

168th Street Improvements

Poppleton Avenue to Ehlers Street

Project Numbers:

STPC-3811(1) CN: 22209 and

STPC-3811(2) CN: 22210

City of Omaha, Douglas County, Nebraska

Draft Environmental Assessment

February 2017

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by the:

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City of Omaha

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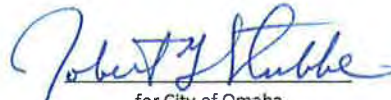
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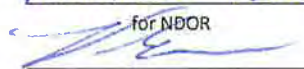
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TABLE OF CONTENTS

Section 1	Introduction and Purpose & Need	1
1.1	Introduction	1
1.2	Background and Study Area.....	3
1.2.1	Background	3
1.2.2	Logical Termini and Environmental Study Area	7
1.3	Purpose of the Proposed Project	8
1.4	Need for the Proposed Project	8
1.4.1	Insufficient Roadway Capacity	8
1.4.2	Inadequate Bridge Conditions	11
1.4.3	Discontinuity with Roadways and Intersections (Vehicular System Linkage).....	13
1.4.4	Inadequate Pedestrian Accessibility (Pedestrian System Linkage).....	17
1.5	Summary.....	20
Section 2	Alternatives.....	21
2.1	No-Action Alternative	21
2.2	Other Alternatives Considered But Not Carried Forward.....	21
2.2.1	Non-Roadway Improvement Alternatives	21
2.2.2	Other Roadway Alternatives Considered.....	22
2.2.3	Other Bridge Alternatives Considered	23
2.3	Proposed Alternative	26
2.4	Proposed Funding Plan and Project Implementation (Phasing)	32
Section 3	Affected Environment and Environmental Consequences	33
3.1	Land Use and Zoning.....	34
3.1.1	Current Conditions.....	34
3.1.2	Environmental Consequences.....	38
3.1.3	Proposed Mitigation	38
3.2	Zorinsky Lake and Ed Zorinsky Recreation Area (Papillion Creek Dam Site 18).....	38
3.2.1	Background	38
3.2.2	Environmental Consequences.....	43

3.2.3	Proposed Mitigation	44
3.3	Social and Economic Considerations	46
3.3.1	Current Conditions.....	46
3.3.2	Environmental Consequences.....	55
3.3.3	Proposed Mitigation	67
3.4	Title VI and Environmental Justice.....	68
3.4.1	Current Conditions.....	69
3.4.2	Environmental Consequences.....	75
3.4.3	Proposed Mitigation	77
3.5	Right-of-Way, Acquisitions, and Relocations	77
3.5.1	Existing Conditions.....	77
3.5.2	Environmental Consequences.....	78
3.5.3	Proposed Mitigation	79
3.6	Pedestrians, Bicyclists, and Accessibility for Individuals with Disabilities	81
3.6.1	Current Conditions.....	81
3.6.2	Environmental Consequences.....	82
3.6.3	Proposed Mitigation	83
3.7	Parks, Recreation Areas, and Trails (Section 4(f) Resources)	84
3.7.1	Current Conditions.....	84
3.7.2	Environmental Consequences.....	88
3.7.3	Proposed Mitigation	98
3.8	Historic and Archeological Resources	99
3.8.1	Current Conditions.....	100
3.8.2	Environmental Consequences.....	100
3.8.3	Proposed Mitigation	101
3.9	Water Resources and Water Quality	101
3.9.1	Existing Conditions.....	102
3.9.2	Environmental Consequences.....	107
3.9.3	Proposed Mitigation	109
3.10	Wetlands and Waters of the United States	110

3.10.1	Current Conditions.....	110
3.10.2	Environmental Consequences.....	111
3.10.3	Compliance with Executive Order 11990.....	113
3.10.4	Proposed Mitigation	113
3.11	Floodplains	114
3.11.1	Current Conditions.....	114
3.11.2	Environmental Consequences.....	114
3.11.3	Compliance with Executive Order 11988.....	117
3.11.4	Proposed Mitigation	118
3.12	Vegetation, Wildlife, and Habitat	118
3.12.1	Current Conditions.....	118
3.12.2	Environmental Consequences.....	121
3.12.3	Proposed Mitigation	121
3.13	Invasive Species	122
3.13.1	Existing Conditions.....	123
3.13.2	Environmental Consequences.....	124
3.13.3	Proposed Mitigation	124
3.14	Threatened, Endangered, and Protected Species.....	125
3.14.1	Current Conditions.....	126
3.14.2	Environmental Consequences.....	127
3.14.3	Proposed Mitigation	128
3.15	Utilities	130
3.15.1	Current Conditions.....	130
3.15.2	Environmental Consequences.....	131
3.15.3	Proposed Mitigation	131
3.16	Noise Impacts.....	133
3.16.1	Current Conditions.....	134
3.16.2	Environmental Consequences.....	135
3.16.3	Proposed Mitigation	137
3.17	Air Quality, Mobile Source Air Toxics, and Greenhouse Gases.....	137

3.17.1	Regional Air Quality	138
3.17.2	Mobile Source Air Toxics.....	138
3.17.3	Greenhouse Gas Emissions	141
3.18	Hazardous Materials and Recognized Environmental Conditions.....	142
3.18.1	Current Conditions.....	142
3.18.2	Environmental Consequences.....	143
3.18.3	Proposed Mitigation	143
3.19	Visual Impacts and Aesthetic Considerations.....	143
3.19.1	Current Conditions.....	143
3.19.2	Environmental Consequences.....	144
3.19.3	Proposed Mitigation	145
3.20	Temporary Construction Related Considerations.....	146
3.20.1	Environmental Consequences.....	146
3.20.2	Proposed Mitigation	148
3.21	Secondary and Cumulative Impacts.....	152
3.22	Permits and Approvals	157
Section 4	Agency Coordination and Public Involvement.....	160
4.1	Agency Coordination.....	160
4.2	Public Involvement.....	163
4.2.1	Public Meetings.....	163
4.2.2	Additional Public Outreach	166
4.2.3	Public Hearing	166
4.2.4	Limited English Proficiency	167
Section 5	Mitigation Measures and Environmental Commitments	168
Section 6	List of Preparers and Reviewers	187
Section 7	List of Acronyms, Abbreviations, and Terms	189
Section 8	Works Cited.....	193

List of Tables

Table 1.1	Side Streets and Auxiliary Turn Lanes along 168th Street
Table 1.2	Existing and Future Daily Traffic Volumes and Level of Service
Table 3.1	Access Changes and Resulting Out of Distance Travel
Table 3.2	Income and Poverty Statistics for the Study Area, 2008-2012 American Community Survey
Table 3.3	Minority Populations Statistics for the Study Area, 2010 Census
Table 3.4	Noise Abatement Criteria, Hourly A-Weighted Sound Level (in decibels) from 23 CFR 772
Table 3.5	Anticipated Permits and Approvals
Table 4.1	Agency Scoping Comments and Responses
Table 4.2	Agency Concurrences Obtained

List of Figures

Figure 1.1	Project Location
Figure 1.2	Federal Functional Classification System
Figure 1.3	Continuous Paved Roadways between Highway 36 and Highway 370
Figure 1.4	Level of Service Characteristics for Roadways
Figure 1.5	Typical Roadway Capacities
Figure 1.6	Existing Zorinsky Lake Bridge Conditions
Figure 1.7	Lane Discontinuity with Roadways and Intersections
Figure 1.8	Congestion Resulting from Vehicles Not Utilizing Right Lanes at West Center Road
Figure 1.9	Congestion Resulting from Vehicles Not Utilizing Right Lanes at Q Street
Figure 1.10	Congestion Resulting from Vehicles Turning Left onto Side Streets
Figure 1.11	Sidewalks
Figure 2.1	Typical Roadway Configurations Not Considered in Further Detail
Figure 2.2	Existing Two-Lane and Proposed Four-Lane Divided Roadway Configurations
Figure 2.3	Proposed Four-Lane Divided Roadway Cross-Section
Figure 2.4	Proposed Bridge Cross-Section
Figure 2.5	Example of Proposed Bridge Railing System
Figure 2.6	Examples of Safety Railings between Trails/Sidewalks and Watercourses/Retaining Walls
Figure 3.1	Existing Zoning from City of Omaha
Figure 3.2	Future Land Use Map from City of Omaha Master Plan
Figure 3.3	Dam Site 18, Zorinsky Lake, and Edward Zorinsky Recreation Area
Figure 3.4	ROW Easement and Proposed Flood Storage Mitigation Sites
Figure 3.5	Subdivisions
Figure 3.6	Social and Economic Considerations
Figure 3.7	Elementary School Attendance Areas
Figure 3.8A	Proposed Access Changes

Figure 3.8B Proposed Access Changes
Figure 3.8C Proposed Access Changes
Figure 3.9 Census Tracts and Block Groups
Figure 3.10 Parks and Trails
Figure 3.11 Pinewood Park
Figure 3.12 Zorinsky Lake and Edward Zorinsky Recreation Area
Figure 3.13 Zorinsky Lake Trail
Figure 3.14 Water Resources and Water Quality
Figure 3.15 MUD Millard Wellfield Wellhead Protection Area and Municipal Wells
Figure 3.16 Wetlands and Waters of the U.S.
Figure 3.17 FEMA Floodplain
Figure 3.18 Typical Sound Pressure Level (A-weighted decibels (dBA))
Figure 3.19 Proposed Noise Wall Locations
Figure 3.20 Typical Noise Walls
Figure 3.21 Alternate Routes

Appendices

Appendix A - Zorinsky Lake Bridge Design Considerations
Appendix B - USACE Missouri River Project Office Coordination
Appendix C - Environmental Justice Concurrence
Appendix D - Section 106 and Tribal Coordination/Concurrence
Appendix E - Waters of the United States Coordination and Preliminary Jurisdiction Determination
Appendix F - Threatened & Endangered Species Coordination/Concurrence
Appendix G - Noise Study
Appendix H - Hazardous Materials Technical Review
Appendix I - Public Involvement Meeting Documentation
Appendix J – Re-Vegetation Plan

SECTION 1 INTRODUCTION AND PURPOSE & NEED

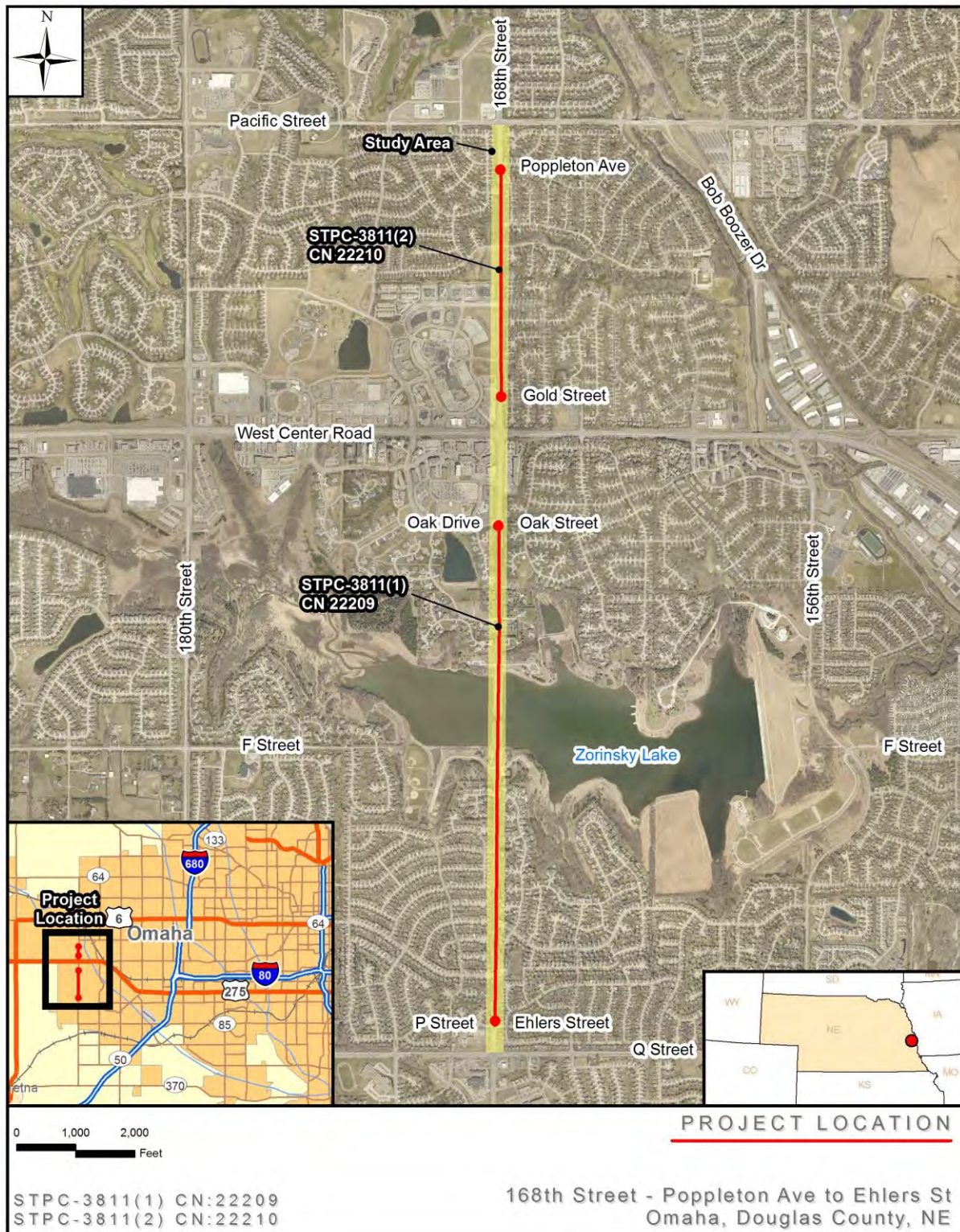
1.1 INTRODUCTION

The City of Omaha, Nebraska (City), in cooperation with the Federal Highway Administration (FHWA) and the Nebraska Department of Roads (NDOR), is proposing to widen 168th Street from a two-lane rural roadway to a four-lane urban divided roadway with turn lanes, generally between Pacific Street and Q Street. These improvements were originally identified in the Metropolitan Area Planning Agency (MAPA) 2035 Long Range Transportation Plan (LRTP) (MAPA, 2011), and have now been included by the City and MAPA in their 2014 Transportation Improvement Plan (TIP). This project is proposed to be funded using a combination of federal and local funds.

More specifically, the proposed project includes widening 168th Street from Poppleton Avenue, which is just south of Pacific Street, to Gold Street, which is just north of West Center Road; and from Oak Street, which is just south of West Center Road, to Ehlers Street, which is just north of Q Street, as shown in **Figure 1.1**. The proposed project does not include improvements to segments of 168th Street that have already been widened to a four-lane roadway as part of previous projects, which includes Q Street to Ehlers Street (completed with Q Street improvements in 2006), just south of Oak Street to Gold Street (completed with West Center Road improvements in 2002), and from Poppleton Avenue to Pacific Street (completed with Pacific Street improvements in 2004).

This Draft Environmental Assessment (EA) was prepared in compliance with the requirements of the *National Environmental Policy Act of 1969* (NEPA); the Council on Environmental Quality (CEQ) regulations in the Code of Federal Regulations (CFR) (40 CFR 1500-1508); FHWA regulations in 23 CFR 771, 23CFR 772, and 23 CFR 774; and guidelines in FHWA's Technical Advisory T-6640.8A, *Guidance for Preparing and Processing Environmental and Section 4(f) Documents*. The intent of these regulations and guidelines are to ensure that all factors are considered in the transportation decision-making process, including a concern for the environment and the involvement of the public (FHWA, 1987).

Figure 1.1 Project Location



1.2 BACKGROUND AND STUDY AREA

1.2.1 BACKGROUND

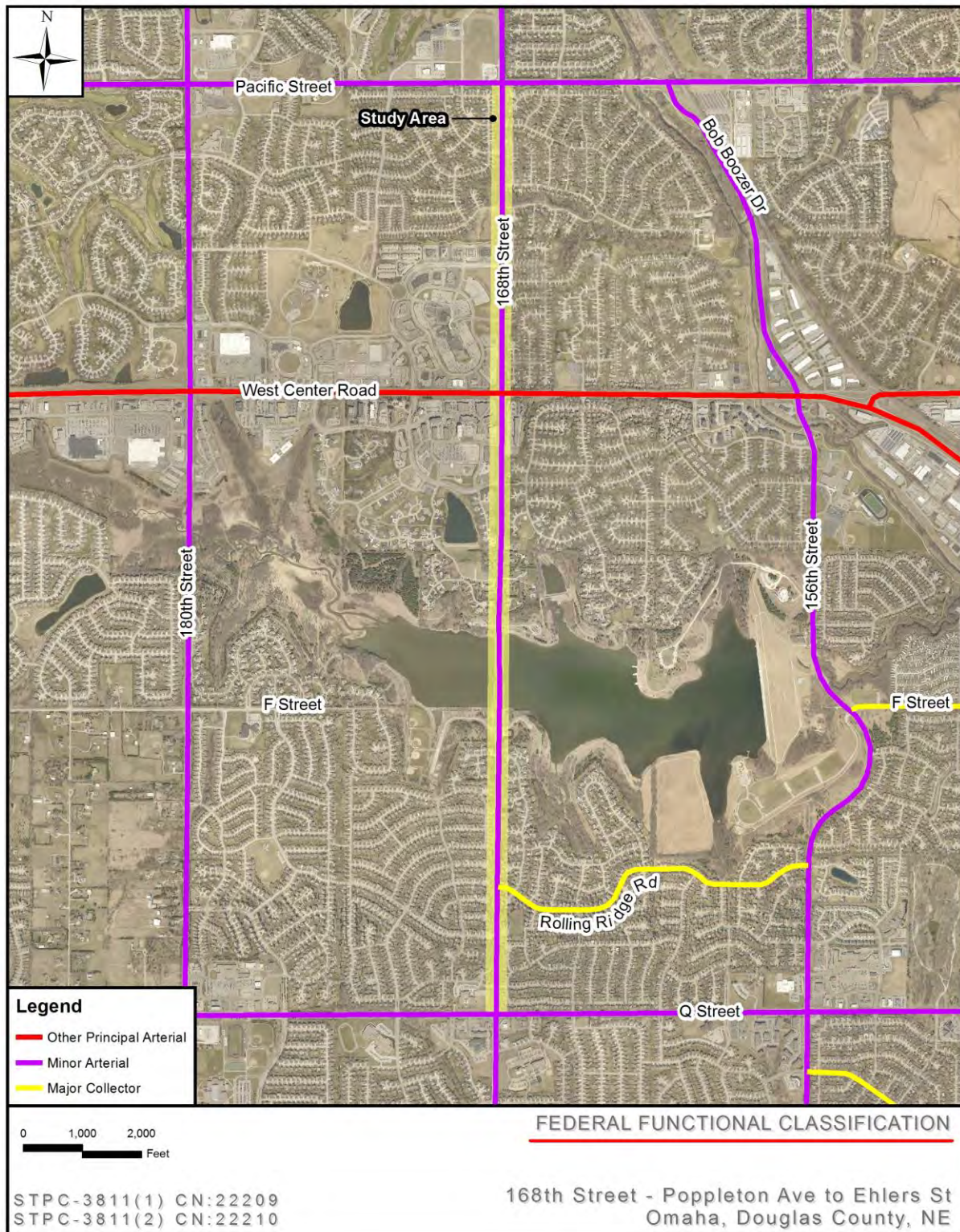
The 168th Street Improvements project was initially programmed as two separate projects by the City: STPC-3811(2) (CN 22210) 168th Street, from West Center Road to Poppleton Avenue, and STPC-3811(1) (CN 22209) 168th Street, from West Center Road to Q Street. In May 2006, the City was instructed by FHWA to combine both projects on 168th Street into one environmental document, with the overall study area extending from Pacific Street to Q Street, and including the existing right-of-way (ROW) plus an approximate 100-foot buffer. The Environmental Study Area for this project is discussed further in **Section 1.2.2**.

This segment of 168th Street, which has been identified as a “minor arterial” by the City and MAPA, serves as a north-south connection for those living and/or working in southwest Omaha and Douglas County, as well as for residents of western Sarpy County. 168th Street intersects West Center Road (U.S. Highway 275/Nebraska Highway 92), a “principal arterial” linking southeast Omaha to Wahoo, NE, as well as Pacific Street and Q Street, which are both major commuter routes connecting to 204th Street (U.S. Highway 6/Nebraska Highway 31), 144th Street (Nebraska Highway 50), Interstate 80, and Interstate 680. Approximately two miles north of Poppleton Avenue, 168th Street also provides connectivity to West Dodge Road (U.S. Highway 6), a major expressway linking suburban residential developments to downtown Omaha and the interstate system. **Figure 1.2** illustrates the Federal Functional Classification of 168th Street, as well as other roadways in the area (NDOR, 2009).

The majority of the 168th Street study area consists of residential and commercial areas including: Rose Gardens Estates, Pacific Heights, Leawood Southwest, Lakeside Hills, Legacy, Armbrust Village, Armbrust Acres, The Reserve, Elshire Acres, Brodersen Place, The Pointe, Lake Shore, Bay Shores, South Shore Heights, Prairie Pointe, Autumn Woods, and Autumn Ridge. 168th Street also passes through the U.S. Army Corps of Engineers’ Dam Site 18, which includes Zorinsky Lake and Edward Zorinsky Recreation Area. The 168th Street embankment divides Zorinsky Lake into an east and west basin, while the Zorinsky Lake Bridge allows for a connection between the basins.

The majority of traffic generated along the study area comes from the commercial developments and residential neighborhoods within the immediate vicinity and from similar developments outside the study area. Major traffic generators within the corridor include the following: Lakeside Hills located at the northwest corner of 168th Street and West Center Road, which includes Alegant Health Lakeside Hospital, a retirement community, apartments, office and medical buildings, small retail stores, restaurants, and other businesses; The Shops of Legacy located at the southwest corner of 168th Street and West Center Road, which includes small retail stores, restaurants, and other businesses; Life Time Fitness, a gym, located at 169th Plaza and Elm Street, just south of the Shops of Legacy; and Armbrust Village located at the southeast corner of 168th Street and West Center Road, which includes a bank, an auto repair shop, and a strip mall with various businesses. Living Hope Lutheran Church and Our Precious Lambs Childcare located east of 168th Street and Orchard Avenue; the commercial areas on the south side of 168th and Q Streets which includes a gas station, YMCA, bank, learning center, and strip mall; and Willowdale Elementary School at 168th and P Streets also contribute to the traffic on 168th Street.

Figure 1.2 Federal Functional Classification System



Additionally, Zorinsky Lake and Edward Zorinsky Recreation Area, which are generally located between West Center Road and Q Street and 156th and 192nd Streets, provide recreational opportunities for nearby neighborhoods as well as the general public, and contribute to traffic within the study area.

Developments outside the study area that contribute to the overall traffic volumes on 168th Street include Village Pointe at 168th Street and West Dodge Road and commercial and retail development at 168th and Harrison Street. Also, this corridor serves as the only continuously paved north/south road from Nebraska Highway 370 in Sarpy County to Nebraska Highway 36 on the north edge of Douglas County (one mile south of the Washington/Douglas County line) between 72nd Street and 204th Street (U.S. Highway 6), a distance of approximately 11 miles (**Figure 1.3**).

