoln Road.

Turn lanes or roundabouts are still being considered for Airway Avenue and the 52nd Street and 66th Street intersections, Grabill said.

The 20-year study does not include adding another roadway to relieve traffic at this time but focuses on improvements for Lincoln Road. Another option is adding a curve for through-way traffic at Airway Avenue.

Other possibilities are to add sidewalks, bicycle and ATV trails.

The $110,000 study is being funded through 80 percent federal dollars — provided through the Bismarck-Mandan Metropolitan Planning Organization — and the rest shared between Burleigh County and the city of Lincoln.

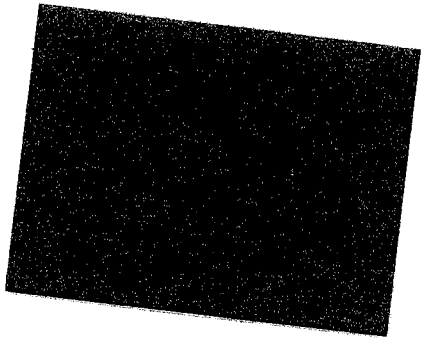
Grabill said his next step is to take all the comments received, analyze the results and draft them into a report.

More public meetings are planned for either late April or early May, he said

Possible corrido upgrades will be posted www.cityoflincolnnd.com

The final study must approved by the MPO, t city of Lincoln and Burlei County Commission.

It is scheduled to be co pleted in July.



49

Ulteig

Communication Record

Time: 9:30 AM	Date: March 30, 2011

I, *Steve Windish* , talked with *Police Chief Jon Hale*

Of *City of Lincoln* .

Phone Number

☐ I Called ☒ Party Called ☐ I Visited

☐ I Returned ☐ Party Returned ☐ Party Visited

☐ Conference Call
Others on Line

UEI Job No. R10.01486 Subject Lincoln Road Corridor Study

Chief Hale called to report htat he watched traffic the morning of March 30, 2011 between 7:15 and 8:15 AM at the intersection of Lincoln Road and 52nd Avenue.
Traffic movements from 52nd Avenue:
164 west
3 east
13 north

We then discussed the various alternatives for floodplain involvement, i.e. Linocln Road, 66th Street, 48th Avenue. We also discussed in general terms the pedestrian and off road vehicle use of the corridor.

Action Needed

Copied To: , , ,

, ,

65

Lincoln Traffic Jam | KXNet.com North Dakota News

Lincoln Traffic Jam

contact Amber Schatz

watch the video
email to a friend
printable version
discuss in the forums
upload new photos for this story

(0) comments on this article (add yours ->)

Apr 13 2011 7:23PM
KXMBTV Bismarck

While a big stretch of interstate remains closed out east... A growing community south of Bismarck has had to take their own flood detour.

Amber Schatz merges into Lincoln's morning commute.

(SANDY LAIB) "It's pretty crazy! pretty busy, backed up sometimes." Starting around seven a-m, vehicles line the only real exit out of Lincoln

(Bobbi Harr/worked here for 6 months) "Lincoln's pretty small, so seeing so many people here is, other than the normal it's really crazy." Workers in the town's gas station have had a front row seat of bumper to bumper traffic Monday it was at a complete standstill

(Bobbi Harr/worked here for 6 months) "It's very chaotic, can't hardly get anywhere on time, you've got people that are just traffic jam about ten cars at once." (Sandy Laib) "Longest line I've seen is probably out here past the trees." Drivers are having to leave town earlier because of 66th Street being closed

(Chris Loraas engineer in bismarck) "Usually the traffic isn't so bad, but the past couple days the 66th being closed, is putting a little damper on the schedule." Gerald Wolf) "Hadn't been too bad until the last couple mornings with 66 being flooded out, makes a difference." (Chris Loraas) "Being six miles out of Bismarck, having a traffic jam is a bit weird." Weird but worth it to some

(Bobbi Harr/worked here for 6 months) "Business has picked up which is good, we like that but it's kind of like, you feel bad but take a lot of time, for the customers to come inand pay for their gas when there's 20 other people in front of them, sometimes you can tell if their attitude has changed, they're kind of getting a little bit grumpier!" But not everyone traveling through the growing area is disheartened by what they see

(Joe Bears Heart)/Drives to Lincoln for work) "I can see, I'm just thinking to myself, man you're going to be late, you're going to be late... and I'm not so I don't mind." (Gerald Wolf) "Just a lot of taillights." In Lincoln, Amber Schatz, KX News.

66th street is still now open... watch the video | save this article / add to your favorites list

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Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

City of Lincoln

Meeting Agenda

- Introductions
- Background
- Review Input from 2nd Public Meeting
- Present and Discuss Draft Report
  - Review Preliminary Alternatives
- Review Project Schedule
- Questions and Answers
- Adjourn

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

City of Lincoln

Ulteig

PLEASE PRINT

ATTENDANCE ROSTER

PROJECT: Lincoln Road Corridor Study

MEETING LOCATION: NDDOT Conference Room 330, Bismarck, North Dakota

DATE/TIME: Wednesday, April 20, 2011 @ 10:30 AM

Name	Position
BEN EHRETH	BISMARCK-MANDAN MPO
Steve Windisch	Ulteig
Bob Fode	NDDOT
Steve Salvei	NDDOT
JACK SMITH	NDDOT
SCOTT ZAHNHOFSKY	NDDOT

02

PLEASE PRINT

Name	Position
Stacey Hanson	Assistant Local Govt Engr
Ronald Henke	Office of Project Development, DOT
Kirk Hoff	Bis Dist.
Kevin Levi	" "

2

To: File
From: Jessica Keller
CC: Steve Windish, Steve Grabill
Date: April 28, 2011

Re: Lincoln Road Corridor Study
Summary of Management Presentation
April 20, 2011

A Management Presentation was held April 20th, 2011 at NDDOT Conference Room 330 at 10:30 AM. Mr. Grabill conducted the meeting. A PowerPoint presentation was provided.

Attendees were:

- Ben Ehreth – Bismarck-Mandan MPO
- Steve Windish – Ulteig
- Bob Fode – NDDOT
- Steve Salwei – NDDOT
- Jack Smith – NDDOT
- Scott Zainhofsky – NDDOT
- Stacy Hanson – Asst. Local Govt. Engineer
- Ronald Henke – Office of Project Dev., NDDOT
- Kirk Hoff – Bismarck Dist.
- Kevin Levi – Bismarck District

The following questions or comments were made (responses are in *italic*):

1. When is the corridor's AM peak? (Bob Fode)
   7:30am-8:30am

2. What kind of traffic is on Airway? (Bob Fode)
   A count was not done. However, according to law enforcement, there are many more people turning left from Lincoln Road onto Airway Avenue than turn right onto Airway Avenue.

3. Are conflicts mostly due to southbound on Airway? (Bob Fode)
   Yes

4. Where is/will be the overflow for the flood plain? (Ron Henke)
   West of the bridge

5. Are there any laws that prohibit ATV's in the ditch? (Bob Fode)
   Not that we found. This is included on alternative

6. Younger group – What age? (Ron Henke)
   9 years and older. Lincoln Law Enforcement is tracking this. The decision has not been made whether there will be an improved surface, or to just let them continue to use. Maybe some improvements should be made at the intersections and those decisions can

be made during the design phase. Parks have applied for funding for multi-use along the north side.

7. ATV trail – Burleigh County to use abandoned rail bed to tie into fairground.
   No response required.

8. When the airport is expanded, then what? (Steve Salwei)
   48th Avenue S. (part of the beltway) may be constructed by that time. Some people at the 1st public input meeting questioned why money should be spent on a grade raise when the long range solution should be 48th Avenue or 66th Street or 52nd Street.

9. NEPA level purpose & need, is it addressed? (Scott Zainhofsky)
   Flooding not necessarily, more capacity issues & safety are driving the project need. The purpose and need will be addressed in the study.

10. The study cannot eliminate alternatives unless a proper purpose & need statement is addressed. (Scott Zainhofsky)

11. Modified urban section has not been considered? (Bob Fode)
    No. Because of large drainage needs, a modified urban section would be cost prohibitive.

12. Was a traffic count done on 52nd? (Bob Fode)
    Yes, 188 turned left, 10 went thru-7 turned right onto Lincoln Road.

13. Lincoln to Bismarck connection discussion.
    Proponents for extending 52nd Street are very adamant that this should be done.

14. If you go north on 52nd where would it tie in? (Kevin Levi)
    Ben Ehreth showed Kevin the previous study; tie in at Yegan Road. Steve Grabill said proponents will continue to pressure elected officials to pursue this option and they want to see legislative action to provide funding.

15. Roundabout doesn't impact Cenex? (Bob Fode)
    We are trying to avoid impacts by providing an offset to the south.

16. Was any concern about the roundabout raised? Don't they usually work better with more balanced traffic – just E-W now. (Ron Henke)
    Yes, but we are thinking that growth will balance traffic flow by adding more north -south traffic.

17. Long range to develop north? (Ron Henke)
    Ben E. – Not to the far north. Development has been proposed to the immediate north.

18. 52nd Street is paved to Copper Ridge. Is there a plan to pave 66th? (Kevin Levi)
    Not that we are aware of.

19. My opinion on the left turn at Airway is the RR crossing reduces the desire to turn right. (Ron Henke)

20. Any development on 66th is minimal. (Bob Fode)

21. Any public comment on the lighting? Residents may not want it. (Bob Fode)
    Impacts can be avoided by providing directional lighting.

22. Are there any designated ATV facilities within the ROW? – liability, maintenance signing? (Kirk Hoff)
    Not that we are aware of, but Burleigh County Parks & Rec. have preliminary plans to extend an ATV facility south of the fairgrounds.