Within the study area, the majority of 168th Street is currently a two-lane “rural” roadway (i.e. without curbs and a median) with additional 3rd and 4th auxiliary lanes at various locations to accommodate turning movements at intersections. However, several segments within the study area have already been improved to a four-lane “urban” divided roadway (i.e. with curbs and a median), also with auxiliary lanes at major intersections to accommodate turning. The typical cross-section of the two-lane “rural” roadway consists of two 11-foot-wide asphalt lanes. However, with the addition of the auxiliary lanes, the existing roadway surface width varies from approximately 25 feet to 48 feet. The typical cross-section of the improved “urban” divided roadway (i.e. Pacific Street, West Center Road, Oak Street, Ehlers Street, and Q Street) consists of two 25-foot-wide concrete lanes with medians varying in width. Including the median and auxiliary lanes, the existing roadway surface width at these areas varies from approximately 66 feet to 98 feet. **Table 1.1** displays the areas along 168th Street with auxiliary turn lanes.

Figure 1.3 Continuous Paved Roadways between Highway 36 and Highway 370

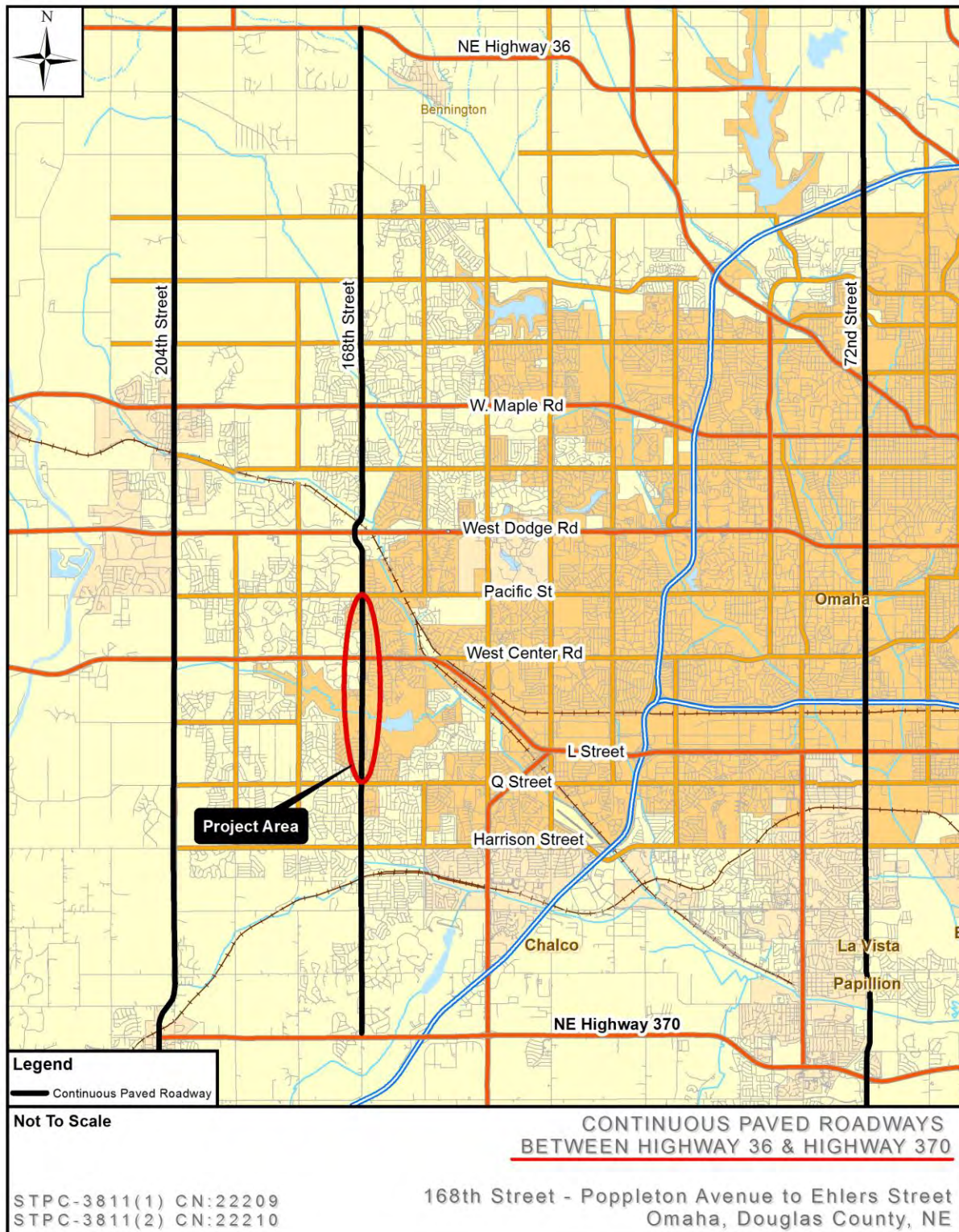


Table 1.1 Side Streets and Auxiliary Turn Lanes along 168th Street

Cross Street	Left-Turn Lane(s)	Right-Turn Lane(s)
William Street	None	None
Pine Street (west leg)	None	Southbound
Pine Street (east leg)	None	None
Shirley Street/Hickory Street	None	None
Frances Street	Northbound and Southbound	Southbound
Lakeside Hills Plaza	Northbound	Southbound
Gold Street	Southbound	None
Ontario Street	None	Southbound
North Lake Access Drives	None	None
South Lake Access Drives	None	None
South H Circle / South 167 th Avenue	None	Northbound and Southbound
Patterson Drive	Northbound	Southbound
Rolling Ridge Road	Southbound	Northbound
Orchard Avenue	None	Southbound

1.2.2 LOGICAL TERMINI AND ENVIRONMENTAL STUDY AREA

As previously mentioned, the widening of 168th Street was originally programmed as two separate projects, which would have improved the existing two-lane “rural” (i.e. without curbs) segments of 168th Street generally between Pacific Street and West Center Road, and between West Center Road and Q Street. However, in 2006, due to their geographic proximity and sequential construction timing, FHWA instructed the City to combine both projects into one environmental document.

Also as previously described, within the study area, there are three segments of existing four-lane “urban” (i.e. with curbs and medians) segments of 168th Street, each of which were constructed with previous improvement projects: a segment south of Pacific Street to Poppleton Avenue, a segment north and south of West Center Road from Gold Street to just south of Oak Street, and a segment north of Q Street to just north of Ehlers Street. These segments are fully developed to their ultimate cross-sections, and the City has no current improvement plans for them. In addition, the City has no improvement plans for 168th Street north of Pacific Street or south of Q Street.

The logical termini¹ for the two projects evaluated in this document are the points along 168th Street where it transitions between a two-lane roadway and a four-lane roadway, or more specifically: the segments from Poppleton Avenue to Gold Street for CN 22210, and approximately 400 feet south of Oak Street to approximately 170 feet north of Ehlers Street for CN 22209. The logical termini points are shown on **Figure 1.1**.

The Environmental Study Area (Study Area) along 168th Street encompasses both projects, beginning on the south side of Pacific Street and extending to the north side of Q Street, or approximately three miles (15,700 feet) from north to south, and includes the existing ROW plus an approximately 100-foot-wide buffer east and west of the ROW. The Study Area is illustrated on **Figure 1.1**.

1.3 PURPOSE OF THE PROPOSED PROJECT

The purpose of this Project is to improve local and regional mobility² by enhancing the vehicular transportation system and improving connectivity, reducing driver delays, and improving pedestrian accessibility along the 168th Street corridor. The project is also intended to support local and regional initiatives of the City and MAPA, as described in multiple long-range planning documents, including the MAPA 2035 LRTP, the City's Capital Improvement Program (CIP), and various "Elements" of the City's Master Plan.

1.4 NEED FOR THE PROPOSED PROJECT

The Project is needed due to insufficient roadway capacity, inadequate bridge conditions, discontinuity with adjacent roadways and intersections, and inadequate pedestrian facilities within the corridor. Details about each of these topics are provided in the following subsections.

1.4.1 INSUFFICIENT ROADWAY CAPACITY

Description of "Level of Service"

Traffic operation conditions are measured by the Level of Service (LOS) of a roadway segment or intersection. LOS is the relative quality of operations taking into consideration such factors as volume, speed, travel time, roadway capacity and delay, and ranges from A (best) to F (worst). The characteristics of various levels of service for roadways are displayed in **Figure 1.4**. According to the City's *Traffic Engineering Guidelines*, the City's goal is to build new projects to a LOS C or better; as described in the MAPA 2035 LRTP, one of the goals of the regional transportation system is to maintain LOS D or higher on all existing streets (MAPA, 2011). The Project is intended to be consistent with these LOS goals.

¹ Logical Termini, as defined by FHWA, are (1) rational end points for a transportation improvement, and (2) rational end points for a review of environmental impacts.

² The term mobility is defined by FHWA as "the ability to move or be moved from place to place" (www.fhwa.dot.gov/planning/glossary). This "ability to move or be moved" is not mode-dependent but applies to vehicles, transit, pedestrians, and bicyclists. According to FHWA, mobility can be measured in terms of "travel times, level of traffic congestion, or duration of congestion—all of which focus on how long it takes to get from place to place" (www.fhwa.dot.gov/environment/cmaqpgs/amaq/03cmaq1.htm).

Figure 1.4 Level of Service Characteristics for Roadways

LOS	Type of Traffic Flow and Delays
A	Traffic is primarily free-flowing. Traffic signal progression is extremely favorable and most vehicles arrive during the green phase of the traffic signal. Many vehicles do not stop at all.
B	Generally unimpeded traffic flow. Good traffic signal progression, but more vehicles stops than LOS A.
C	Describes stable traffic flow with minor delays. Fair progression but green time of individual cycles fails to clear queues (i.e. vehicles waiting at the traffic signal), resulting in overflows. The number of vehicles stopping is significant though many still pass through the intersection without stopping.
D	Indicates less stable traffic flow with reduced speeds and increased delays. Congestion is more noticeable. Longer vehicle queue lengths are a result.
E	Unstable traffic operation. Slow speeds and significant delays due to poor progression and high volume-to-capacity ratios. Individual traffic signal cycle failures.
F	Stop-and-go traffic, high level of delay, often occurring with oversaturation. Most traffic signal cycles fail to clear the vehicle queue.

Adapted from *Highway Capacity Manual 2010*. Transportation Research Board.

Existing Roadway Conditions

The LOS for 168th Street is expected to be affected as traffic volumes increase in the future. As shown in **Table 1.2**, traffic volumes are projected to increase between 14 percent and 69 percent for the future conditions between 2014 and 2040, along various roadway segments within the study area³.

As shown on **Figure 1.5**, based on roadway capacities in the National Cooperative Highway Research Program's (NCHRP) *Report 365 - Travel Estimation Techniques for Urban Planning*, a two-lane roadway typically has the capacity to carry approximately 15,000 vehicles per day (vpd), while a four lane divided roadway can carry approximately 33,000 vpd (NCHRP, 1998). Currently, the unimproved segment of 168th Street north of Pine Street has an Annual Average Daily Traffic (AADT) of approximately 20,400 vpd, resulting in LOS F for that segment of roadway. By 2040, this segment is expected to have nearly 33,000 vpd, and would remain LOS F. The four-lane divided segment of 168th Street just north and south of West Center Road has an existing AADT of 22,200 vpd and 22,900 vpd, respectively, resulting in LOS C for these segments. The future projected AADT by 2040 along 168th Street in these segments is approximately 27,000 vpd to the north, and 26,000 vpd to the south, resulting in LOS D for both of these segments. In the segment between Zorinsky Lake and Q Street, the AADT is between 15,400 vpd and 17,100 vpd, and is expected to increase to 26,000 vpd and 22,000 vpd. Most of the two-lane segments of 168th Street are currently functioning at LOS F, and are expected to decline in traffic operations in the

³ 2014 AADT was calculated from 2014 peak hour counts by the City of Omaha. 2040 AADT was provided by MAPA.

Table 1.2 Existing and Future Daily Traffic Volumes and Level of Service

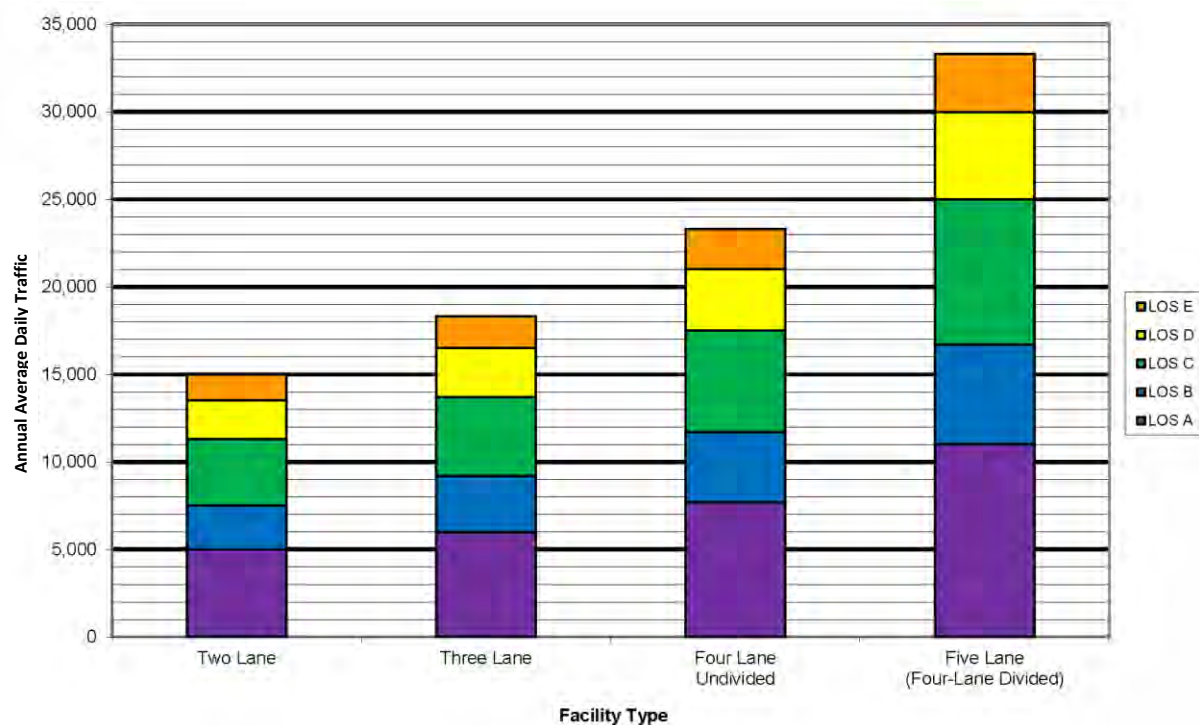
Roadway Segment of 168 th Street	Existing 2014 Annual Average Daily Traffic ¹ (vehicles per day)	Existing 2014 LOS ²	Future 2040 Annual Average Daily Traffic ³ (vehicles per day)	Future 2040 LOS ² (with no widening)	Percent Change 2014-2040
168th St, north of Pine St (2 lane)	20,400	F	33,000	F	+62%
168th St, north of W. Center Rd (4 lane divided)	22,200	C	27,000	D	+22%
168th St, south of W. Center Rd (4 lane divided)	22,900	C	26,000	D	+14%
168th St, north of Rolling Ridge (2 lane)	17,100	F	22,000	F	+29%
168th St, south of Orchard St (2 lane)	15,400	F	26,000	F	+69%

¹ 2014 AADT calculated from 2014 peak hours counts by the City of Omaha

² LOS from the *Highway Capacity Manual* lookup tables (presented below in **Figure 1.5**)

³ 2040 AADT provided by MAPA

Figure 1.5 Typical Roadway Capacities



Source: Alfred Benesch & Company, calculations from NCHRP 365 Chapter 10

future. The two-lane roadway is not capable of adequately handling traffic volumes above 10,000 vpd and traffic volumes along the study area are anticipated to be two or three times this capacity by 2040.

1.4.2 INADEQUATE BRIDGE CONDITIONS

MAP-21 STP and STBG Funding

Section 1108 of the Moving Ahead for Progress in the 21st Century Act (MAP-21) establishes the Surface Transportation Program (STP) under 23 USC (United States Code) 133. The Fixing America's Surface Transportation (FAST) Act, signed on December 4, 2015, converted the long-standing STP into the Surface Transportation Block Grant Program (STBG)⁴, acknowledging that this program has the most flexible eligibilities among all Federal-aid highway programs and aligning the program's name with how FHWA has historically administered it (FAST Act § 1109(a)). The FAST Act and 23 USC 133 makes funds available from FHWA's STBG for bridge replacement, rehabilitation, preservation, and protection, as well as application of anti-icing or de-icing compositions for bridges on public roads of all functional classifications (FHWA, 2014). The STP supports national performance goals, but there are no measures tied specifically to this program (FHWA, 2014). Bridge activities conducted as part of the proposed project should support the national performance goals under STBG funding.

Description of "General Condition Rating"

For the National Bridge Inventory, general condition ratings (GCRs) are used to describe an existing, in-place bridge or culvert as compared to the as-built condition. The materials used in the bridge are considered as well as the physical condition of the deck, superstructure and substructure components. This information is used to determine GCRs on a numerical scale that ranges from zero (failed condition) to nine (excellent condition). The GCRs are used in evaluating bridge decks, bridge superstructures, bridge substructures, and culverts. Bridges can be in a *State of Good Repair, Structurally Deficient, or Functionally Obsolete*.

Description of "Sufficiency Rating"

The sufficiency rating formula provides a method of evaluating highway bridge data by calculating four separate factors to obtain a numeric value which is indicative of bridge sufficiency to remain in service. The result of this method is a percentage in which 100 percent would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient or deficient bridge. The formula considers the structural adequacy; functional obsolescence and level of service; essentiality for public use; and other special reductions.

Existing Bridge Conditions

The Zorinsky Lake Bridge (Bridge No. U182503110) was constructed in 1985 when the United States Army Corps of Engineers (USACE) constructed Dam Site 18. Originally, 168th Street passed over Boxelder Creek on a 16-foot-wide truss bridge approximately 230 feet north of the location of the current bridge. When the lake was constructed, there was consideration of replacing the truss bridge with a culvert, rather than with a new bridge. The decision was ultimately made by the USACE to construct a bridge, while still leaving

⁴ The FAST Act's STBG Program continues all prior STP eligibilities (see in particular 23 U.S.C. 133(b)(15), as amended).

a small opening between the two basins of the lake to improve water quality in the eastern basin by trapping sediment in the western basin from the base flow and during flood events (U.S. Army Corps of Engineers, 1982).

The existing bridge is a cast-in-place concrete slab that is approximately 36-feet-wide, with two 14-foot-wide travel lanes and a 6-foot-wide sidewalk on the east side. Open guardrail barriers are present on both sides of the bridge, with fencing on both sides of the sidewalk (**Figure 1.6**). The bridge was constructed with the intention of being able to widen it in the future. According to the original design plans for the bridge, the future roadway was expected to use a 6-foot-wide median and two pairs of 25-foot-wide travel lanes, with 7-foot-wide sidewalks on both sides of the bridge. The method proposed for widening in the future was to extend the concrete slab to each side, and use mechanical fasteners (i.e. two inch diameter galvanized conduits through which threaded rods could be placed and tightened) through the piers to attach concrete extensions to each of the piers (Douglas County, 1984). The covers on the conduits for these fasteners can be seen on the sides of the bridge piers in **Figure 1.6**.

Figure 1.6 Existing Zorinsky Lake Bridge Conditions



In addition, the trails under the bridge were not built at the same time as the bridge; they were added as asphalt trails in 1991, and replaced with concrete trails in 1994. These trails were built approximately two feet higher than the normal pool elevation, and as such, currently have a vertical clearance of approximately 9 feet on the south side and slightly less than 8 feet on the north side. Since the bridge slab slopes downward to either side of the roadway centerline, and the trails rise in elevation as they wrap around the roadway embankment, the original widening plan for the bridge would have decreased these clearances to less than 8 feet on both sides of the lake.

Existing General Condition Rating

According to the National Bridge Inventory's *Nebraska Inventory and Appraisal Report*, the current GCR for the Zorinsky Lake Bridge is Functionally Obsolete. According to FHWA, "A bridge is considered 'functionally obsolete' when it does not meet current design standards (for criteria such as lane width), either because the volume of traffic carried by the bridge exceeds the level anticipated when the bridge was constructed and/or the relevant design standards have been

revised. Addressing functional deficiencies may require the widening or replacement of the structure” (FHWA, 2010). Specifically, the deck geometry appraisal rating⁵ of the Zorinsky Lake Bridge was a “2” (NDOR, 2014), which is described in FHWA’s *Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges* as “basically intolerable requiring high priority of replacement” (FHWA, 1995). The existing bridge contributes to capacity issues on 168th Street due to its existing two-lane configuration and narrow face-to-face of rail bridge width (28 feet), creating a “pinch-point” for motorists. If the surrounding roadway were to be widened and the bridge remained in its existing two-lane configuration, the bridge would worsen the pinch-point by creating a true “bottleneck” in the roadway.

Existing Sufficiency Rating

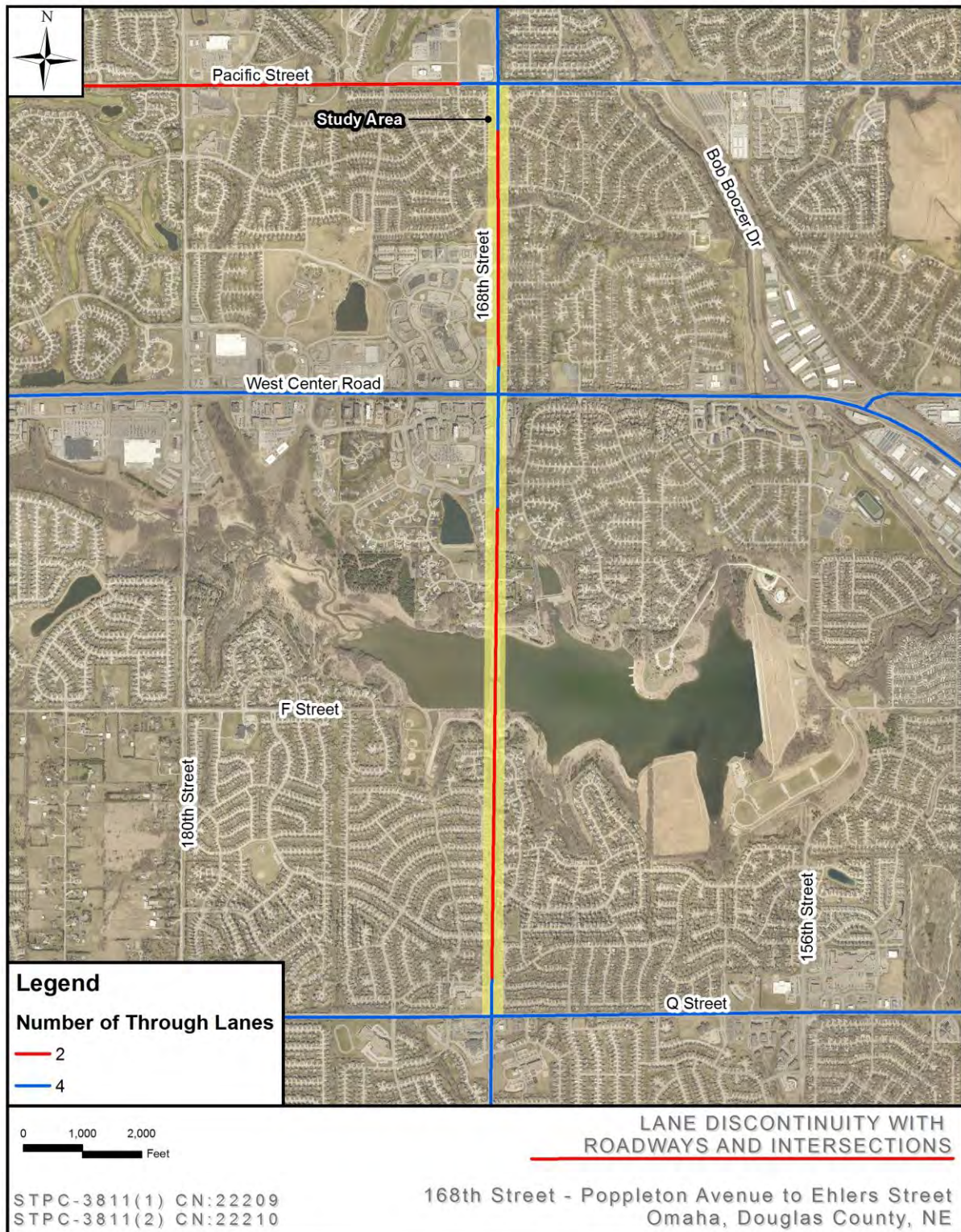
Although the bridge is nearly 30 years old, the current sufficiency rating for the Zorinsky Lake Bridge is 78.8 percent. This relatively good rating is mainly due to the City Bridge Maintenance Division’s efforts to conduct regular inspections and use preventative maintenance techniques to prolong the life of the bridge by performing timely repairs, crack and joint sealing, surface treating the deck, and modifying the approaches to the bridge. Nonetheless, at some point performing additional preventative maintenance on a bridge that is considered functionally obsolete becomes no longer cost-effective, and rehabilitation is needed.