April 28, 2011

Ben Ehreth
Bismarck/Mandan MPO
PO Box 5503
Bismarck, ND 58506-5503

LINCOLN ROAD CORRIDOR STUDY COMMENTS

The North Dakota Department of Transportation has reviewed the draft Lincoln Road Corridor Study report. We offer the following comments based on our review of the report and the Management Presentation that was conducted on April 20, 2011:

Comments on Draft Report

1. For pages 28-39, what are the delay and LOS values for the various alternatives?
   Response: Capacity analysis worksheets can be found in Appendix 2
2. Good to see the roundabout alternatives promoted in this Study.
   Response: Roundabouts appeared to provide a positive solution for some conditions.
3. Page iii - May a list of the appendices be added to the table of contents?
   Response: The list of appendices has been added.
4. Page 2 - May 48th Ave be labeled on the map?
   Response: The label has been added.
5. Page 11 - What are the existing volumes, or the existing computer model volumes, at Airway Ave?
   Response: New existing volume data now appears on page 12 of the Report.
6. Page 12 - The Forecasted Traffic section talks about two scenarios, one with and one without 48th Ave. However, only one set of forecasted volumes is shown on page 13. Are the volumes shown in Figure 6 for the scenario with 48th Ave or without 48th Ave? What are the volumes for the other scenario?
   Response: The report narrative was modified to explain that the analyzed set of forecasted volumes related to a worst case scenario for each intersection.
7. Page 12 - Last paragraph, first sentence: is there a word missing after "unknown", such as "traffic"?
   Response: The paragraph has been modified.
8. Page 13 - The projected turning movement volumes do not seem reasonable:
   a. If Airway Ave was assumed to be closed south of Lincoln Rd (as stated on page 12), why are 175 vehicles making WB to SB left turns? Where are the NB vehicles coming from?
   b. For 52nd St, why are 190veh making WB to SB left turns and NB to EB right turns? Bismarck (the main destination) is north of town, so won't drivers continue to take Lincoln Road to Airway Ave to get to Bismarck? Page 30 says the main movement at the Airway Ave & Lincoln Rd intersection is the WB to NB right turn movement.
   Response: The date for closure of the south approach on Airway Avenue has not been established and may occur beyond the projection year. Narrative on page 30 was modified to reflect traffic count data collected late in the study process. For 52nd Street,

the turning movements reflect a worst case scenario with the south approach on Airway Avenue closed. This could change traffic patterns with more traffic using 66th Street for travel to and from Bismarck.

9. Page 14 - Why weren't Benteen Dr and McDougall Dr analyzed with future traffic? Should the reason be stated in the study?
   Response: Traffic growth at those intersections is expected to be insignificant. The report has been modified to reflect that assumption.

10. Page 14 - In Table 1 are some of the approach descriptions flip-flopped? For Airway Ave the north approach is listed as a thru/right but shouldn't it be thru/left, etc.?
    Response: The table has been corrected.

11. Page 14 - In Table 1 the Airway Ave east approach shows a 120ft queue for WB to SB left-turning traffic. Where are these volumes going – page 12 said it was assumed Airway Ave did not continue south of Lincoln Rd?
    Response: See response to question 8.

12. Page 14 - In Table 1 it is difficult to tell which alternative the future queue lengths are for. Where are the roundabout future queue lengths?
    Response: The table has been modified to clearly distinguish existing and future lane uses.

13. Page 16 - At the Airway Ave & Lincoln Rd intersection is there a historical crash trend of WB rear-end crashes during the AM Peak? If yes, should this trend be mentioned in the crash analysis section of the report?
    Response: The historically elevated crash trend does exist during the AM Peak and it has been noted in the report.

14. Page 17 - Incomplete sentence – last line of section 6.1.
    Response: The sentence has been corrected.

15. Page 29 - Section 6.5.3 middle of 2nd paragraph states "westbound Lincoln Road would have the free movements." This alternative was previously described as an all-way stop, so how can there be free movements?
    Response: This alternative originally considered north-south stop control while keeping Lincoln Road free flow. The narrative has been modified to reflect the current alternative.

16. Page 33 (Figure 17) - Should "roundabout" advance warning signs be installed for Airway Ave traffic?
    Response: Detailed signing recommendations were beyond the scope of this study. It is assumed that any proposed roundabout would include advance warning signs.

17. Page 34 (Figure 18) - Should "stop ahead" signs be installed, since NB traffic is not used to stopping?
    Response: Detailed signing recommendations were beyond the scope of this study.

18. Page 35 - At 52nd St, why would we want to install a NB to EB right turn lane when the right turn volumes are only 7 in the AM peak and 6 in the PM peak?
    Response: Agreed. This alternative was not recommended.

19. Page 38 - Is a section about Benteen Dr missing? If there are no recommendations for Benteen Dr should there at least be a sentence saying that?
Response: The narrative has been added as requested.

20. Page 38 - Section 6.7.2, why would a school crossing be installed prior to a school being constructed? Shouldn't a school crossing be installed at the same time a school is constructed?
Response: The study considered whether additional width for medians might be beneficial when the road is reconstructed. This could save the county money by making proper adjustments to ditch drainage and roadway width in advance of a future school. At-grade medians at this location could benefit pedestrian crossings in the interim.

21. Page 38 - Section 6.8.2, the first sentence talks about installing left turn lanes on 66th St, but Figure 22 shows right turn lanes. Which is correct? Please be consistent. The heading of Figure 22 even says left turn lanes, but the drawing shows right turn lanes.
Response: Corrections to the narratives and titles were made to properly refer to installation of a right turn lane.

22. Page 40 (Figure 21) - The figure shows school crossing signs on the SB approach, which is controlled with a stop sign. However, the 3rd STANDARD paragraph in section 7B.09 of the 2003 MUTCD (currently used by NDDOT) prohibits installing school crossing signs on approaches controlled with a stop sign.
Response: The graphic has been modified to eliminate the school crossing signs from the north approach as called out in the new MUTCD.

23. Page 40 (Figure 21) - The way the medians are laid out in the figure, they create a negative offset for left-turning traffic (left-turning driver's view of opposing through traffic is obstructed by vehicles in the opposing left turn lane). If a median is installed, can the hatched (painted) median be moved between EB through traffic and EB left-turning traffic, so that the left turn lanes are straight across from each other and the medians are straight across from each other? This would eliminate the negative offset.
Response: Median design may be considered in more detail during the design process.
24. Page 42 (Figure 23) - Should "roundabout" advance warning signs be installed for any approaches?
Response: Roundabout signing will be considered during the design process.

25. Page 43 - How many light standards are included in the $350,000 lighting cost estimate? $350,000 seems high. Or are single-sided lighting systems needed on both the north and south sides of the road? Perhaps this could be explained better in the study.
Response: The narrative identifies light standards on the north side of Lincoln Road at 200 foot spacing. Over a one mile length, this would total about 26-30 light standards.

26. Page 47 - Should section 6.11.3 be added to discuss extending 48th Ave?
Response: Since extension of 48th Avenue is part of the approved Long Range Transportation Plan it was not necessary to consider it as an added alternative for the Lincoln Road corridor study.

Mr. Ben Ehreth
April 28, 2011

Comments from Management Presentation

1. What is the legal age to drive an ATV? Are there laws prohibiting use of ATV's in the ditch along the road?
   Response: We are not aware of any issues raised with legal age or of the existence of laws prohibiting use of ATV's in roadside ditches.

2. A purpose and need statement should be identified and defined in the study to link the corridor study and the NEPA process.
   Response: A purpose and need statement has been identified and included in the study.

3. Were any urban typical sections looked at for Lincoln Road or hybrid sections like State Street?
   Response: Urban typical sections were considered cost prohibitive due to drainage needs.

4. Will the proposed roundabout function ok at Lincoln Road and 52nd Street with uneven traffic flows?
   Response: Yes.

5. Is there a long range plan for development of 52nd Street? Is there a plan to go from Copper Ridge east to 66th Street to alleviate some of the traffic on 52nd Street?
   Response: It was beyond the scope of the study to develop future plans for 52nd Street and other City corridors.

6. Are some road users travelling south on Airway Avenue to avoid the railroad crossings to the north on Airway Avenue or 66th Street?
   Response: We heard that a number of travelers are going south to avoid the railroad crossings to the north.

7. Were there any public comments regarding proposed lighting and nearby residences?
   Response: People concurred with the consultant's presentations which stated that proposed lighting should be directional to avoid overflow into yards and adjacent homes.

8. Is there liability associated with installing a designated ATV trail within the roadway right of way?
   Response: We are not aware of any liability concerns.

If you have any questions or comments, please feel free to contact me at (701)328-4469.

STACEY M. HANSON, P.E., ASSISTANT LOCAL GOVERNMENT ENGINEER

38/sw/smh

c: Steve Grabill, Ulteig Engineers
Bob Johnston, City of Lincoln
Marcus Hall, Burleigh County

Josh Kueber

From: Bob Johnston <johnston@bis.midco.net>
Sent: Friday, April 22, 2011 4:48 PM
To: Steve Grabill
Subject: RE: Lincoln Road Corridor Study

Categories: Filed by Newforma

Steve,
The second most expensive option in the draft report is to improve Lincoln Road from the abandoned rail bed to 66th St SE, at an estimated $1.1 million. Some form of that has got to be done. I don't know if the $1.1 million to improve Lincoln Road between the abandoned rail bed and 66th St SE needs to be one of the yes/no questions on the list below, it must be in the final report.

Sorry for the late response.

Bob J

From: Steve Grabill [mailto:Steve.Grabill@ulteig.com]
Sent: Monday, April 18, 2011 10:31 AM
To: Ben Ehreth ; Brad Krogstad; Doug Shconert; John Hale; Kevin Levi; Marcus J. Hall; Mark Berg; Robert Johnston ; Robert W. Johnston; Stacey Hanson; Stephanie Hickman; Steve Saunders; Steven Urlacher
Cc: Steve Windish
Subject: Lincoln Road Corridor Study

Hello Committee Members,

We are sending out this reminder that your comments on the draft Report are **due this Wednesday**. We have received some feedback so far on the draft Report.

One pending change is that the recommendation for a roundabout at Airway Avenue will be modified in favor of adding the right turn lane as a short range improvement. There was an error in the cost information. Roundabouts are typically estimated to cost about $750,000.

Probably the biggest pending change will come with the Decision Documents found near the front of the Report. We intend to simplify and revise them to read as follows:

Lincoln Road Corridor Study

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

Yes _____ No_____

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

Yes _____ No_____

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

Ulteig

PLEASE PRINT

ATTENDANCE ROSTER

PROJECT Lincoln Road Corridor Study – Project Steering Committee Special Meeting

MEETING LOCATION Bismarck Conference Room, Bismarck, North Dakota

DATE/TIME Tuesday, April 26, 2011 4:15 PM

Name	Representing
Steve Grabill	Ulteig
BEN [illegible]	[illegible] MPO
Steve Saunders	MPO
Marcus J. Hall	Burleigh County
Stephanie Hackman	FHWA
Jon Hale	City & Lincoln
BRIAN ZUROFF	ULTEIG
BRAD KROGSTAD	KLJ - CITY ENGR

Ulteig

Study Review Committee
Meeting Summary
Bismarck Mandan MPO
Lincoln Road Corridor Study
April 26, 2011
4:15 p.m.

Attendees

Ben Ehreth and Steve Sunders, Bismarck-Mandan MPO
Marcus Hall, Burleigh County Engineer
Jon Hale, Lincoln Police Chief
Stephanie Hickman, FHWA
Brad Krogstad, Lincoln City Engineer
Steve Grabill and Brian Zuroff, Ulteig Engineers

Meeting Summary

The meeting was scheduled to obtain input from Committee members on the draft Report and to coordinate future project activities.

1. **Introductions**
   Mr. Grabill opened the meeting at 4:15 p.m. and introductions were made.

2. **Review NDDOT Management Presentation Feedback and Discuss draft Report** – Mr. Grabill provided a PowerPoint presentation of the NDDOT Management Presentation and discussed their feedback. He said most of their input related to the idea of constructing ATV trail facilities in public right of way. He said that some attendees were not sure it was appropriate to build and sign/promote the facilities in the ditches due to safety concerns. They were also interested in the recommendation for a roundabout at 52nd Street.

   Mr. Hale stated that he did not believe a roundabout should be constructed at the Airway Avenue intersection. Mr. Grabill said the draft Report would not be recommending a roundabout at the Airway Avenue intersection due to cost and anticipated airport expansion. Instead, a long right turn lane was being recommended.

   There was significant discussion over the merits of roundabouts, the need to accommodate semis and farm implements, and possible design features for a roundabout at 52nd Street.

Mr. Grabill said that only a single lane roundabout was being considered at 52nd Street and that those types of roundabouts are less confusing to drivers. Attendees agreed that a roundabout at 52nd Street would need to adequately address access needs for the gas station.

The conversation shifted to the question of whether to recommend an ATV trail along the corridor. Ms. Hickman wasn't sure it would be eligible for federal funding and she agreed to look into the matter.

Mr. Hale questioned whether the ATV's could be confined to only one side of the road when State Statutes allows use of both sides of the road. Mr. Hall thought the decision on ATV facilities should be mostly a local decision.

Mr. Grabill said the draft Report suggested that building ATV facilities elsewhere may be the best alternative. After further discussion, it was acknowledged that the current location has not been designated as an ATV trail facility, but that we could leave the option open on whether further improvements should be made to enhance use by ATV's.

The corridor study decisions / questions were discussed. Mr. Grabill said Mayor Johnston suggested that the reconstruction of Lincoln Road (east of the abandoned rail bed) should be added to the questions. It was the opinion of the Committee that only "questionable" alternatives should be brought before the elected officials for specific feedback.

Mr. Krogstad suggested the questions should have a lead-in paragraph to add context to the questions. Mr. Grabill agreed to prepare a lead-in paragraph.

Mr. Hale pointed out that for the multi-use trail, the segment between Benteen and 52nd Street was the City's current priority. Mr. Grabill agreed to note this, but the segment further east would remain in the build alternative in order to provide better access for the future school.

Mr. Hall requested copies of the draft Report by Monday so he could give them to the commissioners. Mr. Grabill said he would do this.

Respectfully Submitted,

Steve A. Grabill

Steve A. Grabill, PE, PTOE
Ass't Project Manager

Jennifer Hanley

From: stephanie.hickman@dot.gov
Sent: Wednesday, April 27, 2011 8:11 AM
To: ssaunder@nd.gov; Steve Grabill
Cc: smhanson@nd.gov; Sandy.Zimmer@dot.gov
Subject: Lincoln Rd and Trails

Categories: Filed by Newforma

Steves: I checked with Sandy regarding using federal funds for trails. First, on eligibility. If you do apply Rec Trails funding, it can be used for trails allowing motorized vehicles. Transportation Enhancements cannot. FHWA will oppose linking pedestrian activity with motorized activity.

Second, Sandy Zimmer, our financial manager and program manager for both TE and Rec Trails, thought you might want to check on State law. There may be a restriction on direction of travel for ATVs. If that's true, and the ATVs must travel in the ditch in the same direction as the road traffic, you would have a potential problem with the location of the multi-use trail on the north side of Lincoln Rd.

I've cc'd Sandy on this e-mail so if I've made an error in transmission (or translation, as the case may be) or something needs more clarification, I'll let her respond.

FYI.

Stephanie

Stephanie J. Hickman
Transportation Planning and Research Manager
1471 Interstate Loop
Bismarck, ND 58503
(ph) 701-250-4343 ext 105
(fax) 701-250-4395

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PUBLIC INPUT MEETING

MEETING TOPIC
Lincoln Road Corridor Study
Draft Report

WHEN?
Thursday, May 12, 5:00 – 7:00 p.m.
Open House at 5:00 p.m.
Formal presentation at 5:15 p.m.

WHERE?
Lincoln City Hall
74 Santee Road
Lincoln, ND

This Study is being conducted by Ulteig Engineers on behalf of the Bismarck-Mandan Metropolitan Planning Organization. It addresses the Lincoln Road corridor between Airway Avenue and 66th Street and is scheduled to be completed in July 2011. It considers corridor issues and needs, identifies improvement alternatives, examines costs and funding opportunities, and recommends corridor solutions. The Study plans for corridor improvements, considering auto, pedestrian, bicycle, off-highway vehicle, and horse travel along the route.

City, County, and Ulteig representatives will be on hand to review the draft Report and to receive your input. The public is invited to attend the meeting and comment on the Study and its recommendations. The draft Report may be viewed starting May 2, 2011 on the city website http://www.cityoflincolnnd.com, at the Burleigh County Highway Department, at Lincoln City Hall, and at the Bismarck City Planning office.

The MPO's public participation process is being followed within this notice. The public meeting facility is accessible to mobility impaired individuals. For individuals requiring special needs related but not limited to, hearing or visual impairment, or language interpretive services, please contact MPO staff by May 5, 2011at (701) 355-1840. **WRITTEN STATEMENTS** or comments about this project may be sent by May 19, 2011 to J. Steven Windish, PE, Ulteig Engineers, 1412 Basin Avenue, Bismarck, ND 58504, phone 701-355-2333, email Steve.Windish@Ulteig.com.

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AGENDA

Lincoln Road Corridor Study
Bismarck-Mandan
Metropolitan Planning Organization

Public Input Meeting 3
5:00 PM, May 12, 2011
Lincoln City Hall

1. Open House 5:00 p.m.
2. PowerPoint Presentation 5:15 p.m.
    a. Introductions
    b. Background
    c. Review Input from 2nd Public Meeting
    d. Present and Discuss Draft Report
    e. Review Studied and Recommended Alternatives
    f. Consider Upcoming Corridor Decisions
    g. Review Project Schedule
3. Questions and Answers 5:35 p.m.
4. Open House 6:35 p.m.
5. Adjourn 7:00 p.m.

Remaining Project Schedule

City Public Hearing	Thursday, June 2
County Public Hearing	Monday, June 6
MPO Acceptance	Tuesday, June 21

City Website: www.cityoflincolnnd.com

Ulteig

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ATTENDANCE ROSTER

PROJECT: Lincoln Road Corridor Study

MEETING LOCATION: Lincoln City Hall, Lincoln, North Dakota

DATE/TIME: Tuesday, May 12, 2011 @ 5:00 PM

Name	Address
Steve Grabill	Ulteig
Road Untersehuz	Lincoln
DAVE SENGER	LINCOLN
Mike Benson	LINCOLN
Kevin Daly	Lincoln
Jennifer Mallay	Lincoln
Steve Utlacher	Lincoln
Michele Mindt	Lincoln

This information will be part of the public record included in the study report

PLEASE PRINT

Name	Address
Steve Windisch	Ulteig
BEN EHLERT	BISMARCK-MANDAN MPO
BOB JOHNSTON	CITY of LINCOLN
Marlyn Johnston	Lincoln
Melanie Kitzan	Lincoln
Cy Fix	Cenex Bismarck/Mandan
Roberta Untersehr	Lincoln

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This information will be part of the public record included in the study report

To: File
From: Jessica Keller
CC: Steve Windish, Steve Grabill
Date: May 13, 2011

Re: Lincoln Road Corridor Study
Summary of Public Input Meeting #3
May 12, 2011

A public input meeting was held May 12, 2011 at Lincoln City Hall. An open house was conducted at 5:00 followed by a formal presentation at 5:25 p.m. There were 12 people in the audience. Introductions were made. A PowerPoint presentation was provided.

A straw poll was conducted on the study decisions. Following are the results:

1. Should an estimated 1.5 million be spent to elevate Lincoln Road out of the floodplain?
   Yes: **1**
   No: **6**

2. Should roundabouts be considered in the Lincoln Road reconstruction project?
   Yes: **6**
   No: **2**

3. Should an ATV trail be considered in the south ditch of Lincoln Road?
   Yes: **3**
   No: **6**

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?
   Yes: **5**
   No: **3**

5. Should an estimated $130,000-$225,000 be spent for landscaping along Lincoln Road?
   Yes: **3**
   No: **5**

The meeting was then opened to questions and comments from the public at 5:54pm. The following questions or comments were made (responses are in *italic*):

1. What would landscaping include?

   Various scenarios were looked at. Three existing "Welcome to Lincoln" entrance signs located at Benteen, McDougall and 66th Street have surrounding landscaping. Landscaping improvements may include upgrades to these to promote the current entrances to Lincoln, perhaps at 66th Street and at 52nd Street.

   Tree plantings along the corridor would be provided in consultation with the City Park District. These may be placed in straight lines (formal) or staggered (informal). Some landscaping in the roundabout island would also be desired.

2. Are turning lanes at Benteen & McDougall needed?
   No congestion issues were identified at these intersections. Turn lanes were recommended along Lincoln Road to improve safety by removing left turning traffic from the through traffic lanes.

3. Were the cost estimates for street lighting provided to assume shorter poles to benefit pedestrians or longer poles to benefit vehicular traffic?
   The longer poles were anticipated since they can benefit all modes of traffic. Other forms of lighting, including ornamental lighting, may be considered during the design process. Lighting on shorter poles may actually be more expensive if the distance between poles needs to be reduced.