1.4.3 DISCONTINUITY WITH ROADWAYS AND INTERSECTIONS (VEHICULAR SYSTEM LINKAGE)

System linkage is a concept referred to by FHWA as the desire to provide “connecting links” within the transportation system. While this section of 168th Street is not a “missing link” in the transportation system, it is certainly a “weak link.” Roadway and intersection improvements have already been completed at the intersections of 168th and Pacific Streets, 168th Street and West Center Road, 168th Street and Oak Drive/Oak Street, 168th Street and P Street/Ehlers Street, and at 168th and Q Streets. The 168th Street “legs” of each of these intersections have four-lane, urban cross-sections, with raised medians, curbs, and enclosed storm sewers. Between these segments of four-lane urban roadways, 168th Street is still a two-lane rural roadway (**Figure 1.7**). While approaching an improved four-lane intersection, northbound and southbound traffic can utilize two lanes traveling in each direction. However, after passing through an improved intersection, the roadway transitions back into a two-lane roadway, forcing traffic to merge into the through-lane (i.e. left through-lane).

⁵ “The overall rating for deck geometry includes two evaluations: (a) the curb-to-curb or face-to-face of rail bridge width ... and (b) the minimum vertical clearance over the bridge roadway” (FHWA, 1995).

Figure 1.7 Lane Discontinuity with Roadways and Intersections



These conditions result in congestion in the Study Area as traffic funnels into the smaller capacity roadways. For instance, as traffic passes through the four-lane roadway of 168th Street near West Center Road, instead of using both lanes, vehicles remain in the left through-lane to avoid having to merge as the four-lane roadway transitions back into a two-lane roadway (**Figure 1.8**). Since the right lane does not continue as a through-lane past the intersection, vehicles remain in the left through-lane, resulting in congestion, from the additional traffic, to occur in the left through-lane. Vehicles utilizing the right through-lane often have to significantly increase or decrease speed in order to merge into the left through-lane before the four-lane roadway transitions back into a two-lane roadway. Not only does the discontinuity result in congestion, it can also result in unsafe driving practices and longer vehicle queues which could potentially increase the risk for accidents.

Figure 1.8 Congestion Resulting from Vehicles Not Utilizing Right Lanes at West Center Road

The following picture was taken at approximately 4:00 pm on a Wednesday, and shows 168th Street looking north toward West Center Road. Note how vehicles are starting to block the left-turn lanes because they are not using the right-through lane. This is because the right-through lane ends just north of the intersection. In addition, vehicles often take chances (like the red SUV in the picture) to attempt to get back into the left-through lane after the intersection before the right lane ends.



Excessive vehicle queues in the left through-lane at intersections can also create difficulty for vehicles attempting to utilize the left-turn lane at a traffic signal by delaying or preventing vehicles from entering the left-turn lane, thereby affecting the utilization of the traffic signal and creating excessive wait times for those vehicles attempting to make a left turn. A similar situation occurs just outside the Study Area for southbound traffic north of Pacific Street and for northbound traffic south of Q Street (**Figure 1.9**).

Figure 1.9 Congestion Resulting from Vehicles Not Utilizing Right Through-Lane at Q Street

The following aerial picture was taken at approximately 3:00pm on a Friday. The horizontal street is 168th Street, with north situated to the left. The vertical street is Q Street. Note how vehicles are starting to back up in the left-through lane on northbound 168th Street, blocking the left-turn lane. In addition, the white car at the front of the right-through lane (circled in red) appears to be poised to get back into the left through-lane north of the intersection. This poor lane utilization also can result in the inability for traffic to clear the traffic signal during peak traffic periods. It can take multiple traffic signal cycles for a driver to make it through the intersection.



Delays for vehicles turning left from 168th Street within the Study Area are also common along the existing two-lane segments of 168th Street where no auxiliary lanes are present. This mainly results from vehicles attempting to make left turns into neighborhoods or driveways, but being delayed by oncoming traffic in the opposing lane, which creates congestion behind the vehicle turning left (**Figure 1.10**). This occurs at Pine Street (east and west legs), Shirley Street, Hickory Street, Grover Plaza, Ontario Plaza, Ontario Street, Pasadena Plaza, all four of the Zorinsky Lake Access Drives, H Circle, 167th Avenue, and Orchard Avenue, as well as over a dozen private residential driveways. In addition, for vehicles turning onto 168th Street from these side streets and driveways, they must often wait a considerable amount of time for a break in the traffic flow, or take risks when turning.

Figure 1.10 Congestion Resulting from Vehicles Turning Left onto Side Streets

The following picture was taken at approximately 5:00pm on a Friday, and shows 168th Street looking south toward the intersection of Shirley Street (right side) and Hickory Street (left side). Note how the recreational vehicle (RV) is attempting to turn left onto Shirley Street, with approximately 7 vehicles backed up behind it. The volume of cars headed southbound is fairly constant, so the RV has been waiting for a break in the traffic flow. The grey truck headed southbound is poised to turn left, which will finally give the RV a break to make its turn.



1.4.4 INADEQUATE PEDESTRIAN ACCESSIBILITY (PEDESTRIAN SYSTEM LINKAGE)

Within the Study Area, 168th Street is mostly a two-lane rural roadway with roadside ditches, and sidewalks that are not continuous. Sidewalks or trails are *absent* along 168th Street in the following locations:

- **West side only** (from north to south): from Pine Street to approximately 385 feet north of Frances Street (0.27 miles/1,420 feet); approximately 450 feet north of Ontario Street (i.e. at Grover Plaza) to the Zorinsky Lake North Access Drive (approximately 0.25 miles/1,270 feet); and the south side of the Zorinsky Lake Bridge to Orchard Avenue (0.83 miles/4,390 feet). The Zorinsky Lake Trail does parallel the west side of 168th Street from the south side of the bridge to approximately 330 feet north of the Zorinsky Lake South Access Drive (0.08 miles/430 feet); however, this portion of the trail is roughly 50-60 feet away from the road and 10-15 feet lower in elevation than the road, and is only accessible from the trail under the bridge and the trail to the west.

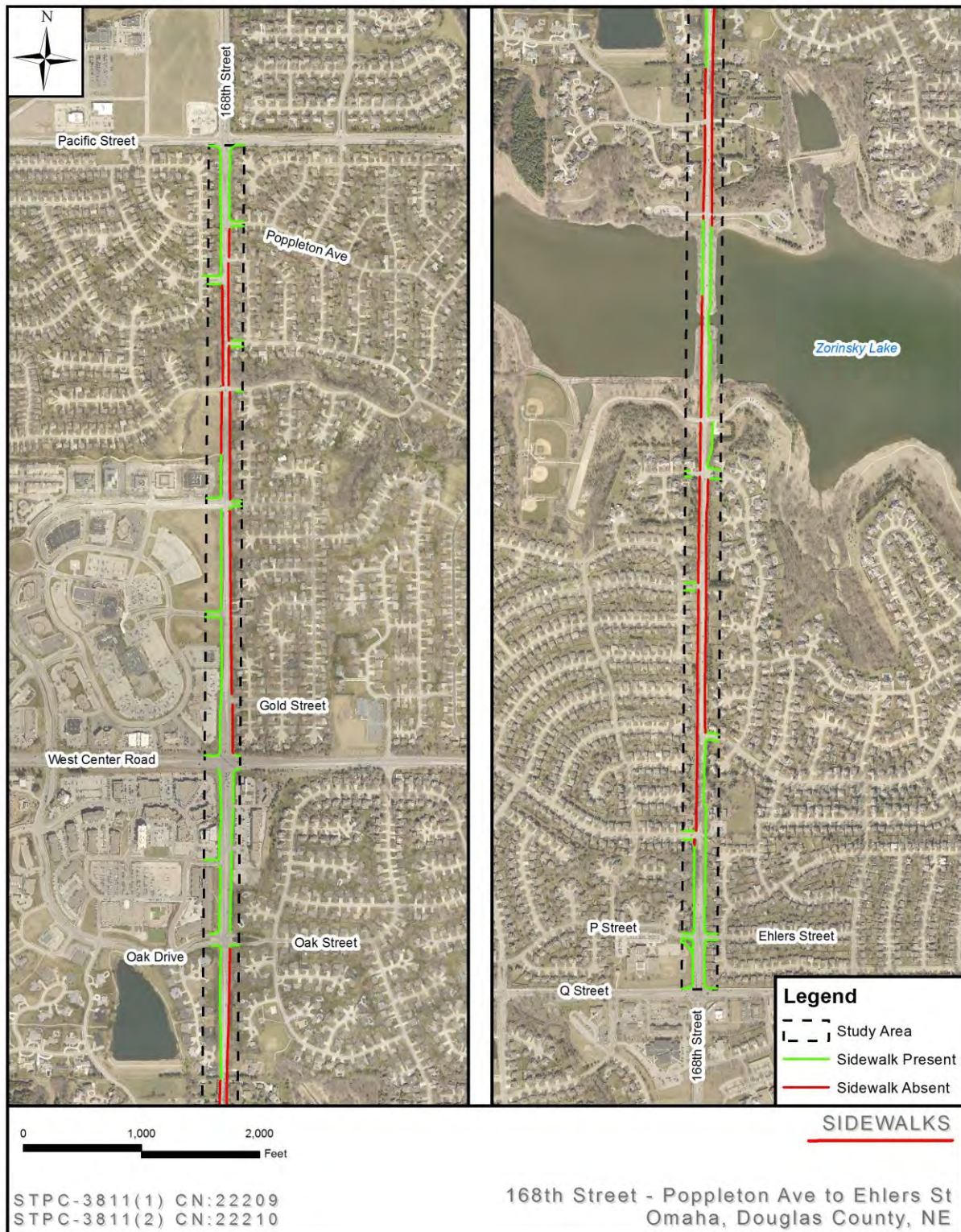
- **East side only** (from north to south): from Poppleton Avenue to West Center Road (0.84 miles/4,440 feet); Oak Street and the Zorinsky North Access Drive (0.46 miles/2,450 feet); and 167th Avenue to Rolling Ridge Road (approximately 0.41 miles/2,140 feet).
- **Both Sides** (from north to south): from Pine Street (west leg) to approximately 385 feet north of Frances Street (0.27 miles/1,420 feet); approximately 450 feet north of Ontario Street (i.e. at Grover Plaza) to just south of the Zorinsky Lake North Access Drive (0.25 miles/1,270 feet); and from 167th Avenue to Rolling Ridge Road (0.43 miles/2,290 feet).

The intersections of 168th Street and West Center Road, 168th Street and Oak Drive/Oak Street, and at a location approximately 120 feet north of P Street/Ehlers Street (north of Willowdale Elementary School) are currently signalized and have marked pedestrian crosswalks. The intersections of 168th Street and Pacific Street, Frances Street, Lakeside Hills Plaza, Patterson Drive, and Rolling Ridge Road are currently signalized, but do not have marked pedestrian crosswalks.

This intermittent pattern of sidewalks and crossings is not conducive to pedestrian safety, as it necessitates multiple crossings of 168th Street to stay on a paved sidewalk. In addition, in a mostly residential corridor, it is required by a City ordinance⁷ to have sidewalks along both sides of the street. Therefore, any proposed solution should address system linkage for pedestrians as well.

⁷ City of Omaha Municipal Code, Ordinance No. 38997, enacted May 3, 2011 (Supp. No. 51)

Figure 1.11 Sidewalks



1.5 SUMMARY

168th Street is a rural, minor arterial roadway, and serves as a primary commuter route for residents of southwestern Douglas County and the City, as well as for residents of northwestern Sarpy County. 168th Street connects to other major arterials and nearby freeways, including Nebraska Highway 370, West Center Road (i.e. U.S. Highway 275) and West Dodge Road (i.e. U.S. Highway 6), and is expected to experience an increase in traffic volumes in the future. The levels of service along the two-lane roadway segments of 168th Street between Pacific Street and Q Street are all currently at LOS F, which leads to unacceptable traffic operations. The Zorinsky Lake Bridge is functionally obsolete because it does not meet current design standards, it represents a “pinch-point” in the roadway due to a narrower than acceptable width, and the fact that the original planned widening would create unacceptable conditions for the current pedestrian and bicycle network⁸ as well as increase congestion. Additionally, the segments of 168th Street within the study area are currently discontinuous in character to the surrounding roadways, both from a lane configuration standpoint, and from a pedestrian access standpoint, as there are several missing links in the sidewalk along this corridor. The proposed project is intended to improve the traffic operations of the corridor, improve connectivity, improve the bridge conditions, and provide greater pedestrian access, consistent with the goals and objectives in the MAPA LRTP and the City’s Master Plan.

⁸ Since the bridge slab slopes downward to either side of the roadway centerline, and the trails (under the bridge) rise in elevation as they wrap around the roadway embankment, the original widening plan for the bridge would have decreased the existing vertical clearances for the trail to less than 8 feet on both sides of the lake. Further decreasing the clearances would have likely required the underpasses to be closed.

SECTION 2 ALTERNATIVES

NEPA requires that reasonable alternatives, including a No-Action Alternative, be presented and evaluated in a NEPA document. This section describes the process used to identify the alternatives that were fully assessed in this EA.

2.1 NO-ACTION ALTERNATIVE

The No-Action Alternative, as defined by FHWA, includes normal, short-term, minor activities that address safety and maintenance issues, without making any major improvements to the existing transportation network, but does not preclude the construction of other planned improvements through the City's long range planning process, the Comprehensive Plan, or through other county or state projects. The No-Action Alternative does not meet the purpose and need as discussed in **Section 1**, because it does not address the capacity and delay issues, does not address the functionally obsolete bridge over Zorinsky Lake, maintains the same discontinuous roadway configuration, and does not satisfy the need for continuous pedestrian accessibility. Nonetheless, it was carried forward for analysis, and is discussed in subsequent sections as a baseline for comparison.

2.2 OTHER ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

The City's roadway network is primarily laid out on a grid system, with minor arterial roadways on one-mile spacing. Since 168th Street is aligned on this type of system, alternatives that would realign this roadway were not considered feasible or prudent. Additionally, the large majority of the study area is developed with residential housing and commercial developments, and the existing 100-foot-wide ROW would make even a minor realignment of this roadway unreasonable. Nonetheless, prudent alternatives were considered where possible, including raising or lowering the profile, reducing the median width, and other modest changes to minimize impacts to a variety of constraints, such as existing and proposed utilities, existing driveways and intersections, drainage features, and other physical constraints. Furthermore, various alternatives were considered for replacing the Zorinsky Lake Bridge to avoid impacts to the trails, recreation areas, the lake itself, and other environmental constraints in the area. Specific alternatives that were considered, but that were not carried forward, are explained in the following subsections. The proposed alternative is explained in greater detail in **Section 2.3, Proposed Alternative**.

2.2.1 NON-ROADWAY IMPROVEMENT ALTERNATIVES

Transportation System Management (TSM) alternatives are those activities which maximize the efficiency of the present system. Possible improvements include fringe parking, ridesharing, high-occupancy vehicle (HOV) lanes on existing roadways, and traffic signal timing optimization. In general, TSM alternatives are used to address major regional transportation issues in metropolitan areas with populations greater than 200,000 (FHWA, 1987). TSM measures are limited in their ability to affect long-term improvements in traffic flow, level of service, and safety. In addition, substandard geometric features and traffic operations of the existing roadways would not be improved. Because the volume-to-capacity ratio would be exceeded in the future without adding capacity (i.e. additional lanes), TSM alternatives would not fully

satisfy the project purpose and need, and were therefore eliminated from further consideration (Murthy Koti, City of Omaha Traffic Engineer, personal communication, April 24, 2014).

Other Intelligent Transportation Systems (ITS) measures were also evaluated by the City. Traffic signal timing optimization is performed by the City on a regular basis at various intersections studied for this project. As such, the City routinely uses the latest traffic volume data to re-time the signals. Although the City does not have a centralized Traffic Management Center (TMC) at this time, efforts are in place to upgrade the signal infrastructure, sensors, communication systems, and share the NDOR Traffic Operations Center (TOC) in the near future. While these initiatives have some potential to reduce non-recurring traffic congestion during off-peak hours, and may improve the City's capability to better manage the signal infrastructure, it is not anticipated that these strategies, alone or in combination with other TSM strategies, would improve the future conditions within the study area without roadway improvements. Furthermore, they would not address the recurring congestion during peak hours on weekdays or turning movement delays (Murthy Koti, personal communication, February 9, 2012).

2.2.2 OTHER ROADWAY ALTERNATIVES CONSIDERED

Various typical roadway configurations were also considered, including three-lane, four-lane undivided, and five-lane (i.e. two travel lanes in each direction with a continuous center turn lane) urban cross-sections (**Figure 2.1**). On the basis of current and projected corridor volume, safety, constructability, impacts, and the configuration of the surrounding corridors, the four-lane roadway with median cross-section was advanced for comparison to the No-Action Alternative in the detailed analysis for this EA.

The three-lane alternative would not sufficiently address the purpose of reducing driver delays since only two lanes of through-traffic would remain (i.e. one lane in each direction), which is the same as the existing roadway. This alternative would not address the insufficient roadway capacity or the discontinuity with adjacent roadways and intersections; therefore, it would not meet the project need. Based on the existing AADT along 168th Street (**Figure 1.5**), a three-lane roadway would result in LOS D, LOS E and LOS F along the various segments for current conditions, and would result in LOS F in the future condition.

The four-lane undivided alternative does not meet the purpose of reducing driver delays since left-turns would still be allowed from 168th Street, which would cause backups while drivers are attempting to make left-turns. This alternative would not address the discontinuity with adjacent roadways and intersections; therefore, it would not meet the project need. Additionally, this alternative would not fully meet the need of addressing insufficient roadway capacity since designated or protected turn-lanes would not be provided. Based on the existing AADT along 168th Street (**Figure 1.5**), a four-lane undivided roadway would result in LOS D and LOS E for current conditions, and would result in LOS F in the future condition.

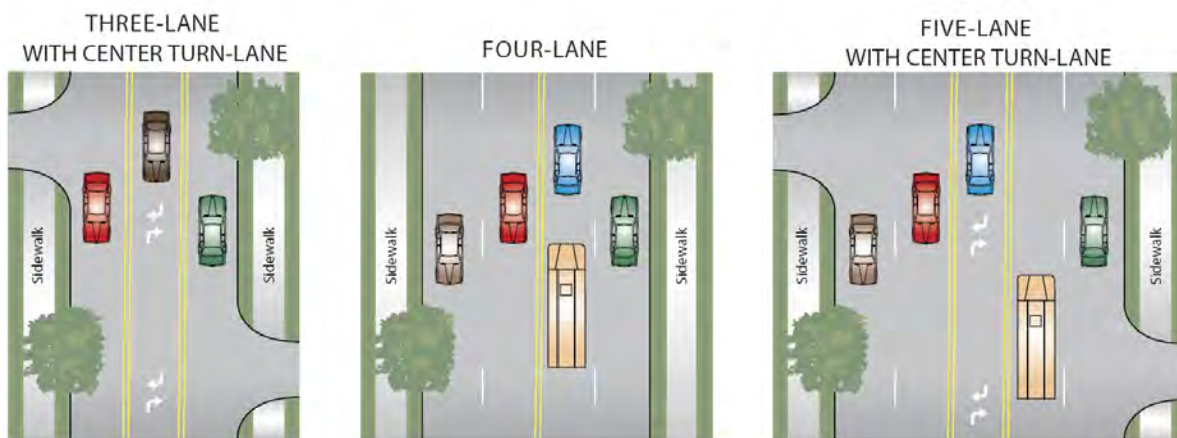
The five-lane alternative would meet some of the purpose of the project, as it would result in similar LOS as the four-lane divided (proposed alternative). However, because it would not match the already improved segments of 168th Street both north and south of this segment, this alternative would not address the discontinuity with adjacent roadways and intersections; therefore, it would not meet the project need.

Although all of the above alternatives would mostly address the purpose of improving pedestrian accessibility along the 168th Street corridor, constructing 168th Street without a median would not provide a pedestrian refuge for people crossing the street. Therefore, constructing the road without a median would not provide the highest level of improvement to pedestrian accessibility. Additionally, constructing 168th Street without a median (i.e. the three-lane, four-lane undivided, and five-lane alternatives) would reduce or eliminate the ability to add dedicated left-turn lanes throughout the study area. Medians also provide for protected left turns at median break locations. Constructing a five-lane roadway without a median is typically used for corridors with numerous commercial access points and driveways that require continuous turning movements, which is not the case for the study area.

The three-lane, four-lane undivided, and five-lane alternatives do not meet the purpose and/or need of the project; therefore these alternatives were not considered in further detail.

The four-lane with median alternative would meet the purpose and need of the project, and is discussed in further detail in **Section 2.3, Proposed Alternative**.

Figure 2.1 Typical Roadway Configurations Not Considered in Further Detail



2.2.3 OTHER BRIDGE ALTERNATIVES CONSIDERED

In addition to roadway alternatives, alternatives for the Zorinsky Lake Bridge were also considered. The majority of these alternatives included keeping all or most of the existing bridge on the existing alignment, constructing a new bridge on the existing alignment, and constructing a new bridge on a new alignment. These alternatives are described in more detail in the following subsections.

Rehabilitate (Widen) the Existing Bridge on the Existing Alignment and at the Existing Profile

This alternative would widen the existing bridge by adding on to both the east and west sides of the bridge, and would keep the bridge at the existing profile.

- Widening the bridge on the existing alignment and profile would decrease the existing vertical clearance, which is approximately 8 feet, between the trail underpasses and bridge since the

bridge would be expanded outward without being raised⁹. By decreasing the existing 8-foot minimum trail clearance¹⁰, this alternative would not meet trail design standards and would likely require the closure of the north trail underpass due to insufficient and unacceptable vertical clearance.

- Vehicular traffic across the bridge may not be able to be maintained during construction since this alternative may require complete closure of the bridge and a lengthy detour for all traffic.
- Pedestrian traffic across the bridge would be diverted during construction.
- This alternative would likely require the least amount of fill material being placed into the flood storage zone of Dam Site 18. However, it would still be necessary to mitigate for lost flood storage volume due to placement of fill material.
- This alternative would result in adverse impacts to recreational resources (i.e. Section 4(f) impacts) due to the permanent closure of the northern underpass for the Zorinsky Lake Trail. Section 4(f) is discussed further in **Section 3.7**.