4. Is the street lighting along the entire corridor length or just intersections?
   It is along the entire length from 66th Street to 52nd Street.

5. $1.5 million, is that to the elevation shown?
   No, that's just to get above floodplain.

6. Is it good to have mixed traffic control; 1 roundabout, 1 island?
   The roundabout is a change that could be beneficial because it signifies to the driver that they are entering town and they need to be more observant and slow down.

7. Will the ditches between Benteen & 52nd be filled?
   No, but the ditches & drainage will be examined for possible improvements during the design.

8. How much snow blockage might be caused by landscaping located within the roundabout?
   There is a good history with roundabouts in Fargo. Designs will be tweaked so snow can be removed.

9. Removing the ATV trail from the south side will not change the current use. If a trail is established it can be enforced.
   We understand this issue will continue. Working with law enforcement, County, etc. dealing with maintenance is an issue, especially at an intersection.

Comments may be submitted on the designated sheets and could be left that night, mailed in or emailed. The meeting ended at 6:13 p.m.

Ulteig

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

RECEIVED BY
MAY 25 2011
ULTEIG ENGINEERS

May 12, 2011

COMMENT CARD
(Please return by May 19, 2011)

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Myron Mindt

ADDRESS (please print): 1110 LaKota Lane Lincoln N.D. 58504

(Comments may also be submitted by email to: Steve.Windish@ulteig.com

I wish to offer the following comments: I see no purpose in Round abouts on Lincoln road if it is slowed down on Airway Ave. & Yegen Rd. What will happen in the winter when the Round abouts are full of snow in the morning and the people that go to work early in the Morning Can't use the Round abouts. My wife and I do not want an ATV path on the south ditch of Lincoln road. The dirt bikes and four wheelers are noisy and driving too fast. What we really could use is a wide 2 lane road with a lot less sharp corners and forget the lights to light the road

Name and address are optional. This sheet will become part of the public record included in the Report. Please leave your comment sheet with us tonight or mail your comments by May 19, 2011 to:

J. Steven Windish, P.E.
Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

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Ulteig

Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

May 12, 2011

COMMENT CARD
(Please return by May 19, 2011)

RECEIVED BY
MAY 24 2011
ULTEIG ENGINEERS

PUBLIC INPUT MEETING: Lincoln Road Corridor Study

NAME (please print): Michele Mindt

ADDRESS (please print): 1108 Lakota Lane, Lincoln, ND

(Comments may also be submitted by email to: Steve.Windish@ulteig.com

I wish to offer the following comments: I think all of the plans for Lincoln Road should be scrapped. I think it's a waste of money to landscape when the ATV's rip up the ditches. We don't need lighting. People should stop speeding and slow down.

I am absolutely AGAINST an ATV trail in the ditch behind my house. At the meeting a guy said there should be a trail so they could regulate the speed. My father spoke to the Lincoln Police about how fast people drive and how they roar past our houses. The police told my father that they can only give a citation to these people if they don't wear a helmet. Otherwise the Lincoln Police can't do anything (over)

Name and address are optional. This sheet will become part of the public record included in the Report. Please leave your comment sheet with us tonight or mail your comments by May 19, 2011 to:

J. Steven Windish, P.E.
Ulteig Engineers, Inc.
1412 Basin Avenue
Bismarck, ND 58504

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about the speed or noise so having an ATV trail will do nothing to fix the problem. If Lincoln wanted a recreation area they should not have put in a housing development beside Lincoln Road. Like I said before I can't even enjoy my front or back yard because of the obnoxcious noise.

What Lincoln needs is a four-way road straight to Bismarck with an overpass over the train tracks by Farmer's Livestock so fire and ambulances can get out to Lincoln quickly without having to wait for a train.

Bound abouts are a waste of time. Why get the traffic flowing faster when you have to stop at Airway Ave and slow down to 20mph by Anderson Western because of a wrecked curve.

The engineer also said that you will need the snow truck to come around more often to clear the round-abouts out so they won't get clogged. Is Burleigh County willing to do snow removal more often?

This is all a waste of money. We need a direct road to Bismarck!!

Josh Kueber

From: Hall, Marcus J. <mahall@nd.gov>
Sent: Tuesday, May 24, 2011 2:07 PM
To: Steve Grabill
Subject: RE: Lincoln Road Corridor Study
Attachments: Turn Count.pdf

Categories: Filed by Newforma

See attached file.

Marcus J. Hall P.E.
Burleigh County Engineer
701-221-6870

From: Steve Grabill [mailto:Steve.Grabill@ulteig.com]
Sent: Monday, May 23, 2011 11:57 AM
To: Hall, Marcus J.; Ehreth, Ben J.; Brad Krogstad; Doug Shconert; John Hale; Levi, Kevin J.; Berg, Mark A.; Robert Johnston ; Johnston, Robert W.; Hanson, Stacey M.; Stephanie Hickman; Saunders, Steve L.; Steven Urlacher
Cc: Steve Windish
Subject: RE: Lincoln Road Corridor Study

Well done, Marcus. It's good to know that we are heading in the right direction. If you could send us the data, we could include it in the final report.

From: Hall, Marcus J. [mailto:mahall@nd.gov]
Sent: Monday, May 23, 2011 10:31 AM
To: Steve Grabill; Ehreth, Ben J.; Brad Krogstad; Doug Shconert; John Hale; Levi, Kevin J.; Berg, Mark A.; Robert Johnston ; Johnston, Robert W.; Hanson, Stacey M.; Stephanie Hickman; Saunders, Steve L.; Steven Urlacher
Cc: Steve Windish
Subject: RE: Lincoln Road Corridor Study

I just wanted to pass the following information along to all of you. On Thursday May 19 Burleigh County conducted a 12hr turn movement count at the intersection of Airway Ave and Lincoln Road. The one big question that I had was regarding the right and left turn movement from westbound Lincoln Road on to Airway Ave.

The answer to that question is 52.1% turn left (and go south) and 47.9% turn right (and go north). With this in mind putting extended right and left turn lanes at this intersection appears to be the right way to go.

Marcus J. Hall P.E.
Burleigh County Engineer
701-221-6870

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PUBLIC HEARINGS

HEARING TOPIC
Lincoln Road Corridor Study Report

LINCOLN CITY COUNCIL HEARING
Thursday, June 2, 7:00 p.m.
Lincoln City Hall
74 Santee Road
Lincoln, ND

BURLEIGH COUNTY COMMISSION HEARING
Monday, June 6, 5:15 p.m.
Tom Baker Meeting Room
City\County Office Building
221 N 5th St, Bismarck ND

This Study is being conducted by Ulteig Engineers on behalf of the Bismarck-Mandan Metropolitan Planning Organization. It addresses the Lincoln Road corridor between Airway Avenue and 66th Street. It considers corridor issues and needs, identifies improvement alternatives, examines costs and funding opportunities, and recommends corridor solutions which consider all modes of travel along the route. The hearings are being conducted as the final study is presented for acceptance.

City, County, and Ulteig representatives will be on hand to present and discuss the Report. The public is invited to attend the meeting and comment on the Study and its recommendations. The Report may be viewed on the city website http://www.cityoflincolnnd.com, at the Burleigh County Highway Department, at Lincoln City Hall, and at the Bismarck City Planning office.

The MPO's public participation process is being followed within this notice. The public meeting facility is accessible to mobility impaired individuals. For individuals requiring special needs related but not limited to, hearing or visual impairment, or language interpretive services, please contact MPO staff by May 26, 2011 at (701) 355-1840. **WRITTEN STATEMENTS** or comments about this project may be sent by June 3, 2011 to J. Steven Windish, PE, Ulteig Engineers, 1412 Basin Avenue, Bismarck, ND 58504, phone 701-355-2333, email Steve.Windish@Ulteig.com.

Due to regional flooding, public hearings to consider the Lincoln Road Corridor Study at the Lincoln City Council on June 2, 2011 at 7pm and at the Burleigh County Commission on June 6, 2011 at 5:15pm have been **DELAYED**.

	Previous Schedule	**New Schedule**
City of Lincoln Hearing 74 Santee Road, Lincoln, ND	June 2, 7pm	June 30, 7pm
Burleigh County Hearing City/County Building 221 N. 5th Street, Bismarck, ND.	June 6, 5:15 pm	July 6, 5pm

The study was conducted by Ulteig Engineers on behalf of the Bismarck-Mandan Metropolitan Planning Organization, the City of Lincoln, and Burleigh County. It is intended to address issues associated with the Lincoln Road corridor between Airway Avenue and 66th Street. The study considers corridor issues and needs, identifies improvement alternatives, and examines costs and funding opportunities with consideration to all modes of travel along the route.

PUBLIC HEARINGS

HEARING TOPIC
Lincoln Road Corridor Study Report

LINCOLN CITY COUNCIL HEARING
Thursday, June 30, 7:00 p.m.
Lincoln City Hall
74 Santee Road
Lincoln, ND

BURLEIGH COUNTY COMMISSION HEARING
Wednesday, July 6, 5:15 p.m.
Tom Baker Meeting Room
City\County Office Building
221 N 5th St, Bismarck ND

This Study is being conducted by Ulteig Engineers on behalf of the Bismarck-Mandan Metropolitan Planning Organization. It addresses the Lincoln Road corridor between Airway Avenue and 66th Street. It considers corridor issues and needs, identifies improvement alternatives, examines costs and funding opportunities, and recommends corridor solutions which consider all modes of travel along the route. The hearings are being conducted as the final study is presented for acceptance.

City, County, and Ulteig representatives will be on hand to present and discuss the Report. The public is invited to attend the meeting and comment on the Study and its recommendations. The Report may be viewed on the city website http://www.cityoflincolnnd.com, at the Burleigh County Highway Department, at Lincoln City Hall, and at the Bismarck City Planning office.

The MPO's public participation process is being followed within this notice. The public meeting facility is accessible to mobility impaired individuals. For individuals requiring special needs related but not limited to, hearing or visual impairment, or language interpretive services, please contact MPO staff by June 24, 2011 at (701) 355-1840. **WRITTEN STATEMENTS** or comments about this project may be sent by June 27, 2011 to J. Steven Windish, PE, Ulteig Engineers, 1412 Basin Avenue, Bismarck, ND 58504, phone 701-355-2333, email Steve.Windish@Ulteig.com.

Ulteig

PLEASE PRINT

ATTENDANCE ROSTER

PROJECT: Lincoln Road Corridor Study

MEETING LOCATION: Lincoln City Hall, Lincoln, North Dakota

DATE/TIME: Thursday, June 30, 2011 @ 7:00 PM

Name	Address
Steve Windish	1014 Highland Pl Bismarck
BEN EHLERT	BISMARCK-MANDAN MPO
BRAD KROSTAD	CITY ENGINEER
Don Hale	Chief of Police
Mike Hemsoth	108 N. McDougall
BOB JOHNSTON	21 CARLIN DRIVE
Rand Untiedt	47 Carlin Dr.
Roberta Untiedt	47 Carlin Dr

LD

This information will be part of the public record included in the study report

PLEASE PRINT

Name	Address
Karen Daly	3 Santa Lincoln
Savanah Cantleberry	144 Dolan Drive Lincoln

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This information will be part of the public record included in the study report

To: File
From: Jessica Keller
CC: Steve Windish, Steve Grabill
Date: July 6, 2011

Re: Lincoln Road Corridor Study
Summary of Public Hearing
June 30, 2011

A public hearing was held at 7PM at the Lincoln City Council Chamber. Meeting was called to order at 7:05pm. Steve Grabill gave a short presentation. Final comments had been received since the final report was posted. These where passed out.

The decision document will be acted upon on July 6th by the Burleigh County Commission. The reason for the special City Council meeting was that it was important for the city's voice to be heard.

Commissioner: What are you basing the proposed added right turn lane on?
More people may eventually turn right at Airway Ave. The backup for left turns may still get long at times. Some people may then choose to turn right because they find it to be quicker.

Commissioner: Was the roundabout at 66th Street included in the beltway study?
No, it was not included in the Beltway study. The staff did not want to get into that level of detail as the traffic counts to warrant that were too far out.

Commissioner Karen: What is considered multi-use?
Anything not motorized, such as walking, jogging, bikes & rollerblades.

Commissioner: Regarding horses, are they in the picture?
We considered them early on, but did not receive any feedback from the public that a special facility was needed. Therefore, we did not develop a special facility for them.

Commissioner Karen: Where are they going to go?

Commissioner: In the south ditch, where they are now.

Presentation was concluded at 7:28pm. Public hearing was then opened.

The following questions or comments were made (responses are in *italic*):

1. Mayor: Regarding streetlights, will they be subdued or bright?
   They may be more ornamental so that the glare, brightness, etc. can be controlled. Cobra headed lights are not anticipated.

2. Brad Klogstad: Are you anticipating any decal lighting?
   We have spoken with the county engineer; it is not necessary but probable.

3. Clerk person: So there is more traffic going north-south than east-west (at 66th Street)?
   Yes – that is correct.

4. Karen: Are there a lot of people from the east turning north?
   Yes there are, but the stop will not delay the right turn movement. However, we do need to consider through and left turn movements.

5. Karen: Do you think that more people will go on Lincoln Road?
   We think that the left turn volume will drop if the signs are moved.
   All the buses go south, unless you are going to north Bismarck. It is faster to go south around the airport.

6. Karen: All the buses go south, unless you are going to north Bismarck. It is faster to go south around the airport.
   No response needed.

7. Krogstad: Can you go over the 52nd St. intersection alternatives and why a roundabout is better?
   On a national level, they will reduce serious crashes by 90% as everything will be a right turn, like a right in/right out. It will operate better than a signal especially during non-peak time. Mobility & pedestrian crossing will also be better.

8. Krogstads: What was observed with peak time delays/stacking at 52nd Street?
   Using a letter grade system – A being great & F for failing, we are getting an E on the AM peak for traffic trying to enter onto Lincoln Road. There is no conflict with the right turn, but the left turn onto Lincoln Road is the conflict in the morning.

9. Krogstads: Does a roundabout get us to an A?
   Correct

10. Krogstads: How about the left turn lane?
    There's not much improvement. There are no Federal warranted mandates to construct a roundabout & does not have potential hazards like signals.

11. Ben: Any experience on snow removal?
    There needs to be adequate circumference to keep the plows moving, otherwise if it's too small they will get stuck. Fargo has completed the trial & error with snow removal at roundabouts and we believe we know how to better design them now.

12. Ben: In order for semi's to get into Cenex from the west they will have to do a ¾ circle, is that possible?
    Yes very easily with the right diameter center islands.

13. Ben: Can the roundabout function for a combine with headers?
    The medians are low enough, but signs may be an issue. Of course, signs may be a challenge at any intersection.

14. Ben: If they cannot get around they will go through the center line.

There are different island treatments available. *Chief Hale brought this up during the staff meetings.

15. Krogstad: Going back to the Cenex slide with the raised median, 90% of the customers go through the wide entrance.
    This is a valid design detail & will need to be worked out with Cenex.

16. Karen: What is the probability of getting easements?
    Brad: Possibly a little from Cenex

17. Commissioner Savanah: How fast do they travel through the roundabout?
    The design speed is about 15mph

18. Commissioner Savanah: Any concerns of more backup on east approach of the roundabout because they've slowed down?
    No, there is not enough volume to be concerned about congestion

19. Karen: What kind of traffic, trucks or cars?
    For the rural roundabout in Cass County, trucks were in the traffic, semis had no problems getting through. They did not have any snow problems either.

20. Brad: Agrees with Steve, he had used a roundabout everyday & had no problems.

21. Mayor: What is the function of the lane width, just used one in WI, posted speed at 15mph but went through faster.
    They are designed to slow you down.

22. Ben: Do you find there is an educational component?
    Commissioner: In the first month many will want to turn left. We are not opposed to this but want to cover all bases.
    It is our strong recommendation to bump up public education, whether with handouts in the community, police watch, etc.

23. Commissioner: And the County would fund it?
    Cass County did a lot of public education; however we do not know how they funded it.

Public hearing was closed at 7:57pm.

The decision document will be completed individually and compiled & all documents will be sent to Ulteig.

Meeting adjourned at 8pm

Josh Kueber

From: Roberta Unterseher <cityoflincoln2@midconetwork.com>
Sent: Friday, July 01, 2011 9:58 AM
To: Steve Grabill
Subject: Lincoln Road Study Feed Back Sheets
Attachments: 2873_001.pdf

Categories: Filed by Newforma

Good morning Steve, attached you will find all of the feedback sheets from Lincoln's council.
Thanks and have a great 4th.

From: City of Lincoln [mailto:cityoflincoln@midconetwork.com]
Sent: Friday, July 01, 2011 9:34 AM
To: Roberta
Subject: Attached Image

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Lincoln Road Corridor Study
Lincoln City Council Feedback

The Lincoln Road Corridor Study provides a number of recommendations that provide clear guidance for future project development. The Study Review Committee requested more specific feedback from elected officials on five alternatives considered within the study. Questions pertaining to these five alternatives are provided as follows:

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

   Yes _____ No X

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

   Yes _____ No X

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

   Yes_____ No X

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?

   Yes X No_____

5. Should an estimated $130,000 - $225,000 be spent for landscaping along Lincoln Road?

   Yes X No_____

Additional City Council Feedback:

_____

_____

_____

_____

_____ 1 July 2011
Authorized Signature Date

Lincoln Road Corridor Study
Lincoln City Council Feedback

The Lincoln Road Corridor Study provides a number of recommendations that provide clear guidance for future project development. The Study Review Committee requested more specific feedback from elected officials on five alternatives considered within the study. Questions pertaining to these five alternatives are provided as follows:

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

   Yes _____ No X

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

   Yes X No _____

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

   Yes X No _____

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?

   Yes X No _____
   * if the multiuse trail is put in, if no trail start w lighting @ crosswalks or other options

5. Should an estimated $130,000 - $225,000 be spent for landscaping along Lincoln Road? Not @ this time.

   Yes _____ No X

Additional City Council Feedback:

_____

_____

_____

_____

Sarah Carl Celemy
Authorized Signature

6/30/11
Date

Lincoln Road Corridor Study
Lincoln City Council Feedback

The Lincoln Road Corridor Study provides a number of recommendations that provide clear guidance for future project development. The Study Review Committee requested more specific feedback from elected officials on five alternatives considered within the study. Questions pertaining to these five alternatives are provided as follows:

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

   Yes _____ No X

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

   Yes _____ No X

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

   Yes X No _____

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?

   Yes _____ No X Less

5. Should an estimated $130,000 - $225,000 be spent for landscaping along Lincoln Road?

   Yes _____ No X

Additional City Council Feedback:

Considering the economy - go the best option at best cost

Karen Daly
Authorized Signature

6-30-11
Date

Lincoln Road Corridor Study
Lincoln City Council Feedback

The Lincoln Road Corridor Study provides a number of recommendations that provide clear guidance for future project development. The Study Review Committee requested more specific feedback from elected officials on five alternatives considered within the study. Questions pertaining to these five alternatives are provided as follows:

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

   Yes _____ No ✓

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

   Yes ✓ No _____

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

   Yes _____ No ✓

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?

   Yes ✓ No _____

5. Should an estimated $130,000 - $225,000 be spent for landscaping along Lincoln Road?

   Yes ✓ No _____

Additional City Council Feedback:

_____

_____

_____

_____

Robert W. Johnston
Authorized Signature

6/30/11
Date

Lincoln Road Corridor Study
Lincoln City Council Feedback

The Lincoln Road Corridor Study provides a number of recommendations that provide clear guidance for future project development. The Study Review Committee requested more specific feedback from elected officials on five alternatives considered within the study. Questions pertaining to these five alternatives are provided as follows:

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

   Yes X No_____

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

   Yes X No_____

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

   Yes X No_____

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?

   Yes X No_____

5. Should an estimated $130,000 - $225,000 be spent for landscaping along Lincoln Road?

   Yes_____ No X

Additional City Council Feedback:

_____

_____

_____

_____

_____ 6-30-11

Authorized Signature Date

emphasized that inspections on properties cannot be done until flood waters recede.

Stacy Sturm, Burleigh County Flooded Residents, appeared regarding flood recovery.
Sturm presented several questions for the Commission concerning pumping of water, assessment for levees and pumping, buy outs and reimbursements, property taxes, etc.

Chairman Bitner stated that he understands that flooding residents would like answers at the moment but decisions will be made as the flood water levels recede.