Replace Bridge on the Existing Alignment and at the Existing Profile

This alternative would construct a new bridge on the same general alignment as the existing bridge and at approximately the same profile.

- Constructing a new bridge on the existing alignment and profile would decrease the vertical clearance between the trail underpasses and bridge since the bridge would be expanded outward without being raised. By decreasing the existing 8-foot minimum trail clearance, this alternative would not meet current trail design standards, and would likely require the closure of the north and/or south trail underpass due to insufficient and unacceptable vertical clearance. A design exception for an 8-foot minimum vertical clearance would likely not apply to the construction of a new bridge, as new construction would likely require a 10-foot vertical clearance (new NDOR standards) between the bridge and trail underpasses.
- Constructing a new bridge on the existing alignment would require complete closure of the bridge due to the need to completely demolish the existing bridge prior to the construction of the new bridge. Vehicular traffic across the bridge would not be able to be maintained during the construction of the new bridge, and full detours would result from the closure of the bridge.
- This alternative would require fill material to be placed into the flood storage zone of Dam Site 18, which would also require mitigation for lost flood storage volume.
- This alternative would result in adverse impacts to Section 4(f) resources due to the permanent closure of both underpasses for the Zorinsky Lake Trail. Section 4(f) is discussed further in **Section 3.7**.

⁹ Since the bridge slab slopes downward to either side of the roadway centerline, and the trails rise in elevation as they wrap around the roadway embankment, the original widening plan for the bridge would have decreased these clearances to less than 8 feet on both sides of the lake.

¹⁰ According to trail design standards identified in the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*, 4th Edition, the minimum operating vertical clearance for bicycles should be 8.3 feet (100 inches); however, 10 feet (120 inches) is preferred (AASHTO 2012).

Replace Bridge on the Existing Alignment with a Raised Profile

This alternative would construct a new bridge with a raised profile in order to increase vertical clearance for trails under the bridge.

- Constructing a new bridge would likely require the new structure to meet a 10-foot vertical clearance between the trail underpasses and bridge, as a design exception for an 8-foot minimum vertical clearance would likely not apply to the construction of a new structure. Increasing the vertical clearance to 10 feet would result in increased impacts to Edward Zorinsky Recreation Area and Zorinsky Lake.
- Vehicular traffic across the bridge would not be able to be maintained during the construction of the new bridge. Constructing a new bridge on the existing alignment would require a complete closure of the bridge and lengthy detours to completely demolish the existing bridge prior to the construction of the new bridge.
- This alternative would require widening to both the east and west sides of the embankments in order to raise the profile of the road and bridge, which would result in fill material being placed into both basins of Zorinsky Lake.
- To raise the roadway, this alternative likely would require an excessive amount of fill material to be placed into the flood storage zone of Dam Site 18. Preliminary locations for the flood storage volume mitigation would involve excavation of very large excavation sites within the Edward Zorinsky Recreation Area, with potential impacts to trails and other recreational features.
- This alternative would result in increased impacts to trees and Section 4(f) resources due to the need for a larger mitigation site for a larger loss of flood storage volume. Section 4(f) is discussed further in **Section 3.7**.

Replace Bridge on New Alignment (East or West) with a Raised Profile

This alternative would build a new bridge at a raised profile in order to meet the 10-foot vertical clearance for trails under the bridge.

- Constructing a new bridge would likely require the new structure to meet a 10-foot vertical clearance between the trail underpasses and bridge, as a design exception for an 8-foot minimum vertical clearance would likely not apply to the construction of a new structure. Increasing the vertical clearance to 10 feet would result in increased impacts to Edward Zorinsky Recreation Area and Zorinsky Lake.
- Constructing a new bridge on a new alignment would potentially allow the existing bridge to remain open during construction.
- To raise the roadway, this alternative would likely require an excessive amount of fill to be placed into the flood storage zone of Dam Site 18.
- Preliminary locations identified for the flood storage mitigation would involve excavation of very large excavation sites within the Edward Zorinsky Recreation Area, with potential adverse impacts to trails and other recreational features.

- This alternative would result in increased impacts to trees and Section 4(f) resources due to the need for a larger mitigation site for a larger loss of flood storage volume. Section 4(f) is discussed further in **Section 3.7**.
- Of the two options (east or west), the USACE prefers widening to the west, as widening to the east would result in impacts to the east basin of the lake, which has better water quality and more frequent recreational use.

Replace Bridge with a Longer Bridge on the Existing Alignment

This alternative would involve constructing a longer bridge and shortening the length of the embankments in an attempt to offset the amount of fill material placed into the flood storage zone with the same amount of excavation from the existing embankments.

- Preliminary calculations showed that in order to balance cut and fill, nearly the entire length of the embankments would need to be removed, resulting in a bridge that would span nearly the entire width of the lake.
- A lengthened bridge would widen the existing narrow connection between the east and west basins of the lake, which would result in adverse impacts to sediment control (i.e. increased sediment flowing into the east basin) and operations (i.e. flood control) at Dam Site 18¹¹. Increased sedimentation in the east basin would ultimately result in negative impacts to aquatic habitat, and increased impacts to recreational activities.
- This alternative would require constructing a much longer bridge with numerous additional piers, as well as constructing new abutments, thus significantly increasing overall project costs.

2.3 PROPOSED ALTERNATIVE

The Proposed Alternative would consist of a four-lane roadway, with raised medians and curbs, and separated, parallel sidewalks (or a combination sidewalk/trail within the Edward Zorinsky Recreation Area). The Proposed Alternative would also involve the rehabilitation of the Zorinsky Lake Bridge to allow both trail underpasses to remain open once completed, and also minimize the amount of fill material needed to widen the roadway. The Proposed Alternative is explained in greater detail below.

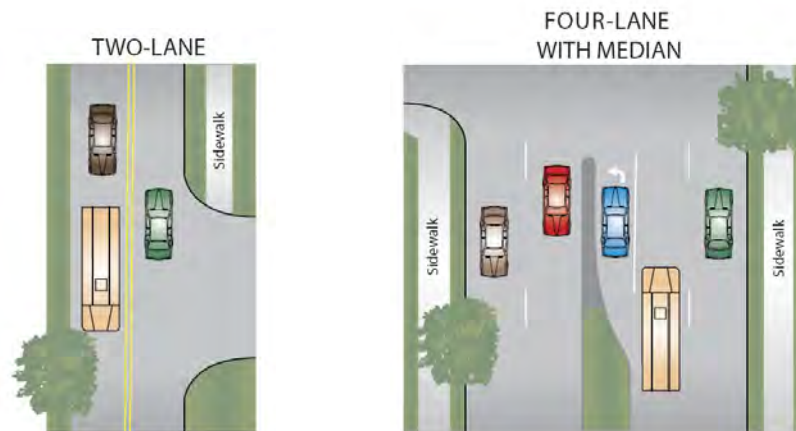
The proposed project would remove the existing two-lane rural asphalt roadway and construct a four-lane divided urban concrete roadway with raised medians (**Figure 2.2**). Additional auxiliary lanes would be added to accommodate turning movements and to improve the traffic capacity of the roadway. The typical four-lane divided roadway cross-sections (**Figure 2.3**) would consist of two 12.5-foot-wide lanes (i.e. for a total of 25 feet from back-of-curb to back-of-curb) in each direction. The driving lanes would be separated by a 16-foot-wide median, for an overall total width of 66 feet. These medians are required to accommodate the addition of dedicated left-turn lanes at several locations that would be 12-feet-wide.

¹¹ The west basin of the lake was designed to collect sediment from the upstream watershed by giving the sediment time to settle out of the water; and the narrow connection present between the west and east basins under the existing bridge is the mechanism that allows this to happen. The USACE indicated that they would not be in favor of an alternative that would change the current process by which the sediment is allowed to settle out in the west basin.

Where left-turn lanes would be added, the median would be reduced to 4-feet-wide. In addition, there are several locations where right-turn lanes or dual-left-turn lanes are proposed. Where right-turn lanes or dual-left-turn lanes would be added, they would expand the overall width of the roadway to 78 feet. According to the NDOR approved *Pavement Determination Form*, the proposed pavement would be a minimum of ten inch (10") thick concrete with approximately six inch (6") high integral curbs. The medians would have, at a minimum, hard-surfaced "mow strips" (i.e. 28-inch-wide by six-inch-thick concrete) adjacent to the inside back of curb, with the remainder of the median planted with grass. The median width on the Zorinsky Lake Bridge would be 10-feet-6-inches (10'-6") and would be stamped concrete (**Figure 2.4**).

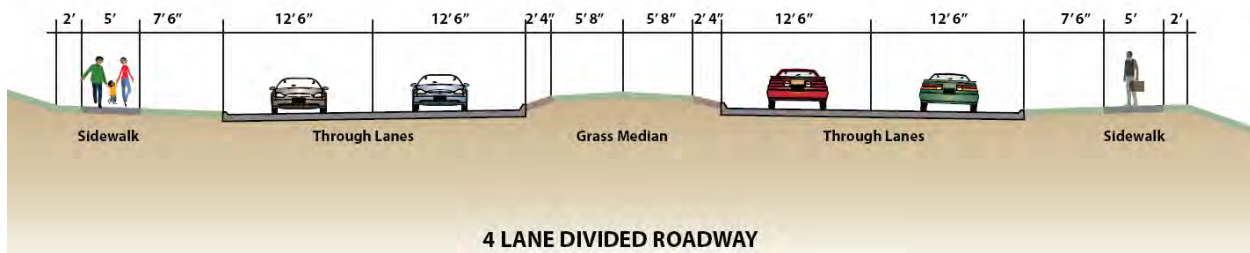
The construction of medians would convert several private driveways and side streets to right-in/right-out access only or a $\frac{3}{4}$ movement intersection¹², to improve safety and to comply with the *Transportation Element* of the City's Master Plan and other city ordinances regulating the spacing of driveways and median breaks. See the "Travel Patterns and Accessibility" discussion in **Section 3.3, Social and Economic Considerations** for more information.

Figure 2.2 Existing Two-Lane and Proposed Four-Lane Divided Roadway Configurations



¹² Within this document, a $\frac{3}{4}$ movement intersection refers to an intersection where left-turns are allowed onto to an adjacent street from 168th Street, but are not allowed onto 168th Street from an adjacent street. Right-turns onto or from 168th are allowed at $\frac{3}{4}$ movement intersections. These $\frac{3}{4}$ movement intersections occur at two locations along the project: 168th Street and Poppleton Avenue, and 168th Street and the west leg of Pine Street. See **Section 3.3.2** for more information.

Figure 2.3 Proposed Four-Lane Divided Roadway Cross-Section



The proposed roadway shoulders would consist of 7.5-foot-wide grassed areas, with an adjacent 5-foot-wide concrete sidewalk and 2-foot-wide clear area on both sides of the roadway (**Figure 2.3**). A 10-foot-wide bicycle trail would be constructed in place of the existing 8-foot-wide trail along both the east and west sides of 168th Street through the Edward Zorinsky Recreation Area, and a 5-foot-wide sidewalk would be constructed along the west side of the roadway south of the lake, where no sidewalk exists today. On the Zorinsky Lake Bridge, there would be a 12-foot-wide trail on the east side, with a 7-foot-wide sidewalk on the west side (**Figure 2.4**). On the bridge, guardrail barriers would be situated between the driving lanes and the trail or sidewalk, and fencing would be situated on the outside edges of the bridge (**Figure 2.5**).

Figure 2.4 Proposed Bridge Cross-Section (viewed looking north)

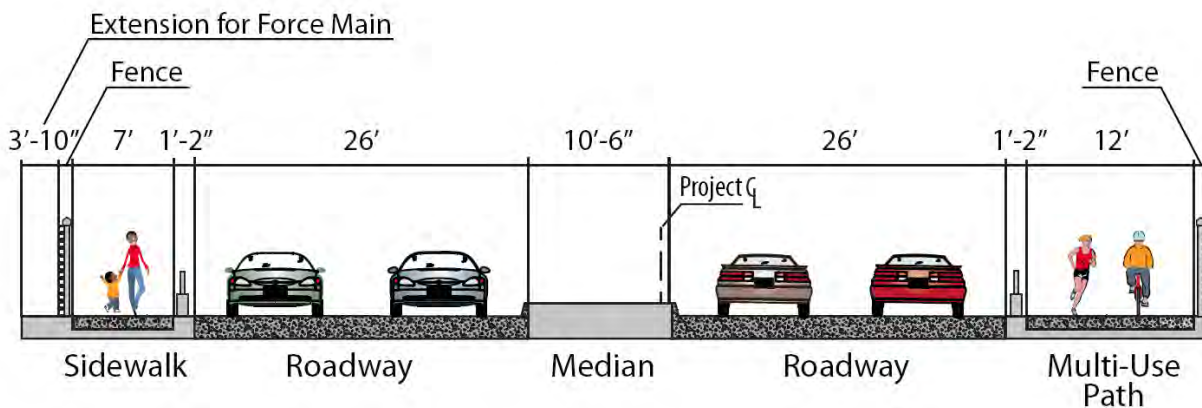


Figure 2.5 Example of Proposed Bridge Railing System



There would remain two 10-foot-wide trails underneath the bridge on both the north and south sides of the lake since the minimum vertical clearance would be achieved (see below for more information). A safety rail would be added between the edge of the trails and the open water area of Zorinsky Lake, as well as other locations where the sidewalks or trails would have a vertical drop (i.e. adjacent to retaining walls) to protect bicyclists and pedestrians (**Figure 2.6**). The safety rails on the retaining walls would also serve as guardrails to prevent vehicles from leaving the roadway. Sidewalk ramps conforming to the *Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG)* would be constructed to accommodate pedestrians crossing at controlled intersections and driveways¹³.

Figure 2.6 Examples of Safety Railings between Trails/Sidewalks and Watercourses/Retaining Walls



¹³ As of October 2016, the United States Access Board is still in the process of developing final rules for accessibility of pedestrian facilities in the (PROWAG). These guidelines are expected to be finalized prior to the final design of the Proposed Alternative, and would be used to develop accessible facilities throughout the project. The draft rule is available online at <http://www.access-board.gov/prowag/>.

The Proposed Alternative would include one new signalized intersection at 168th Street and the Zorinsky Lake South Access Drive, which would also function as an at-grade crossing for pedestrians and bicyclists using the Zorinsky Lake Trail. All existing signalized intersections, which include Pacific Street, Frances Street, Lakeside Hills Plaza, West Center Road, Oak Street, Patterson Drive, Rolling Ridge Road, and Q Street, would remain signalized.

The Zorinsky Lake Bridge would be rehabilitated (i.e. the existing piers would be used in place and widened, and the existing slab would be removed) with a new, wider slab at a slightly higher elevation (i.e. maximum increase of approximately one foot)¹⁴, to achieve at least 8 feet of vertical clearance for the existing trails under the bridge¹⁵. The Proposed Alternative would actually improve the clearance for the north trail, which is currently less than 8 feet. The rehabilitated bridge would be four lanes wide, with sidewalks and trails as described above. The earthen embankment north and south of the bridge would be minimally raised and widened to accommodate the additional lanes, wider trails, and the required profile change for the bridge (i.e. to achieve at least 8 feet of vertical clearance for the trails underneath). For more information on trails see **Section 3.7, Parks, Recreation Areas, and Trails (Section 4(f) Resources)**. The placement of fill material would be minimized to the extent practicable using acceptable engineering design standards, retaining walls, and appropriate slopes as required by the Corps of Engineers to minimize runoff. The widening for the piers will be accomplished by using tightly sealed forms to extend them to the east and west, and de-watering (using temporary cofferdams) would be required to facilitate construction. Exposed slopes would be reseeded with native vegetation.

The placement of fill material (for the slightly raised roadway profile) into the flood storage zone of Dam Site 18 (i.e. Edward Zorinsky Recreation Area) would result in a loss of flood storage capacity at this flood-control reservoir project. The USACE Operations Branch requires a balance of cut and fill at reservoir projects; therefore, it would be necessary to mitigate for the loss of flood storage capacity. This mitigation would involve excavating fill material at two areas within the flood storage zone between the elevations 1,110 feet above mean sea level (msl) and 1,128 feet above msl. Therefore, excavation would occur at two locations in upland areas above the existing ordinary high water mark (OHWM) of Zorinsky Lake and outside of wetlands where possible. It is currently estimated that approximately 11,000 cubic yards (cu yds) would need to be excavated due to fill activities. The excavation sites are located west of 168th Street just north and south of the west basin of Zorinsky Lake. The USACE would grant a temporary construction license for construction activities at and through the reservoir project¹⁶. In addition, the USACE indicated that they would likely also be preparing their own Categorical Exclusion for the construction activities at the reservoir project which are outside of the existing easement area. For more information on flood storage capacity and the excavation sites see **Section 3.2, Zorinsky Lake and Ed Zorinsky Recreation Area (Papillion Creek Dam Site 18)**. The excavated material would be used elsewhere on the project site if deemed suitable to meet the necessary fill requirements; however, if the fill material is deemed unsuitable for project requirements, it would be hauled off-site. After excavation, these sites would be

¹⁴ NDOR approved the bridge type, size, and location (TS&L) and the hydraulics data sheet in a memo dated April 17, 2015 (**Appendix A**).

¹⁵ NDOR approved using the minimum 8 feet vertical clearance for trail height in a letter dated November 14, 2013 (**Appendix A**).

¹⁶ The USACE Missouri River Project Office's Easement/License Application Checklist is included in **Appendix B**.

utilized as permanent stormwater detention areas to improve the water quality of the runoff from 168th Street before being released into Zorinsky Lake. The stormwater detention areas would have natural bottoms that would be planted with seed mix. A permanent easement would be granted by the USACE Operations Branch for the City to maintain these facilities¹⁷. For more information on the stormwater detention areas see **Section 3.2, Zorinsky Lake and Ed Zorinsky Recreation Area (Papillion Creek Dam Site 18)** and **Section 3.9, Water Resources and Water Quality**. Storm sewers, inlets, and outlets would be constructed where open ditches currently exist, and connections would be made to existing drainage facilities where necessary. These improvements would meet the drainage requirements of the *Omaha Regional Stormwater Design Manual*.

An intermittent tributary between Pine Street and Shirley Street along the west side of the roadway would be avoided by using retaining walls to reduce the extent of grading. A drainage structure (i.e. culvert) would be replaced under 168th Street. The profile of the culvert outlet would be reduced (i.e. made flatter), and the length of the culvert, while still longer than the existing culvert, would be minimized by the use of retaining walls on both sides of the roadway. Erosion control best management practices (BMPs) would be used at the outlet of the culvert to minimize erosion. For more information on retaining wall, culvert, and intermittent tributary see **Section 3.10 Wetlands and Waters of the United States**.

Grading activities, storm sewer, and proposed roadway and sidewalk features would require utility relocations and retaining wall construction. The majority of construction would occur within existing ROW, with minor strips of ROW required at a few locations. Retaining walls would be used to minimize the impacts to property outside the ROW. One house may be acquired due to the resulting proximity of the house to the edge of the new roadway. This house was built using county road ROW standards before the area was annexed by the City, and is also situated sideways along the roadway, rather than with its backyard facing the roadway. All property acquisition would follow the *Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*¹⁸. For more information see **Section 3.5, Right-of-Way, Acquisitions, and Relocations**.

Construction is proposed to be accomplished in phases, with the entire project occurring over three construction seasons. The first construction season would focus on the construction of 168th Street from Poppleton Avenue to Gold Street. The second construction season would focus on the construction of 168th Street from Oak Street to Ehlers Street. Phasing for the reconstruction of the bridge (year two) would allow one lane in each direction to remain open for vehicular traffic throughout construction of the project. Pedestrians would be diverted around the bridge, and would not be allowed under the bridge during construction. At-grade crossings would be provided both north and south of the bridge. Phasing for the roadway construction would allow one lane to remain open in both directions for all but a temporary closure (i.e. 3 months) to reconstruct 168th Street between the east leg of Pine Street and

¹⁷ The USACE Missouri River Project Office's Easement/License Application Checklist is included in **Appendix B**.

¹⁸ The *Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* was enacted by Congress to ensure that people whose real property is acquired, or who move as a result of projects receiving Federal funds, will be treated fairly and equitably and will receive assistance in moving from the property they occupy. See **Section 3.5** for more information.

Frances Street. This closure is needed to lower the roadway profile and to replace the box culvert under 168th Street between Pine Street and Shirley Street. Alternate routes would be available using 156th Street, 180th Street, West Center Road, Pacific Street, and Q Street. No improvements would be made to these alternate routes; however signage would be used to notify drivers during construction. For more information see **Section 3.20, Temporary Construction Related Considerations**.

2.4 PROPOSED FUNDING PLAN AND PROJECT IMPLEMENTATION (PHASING)

Project Funding

The Proposed Alternative to widen 168th Street to four lanes between Poppleton Avenue and Ehlers Street is currently estimated to cost approximately \$13.5M, with the segment between Oak Street and Ehlers Street (CN 22209) estimated to cost approximately \$8.5M, and the segment between Poppleton Avenue and Gold Street (CN 22210) estimated to cost approximately \$5M. The bridge is expected to cost \$1.7M. These estimates include preliminary engineering, NEPA documentation, ROW acquisition, utility relocations, construction, and construction engineering.

The proposed projects would be funded by a combination of funds from the City and FHWA. Federal funds are currently being provided through MAPA's TIP program. Federal funding guidelines for Local Public Agency (LPA) projects require a 20 percent match by the City, with the remaining 80 percent of the funds being provided by FHWA. Local and federal funds have been currently obligated for Preliminary Engineering by the City, MAPA, and FHWA for these projects, and construction is planned for 2018 (CN 22210), and for 2018 through 2019 (CN 22209).

Project Implementation (Phasing)

The proposed project would be implemented in two separate phases, occurring over three construction seasons. Preliminary plans are for the first construction season to focus on the construction of the segment between Poppleton Avenue and Gold Street (CN 22210), and for the second and third construction season to focus on the construction of the segment between Oak Street and Ehlers Street (CN 22209). These plans may be subject to change, pending project specifications developed for the final design and following constructability reviews by the contractor and the City. Specific details on construction phasing are provided in **Section 3.17, Temporary Construction Related Considerations**.

The City would coordinate the planned construction activities with the public throughout the construction process. Specifically, the City would place door hangers on affected property owners' front doors prior to construction and would hold a pre-construction public meeting to discuss specific issues related to detours, access, and timing. **If you or someone you know may require special access or provisions during construction, please contact the City at 402-444-5000.**

SECTION 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section includes a description of potentially affected natural and human environmental resources, and the environmental consequences of the No-Action and Proposed Alternatives. It also lists mitigation measures, including NDOR standard specifications, and special provisions¹⁹ of the Proposed Alternative to avoid, minimize, or mitigate potential adverse impacts. Pursuant to NEPA, and based on the character of the Study Area, as well as input received from agencies, the public, and stakeholders, the following list of potentially affected resources was identified for detailed analysis:

- Land Use and Zoning
- Zorinsky Lake and Edward Zorinsky Recreation Area (Papillion Creek Dam Site 18)
- Social and Economic Considerations
- Environmental Justice
- Right-of-Way, Acquisitions, and Relocations
- Pedestrians, Bicyclists, and Accessibility for Individuals with Disabilities
- Parks, Recreation Areas, and Trails (Section 4(f) Resources)
- Historic and Archeological Resources
- Water Resources and Water Quality
- Wetlands and Waters of the United States
- Floodplains
- Vegetation, Wildlife, and Habitat
- Invasive Species
- Threatened, Endangered, and Protected Species
- Utilities
- Noise Impacts
- Air Quality, Mobile Source Air Toxics, and Greenhouse Gases
- Hazardous Materials and Recognized Environmental Conditions
- Visual Impacts and Aesthetic Considerations
- Temporary Construction Impacts
- Secondary and Cumulative Impacts

The following potentially affected resources either do not occur in the Study Area, or were determined to not be affected by the proposed project, and are therefore not required to be discussed further:

- Freight Movement - According to the City's Public Works Department, 168th Street is not currently a designated truck route, nor would it be designated as a truck route following the construction of the proposed project. The proposed project is also not part of a statewide or national freight

¹⁹ NDOR's *Standard Specifications for Highway Construction, 2007 Edition* lists standard construction methods and processes that would be used to minimize and mitigate potential adverse impacts to the natural and social environment, and are listed as commitments in the mitigation section for each of the relevant resources. Special Provisions are modifications or additions to the standard specifications described above, and would be included in the construction documents for this project. Responsible parties are also noted in **Section 5**.

network, policy, or strategic plan. Therefore, there would be no appreciable impacts or benefits to freight movement as a result of the proposed project. However, local deliveries may experience improved mobility from shorter wait times and reduced congestion.