Dave Wolfer, also speaking for the group, questioned what the process will be for assessing properties in the flood areas and what can residents expect concerning property taxes.

County Auditor Glatt explained that they are working diligently on a plan within the parameters of state law. Glatt hoped a detailed plan will be complete within the next couple weeks.

Bob Upgren, Fox Island resident, appeared and cautioned against lowering property values in flooded areas. Upgren stated he does not want his property devalued and considered worthless. Upgren questioned the feasibility of constructing a permanent levee in the Fox Island area.

Jonathan Bry and Rod Eckroth appeared with questions regarding pumping and when levees will be removed.

This was the hour and date set for a PUBLIC HEARING regarding the Lincoln Road Corridor Study.

Steve Grabill, Ulteig Engineers, appeared on behalf of the Bismarck-Mandan MPO and presented the final draft of the Lincoln Road Corridor Study. Grabill informed the Commission that several public input meetings and two (2) public hearings have been held. Grabill presented a brief overview of the recommended alternatives which include both corridor and intersection level recommendations. Grabill noted people want better connections between Lincoln and Bismarck with mixed response concerning at the 52nd St intersection and elevating the Lincoln Road. Grabill noted the expressed concerns regarding Airway Ave. Grabill presented the results of five (5) questions that were posed at the public hearings and public input meetings. Grabill asked that each Commissioner review the questions and provide individual feedback. Grabill further requested the Commission take action on the final Lincoln Road Corridor Study.

Chairman Bitner called for testimony from those in attendance. As no one appeared the following motion was made.

Motion by Comm. Woodcox, 2nd by Comm. Armstrong, to accept the Lincoln Road Corridor Study as presented. All members present voted "AYE." Motion carried.

County Engineer Hall appeared and presented his monthly County Engineer's report along with the following items for the Board's consideration: authorize purchase agreement for property for the new Bismarck shop, and authorization reclassification and salary adjustment for Asst County Engineer Position to Engineer II.

Engineer Hall requested authorization to execute a purchase agreement with Michael & David Esposito for the purchase of 40 acres in the SW ¼ SW ¼, Section 16, Gibbs Township, in the amount of $200,000 for the site of a new Bismarck shop facility. Hall explained that the Highway Department's Property Team has been searching for a suitable piece of property to facilitate the replacement of the current Bismarck shop. Hall stated that this property is located at the corner of 43rd Avenue NE and 80th Street NE. Hall stated that the offer is based on appraisal and negotiation with the land owner.

Motion by Comm. Armstrong, 2nd by Comm. Woodcox, to authorize and approve the Highway Departments purchase of the SW ¼ of the SW ¼ of Section 16 in Gibbs Township (40 acres +/-) from Michael Esposito and David Esposito for $200,000. All members present voted "AYE." Motion carried.

Engineer Hall continued that he has been working with the HR Director on redesigning the Engineering positions to accommodate the expanded duties of the engineering staff due to growth in Burleigh County. Hall stated that after reviewing different professional tract structures within the ND Dept of Transportation, Cass County and the Burleigh County State's Attorney's Office, he worked with the HR Director and Fox Lawson & Associates and the following three (3) positions were established: Engineer I, Engineer II, and Senior Assistant County Engineer. Hall explained that a current employee

Steve Grabill

From: Bev Bettenhausen <bbettenh@nd.gov>
Sent: Wednesday, August 17, 2011 10:10 AM
To: Steve Grabill
Cc: 'Kevin Glatt'
Subject: questionnaires
Attachments: grabill.pdf

Steve,

We have four out of the five questionnaires for you. Bitner was not at today's meeting.

Thanks,
Bev

Beverly Bettenhausen
Deputy Auditor/Treasurer
(701) 222-6697
bbettenh@nd.gov

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Lincoln Road Corridor Study
Burleigh County Commission Feedback

The Lincoln Road Corridor Study provides a number of recommendations that provide clear guidance for future project development. The Study Review Committee requested more specific feedback from elected officials on five alternatives considered within the study. Questions pertaining to these five alternatives are provided as follows:

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

   Yes X No_____

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

   Yes X No_____

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

   Yes X No_____

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?

   Yes Y No_____

5. Should an estimated $130,000 - $225,000 be spent for landscaping along Lincoln Road?

   Yes X No_____

Additional County Commission Feedback:

_____

_____

_____

Authorized Signature

8/17/11
Date

Lincoln Road Corridor Study
Burleigh County Commission Feedback

The Lincoln Road Corridor Study provides a number of recommendations that provide clear guidance for future project development. The Study Review Committee requested more specific feedback from elected officials on five alternatives considered within the study. Questions pertaining to these five alternatives are provided as follows:

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

   Yes _____ No X

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

   Yes X No_____

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

   Yes_____ No X

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?

   Yes_____ No X

5. Should an estimated $130,000 - $225,000 be spent for landscaping along Lincoln Road?

   Yes_____ No X

Additional County Commission Feedback:

_____

_____

_____

Authorized Signature

17 Aug 2011
Date

Lincoln Road Corridor Study
Burleigh County Commission Feedback

The Lincoln Road Corridor Study provides a number of recommendations that provide clear guidance for future project development. The Study Review Committee requested more specific feedback from elected officials on five alternatives considered within the study. Questions pertaining to these five alternatives are provided as follows:

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

   Yes X No_____

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

   Yes X No_____

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

   Yes X No_____

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?

   Yes_____ No X

5. Should an estimated $130,000 - $225,000 be spent for landscaping along Lincoln Road?

   Yes_____ No X

Additional County Commission Feedback:

_____

_____

_____

James Peluso
Authorized Signature

9-18-11
Date

Lincoln Road Corridor Study
Burleigh County Commission Feedback

The Lincoln Road Corridor Study provides a number of recommendations that provide clear guidance for future project development. The Study Review Committee requested more specific feedback from elected officials on five alternatives considered within the study. Questions pertaining to these five alternatives are provided as follows:

1. Should an estimated $1.5 million be spent to elevate Lincoln Road out of the floodplain?

   Yes____ No X it seems that those who use this should be supporting this - not opposing it.

2. Should roundabouts be considered in the Lincoln Road reconstruction project?

   Yes X No____

3. Should an ATV trail be considered in the south ditch of Lincoln Road?

   Yes____ No X

4. Should an estimated $350,000 be spent for street lighting along Lincoln Road?

   Yes X No____ if paid for by Lincoln Residents

5. Should an estimated $130,000 - $225,000 be spent for landscaping along Lincoln Road?

   Yes X No____ if paid for Lincoln Residents

Additional County Commission Feedback:

Future expansion of the airport is a major detriment to spending 1.5 mil if we might loose it in the future. Roundabouts are definately in - do it!

Jerry Woodcox
Authorized Signature

7-6-2011
Date

Appendix 4

Opinion of Costs

Lincoln Road Corridor Study
Lincoln, North Dakota
CONSTRUCTION COST ESTIMATES
UEI Project No. 10.01486
April 29, 2011

LINCOLN ROAD - AIRWAY AVENUE TO ABANDONED RAIL BED ALTERNATIVES

Alternative 1 - Grade Raise with 4-ft Shoulders

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Removal of Bituminous Surfacing	SY	9,560	$1.50	$14,340.00
2	Removal of Culverts - All Types and Sizes	LF	100	$12.00	$1,200.00
3	Common Excavation	CY	2,600	$5.00	$13,000.00
4	Granular Borrow	CY	32,865	$10.00	$328,650.00
5	Topsoil	CY	500	$20.00	$10,000.00
6	Aggregate Base Class 5	CY	2,090	$28.00	$58,520.00
7	Hot Bituminous Pavement Wearing Course	TON	1,400	$70.00	$98,000.00
8	Hot Bituminous Pavement Non-Wearing Course	TON	1,400	$70.00	$98,000.00
9	Mobilization	LS	1	$50,000.00	$50,000.00
10	Traffic Control	LS	1	$15,000.00	$15,000.00
11	Traffic Control Signs	UNIT	8	$350.00	$2,800.00
12	4" Solid Line White - Epoxy	LF	6,600	$0.35	$2,310.00
13	4" Broken Line Yellow - Epoxy	LF	1,400	$0.35	$490.00
14	4" Solid Line Yellow - Epoxy	LF	3,800	$0.35	$1,330.00
15	Pavement Mesaage Left Arrow	EACH	6	$250.00	$1,500.00
16	Pavement Mesaage Right Arrow	EACH	5	$250.00	$1,250.00
17	Pipe Conc Reinf CL III - All Sizes	LF	240	$50.00	$12,000.00
18	Erosion Control	LS	1	$7,500.00	$7,500.00
19	Turf Restoration	ACRE	3.8	$6,000.00	$22,800.00
20	Silt Fence, Type Machine Sliced	LF	6,600	$5.00	$33,000.00
21	Traffic Control Signs	UNIT	2	$350.00	$700.00
22	Temporary Traffic Control	LS	1	$20,000.00	$20,000.00
23	Flotation Silt Curtain, Type Moving Water	LF	120	$30.00	$3,600.00
24	Random Rip Rap Class III	CY	40.0	$50.00	$2,000.00
25	Bridge Replacement	LS	1.0	$650,000.00	$650,000.00
				Alternate 1	**$1,447,990.00**

Alternate 2 - Grade Raise with 8-ft Shoulders

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Removal of Bituminous Surfacing	SY	9,560	$1.50	$14,340.00
2	Removal of Culverts - All Types and Sizes	LF	100	$12.00	$1,200.00
3	Common Excavation	CY	1,960	$5.00	$9,800.00
4	Granular Borrow	CY	37,995	$10.00	$379,950.00
5	Topsoil	CY	500	$20.00	$10,000.00
6	Aggregate Base Class 5	CY	2,570	$28.00	$71,960.00
7	Hot Bituminous Pavement Wearing Course	TON	1,715	$70.00	$120,050.00
8	Hot Bituminous Pavement Non-Wearing Course	TON	1,715	$70.00	$120,050.00
9	Mobilization	LS	1	$50,000.00	$50,000.00
10	Traffic Control	LS	1	$15,000.00	$15,000.00
11	Traffic Control Signs	UNIT	8	$350.00	$2,800.00
12	4" Solid Line White - Epoxy	LF	6,600	$0.35	$2,310.00
13	4" Broken Line Yellow - Epoxy	LF	1,400	$0.35	$490.00
14	4" Solid Line Yellow - Epoxy	LF	3,800	$0.35	$1,330.00
15	Pavement Mesaage Left Arrow	EACH	6	$250.00	$1,500.00
16	Pavement Mesaage Right Arrow	EACH	5	$250.00	$1,250.00
17	Pipe Conc Reinf CL III - All Sizes	LF	240	$50.00	$12,000.00
18	Erosion Control	LS	1	$7,500.00	$7,500.00
19	Turf Restoration	ACRE	3.8	$6,000.00	$22,800.00
20	Silt Fence, Type Machine Sliced	LF	6,600	$5.00	$33,000.00
21	Traffic Control Signs	UNIT	2	$350.00	$700.00
22	Temporary Traffic Control	LS	1	$20,000.00	$20,000.00
23	Flotation Silt Curtain, Type Moving Water	LF	120	$30.00	$3,600.00
24	Random Rip Rap Class III	CY	40	$50.00	$2,000.00
25	Bridge Replacement	LS	1	$800,000.00	$800,000.00
				Alternate 2	**$1,703,630.00**

LINCOLN ROAD - ABANDONED RAIL BED TO 66TH STREET SE ALTERNATIVES

Alternate 1 - Build with 4-ft Shoulders and Turn Lanes

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Removal of Bituminous Surfacing	SY	21,000	$1.50	$31,500.00
2	Removal of Culverts - All Types and Sizes	LF	300	$12.00	$3,600.00
3	Common Excavation	CY	13,000	$5.00	$65,000.00
4	Granular Borrow	CY	5,370	$10.00	$53,700.00
5	Topsoil	CY	1,000	$20.00	$20,000.00
6	Aggregate Base Class 5	CY	6,175	$28.00	$172,900.00
7	Hot Bituminous Pavement Wearing Course	TON	4,130	$70.00	$289,100.00
8	Hot Bituminous Pavement Non-Wearing Course	TON	4,130	$70.00	$289,100.00
9	Mobilization	LS	1	$50,000.00	$50,000.00
10	Traffic Control Signs	UNIT	16	$350.00	$5,600.00
11	Temporary Traffic Control	LS	1	$12,500.00	$12,500.00
12	4" Solid Line White - Epoxy	LF	14,500	$0.35	$5,075.00
13	4" Broken Line Yellow - Epoxy	LF	1,250	$0.35	$437.50
14	4" Solid Line Yellow - Epoxy	LF	13,100	$0.35	$4,585.00
15	Pavement Message Left Arrow	EACH	14	$250.00	$3,500.00
16	Crosswalk Marking - Epoxy	SF	360	$12.00	$4,320.00
17	Pipe Conc Reinf CL III - All Sizes	LF	600	$50.00	$30,000.00
18	Erosion Control	LS	1	$7,500.00	$7,500.00
19	Turf Restoration	ACRE	8.3	$6,000.00	$49,800.00
				Alternate 1	**$1,098,217.50**

Alternate 2 - Build with 8-ft Shoulders and Turn Lanes

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Removal of Bituminous Surfacing	SY	21,000	$1.50	$31,500.00
2	Removal of Culverts - All Types and Sizes	LF	300	$12.00	$3,600.00
3	Common Excavation	CY	14,500	$5.00	$72,500.00
4	Granular Borrow	CY	6,500	$10.00	$65,000.00
5	Topsoil	CY	1,000	$20.00	$20,000.00
6	Aggregate Base Class 5	CY	7,225	$28.00	$202,300.00
7	Hot Bituminous Pavement Wearing Course	TON	4,900	$70.00	$343,000.00
8	Hot Bituminous Pavement Non-Wearing Course	TON	4,900	$70.00	$343,000.00
9	Mobilization	LS	1	$50,000.00	$50,000.00
10	Traffic Control Signs	UNIT	16	$350.00	$5,600.00
11	Temporary Traffic Control	LS	1	$12,500.00	$12,500.00
12	4" Solid Line White - Epoxy	LF	14,500	$0.35	$5,075.00
13	4" Broken Line Yellow - Epoxy	LF	1,250	$0.35	$437.50
14	4" Solid Line Yellow - Epoxy	LF	13,100	$0.35	$4,585.00
15	Pavement Message Left Arrow	EACH	14	$250.00	$3,500.00
16	Crosswalk Marking - Epoxy	SF	360	$12.00	$4,320.00
17	Pipe Conc Reinf CL III - All Sizes	LF	600	$50.00	$30,000.00
18	Erosion Control	LS	1	$7,500.00	$7,500.00
19	Turf Restoration	ACRE	8.3	$6,000.00	$49,800.00
				Alternate 2	**$1,254,217.50**

MULTI-USE TRAIL ALTERNATIVES

Alternate 1 - Build from 52nd Street SE to 66th Street SE

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Common Excavation	CY	1,170	$7.00	$8,190.00
3	Aggregate Base Class 5	CY	1,170	$35.00	$40,950.00
4	Hot Bituminous Pavement Wearing Course	TON	850	$90.00	$76,500.00
5	Mobilization	LS	1	$10,000.00	$10,000.00
6	Traffic Control Signs	UNIT	6	$350.00	$2,100.00
7	Pipe Conc Reinf CL III - All Sizes	LF	100	$50.00	$5,000.00
8	Turf Restoration	ACRE	1.2	$6,000.00	$7,200.00
				Alternate 2	**$149,940.00**

ATV TRAIL ALTERNATIVES

Alternate 1 - Build from Abandoned Rail Bed to 66th Street

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Common Excavation	CY	1,300	$7.00	$9,100.00
2	Aggregate	CY	1,300	$35.00	$45,500.00
3	Mobilization	LS	1	$10,000.00	$10,000.00
4	Traffic Control Signs	UNIT	7	$350.00	$2,450.00
5	Pipe Conc Reinf CL III - All Sizes	LF	130	$50.00	$6,500.00
6	Turf Restoration	ACRE	1.6	$6,000.00	$9,600.00
				Alternate 1	**$83,150.00**

AIRWAY AVENUE INTERSECTION ALTERNATIVES

Alternate 1 - Turn Lane

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Common Excavation	CY	880	$5.00	$4,400.00
2	Granular Borrow	CY	1,760	$10.00	$17,600.00
3	Aggregate Base Class 5	CY	440	$28.00	$12,320.00
4	Hot Bituminous Pavement Wearing Course	TON	290	$75.00	$21,750.00
5	Hot Bituminous Pavement Non-Wearing Course	TON	290	$75.00	$21,750.00
6	Mobilization	LS	1	$10,000.00	$10,000.00
7	Precast Concrete Box Culvert	LF	30	$850.00	$25,500.00
8	4" Solid Line White - Epoxy	LF	3,700	$0.50	$1,850.00
9	4" Solid Line Yellow - Epoxy	LF	2,400	$0.50	$1,200.00
10	Pavement Mesaage Left Arrow	EACH	5	$250.00	$1,250.00
11	Pavement Mesaage Right Arrow	EACH	5	$250.00	$1,250.00
12	Turf Restoration	ACRE	0.8	$6,000.00	$4,800.00
13	Silt Fence, Type Machine Sliced	LF	1,400.0	$5.00	$7,000.00
14	Traffic Control Signs	UNIT	2.0	$350.00	$700.00
15	Temporary Traffic Control	LS	1.0	$3,500.00	$3,500.00
16	Random Rip Rap Class III	CY	100.0	$50.00	$5,000.00
				Alternate 1	**$139,870.00**

Alternate 2 - Turn Lane with Revised Stop Control

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Common Excavation	CY	880	$5.00	$4,400.00
2	Granular Borrow	CY	1,760	$10.00	$17,600.00
3	Aggregate Base Class 5	CY	440	$28.00	$12,320.00
4	Hot Bituminous Pavement Wearing Course	TON	290	$75.00	$21,750.00
5	Hot Bituminous Pavement Non-Wearing Course	TON	290	$75.00	$21,750.00
6	Mobilization	LS	1	$10,000.00	$10,000.00
7	Precast Concrete Box Culvert	LF	30	$850.00	$25,500.00
8	4" Solid Line White - Epoxy	LF	3,700	$0.50	$1,850.00
9	4" Solid Line Yellow - Epoxy	LF	2,400	$0.50	$1,200.00
10	Pavement Mesaage Left Arrow	EACH	5	$250.00	$1,250.00
11	Pavement Mesaage Right Arrow	EACH	5	$250.00	$1,250.00
12	Turf Restoration	ACRE	0.8	$6,000.00	$4,800.00
13	Silt Fence, Type Machine Sliced	LF	1,400.0	$5.00	$7,000.00
14	Traffic Control Signs	UNIT	5	$350.00	$1,750.00
15	Temporary Traffic Control	LS	1	$3,500.00	$3,500.00
16	Random Rip Rap Class III	CY	100	$50.00	$5,000.00
				Alternate 2	**$140,920.00**

Alternate 3 - Roundabout

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Roundabout	LS	1	$750,000.00	$750,000.00
				Alternate 3	**$750,000.00**

Alternate 4 - Geometric Change

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Removal of Bituminous Surfacing	SY	6,360	$1.50	$9,540.00
2	Common Excavation	CY	3,670	$5.00	$18,350.00
3	Granular Borrow	CY	7,340	$10.00	$73,400.00
4	Topsoil	CY	200	$20.00	$4,000.00
5	Aggregate Base Class 5	CY	1,835	$28.00	$51,380.00
6	Hot Bituminous Pavement Wearing Course	TON	1,220	$70.00	$85,400.00
7	Hot Bituminous Pavement Non-Wearing Course	TON	1,220	$70.00	$85,400.00
8	Mobilization	LS	1	$25,000.00	$25,000.00
9	Traffic Control	LS	1	$5,000.00	$5,000.00
10	Traffic Control Signs	UNIT	6	$350.00	$2,100.00
11	4" Solid Line White - Epoxy	LF	5,400	$0.50	$2,700.00
12	4" Solid Line Yellow - Epoxy	LF	3,350	$0.50	$1,675.00
13	Pavement Mesaage Left Arrow	EACH	4	$250.00	$1,000.00
14	Erosion Control	LS	1	$5,000.00	$5,000.00
15	Turf Restoration	ACRE	2.1	$6,000.00	$12,600.00
16	Remove and Replace Box Culvert	LF	80	$300.00	$24,000.00
17	Silt Fence, Type Machine Sliced	LF	4,400	$5.00	$22,000.00
18	Traffic Control Signs	UNIT	2	$350.00	$700.00
19	Temporary Traffic Control	LS	1	$2,500.00	$2,500.00
20	Random Rip Rap Class III	CY	40	$50.00	$2,000.00
				Alternate 4	**$433,745.00**