- Prime Farmland - There is no farmland in the Study Area, including prime farmland or farmland otherwise designated as unique or important.
- Section 6(f) - According to the Nebraska Game and Parks Commission (NGPC), there are no properties developed with Land and Water Conservation Act Funds in the Study Area.
- Section 10 of the Rivers and Harbors Act (Navigable Waters of the United States) – The only Navigable Water in Nebraska is the Missouri River, which is not in the Study Area.
- Wild and Scenic Rivers - The nearest Wild and Scenic River is the Missouri River at Yankton, SD.
- Coastal Barriers or Coastal Zones - There are no coastal areas in Nebraska.
- Marine Mammals and Anadromous Fish – There are no marine mammals or anadromous fish in Nebraska.
- Platte River Depletions - The project is not within the Platte River Watershed.

3.1 LAND USE AND ZONING

This section addresses the consistency of the alternatives considered in relation to the surrounding existing land use and future land use plans and policies, including Comprehensive Plans, Long Range Transportation Plans, community development plans, special zoning or overlay districts, and other growth initiatives. Specifically, in the City of Omaha, these plans and policies are outlined in the City's Master Plan, which includes various “Elements” for Transportation, Environment, Urban Development, Land Use, Parks and Recreation, and Housing and Community Development.

3.1.1 CURRENT CONDITIONS

Existing Land Use

The existing land uses in the Study Area are primarily residential, with three areas of commercial development at the northwest, southwest, and southeast corners of 168th and West Center Road, which includes Lakeside Hills, The Shops of Legacy, and Armbrust Village. Commercial areas are also present on the south side of 168th and Q Streets, which is just outside of the Study Area. There are also two civic²⁰ areas along 168th Street: Living Hope Lutheran Church and Our Precious Lambs Daycare, both of which are located at 168th Street and Orchard Avenue; and Willowdale Elementary School at 168th and P Streets. The segment of 168th Street that passes through Edward Zorinsky Recreation Area and Zorinsky Lake is primarily surrounded by open space, trails, and open water areas, which provide for multiple recreational opportunities.

Zoning

Figure 3.1 shows the zoning in the Study Area and surrounding vicinity, which appears to be consistent to the existing land uses observed during field visits. The Study Area is primarily zoned as medium- to high-

²⁰ According to the Land Use Element of the City's Master Plan, the land use category term “Civic” includes hospitals, schools, universities, libraries, airports, cemeteries, and other uses of a general institutional or public/quasi-public nature.

density Residential, with Mixed Use areas at the northwest and southwest corners of 168th Street and West Center Road, and a Community Commercial area at the southeast corner of 168th Street and West Center Road. Living Hope Lutheran Church is zoned as high-density Residential, while Willowdale

Elementary School is zoned as Development Reserve²¹. Zorinsky Lake is zoned as Agricultural west of 168th Street and as Development Reserve east of 168th Street.

Future Land Use

The future land use map from the Land Use Element of the City's Master Plan (**Figure 3.2**) indicates that the future land uses in the Study Area are generally planned to be the same as the existing land uses (City of Omaha, 2011). Specifically, the future land use map depicts the majority of the study area as low-density single family residential housing, and illustrates the intersection of 168th and Q Streets as a "Convenience Area²²," the intersection of 168th and Pacific Streets as a "Neighborhood Mixed-Use Area²³," the intersection of 168th Street and West Center Road as a "Community 165 Mixed-Use Area²⁴," Willowdale Elementary School as a "Civic/Institutional Area²⁵," and Zorinsky Lake and Edward Zorinsky Recreation Area as an "Open Space Area²⁶." There is also one "Open Space Area" depicted on the north end of the Study Area located east of 168th Street and north of Hickory Street. Also, it should be noted that the limits of the mixed-use area at the intersections of 168th and Pacific Streets and 168th and Q Streets are located just outside of the Study Area to the northwest and south, respectively, as outlined on the future land use maps. Outside of the Study Area, but in the general vicinity of the corridor, there are three additional "Neighborhood Mixed-Use Area" intersections; at 180th and Pacific Streets, 156th and Pacific Streets, and 156th and Q Streets, and three "Community Mixed-Use Area" intersections; at 180th Street and West Center Road, 156th Street and West Center Road, and 180th and Q Streets. For additional information regarding the areas depicted as open space, see **Section 3.7, Parks, Recreation Areas, and Section 4(f) Resources**.

To the west of the Study area, West Center Road is shown as a "Transit Corridor" overlay on the Future Land Use map. This designation encourages higher density single and multi-family dwelling units to support a viable bus service along this corridor (City of Omaha, 2011).

²¹ The City of Omaha Municipal Code Chapter 55, Section 103-120 describes the "Development Reserve" zoning classification as land "intended to provide a transitional zone for the orderly conversion of land from agricultural and rural to urban uses. The Development Reserve district coincides generally with undeveloped land on the fringe of the urbanized areas which has access to public facilities. However, the Development Reserve district may also apply to certain sites within central city development areas as well. It permits both agricultural and rural uses and very low-density residential use. It assures that land is not developed prematurely or without adequate urban services." In the case of land uses adjacent to 168th Street, it expressly allows for primary educational facilities, and park and recreation facilities.

²² The Master Plan describes "Convenience Areas" as areas providing "goods and services at a moderate scale to nearby residences. Typical facilities include convenience stores, grocery stores, gas stations, ATMs, and small offices and shops."

²³ The Master Plan describes "Neighborhood Mixed-Use Areas" as being intended to provide a level of service between that of the smaller convenience area and the larger community-sized mixed-use area.

²⁴ The Master Plan describes "Community Mixed Use Areas" as providing "major grocery and discount stores, major retail stores, major medical and educational institutions, automobile dealerships and other large-scale auto-related uses, moderate- to large-scale civic and cultural facilities, community recreational centers, apartment buildings and townhouses, and moderately sized office buildings." The "165" refers to the size (165 acres) of the area.

²⁵ According to the Master Plan, the "Civic/Institutional" land use category includes hospitals, schools, universities, libraries, airports, cemeteries, and other uses of a general institutional or public/quasi-public nature.

²⁶ The Master Plan states that "Open Space" can be paved or unpaved and could include plazas, parks, pedestrian pathways, lakes, or similar types of park-like features.

Figure 3.1 Existing Zoning from City of Omaha

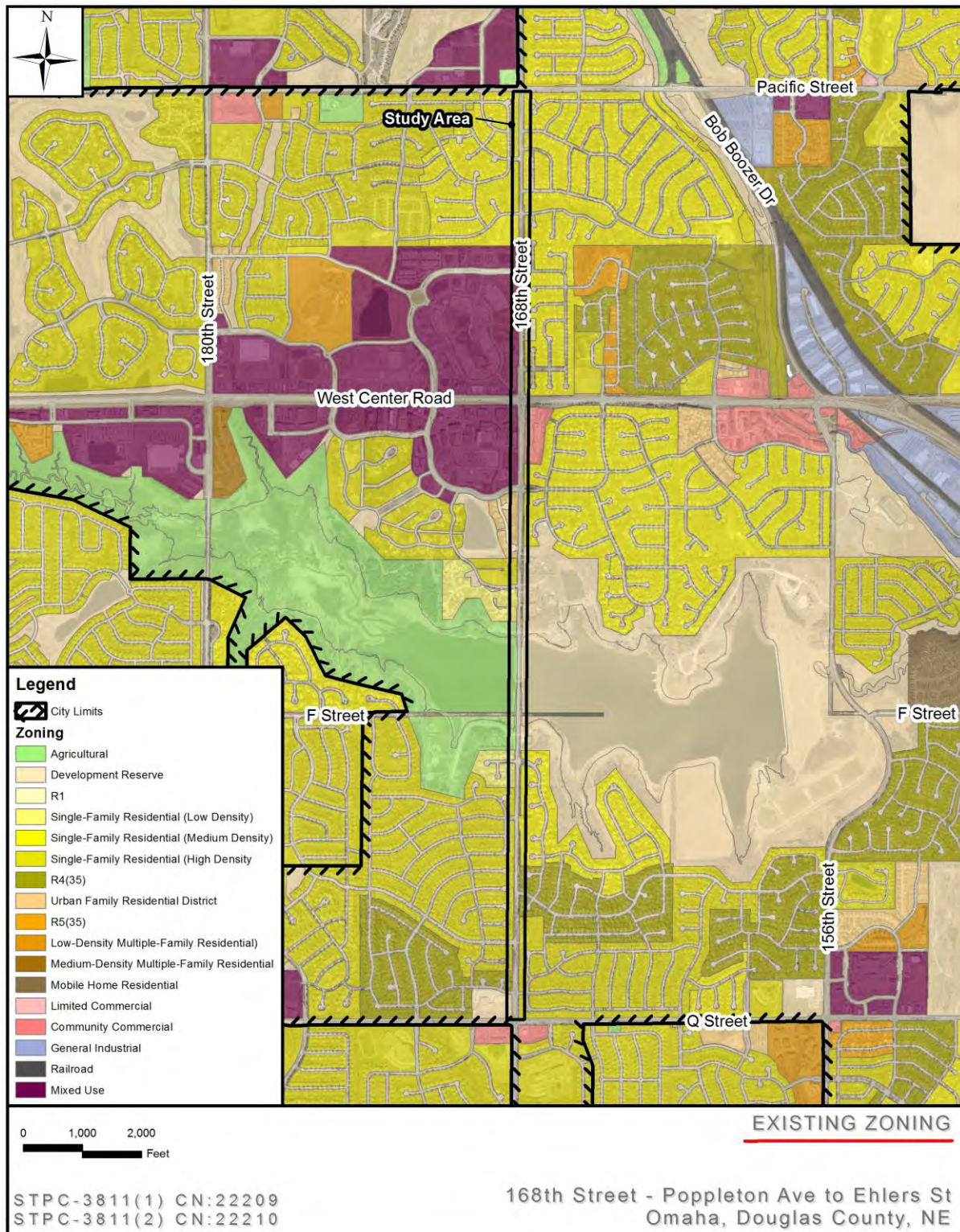
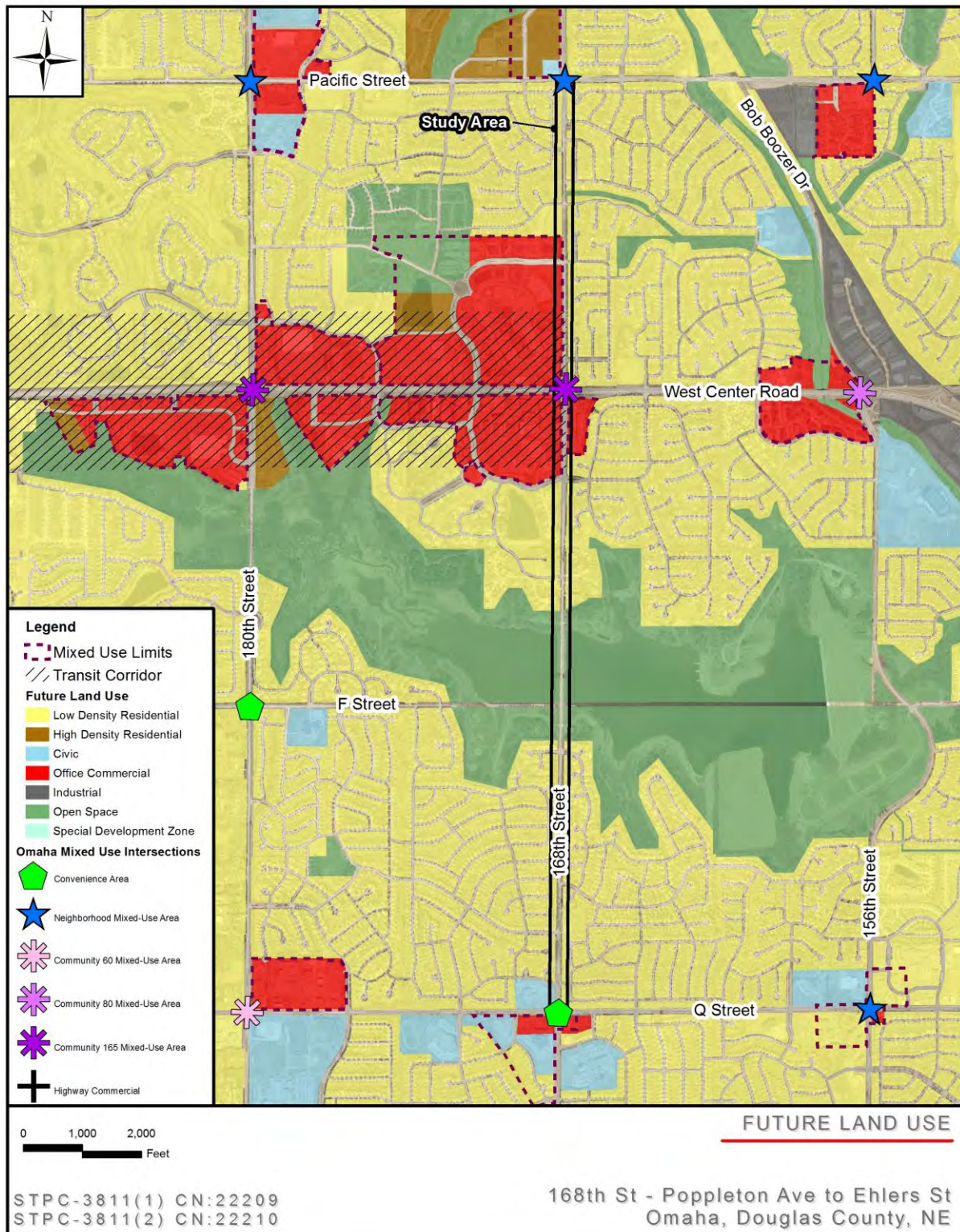


Figure 3.2 Future Land Use Map from City of Omaha Master Plan



3.1.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would not create any changes to existing land uses in the study area, nor would it modify any of the City's future land use plans.

Proposed Alternative

The Proposed Alternative would be consistent with existing plans, such as future land use, future zoning, Omaha's Master Plan and *Complete Streets Omaha*. The Proposed Alternative would not be expected to affect the existing land uses of the Study Area, nor would it be expected to change the future land use plans for the area. The Proposed Alternative would utilize lands that are primarily within the existing ROW for 168th Street, with only minor strips of land adjacent to the ROW required in some areas. Specifics of land acquisition are described in **Section 3.5, Right-of-Way, Acquisitions, and Relocations**. These small strips of land acquisition would not affect the adjacent land uses.

Additionally, while the potential exists for adjacent areas to be re-zoned to a higher or different use in the future, this would be unlikely given the fact that zoning and future land use decisions are based on the functional classification of the adjacent and intersecting roadways, which would not be affected by the proposed project, because the functional classification will not change as a result of the project. The Proposed Alternative would not create additional access points to the commercial, recreational, or residential areas, and would not create an incentive to change future land use plans for any other areas along or outside the study area. The Proposed Alternative would also not create any additional opportunities for unplanned growth or development, as the entire study area is already developed, and it would also not have any effect on the higher density of residential dwelling units planned for the West Center Road Transit Corridor.

3.1.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- The Proposed Alternative would be designed to be consistent with existing plans, such as future land use, future zoning, and *the Complete Streets Omaha Policy*. (City of Omaha)

3.2 ZORINSKY LAKE AND ED ZORINSKY RECREATION AREA (PAPILLION CREEK DAM SITE 18)

3.2.1 BACKGROUND

Dam Site 18

The *Flood Control Act of 1968* (Public Law 90-483) authorized the construction, repair, and preservation of certain public works on rivers and harbors for navigation, flood control and other purposes. Specifically, this Act authorized the projects for flood protection in the Papillion Creek Basin, which includes Papillion Creek Dam Site 18 (Dam Site 18). The *Flood Control Act of 1968*, along with the *Energy and Water Development Appropriations Act of 1981* (Public Law 96-367), gave the USACE the authority and funding to purchase the necessary land for flood control purposes and to build flood control structures (i.e. dams and reservoirs).

As a result of these authorizations, the USACE purchased the land on behalf of the United States America (i.e. United States Government) and constructed Dam Site 18, which extends from 153rd Street to just east of 192nd Street and lies generally between West Center Road and Q Street (**Figure 3.3**). Dam Site 18 was constructed

on Boxelder Creek, a tributary of West Branch Papillion Creek, as a flood control project. The dam was completed in 1984, the low-level gate was closed in 1989, and the resulting reservoir, Zorinsky Lake, reached its initial fill in 1992 (U.S. Army Corps of Engineers, 2012). Several other tributaries empty into Boxelder Creek, contributing to a total watershed area of 16.4 square miles for Dam Site 18, much of which has been largely urbanized over the past 20 years (U.S. Army Corps of Engineers, 2012). Dam Site 18 is owned by the United States of America, with the entire dam site/project area including the outlet structures, spillway, dam, and underlying reservoir land (reservoir area) being operated by the USACE as part of the Papillion Creek and Tributaries Flood Protection Project.

In order to maintain the existing roadway network (with the exception F Street, which was abandoned), the USACE granted Douglas County a ROW easement for roads or streets through Dam Site 18 in March of 1988²⁷, which has since been transferred to the City²⁸. This easement, which was pursuant to a relocation contract²⁹, grants a “perpetual easement of right-of-way for roads or streets over, across, in, and upon lands of the U.S.” which are described as the segments of 156th, 168th, and 180th Streets that extend through Dam Site 18. The location of the ROW easement is shown on **Figure 3.4**.

Zorinsky Lake

Zorinsky Lake (**Figure 3.3**) is the focal point of Dam Site 18, and as mentioned previously, is the reservoir resulting from the construction of the dam on Boxelder Creek. According to surveyed conditions in 2007, the multipurpose pool (normal operating pool) of Zorinsky Lake has a surface area of 247 acres and a capacity of 2,781 acre-feet (U.S. Army Corps of Engineers, 2012). USACE lists the following pool data elevations for Zorinsky Lake: top of multipurpose pool (normal operating pool) – 1,110.0 feet msl, top of flood control pool – 1,128.2 feet msl, and top of maximum pool – 1,138.2 feet msl (U.S. Army Corps of Engineers, n.d. (circa 1984-1985)). As shown by this data, the USACE has reserved 18.2 feet in elevation above the normal operating pool exclusively for flood storage.

Zorinsky Lake is divided into an east and west basin by 168th Street, with the roughly 115-foot-long bridge allowing both basins to remain connected through a narrow opening in the embankments. This narrow connection between the basins limits the water flow from the west basin to the east basin, allowing the west basin to act as a natural sediment control structure, trapping sediment before it reaches the east (main) basin. The east basin is the primary recreational portion of the lake as it is larger in surface area and deeper, allowing for better aquatic recreational opportunities such as boating³⁰, fishing, and swimming; however, the west basin remains accessible for aquatic recreational activities. Zorinsky Lake also supports aquatic wildlife and is stocked with fish by the NGPC, making fishing a popular recreational activity at the lake. See **Section 3.12, Vegetation, Wildlife, and Habitat** for more information on wildlife and habitat at Zorinsky Lake.

²⁷ Department of the Army Easement for Roads or Streets on Papillion Creek Flood Protection Project, Dam Site 18. Easement No. DACW45-2-87-6035 (U.S. Army Corps of Engineers, 1988).

²⁸ Assignment of Easement for Roads or Streets No. DACW45-2-87-6035 at Zorinsky Lake, Dam Site 18, Papio Creek & Tributaries (U.S. Army Corps of Engineers, 2007).

²⁹ Contract No. DACW45-83-C-0088. Site 18 Contract with Owner for Relocation or Alteration of Facilities (U.S. Army Corps of Engineers, 1983).

³⁰ According to the NGPC's 2015 Fishing Guide, boats are restricted to 5 miles per hour (no wake) at Zorinsky Lake.

Figure 3.3 Dam Site 18, Zorinsky Lake, and Edward Zorinsky Recreation Area

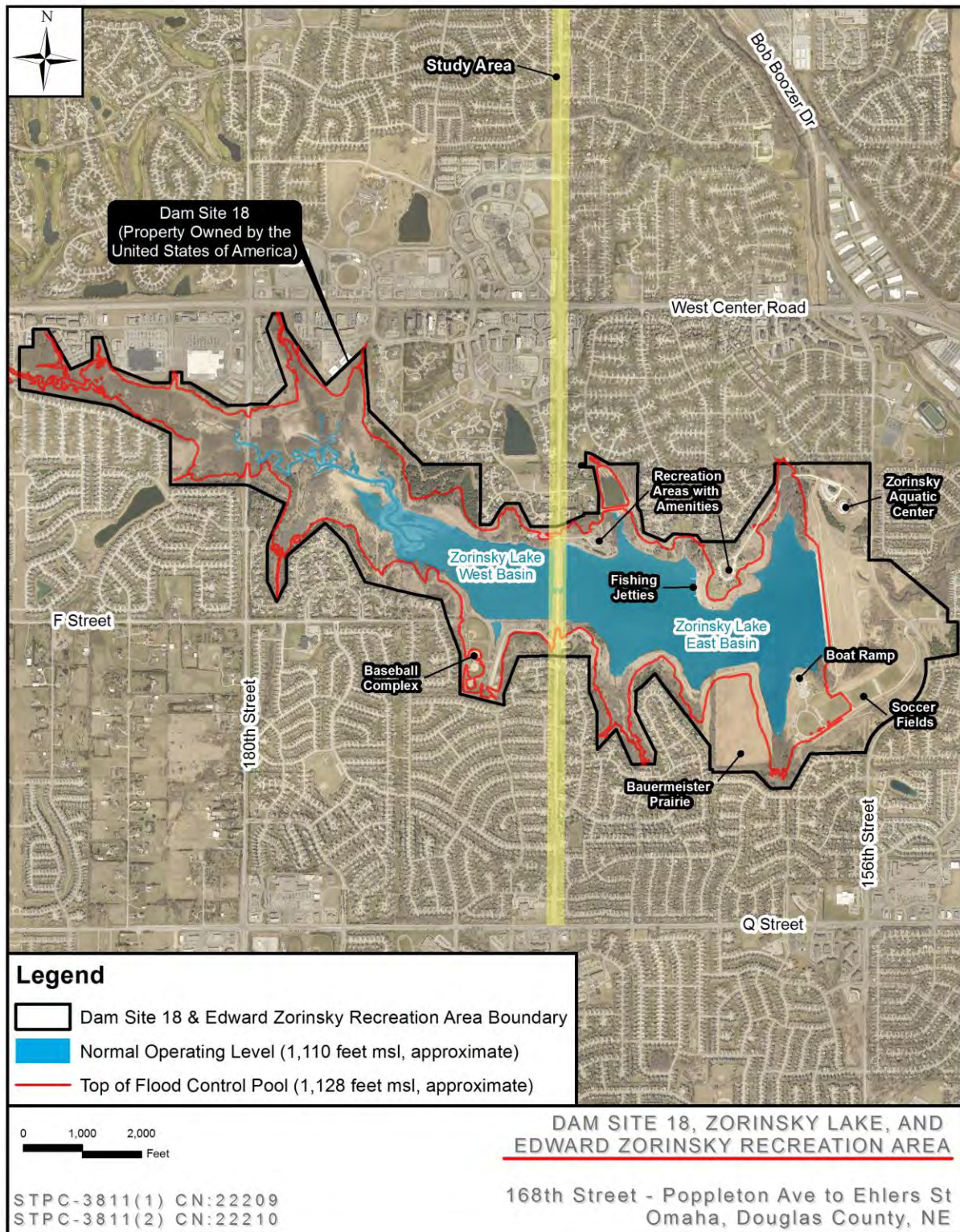


Figure 3.4 ROW Easement and Proposed Flood Storage Mitigation Sites



Edward Zorinsky Recreation Area

The *Federal Water Project Recreation Act of 1965*, as amended (Public Law 89-72, 16 USC § 460l et seq.) states that “it is the policy of the Congress and the intent of this Act that (a) in investigating and planning any Federal navigation, flood control, reclamation, hydroelectric, or multiple-purpose water resource project, full consideration shall be given to the opportunities, if any, which the project affords for outdoor recreation and for fish and wildlife enhancement...”. In addition, 16 USC 460d gave the Chief of Engineers the authority to “construct, maintain, and operate public park and recreational facilities at water resource development projects under the control of the Department of the Army, to permit the construction of such facilities by local interests, and to permit the maintenance and operation of such facilities by local interests” (Office of the Law Revision Council). 16 USC 460d goes on to state that the “Secretary of the Army is also authorized to grant leases of lands...at water resource development projects for such periods, and upon such terms and for such purposes as he may deem reasonable in the public interest.”

As a result of these authorizations, the USACE entered into a recreation lease with the City in May of 1996³¹ (which was pursuant to a preliminary agreement for recreational development entered into in 1983³²) to operate the land around Dam Site 18 for public park and recreational purposes for a term of 50 years, beginning 1 January, 1995. This lease allows the City to operate and maintain a recreation area at Dam Site 18; however, the USACE remains the underlying property owner. In addition, this lease is subject to various conditions and provisions including the right of the United States to enter and flood the premises and the subjectivity of this lease to other prior existing easements. Specifically, Condition 14 of the recreation lease reserves the right for the United States and its employees “to enter the premises at any time and for any purpose necessary or convenient in connection with Government work... to flood the premises, to manipulate the level of the lake or pool in any manner whatsoever, and/or to make any other use of the land as may be necessary in connection with project purposes,” and Condition 19 of this lease states that “this lease is subject to all existing easements, easements subsequently granted, and established access routes for roadways and utilities located, or to be located on the premises...”

The Edward Zorinsky Recreation Area, created by the recreation lease agreement described above and managed by the City, is the overlay on top of the USACE owned land for Dam Site 18. Therefore, the recreation area boundaries are the same as the property limits of the land owned by the Federal government (**Figure 3.3**). The recreation area totals approximately 1,023 acres of land and water, with its boundaries extending from West Center Road at the northernmost limits to Rolling Ridge Road (north of Q Street) at the southernmost limits, and from 153rd Street to just east of 192nd Street. The west side of the recreation area (i.e. west of 168th Street) is primarily a mixture of moderately to heavily wooded land and open grassland areas, and is generally managed more for wildlife than recreation³³. However, some recreational opportunities, amenities, and facilities are present at the west recreation area. The west side

³¹ Lease No. DACW45-1-96-6012. Department of the Army Lease for Cost-Share Public Park and Recreational Purposes, Zorinsky Lake, Dam Site 18, Papio & Creek Tributaries Douglas County, Nebraska (U.S. Army Corps of Engineers, 1996).

³² Agreement No. ODPD-221-83-001 Between the United States of America and City of Omaha, Nebraska for Recreation Development at Site 18 Reservoir, Papillion Creek and Tributaries Lakes, Nebraska (U.S. Army Corps of Engineers, 1983).

³³ According to the USACE’s *Re-vegetation Plan – Site 18; Design Memorandum No MPC-47*, the “wildlife lands” begin approximately ¼ mile east of 180th Street, and extend to the western limits of the site (USACE, 1984). The remainder of the site is “recreation lands.”

of the recreation area is crossed by Boxelder Creek, which flows east and empties into the west basin of Zorinsky Lake and is also crossed by 180th Street. The east side of the recreation area (i.e. east of 168th Street) contains the main basin of Zorinsky Lake and generally offers more recreational opportunities, amenities, and facilities. The recreation area as a whole includes amenities such as trails, soccer fields, a baseball complex, an aquatic center, playgrounds, restrooms, picnic facilities, a boat ramp, and fishing jetties (**Figure 3.3**). As previously stated, the lake portion of the recreation area also offers recreational opportunities such as boating and fishing. The majority of the recreational amenities offered at Edward Zorinsky Recreation Area are found on the east side of the recreation area; aside from the lake, the trails and the baseball complex are the only other recreational amenities present on the west side of the recreation area. There are four access drives to the recreation area along 168th Street, two on the north side and two on the south side of the recreation area, as well as additional access drives from 156th Street. For more information on these recreation areas see **Section 3.7, Parks, Recreation Areas, and Section 4(f) Resources**. For more information on the baseball complex see **Section 3.3, Social and Economic Considerations**.

3.2.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would not create any changes to the flood storage capacity at Dam Site 18, nor would it change the existing area available for recreation and wildlife habitat at Zorinsky Lake and Edward Zorinsky Recreation Area. The No-Action Alternative would not require the use of the land described within the ROW easement for 168th Street through Dam Site 18.

Proposed Alternative

The widening of the 168th Street roadway through Dam Site 18/Edward Zorinsky Recreation Area would be contained entirely within the approximately 250-foot-wide ROW easement originally granted to Douglas County (and transferred to the City) from the USACE. While there would be minor and temporary impacts to the recreational facilities within the ROW easement (e.g. Zorinsky Lake Trail), this land was originally intended to be used for roadway improvements, and the City's recreation lease is subject to the conditions of the ROW easement. See **Section 3.5, Right-of-Way, Acquisitions, and Relocations** for more information pertaining to ROW and easements at Dam Site 18, and **Section 3.7, Parks, Recreation Areas, and Trails (Section 4(f) Resources)** for more information about parks and trails. The Proposed Alternative would also require the use of land outside of the ROW easement at Dam Site 18 in order to excavate fill material to mitigate for loss of flood storage capacity, which is discussed further below.

The Proposed Alternative would require the placement of approximately 11,000 cu yds of fill material into the flood storage zone of Dam Site 18 in order to widen and slightly raise the profile of the roadway embankment and bridge. The placement of fill material into the flood storage zone would decrease the designed flood storage capacity at the dam site and impact its designated purpose of flood control. According to the USACE, topographic changes are allowed at Dam Site 18 within the flood storage zone; however, USACE Omaha District policy requires a balance of cut and fill, with no net loss of [flood] storage [capacity] (USACE, n.d.). To offset this placement of fill, the Proposed Alternative would excavate an equal or greater amount from the flood storage zone (between 1,110 and 1,128 feet msl) of Dam Site 18.

Meetings were held with the USACE on January 22, 2013 and December 10, 2013 to address the placement of fill and identify suitable flood storage mitigation sites at Dam Site 18. The locations of the proposed excavation areas (also referred to as “flood storage mitigation sites”) were determined in coordination between the USACE and the City and are located immediately west of 168th Street at the northeast and southeast corners of the west basin of Zorinsky Lake (**Figure 3.4**). Following excavation, the flood storage mitigation sites would be converted to “stormwater detention basins” to improve the water quality of roadway runoff before being released into Zorinsky Lake. Additional information about these stormwater detention basins is provided in **Section 3.9, Water Resources and Water Quality**. The excavation activities would also involve tree removal, which is described further in **Section 3.7 Parks, Recreation Areas, and Trails (Section 4(f) Resources)**. Tree removals would be mitigated according to the proposed re-vegetation plan developed in coordination with the City’s Parks, Recreation, and Public Property Department (**Appendix J**).

The USACE has stated that a temporary construction license, which would describe the relevant portions of the project on USACE property (both within and outside the limits of the ROW easement boundaries) and outline the timing of construction, would be required for construction of the project across Dam Site 18. According to the USACE Real Estate Division, one temporary construction license would be able to cover the entire project and would need to be executed prior to construction. In addition, the USACE also noted that a new permanent easement would be required for the excavation and long-term maintenance of the flood storage mitigation sites (again, referred to as “stormwater detention basins” after construction is completed). The USACE Missouri River Project Office Easement/License Application Checklist is included in **Appendix B**. Once approved for release, a copy of this Draft Environmental Assessment will be provided to the USACE for review during the comment period.

3.2.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- The City would submit the items identified in the USACE’s Easement/License Application checklist, which includes final plans, to the USACE for review and approval. (City of Omaha)
- Prior to construction, the City would obtain a temporary construction license from the USACE for project construction activities at and through Dam Site 18, including the excavation of the flood storage mitigation sites. (City of Omaha)
- Flood storage mitigation at Dam Site 18 would include the excavation of approximately 11,000 cu yds within the flood storage zone between elevations 1,110 feet msl and 1,128 feet msl at the proposed flood storage mitigation sites, which would be located at the northeast and southeast corners of the west basin of Zorinsky Lake. The excavation volumes needed would be determined during final design and permitting, and would be verified by a field survey before and after the excavation. (City of Omaha)
- The City would be responsible for designing the flood storage mitigation sites and ensuring the proper volumes are excavated. (City of Omaha)

- The City would obtain a new permanent easement from the USACE for the conversion of the flood storage mitigation sites into stormwater detention basins and for their long-term maintenance. (City of Omaha)
- Following excavation, the City would convert the flood storage mitigation sites into stormwater detention basins. (City of Omaha)
- The stormwater detention areas would be planted with appropriate flood-tolerant vegetation, and would be maintained by the Environmental Quality Control Division (EQCD) of the City's Public Works Department. A maintenance commitment with the EQCD would be in place prior to construction. (City of Omaha)
- Tree and vegetation removal at the excavation sites would be mitigated according to the proposed re-vegetation plan developed in coordination with the City's Parks, Recreation and Public Property Department. The re-vegetation plan would be submitted along with the USACE's Easement/License Application checklist for the USACE's review and approval. (City of Omaha)
- A copy of this Draft Environmental Assessment, including the proposed revegetation plan, would be provided to the USACE for review during the comment period. (City of Omaha)

3.3 SOCIAL AND ECONOMIC CONSIDERATIONS

This section addresses potential impacts to the social and economic environment, including changes to community cohesion, travel patterns, vehicular accessibility, schools and their attendance areas, induced development, other modifications to the community, and changes to the regional or local economy including reduced tax revenues, increased public expenditures, changes to employment opportunities, decreases in retail sales, and loss of businesses. Impacts to individual properties are discussed in **Section 3.5, Right-of-Way, Acquisitions, and Relocations**.

3.3.1 CURRENT CONDITIONS

Subdivisions and Neighborhoods

In the Study Area, neighborhoods are self-contained, and are not bisected by major arterial roadways, such as 168th Street, as they were platted around the rural section-line roads when they were constructed in the 1980's. Neighborhoods or subdivisions in the immediate vicinity of the Study Area occurring along 168th Street include: Rose Garden Estates, Pacific Heights, Lakeside Hills, Leawood Southwest, Legacy, Legacy Villas, Armbrust Village, Armbrust Acres, The North Reserve, The Reserve, Brodersen Place, Elshire Acres, The Pointe, Lake Shore, Bay Shores, South Shore Heights, Autumn Woods, Autumn Ridge, and Prairie Pointe. All of these subdivisions are within the City's limits. Nine of these subdivisions have officially recognized Homeowners Associations (HOA)³⁴, which include Armbrust Acres, Pacific Heights, Leawood Southwest, Legacy, The Pointe, Lake Shore, Bay Shores, South Shore Heights, and Autumn Ridge. These entities typically collect annual dues, and are active in maintaining the upkeep of common areas, organizing neighborhood events, and creating a "community feeling" for the residents of their neighborhood. The subdivision boundaries are shown on **Figure 3.5**.

Community Mixed-Use and Gathering Areas

In the vicinity of the Study Area, there is a "neighborhood mixed-use area," a "community mixed-use area," and a "convenience area," which are located at the intersections of 168th and Pacific Streets, 168th Street and West Center Road, and 168th and Q Streets, respectively. Lakeside Hospital and the Lakeside commercial development, the Shops of Legacy, and Armbrust Village are part of these community mixed-use areas, and are located within the Study Area at the intersection of 168th Street and West Center Road (**Figure 3.6**). These places are commercial areas which offer a variety of services to local neighborhood residents, as well those who live outside of the immediate area. Services offered at these areas include, but are not limited to, retail/shopping, dining, banking, automotive, fitness, health, and medical. These commercial centers not only serve an important economic function, but also serve an important social function by offering a common gathering place for members of the community. Many area residents likely frequent these areas for their services, and at the same time interact with other members of the community. In addition, Living Hope Evangelical Lutheran Church could also be considered as a community gathering area. These areas are shown in **Figure 3.6** and are described in further detail on the following pages.

³⁴ Also referred to as Neighborhood Associations or Improvement Associations

Lakeside Hills and Catholic Health Initiatives (CHI) Health Lakeside Hospital

The Lakeside Hills area is located on the north side of West Center Road, and extends from 168th Street to 177th Street. Along 168th Street, Lakeside Hills extends from West Center Road to just north of Frances Street. The Lakeside Hills area offers numerous stores and shops, restaurants, offices, medical facilities, and an apartment complex, as well as a retirement community and a park nearby.

CHI Health Lakeside Hospital (formerly Alegent Creighton Lakeside Hospital), located in the center of Lakeside Hills, opened in 2004 as a 45-bed acute care facility and has grown to a 157-bed acute care facility with approximately 550 physicians on active staff, 125 full-time registered nurses, and 390 full-time employees. This hospital is a full service hospital, providing a full range of services including maternity, cancer and surgery care, and diagnostic and emergency services (Alegent Creighton Health, 2014).

Shops of Legacy and Armbrust Village

The Shops of Legacy, located southwest of 168th Street and West Center Road, is a shopping center with retail shops and restaurants that offers 120,000 square feet of retail space. There are also adjacent buildings to the Shops of Legacy including Life Time Fitness, Rockbrook Camera, Upstream Brewery, and the Springs at Legacy Commons apartment complex. In addition, The Heritage at Legacy is a retirement village that recently opened at the northwest corner of 168th Street and Oak Drive. Armbrust Village, located southeast of 168th Street and West Center Road, is a strip mall with retail shops and restaurants, a chiropractor and dental office and three stand-alone buildings.

Living Hope Evangelical Lutheran Church

Living Hope Evangelical Lutheran Church opened in February of 1992, and is located on the northeast corner of 168th and Orchard Avenue. The Church offers Bible study groups and Sunday school on Sundays at 9:15 AM, and worship services at 10:30 AM. Additionally, from May through October the Church offers Wednesday night worship services at 7:00 PM. This Church also runs a preschool and child care, Our Precious Lambs Preschool and Child Care. The child care is open Monday through Friday from 7:00 AM to 6:00 PM, and the preschool is in session from September through May on Mondays, Wednesdays and Fridays from 9:00 AM to 11:30 AM (Living Hope Evangelical Lutheran Church, 2013). All times listed above are current as of April 6, 2015, but are subject to change in the future.

Figure 3.5 Subdivisions

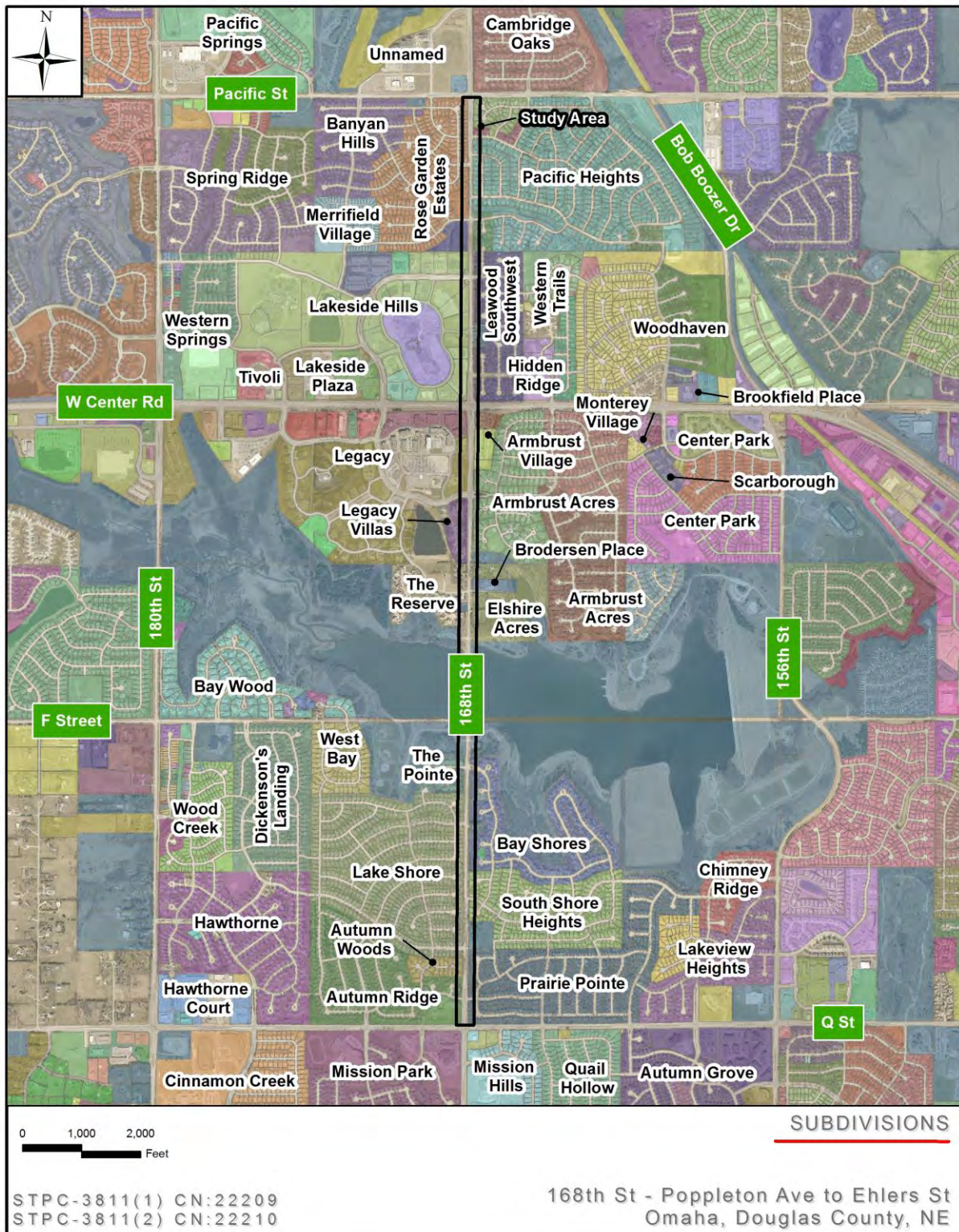


Figure 3.6 Social and Economic Considerations



Recreational Gathering Areas

Recreation areas are often common gathering areas for members of the nearby neighborhoods, as well as for the general public. The two primary recreation areas in the Study Area are shown on **Figure 3.6** and described in further detail below. **Section 3.7, Parks, Recreation Areas, and Trails (Section 4(f) Resources)** provides more information on parks and recreation areas.

Edward Zorinsky Recreation Area

Edward Zorinsky Recreation Area has four areas with recreational facilities in the vicinity of the Study Area, including a youth baseball complex and playground at the Zorinsky Lake Southwest Access Drive (described in greater detail below), equestrian trail access and staging areas at the Zorinsky Lake Northwest and Southeast Access Drives, and a heavily used general recreation area at the Zorinsky Lake Northeast Access Drive. Each of these recreation areas offers parking lots and trail access, and the recreation areas at the Zorinsky Lake Northeast and Southeast Access Drives have public restroom facilities. In addition, the recreation area at the Zorinsky Lake Northeast Access Drive has a picnic shelter, and is a popular parking area for those utilizing the trails and the lake.

Kingswood Athletic Association Baseball Complex

The baseball complex at the Zorinsky Lake Southwest Access Drive is owned by the City, but is maintained and used by the Kingswood Athletic Association (KWAA) through a 5-year-term renewable lease agreement. There are five baseball and softball fields, a playground, and parking for over 150 vehicles. There is also a concession stand and restrooms that are only open during KWAA (and City) events. The complex is primarily used between March and October, with practices and games occurring in the evenings and weekends. The spring season is the heaviest use time, with practices and games beginning around 4:00pm during the week, and all day on the weekends. During the fall, practices are held during the week, and games are normally held on the weekends. KWAA holds two tournaments annually, one in April and one over Memorial Day weekend. Under the terms of the lease agreement, the City also maintains the ability to use the complex for a two-week period during the summer (i.e. aligned with the College World Series) to operate a city-wide baseball tournament, that is organized and operated by a private company that publicizes the event nationally. The four main fields at the complex are gated and locked, and are not open to the public at any time. Two of these fields are reserved for youth baseball, and two are reserved for middle-school and high-school aged teams (Kingswood Athletic Association, 2014). While KWAA does have other fields available in the Omaha area for the younger teams, the two larger fields are the only location that KWAA has available for older age groups. The fifth field is a “little-league” field that is open to the public at all times (Adrian Alvarez, KWAA President of Baseball and Softball, personal communication, January 15, 2014).

Elementary Schools

There is only one elementary school in the Study Area, Willowdale Elementary School (Millard Public Schools), which is located at the northwest corner of 168th Street and Q Street, and is accessed from P Street. The Willowdale building is approximately 300 feet from 168th Street, with a playground that is approximately 75 feet from 168th Street. The segment of 168th Street adjacent to Willowdale has already been improved to four lanes. According to the “WillowWeb” website, Willowdale is a leader in educational technology, utilizing

technology such as a website offering numerous educational links specific to each grade, podcasting (“Radio WillowWeb”), iMovies, blogs, interactive whiteboards and smartboards (Willowdale Elementary School, 2013).

There are four elementary school attendance areas which either border, or are crossed by, the Study Area, including Spring Ridge (Elkhorn Public Schools), West Bay (Elkhorn Public Schools), Morton (Millard Public Schools), and Willowdale (Millard Public Schools). The Spring Ridge and West Bay attendance areas are adjacent to, but not crossed by the Study Area, and the Morton and Willowdale school attendance areas are bisected by 168th Street. It should be noted that the majority of the Morton attendance area is east of 168th Street and there is only one small neighborhood that is west of 168th Street. The attendance areas for these public elementary schools are shown on **Figure 3.7**.