52nd STREET SE INTERSECTION ALTERNATIVES

Alternate 1 - Addition of Left Turn Lanes

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Common Excavation	CY	200	$5.00	$1,000.00
2	Granular Borrow	CY	400	$10.00	$4,000.00
3	Aggregate Base Class 5	CY	100	$30.00	$3,000.00
4	Hot Bituminous Pavement Wearing Course	TON	70	$80.00	$5,600.00
5	Hot Bituminous Pavement Non-Wearing Course	TON	70	$80.00	$5,600.00
6	Mobilization	LS	1	$10,000.00	$10,000.00
7	Traffic Control Signs	UNIT	2	$350.00	$700.00
8	Temporary Traffic Control	LS	1	$2,500.00	$2,500.00
9	4" Solid Line White - Epoxy	LF	540	$1.00	$540.00
10	Pavement Mesaage Right Arrow	EACH	2	$250.00	$500.00
11	Turf Restoration	ACRE	0.2	$6,000.00	$1,200.00
				Alternate 1	**$34,640.00**

Alternate 2 - Roundabout

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Roundabout	LS	1	$750,000.00	$750,000.00
				Alternate 2	**$750,000.00**

McDOUGALL AVENUE INTERSECTION ALTERNATIVES

Alternate 1 - Enhanced Crosswalk Improvements

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Common Excavation	CY	785	$5.00	$3,925.00
2	Granular Borrow	CY	1,570	$10.00	$15,700.00
3	Aggregate Base Class 5	CY	400	$28.00	$11,200.00
4	Hot Bituminous Pavement Wearing Course	TON	275	$80.00	$22,000.00
5	Hot Bituminous Pavement Non-Wearing Course	TON	275	$80.00	$22,000.00
6	Mobilization	LS	1	$10,000.00	$10,000.00
7	Traffic Control Signs	UNIT	12	$350.00	$4,200.00
8	Temporary Traffic Control	LS	1	$2,500.00	$2,500.00
9	4" Concrete Walk	SF	960	$4.00	$3,840.00
10	Concrete Median	SF	3,660	$6.00	$21,960.00
11	4" Solid Line Yellow - Epoxy	LF	960	$1.00	$960.00
				Alternate 1	**$118,285.00**

66th STREET SE INTERSECTION ALTERNATIVES

Alternate 1 - Addition of Turn Lanes

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Common Excavation	CY	400	$5.00	$2,000.00
2	Granular Borrow	CY	800	$10.00	$8,000.00
3	Aggregate Base Class 5	CY	200	$28.00	$5,600.00
4	Hot Bituminous Pavement Wearing Course	TON	140	$80.00	$11,200.00
5	Hot Bituminous Pavement Non-Wearing Course	TON	140	$80.00	$11,200.00
6	Mobilization	LS	1	$10,000.00	$10,000.00
7	Traffic Control Signs	UNIT	4	$350.00	$1,400.00
8	Temporary Traffic Control	LS	1	$2,500.00	$2,500.00
9	4" Solid Line White - Epoxy	LF	1,080	$1.00	$1,080.00
10	Pavement Mesaage Right Arrow	EACH	4	$250.00	$1,000.00
11	Turf Restoration	ACRE	0.3	$6,000.00	$1,500.00
				Alternate 1	**$55,480.00**

Alternate 2 - Roundabout

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Roundabout	LS	1	$750,000.00	$750,000.00
				Alternate 2	**$750,000.00**

STREET LIGHTING ALTERNATIVES

Alternate 1 - Street Lighting through City of Lincoln

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Street Lighting Modifications	LS	1	$350,000.00	$350,000.00
				Alternate 1	**$350,000.00**

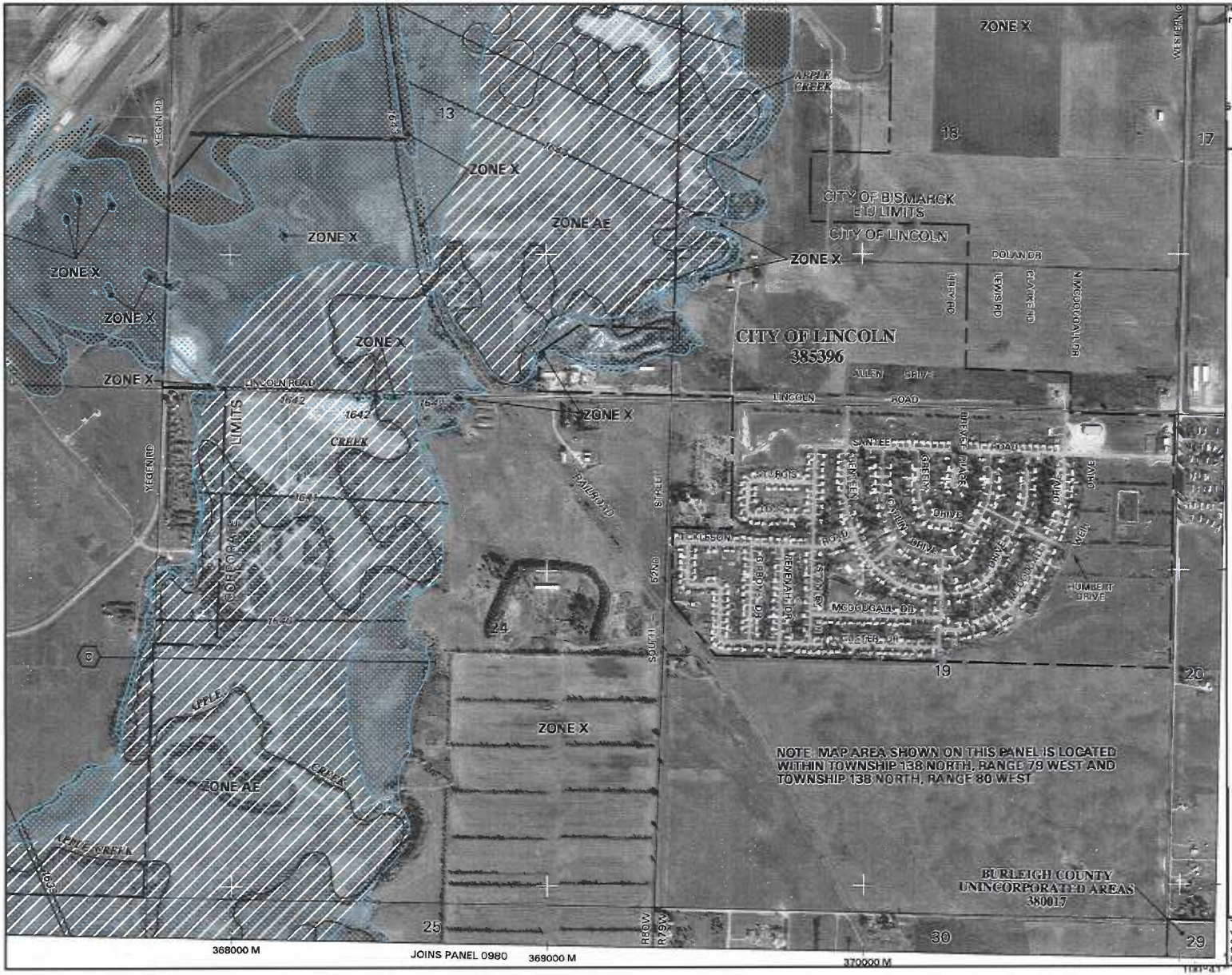
OTHER CONSIDERED ALTERNATIVES

Multi-Use Trail from Airway Avenue to 52nd Street

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Common Excavation	CY	1,950	$7.00	$13,650.00
2	Granular Borrow	CY	13,150	$12.00	$157,800.00
3	Aggregate Base Class 5	CY	1,170	$35.00	$40,950.00
4	Hot Bituminous Pavement Wearing Course	TON	850	$90.00	$76,500.00
5	Mobilization	LS	1	$10,000.00	$10,000.00
6	Traffic Control Signs	UNIT	4	$350.00	$1,400.00
7	Pipe Conc Reinf CL III - All Sizes	LF	100	$50.00	$5,000.00
8	Turf Restoration	ACRE	1.2	$6,000.00	$7,200.00
9	Multi-Use Bridge	LS	1	$215,000.00	$215,000.00
				Alternate	**$527,500.00**

ATV Trail from Airway Avenue to Abandoned Rail Bed

Item No.	Item	Unit	Quantity	Unit Cost	Estimated Cost
1	Common Excavation	CY	1,300	$7.00	$9,100.00
2	Granular Borrow	CY	13,000	$12.00	$156,000.00
3	Aggregate	CY	650	$35.00	$22,750.00
4	Mobilization	LS	1	$10,000.00	$10,000.00
5	Traffic Control Signs	UNIT	3	$350.00	$1,050.00
6	Pipe Conc Reinf CL III - All Sizes	LF	70	$50.00	$3,500.00
7	Turf Restoration	ACRE	0.8	$6,000.00	$4,800.00
8	ATV Bridge	LS	1	$270,000.00	$270,000.00
				Alternate	**$477,200.00**



...surance is available in this community, contact yo...
...nal Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0815C

FIRM

FLOOD INSURANCE RATE MAP

BURLEIGH COUNTY, NORTH DAKOTA AND INCORPORATED AREAS

PANEL 815 OF 1125

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BURLEIGH COUNTY, UNINCORPORATED AREAS	380017	0815	C
LINCOLN, CITY OF	385396	0815	C
BISMARCK, CITY OF	380148	0815	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
38015C0815C

EFFECTIVE DATE:
JULY 19, 2005

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

od insurance is available in this community, contact you
nal Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0815C

FIRM

FLOOD INSURANCE RATE MAP

BURLEIGH COUNTY,
NORTH DAKOTA AND
INCORPORATED AREAS

PANEL 815 OF 1125

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BURLEIGH COUNTY, UNINCORPORATED AREAS	380017	0815	C
LINCOLN, CITY OF	380099	0815	C
BISMARCK, CITY OF	380149	0815	C

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