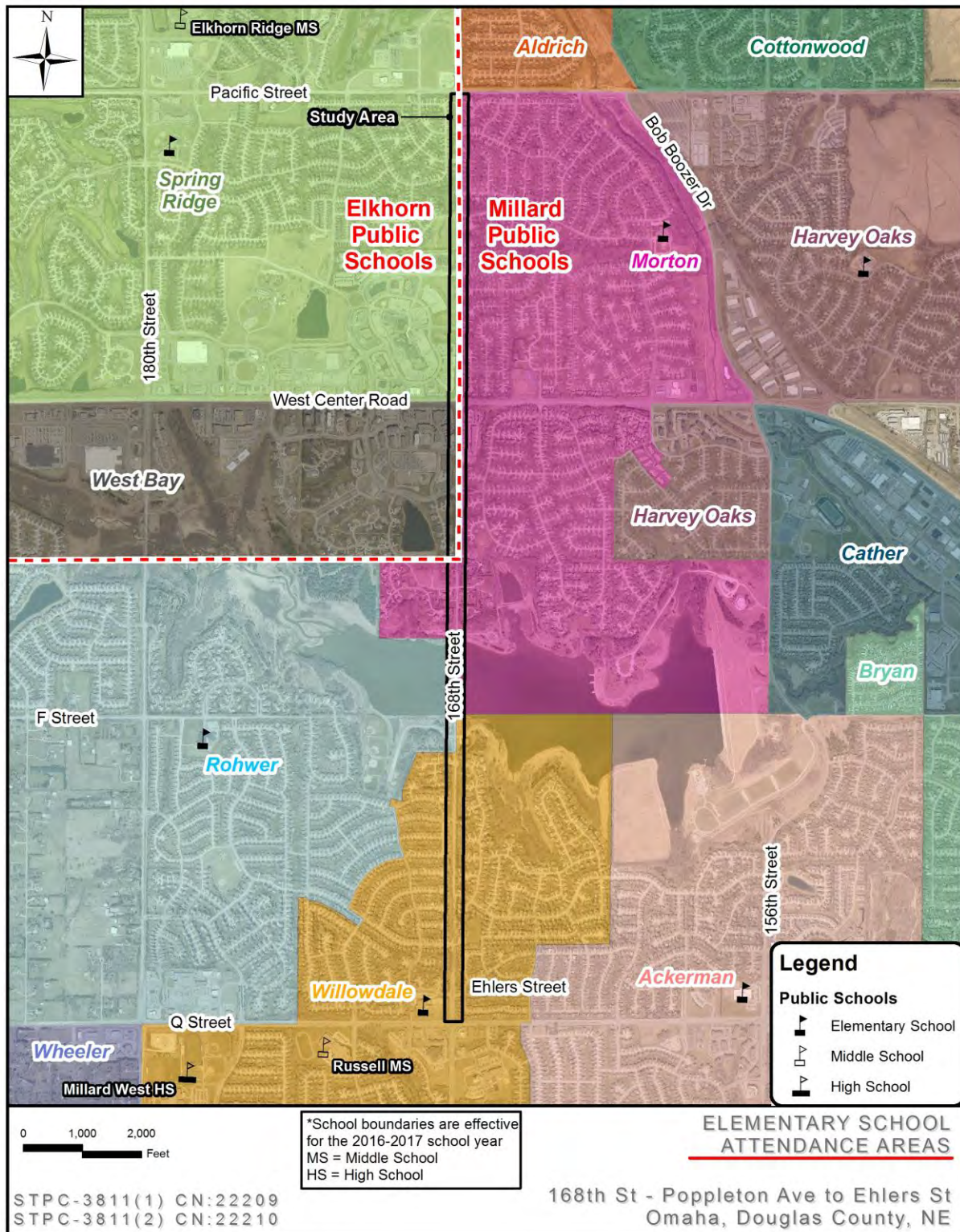
In the Elkhorn Public Schools district, children living farther away than four miles from their assigned school are provided free bus transportation. The Spring Ridge and West Bay attendance areas are entirely west of 168th Street so they are not crossed by the Study Area, and neither school has any areas that are over four miles from the school; therefore, there are no busing or pedestrian crossing concerns.

In the Millard Public Schools district, elementary school children who live greater than two miles away from their assigned schools receive free bus transportation. The Millard Public Schools Board of Education can approve additional free transportation services for students living within two miles of their assigned school; however, bus stops are not allowed to be located within a one-mile radius of the main entrance of their assigned school. Students residing within the one-mile radius can walk to a regularly scheduled bus stop (beyond one mile) to board and ride a bus, or can walk (or use other non-vehicular transportation) to school or be driven by parents. In addition, because sidewalks are not continuous, or are absent in many segments along the study area, it is unlikely that students would use those segments of 168th Street to walk or ride to school.

The Morton attendance area is almost entirely east of 168th Street, with the exception being The Reserve subdivision which is located west of 168th Street. Morton Elementary School itself is located approximately ½ mile north and east of West Center Road and 168th Street at 160th Street and Wood Drive. According to the Millard Public Schools Transportation Office, the district does provide busing for students attending Morton who live in The Reserve and Elshire Acres subdivisions, as well as for students who live greater than one mile from the school in the Armbrust Acres subdivision (Kim Buhr, Transportation Secretary, Millard Public Schools, personal communication, January 24, 2014).

Willowdale has an attendance area that is bisected by 168th Street. The students living within the Bay Shores, South Shore Heights, and Prairie Pointe subdivisions who attend Willowdale are within two miles (door to door) of the school, and are also within a one-mile radius of the school; therefore, the district does not provide busing, and students must either walk to school (or use other non-vehicular transportation) or be driven by parents. As previously mentioned, there is a signalized, dedicated pedestrian crosswalk on 168th Street just north of P Street/Ehlers Street which provides a safe crossing opportunity for students to and from Willowdale for these subdivisions.

Figure 3.7 Elementary School Attendance Areas



Middle and High Schools

There are four middle school attendance areas which either border or are crossed by the Study Area, including Peter Kiewit, Millard North, Russell, and Elkhorn Ridge. Additionally, three high school attendance areas also border or are crossed by the Study Area, including Millard North, Millard West, and Elkhorn South. The attendance areas of Russell Middle School, Millard West High School, and a small portion of Millard North Middle School and Millard North High School are bisected by 168th Street. None of the middle or high schools associated with these attendance areas are located within the Study Area; however, Russell Middle School is located approximately 0.30 miles from the Study Area at the southwest corner of the intersection of 172nd Street and Q Street.

In the Elkhorn Public Schools district, middle school and high school students living farther away than four miles from their assigned school are provided free bus transportation. In the Millard Public Schools district, middle school students do not receive free bus transportation. The district arranges transportation services for middle school students who live more than two miles from their assigned school; however, there is a charge for the transportation. The district only provides transportation for high school students living farther away than four miles from their assigned school.

The Russell Middle School attendance area is bisected by 168th Street. However, students attending Russell and living within the vicinity of the Study Area live less than two miles from the school; therefore, busing is not an issue. Students attending Russell Middle School must either walk or ride their bikes to school, or be driven by parents. Students that live east of 168th Street and walk or ride to school can use the signalized dedicated pedestrian crosswalk at either Q Street or just north of P Street/Ehlers Street to safely cross 168th Street. Students living within the vicinity of the Study Area that attend Millard North Middle School, Peter Kiewit Middle School, Elkhorn Ridge Middle School, Millard North High School, Millard West High School, and Elkhorn South High School live far enough from their assigned schools that they are likely bused, driven by parents, or drive themselves.

Travel Patterns and Vehicular Accessibility

Currently, all of the intersections along 168th Street from Poppleton Avenue to Gold Street and from Oak Street to Ehlers Street are full movement intersections, allowing right and left turns onto and off of 168th Street. In the previously improved segments of 168th Street, there are three locations where access has been restricted to right-in/right-out. These locations are at P Street/Ehlers Street, Elm Plaza (an entrance to the Shops of Legacy), and the northern entrance to Armbrust Village.

Along 168th Street, there are 19 direct access points from private properties to the roadway, all of which currently have full movement to and from 168th Street. These direct access points serve 15 private properties and consist of driveways, private roads (i.e. long driveways), and one parking lot. Specifically, three of the properties have semi-circular driveways with two access points to 168th Street, one of which also has an additional separate driveway. One property, Living Hope Lutheran Church, includes a driveway for the parking lot as well as a driveway for the Parsonage (i.e. residence for the church's pastor). Additionally, Grover Plaza and Ontario Plaza each provide direct access to 168th Street for two properties (one of the properties with access to Grover Plaza also has a separate driveway). The rest of the driveways

along 168th Street each serve one private property. The locations of the properties with direct access to 168th Street are listed in **Table 3.1** on Page 58, and shown on **Figures 3.8A-C** on Pages 60, 61, and 62.

Emergency Service Providers

When responding to emergency calls or situations, emergency vehicles (e.g. firetrucks, ambulances) normally travel on main roads (e.g. arterials), such as 168th Street, as much as possible since they often provide the fastest routes. The existing two-lane segments of 168th Street within the study area are not conducive to emergency response vehicles because they lack capacity and turning lanes, and because of their often congested state. Additionally, the two-lane segments of 168th Street also lack a suitable shoulder for cars to pull over when emergency vehicles are attempting to pass. These existing conditions along 168th Street can result in delays in emergency response times.

Bus Routes and Bus Stops

One Omaha Metro bus route, Route 94, currently runs along a small segment of 168th Street, specifically from West Center Road to Lakeside Hills Plaza. Route 94 (“*West Center Express*”) is one of the farthest westward-extending bus routes offered by the Omaha Metro bus system. There is an Omaha Metro bus “park-and-ride” lot at Lakeside Hospital, which offers free parking for those using Omaha Metro bus transportation. With the exception of the Village Pointe park-and-ride lot at 180th and West Dodge Road, the park-and-ride lot at Lakeside Hospital is the westernmost park-and-ride lot in the Omaha Metro bus system.

Additionally, three bus stops are located within the Study Area, near the northwest corner of 168th Street and Lakeside Hills Plaza, the northeast corner of 168th Street and West Center Road, and the southeast corner of 168th Street and Gold Street. The bus stop near the southeast corner of 168th Street and Gold Street is the only bus stop actually along 168th Street; however, it is just outside the proposed construction limits (Transit Authority of the City of Omaha, 2015)³⁵.

Alternate Routes for Construction

Because there would be a three-month-long full closure of 168th Street required for the reconstruction of 168th Street between the east leg of Pine Street and Frances Street and the replacement of the box culvert under 168th Street within this section (see **Section 3.20 Temporary Construction Related Considerations**), an analysis of existing social and economic considerations along these routes was also conducted. The alternate routes would utilize West Center Road, Pacific Street, 180th Street, and/or Bob Boozer Drive to travel around the full closure of 168th Street (see **Figure 3.18** in **Section 3.20 Temporary Construction Related Considerations**). Therefore, the social and economic resources immediately along these routes were identified in order to determine potential effects from the alternate routes.

³⁵ Metro is currently in the planning stages of modifying their bus routes; the current proposal is to eliminate routes 15 and 94 because they are underperforming. If these routes are eliminated, the park and ride lot designation and the stops on 168th Street would also be eliminated.

The majority of the area along the alternate routes consists of residential and commercial development; however, there are also several churches, four parks, a school, and a fire station located along the alternate routes.

There are no residential properties that front (i.e. have direct access to) the alternate routes. There are multiple neighborhood access points along West Center Road, 180th Street, and Pacific Street. There are no residences fronting or neighborhood access points along Bob Boozer Drive.

Commercial developments (i.e. businesses) are located at or near the intersections of 156th Street and West Center Road, 160th Street and West Center Road, 168th Street and West Center Road, 180th Street and West Center Road, and 180th and Pacific Street. Commercial development dominates the stretch of West Center Road between 168th and 180th Streets. Only one of the commercial areas is directly accessed from the alternate routes (156th Street and West Center Road), while the rest of the commercial areas are accessed from side streets along the alternate routes.

Only one of the churches, Pacific Springs Assembly of God (174th and Pacific Streets), is directly accessed from the alternate routes (Pacific Street).

Parks along the alternate routes are located along Pacific Street, 156th Street, and West Center Road. None of the parks are directly accessed from the alternate routes.

The Omaha Fire Department's Fire Station 56 is located at Pacific Street and Peterson Drive, which is approximately 700 feet west of 156th Street. The Fire Station is directly accessed from Pacific Street, and is located at a signalized intersection. The signals at this intersection can be controlled to give preference to emergency vehicles entering and exiting the facility. The Omaha Fire Department's Fire Station 63 is located at 168th and S Streets, and is directly accessed from S Street. The signals at 168th and S Street can also be controlled to give preference to emergency vehicles. It should be noted that Fire Station 63 is not actually along the alternate routes, but could be affected by the alternate routes.

Spring Ridge Elementary School is located at 180th and Woolworth Streets, with the school itself offset from 180th Street. The school's playground and ballfields are situated along 180th Street, but are also set back from the roadway and are fenced-off from 180th Street. The school is not directly accessed from 180th Street.

3.3.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no significant impacts to social cohesion, economic vitality or opportunities, or school attendance areas. The No-Action Alternative would maintain full turning movements at all intersections along 168th Street, as well as at the driveways, private drives, and parking lot with direct access to 168th Street. However, leaving the roadway in its existing two-lane configuration with full turning movements at private driveways would continue to impact traffic movement and flow due to backups from vehicles making turns onto or from 168th Street. Additionally, the No-Action

Alternative would not construct any turn lanes where they do not currently exist, which would perpetuate traffic flow and access disruptions to community gathering areas.

Proposed Alternative

The Proposed Alternative would not result in adverse impacts to the existing social or economic conditions. The project is intended to have a beneficial impact to the community by increasing mobility, reducing congestion throughout the study area and at intersections (including driveways), improving pedestrian and vehicular access, and enhancing the transportation network.

There would be no changes to community, school, or development boundaries; there would be no effects on commercial space availability or the ability to construct new commercial buildings; there would be no effects to existing bus routes or bus stops; there would be minimal potential effects on the existing property valuation and/or increases/decreases in taxes paid by residences or businesses; and there would be no adverse changes to vehicular access for existing businesses.

More specifically, there would be temporary and permanent changes to vehicular access, turning movements, and travel patterns. Additional details on the proposed changes are provided below.

Subdivisions and Neighborhoods

The Proposed Action would temporarily close 168th Street between the east leg of Pine Street and Frances Street. There are no residences with direct access to 168th Street within this section of roadway, so there would be no access restrictions to individual residences. Temporary changes to travel patterns would occur for the residents living in the subdivisions and neighborhoods along the temporarily closed segment of 168th Street. The residents living in the subdivisions west of 168th Street would not be able to access their neighborhood from Shirley Street during the closure, but would be able to use the west leg of Pine Street and Frances Street to access their neighborhood from 168th Street. Residents living in the subdivisions east of 168th Street would not be able to access their neighborhood from Hickory Street during the closure, but would be able to use Frances Street, the east leg of Pine Street, William Street, and Poppleton Avenue to access their neighborhood from 168th Street. In addition, residents would also be able to access their subdivisions from Pacific Street.

Community Mixed-Use and Gathering Areas

The Proposed Alternative would have a beneficial impact on accessibility to community mixed-use areas, gathering areas, and businesses by constructing dedicated turn lanes at several locations where none exist today. Left-turn lanes would be constructed at the following locations along 168th Street: northbound and southbound at the Zorinsky Lake North Access Drive; northbound and southbound at the Zorinsky Lake South Access Drive; and southbound at the Living Hope Lutheran Church parking lot. Dual left-turn lanes would be constructed at the northbound entrance to CHI Health Lakeside Hospital at 168th Street and Lakeside Hills Plaza to account for future increased traffic. Additionally, the Zorinsky Lake South Access Drive would be

signalized, further benefiting accessibility to and from the KWAA baseball complex and Edward Zorinsky Recreation Area. All existing dedicated left-turn lanes would remain after construction.

The Proposed Action would temporarily close 168th Street between the east leg of Pine Street and Frances Street. There are no businesses with direct access to 168th Street within this section of roadway, so there would be no access restrictions to individual businesses. As a result of the closure, temporary changes to travel patterns would occur for motorists traveling to or from businesses at Lakeside Hills Plaza. The businesses at Lakeside Hills Plaza, including CHI Health Lakeside Hospital, would still be accessible from both Lakeside Hills Plaza and Frances Street for northbound traffic since the closure begins just north of Frances Street. Motorists traveling southbound and attempting to access the businesses at Lakeside Hills Plaza would need to use the alternate routes, or utilize interior neighborhood streets to reach these facilities.

A meeting was held on February 8, 2016 with CHI Health Lakeside Hospital to discuss the proposed project. CHI Health Lakeside Hospital indicated that they would need to notify out-of-town ambulance providers of the proposed road closure. CHI Health Lakeside Hospital was informed that the City would contact the hospital prior to the closure. The project would not affect deliveries to the hospital since it was indicated that deliveries come from West Center Road. The hospital also requested that the City place temporary sign covers on the “Hospital” street signs in the project vicinity prior to any closures. Additionally, the City would use dynamic message signs (DMS) to notify drivers of access changes to the hospital. Furthermore, the City would notify online mapping providers (e.g. Google) of the closures so that online maps would reflect the closure.

Elementary, Middle, and High Schools

The Proposed Alternative would have no direct impacts on Willowdale Elementary School, or Russell Middle School. 168th Street adjacent to Willowdale has already been improved to four lanes, and there would be no impacts to the signalized crosswalk across 168th Street just north of P Street/Ehlers Street. This crosswalk would remain open at all times during construction. Russell Middle School is located outside of the Study Area and would not be impacted by the Proposed Alternative.

The Proposed Alternative would include the temporary, full closure of 168th Street from the east leg of Pine Street to Frances Street for approximately three months in order to lower the roadway profile and replace the box culvert in this segment. This closure is planned to occur while school is out of session; therefore, impacts to school-related travel are not anticipated. However, if the temporary closure of 168th Street was to extend into the school year, the residents in the Leawood Southwest, Western Trails, Hidden Ridge, Woodhaven, Armbrust Acres, Elshire Acres, Broderson Place, and/or The Reserve subdivisions who have children attending Morton Elementary School, Peter Kiewit Middle School, and/or Millard North High School could have potential minor impacts, explained further below. Pedestrian and bicyclist concerns are not anticipated during the temporary closure since there are currently no sidewalks in this segment, so it is assumed that

students are not utilizing this route. Any temporary closures occurring during the school year would be advertised.

The residents of these subdivisions with students who attend Peter Kiewit Middle School and/or Millard North High School would likely be minimally affected or unaffected by the temporary closure due to the ability to use West Center Road and Bob Boozer Drive or 144th Street when traveling to these schools. It is reasonable to assume that the majority of the residents in these areas may already use these routes when traveling to the middle and high schools, and thus would be unaffected by the temporary closure of 168th Street.

Residents residing in the Leawood Southwest, Western Trails, Hidden Ridge, and Woodhaven subdivisions who have children attending Morton Elementary School would also be unaffected by the temporary closure of 168th Street since they likely already use the internal public streets while traveling to the school, and would be able to continue to do so during the closure. While some residents living in the Morton attendance area south of West Center Road might currently use 168th Street while traveling to Morton Elementary School, they would be able to use West Center Road and the internal public streets north of West Center Road to drive to school during the temporary closure.

Residents in the Elkhorn Public Schools attendance areas attending Spring Ridge Elementary, West Bay Elementary, Elkhorn Ridge Middle, or Elkhorn South High School would be unaffected by the temporary closure of 168th Street. Residents living in the Rose Garden Estates, Banyan Hills, Merrifield Village, Spring Ridge, and Western Springs subdivisions with children attending Spring Ridge Elementary School are able to travel the internal public streets to their elementary school, and would therefore be unaffected by the closure. Residents in these subdivisions with children attending Elkhorn Ridge Middle School or Elkhorn South High School could exit the neighborhood onto Pacific Street or 180th Street to completely avoid the closure. Residents would also be able to exit the neighborhood at the west leg of Pine Street onto northbound 168th Street and be unaffected by the temporary closure.

Meetings were held with representatives of Spring Ridge Elementary School (February 8, 2016) and Willowdale Elementary School (February 10, 2016) to discuss the proposed project. The only concerns raised were by Willowdale Elementary School, which were related to the signalized crosswalk across 168th Street just north of P Street/Ehlers Street, the sight distance for southbound traffic on 168th Street, and maintaining access (right-in/right-out) at P Street. The signalized crosswalk would remain open during construction. The sight distance issue was reviewed by the City, and was determined to be more than satisfactory to meet the AASHTO guidelines. Right-in/right-out access would be maintained at the intersection of P and 168th Streets while school is in session. No concerns were expressed by either school regarding busing and the temporary closure of 168th Street. If the closure were still in place during the school-year, school bus routes would be re-routed as necessary and would utilize the alternate routes (described below) or internal neighborhood streets to reach their destinations.

Alternate routes would also be available for the general traveling public during the temporary closure of 168th Street between the east leg of Pine Street and Frances Street. Alternate routes include 156th Street, 180th Street, Q Street, West Center Road, and Pacific Street. No improvements would be made to these routes. The temporary full closure of this segment of 168th Street is discussed further in **Section 3.19, Temporary Construction Related Considerations**.

Travel Patterns and Vehicular Accessibility

As previously noted, 168th Street is the only continuously paved north/south road from Nebraska Highway 370 in Sarpy County to Nebraska Highway 36 on the north edge of Douglas County between 72nd Street and 204th Street (U.S. Highway 6), a distance of approximately 11 miles. As such, the widening of 168th Street to four lanes could be expected to generate increased through-traffic in the study area. The Proposed Alternative is intended to be consistent with the City's and MAPA's LOS goals; therefore, the increase in through-traffic would not be an adverse impact since the roadway would be anticipated to handle the increased traffic volume and to meet the desired LOS goals.

The Proposed Alternative would result in permanent limited movement (i.e. right-in/right-out only) for the majority of properties that currently have direct access to 168th Street. Nineteen private driveways serving 15 residences and one church/daycare would be affected by the construction of medians along 168th Street. The physical addresses of these private driveways and roads with existing direct access are listed in **Table 3.1** below, along with the proposed access and out-of-distance travel length for each.

Five side streets would also be permanently affected by median construction. William Street, the east leg of Pine Street, and Gold Street would be converted from full access to right-in/right-out only access, and the proposed accesses and out-of-distance travel lengths are listed in **Table 3.1**. In addition, Poppleton Avenue and the west leg of Pine Street would be converted from full access to a $\frac{3}{4}$ movement intersection (i.e. left turns would not be allowed onto 168th Street from Poppleton Avenue or the west leg of Pine Street). The proposed accesses and out-of-distance travel lengths for these two intersections are listed in **Table 3.1**. **Figure 3.8A** depicts the proposed access for Poppleton Street, William Street, the west leg of Pine Street, and the east leg of Pine Street, and **Figure 3.8B** depicts the proposed access for Gold Street. The private driveways and roads with direct access to 168th Street, along with the proposed access for each are depicted on **Figure 3.8B** and **Figure 3.8C**.

These driveway access changes are consistent with the City's *Guidelines and Regulations for Driveways* ordinance that requires a separation of at least forty feet of full curb height between driveways serving a single parcel of property or serving any of several adjacent properties under single ownership. The driveway ordinance also requires that properties with less than 60 feet of roadway frontage be limited to one driveway and that no property shall be provided more than two driveways except for corner properties (City of Omaha, 2011). Therefore, the realigned driveways are being planned to be more consistent with City guidelines, and to also provide better sight distances in compliance with NDOR and federal design guidelines. Driveways that would be

realigned at side streets with traffic signals (i.e. the driveways across from Patterson Drive and Lakeside Hills Drive) would also receive a sensor in the driveway pavement to change the signal for vehicles to exit driveways more safely.

The limited movement on side streets (William Street, both legs of Pine Street, Gold Street, and Poppleton Avenue) resulting from the Proposed Alternative would create some out-of-distance travel for residents in the adjacent subdivisions, requiring drivers to travel new routes to access their subdivision. However, these minor impacts are also outweighed by the benefits of safer intersections and roadways. In addition, converting Gold Street to right-in/right-out is consistent with the *Transportation Element* of the City's Master Plan that regulates perpendicular roadway access at 1/8 mile spacing on major arterials. More specifically, Gold Street is located less than 1/8 mile from the intersection with West Center Road, and leaving it open would conflict with the left-turn storage lanes for the southbound left-turn movement.

Furthermore, the 2014 traffic study showed that the turning movement volumes at these side streets were typically low, with the highest turning volumes being approximately 20 vehicles during the PM peak hour at Poppleton Avenue, William Street, and Gold Street. These vehicles would be able to use alternate roadways to access to the neighborhood.

Drivers and residents affected by these access changes would be allowed to make U-turns directly on 168th Street at the following locations: northbound to southbound at Lakeside Hills Plaza, northbound to southbound and southbound to northbound at West Center Road, and southbound to northbound at the Zorinsky Lake South Access Drive. These U-turns would be allowed with signage and traffic signals, and the intersection would be designed to properly accommodate turning vehicles. Public streets intersecting 168th Street would also be available for motorists to make legal U-turns to access their properties. Unless otherwise noted, the distances in **Table 3.1** are calculated using the nearest U-turn directly on 168th Street.

Table 3.1 Access Changes and Resulting Out-of-Distance Travel

Driveway Number ¹	Address/Street Name	Proposed Access	Approximate Out-of-Distance Travel Incoming (feet)	Approximate Out-of-Distance Travel Outgoing (feet)
-	Poppleton Avenue	Limited Movement: $\frac{3}{4}$ movement ²	None	3,150
-	William Street	Limited Movement: right-in/right-out ³	2,635	2,875
-	Pine Street (west leg)	Limited Movement: $\frac{3}{4}$ movement ⁴	None	1,215
-	Pine Street (east leg)	Limited Movement: right-in/right-out ⁵	1,340	2,980
1 & 2	2305 S 168 th Street (semi-circle driveway)	Complete Access: accomplished by shifting driveway #2 10 feet south ⁶	None	None
3 & 4	2315 S 168 th Street (semi-circle driveway)	Complete Access ⁶	None	None
5 & 6	2409 S 168 th Street (driveway 1, semi-circle driveway)	Limited Movement: right-in/right-out	2,090	220
7	2409 S 168 th Street (driveway 2)	Limited Movement: right-in/right-out	1,880	420
-	Gold Street	Limited Movement: right-in/right-out	860	1,350
8	3303 S 168 th Street	Limited Movement: right-in/right-out ⁷	2,565	2,800
9	Grover Plaza (3505 S 168 th St & 3511 S 168 th St)	Limited Movement: right-in/right-out ⁷	2,350	2,970
10	3511 S 168 th Street	Limited Movement: right-in/right-out ⁷	2,130	3,260
11	3508 S 168 th Street	Limited Movement: right-in/right-out ⁷	2,960	2,380
12	3536 S 168 th St	Limited Movement: right-in/right-out ⁷	3,280	2,060
13	Ontario Plaza (16705 Ontario Plz & 16710 Ontario Plz)	Complete Access	None	None
14	3611 S 168 th Street	Limited Movement: right-in/right-out ⁸	None	None
15	3630 S 168 th Street	Limited Movement: right-in/right-out ⁹	1,880	1,730

Driveway Number ¹	Address/Street Name	Proposed Access	Approximate Out-of-Distance Travel Incoming (feet)	Approximate Out-of-Distance Travel Outgoing (feet)
16	Pasadena Plaza (16725 Pasadena Plz)	Limited Movement: right-in/right-out ⁹	2,400	2,110
17	4505 S 168 th Street	Complete Access: accomplished by shifting driveway 25 feet north	None	None
18	4811 S 168 th Street (Parsonage)	Limited Movement: right-in/right-out ¹⁰	990	1,930
19	4823 S 168 th Street (Church)	Complete Access	None	None

¹ The driveway numbers listed in the first column correspond to the driveway numbers shown on **Figures 3.8A, 3.8B, and 3.8C**.

² Residents currently using Poppleton Avenue to leave the Pacific Heights Subdivision and travel southbound on 168th Street would be able to use the internal public streets of Poppleton Avenue, 167th Street, Pierce Street, 166th Street, and Pacific Street to head southbound on 168th Street. The Pacific Heights Subdivision would remain accessible from both northbound and southbound directions on 168th Street.

³ Residents currently using William Street to access their property would be able to use the internal public streets of Poppleton Ave, 166th Street, Pine Street and 167th Street to enter their property from southbound 168th Street, and would be able to use 167th Street, Pine Street, and Hickory Street to leave their property headed southbound on 168th Street.

⁴ Residents currently using Pine Street (west leg) to leave the Rose Garden Estates Subdivision and travel northbound on 168th Street would be able to use the internal streets of 168th Avenue, Pierce Street, 169th Street, and Pacific Street to head northbound on 168th Street. The Rose Garden Estates subdivision would remain accessible from both northbound and southbound 168th Street.

⁵ Residents currently using Pine Street (east leg) to access their property would be able to use the internal public streets of Poppleton Ave, 166th Street, and Pine Street to enter their property from southbound 168th Street, and would be able to use Pine Street and Hickory Street to leave their property headed southbound on 168th Street.

⁶ 2305 and 2315 S 168th Street would be able to turn left into their driveway from southbound 168th Street using a dedicated left turn lane, and would be able turn left directly onto southbound 168th Street as well. The traffic signal at 168th Street and Lakeside Hills Plaza will be actuated to allow these residents to turn left onto southbound 168th Street from their driveway.

⁷ Residents leaving or entering these properties would be able to use Oak Street or Ontario Street and 169th Circle to make a legal U-turn to be able to head either northbound or southbound on 168th Street.

⁸ 3611 S 168th Street has direct access to Ontario Plaza, which would result in complete access for this property.

⁹ Residents would be able to utilize the Zorinsky Lake North Access Drive and Ontario Street to make a legal U-turn to be able to head either northbound or southbound on 168th Street.

¹⁰ 4811 S 168th Street (Parsonage for Living Hope Lutheran Church) would be able to turn left into their driveway from southbound 168th Street by turning left into the church parking lot and then performing a U-turn in the parking lot and entering from northbound 168th Street; and would be able to access southbound 168th Street by turning north from their driveway, then right onto Rolling Ridge Road, and then performing a U-turn at 167th Avenue Circle, to turn left onto 168th Street.

Emergency Service Providers

The Proposed Alternative would add one travel lane in each direction and would also add turning lanes where none currently exist, thus improving mobility and reducing congestion. The conversion of full movement intersections to right-in/right-out only access or ¾ movement intersections would also reduce congestion and backups along 168th Street. The additional travel lanes and turning lanes would provide areas of refuge for vehicles to utilize when emergency vehicles are attempting to pass. Therefore, the Proposed Alternative is expected to benefit emergency vehicles and improve response conditions by reducing delays and congestion along 168th Street.

The temporary closure of 168th Street from the east leg of Pine Street to Frances Street would have a temporary impact on emergency vehicles as they would need to modify their routes to avoid the closure; however, alternate routes would be available during the closure, and would use either Pacific Street or West Center Road and either Bob Boozer Drive or 180th Street. Emergency service providers would be notified prior to the closure. Although temporary impacts to emergency vehicles would occur during the closure, the project would have an overall benefit to emergency vehicles as stated above.

A meeting was held on February 8, 2016 with the local fire department stations (No. 56 and 63) to discuss the proposed project. The fire department did not express any concerns with the proposed temporary closures and alternate routes. They requested to be notified of the closure ahead of time.

Bus Routes

The Proposed Alternative would not close the segment of 168th Street between West Center Road and Lakeside Hills Plaza that is currently utilized by the Omaha Metro bus system; therefore, bus accessibility would not be impacted by the proposed project. Additionally, the bus stop near the southeast corner of 168th Street and Gold Street would remain open during construction, and would not be affected by the temporary closure of 168th Street north of Frances Street.

Alternate Routes for Construction

The Proposed Alternative would not make any improvements to the alternate routes (i.e. West Center Road, Pacific Street, 156th Street, and 180th Street); therefore, there would be no direct impacts to the neighborhoods, businesses, churches, parks, school, or fire station that are located along these routes. There would also be no access restrictions to these places. A slightly higher amount of traffic may exist on the alternate routes while the 168th Street closure is in place; however, this is not expected to result in any adverse impacts to these facilities. The intersection and driveway to Fire Station 56 is signalized, so potential increases in traffic would not be expected to impact emergency vehicle mobility to and from the fire station.

Based on the explanation provided above, the Proposed Alternative would not adversely impact social cohesion or travel patterns and accessibility, and would not affect school attendance areas or bus routes, induce development, or cause any other social or economic modifications to the community.

Figure 3.8A Proposed Access Changes

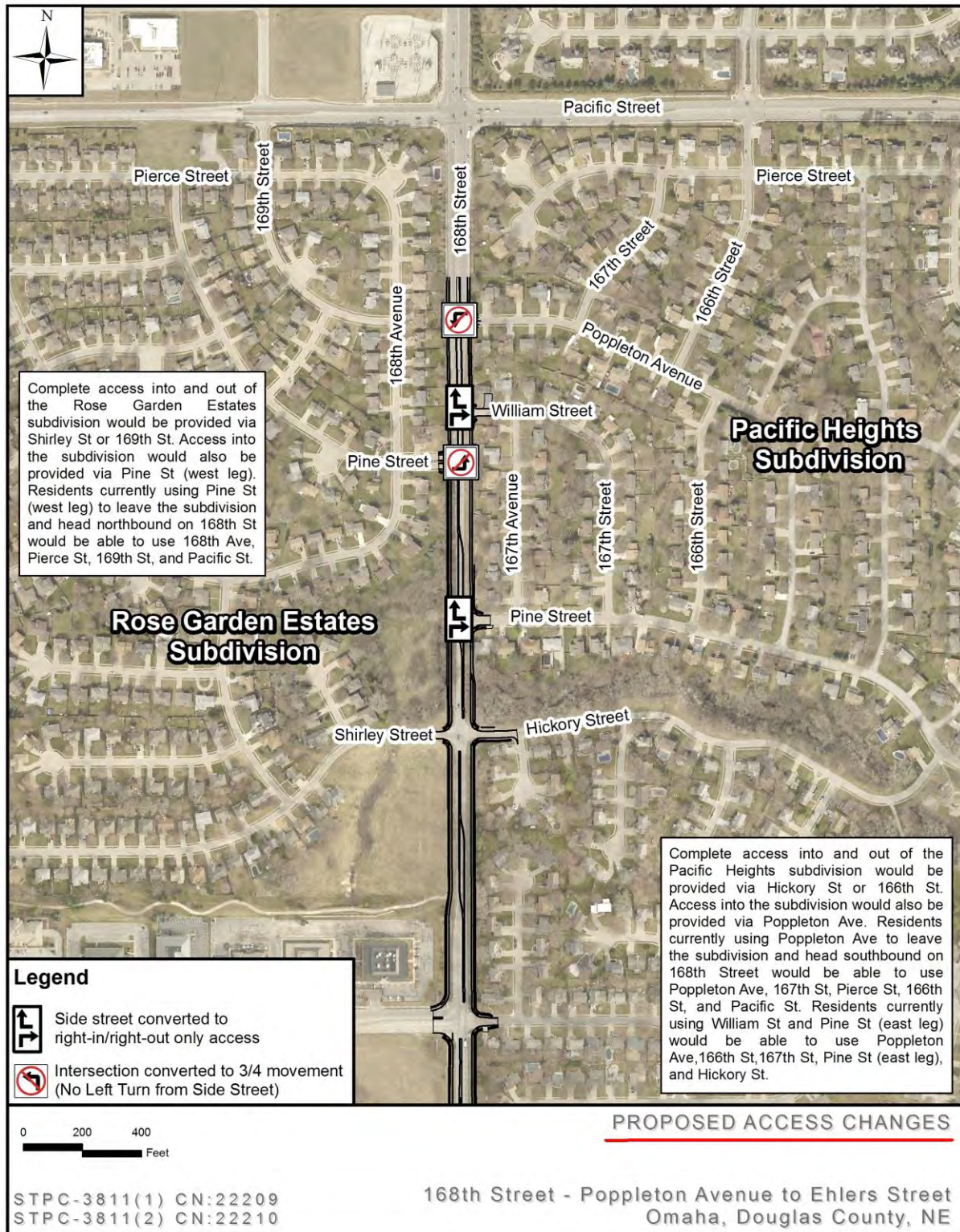


Figure 3.8B Proposed Access Changes

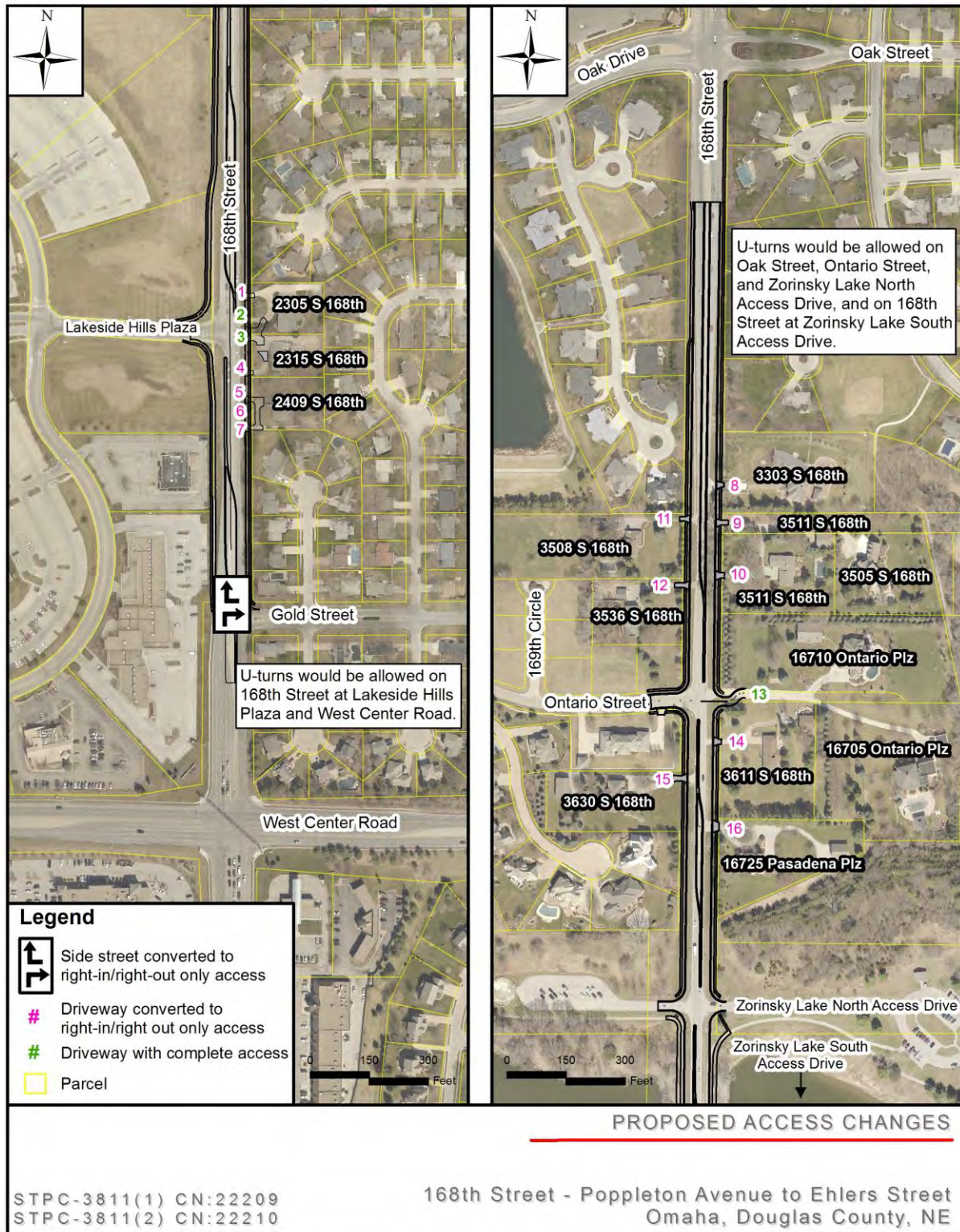
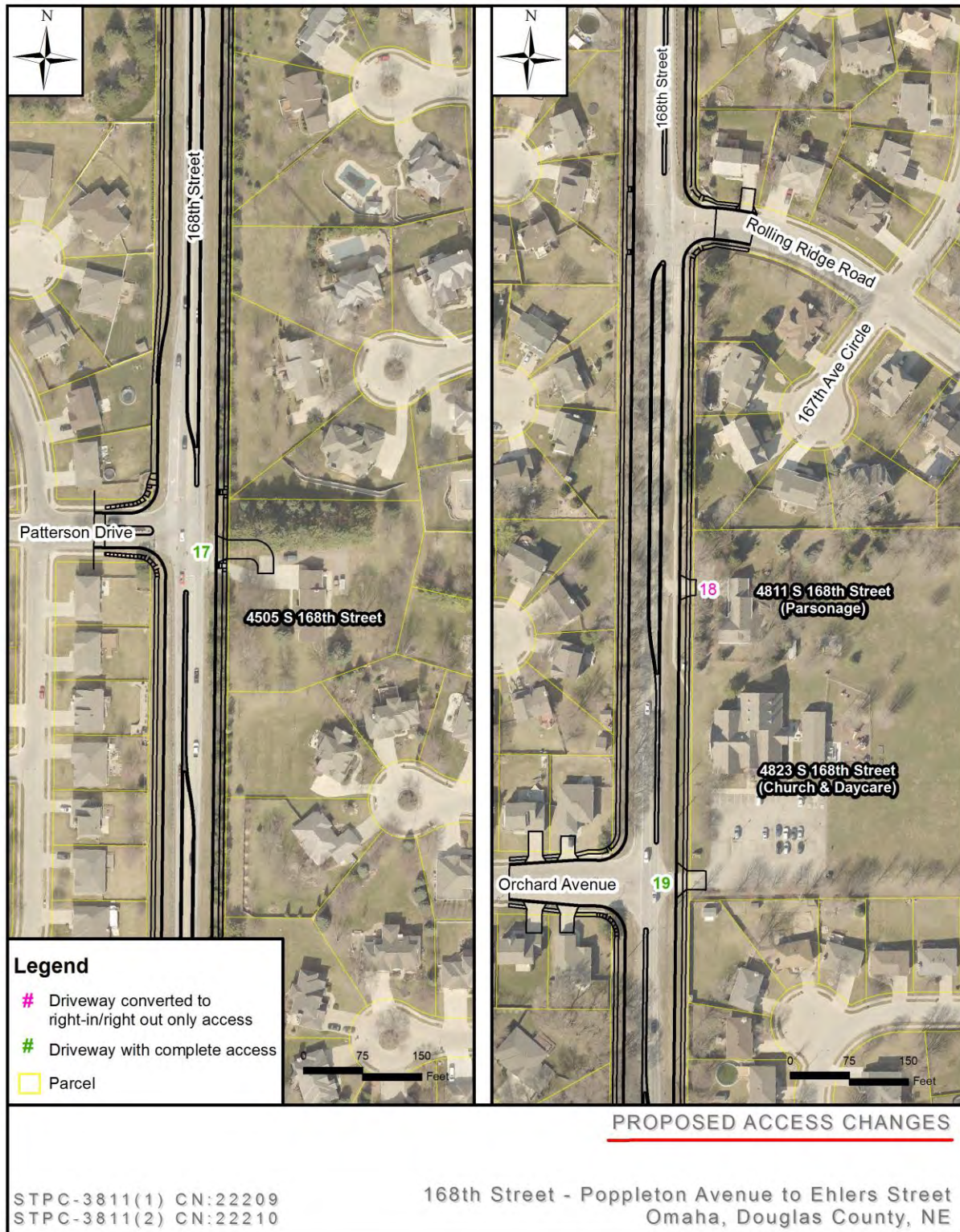


Figure 3.8C Proposed Access Changes



3.3.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- Individuals directly affected by construction, Willowdale Elementary School, Russell Middle School, neighborhood associations, Kingswood Athletic Association, Living Hope Lutheran Church, the City's Parks and Recreation Department (for Edward Zorinsky Recreation Area), and CHI Lakeside Hospital and the businesses at Lakeside Hills would be notified of the construction schedule approximately four weeks prior to construction. (City of Omaha)
- The City would notify the general public of the start of construction by placing notices in the newspaper at least 10 calendar days prior to construction, and dynamic message signs would be used along 168th Street prior to the beginning of construction activities. (City of Omaha)
- The City would notify emergency services such as police and fire departments before construction activities begin, as well as maintain continued coordination throughout construction. Emergency services providers would be invited to the pre-construction meeting for this project. (City of Omaha)
- The City would notify emergency services, CHI Health Lakeside Hospital, and online mapping providers prior to temporarily closing 168th Street. (City of Omaha)
- The City would place temporary sign covers on the "Hospital" street signs in the project vicinity during the temporary closure of 168th Street, and use dynamic message signs to direct drivers to alternate routes to CHI Health Lakeside Hospital. (City of Omaha, Contractor)
- Throughout construction, the City would continue to coordinate with Willowdale Elementary School, Russell Middle School, neighborhood associations, Kingswood Athletic Association, Living Hope Lutheran Church, the City's Parks and Recreation Department (for Edward Zorinsky Recreation Area), and CHI Lakeside Hospital and the businesses at Lakeside Hills to provide up-to-date information regarding construction timing and maintenance of pedestrian and vehicular access. (City of Omaha)
- Temporary access would be provided for residents temporarily affected by construction through the use of existing side streets and on-street parking. (City of Omaha, Contractor)
- Residences with direct driveway access to 168th Street would be provided access to their property at all times. (Contractor)
- Phasing and alternate routes would be used to construct the portion of 168th Street between the east leg of Pine Street and Frances Street during the summer, most likely when school is out of session. (City of Omaha, Contractor)
- The Contractor would strive to limit the temporary road closure to the summer months when school is out of session. However, if temporary closures extend into the school year, they would be advertised. (City of Omaha, Contractor)
- Pedestrian access at the 168th Street crosswalk just north of P Street/Ehlers Street would be maintained at all times, and no barriers or equipment would be staged on the crossing. (City of Omaha, Contractor)

- Right-in/Right-out access would be maintained at 168th and P Streets while school is in session. (Contractor)
- The City would maintain the 25 mile per hour (mph) “school zone” on 168th Street for Willowdale Elementary School. (City of Omaha)
- Access to CHI Lakeside Hospital and Lakeside Hills from 168th Street would be maintained by keeping at least one of the direct access roads to and from 168th Street (i.e. Frances Street and Lakeside Hills Plaza) open at all times. Additionally, CHI Lakeside Hospital and Lakeside Hills would also remain accessible from West Center Road at all times. (City of Omaha, Contractor)
- Access to community mixed-use areas, gathering areas, and businesses would be maintained at all times. (City of Omaha, Contractor)
- The City would allow U-turns on 168th at the following locations: northbound to southbound at Lakeside Hills Plaza, northbound to southbound and southbound to northbound at West Center Road, and southbound to northbound at the Zorinsky Lake South Access Drive. These U-turns would be posted with signage and signals, and the intersection would be designed to properly accommodate turning vehicles. (City of Omaha, Engineer)

3.4 TITLE VI AND ENVIRONMENTAL JUSTICE

Title VI of the *Civil Rights Act of 1964* and related laws and regulations assure that individuals and groups are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, or national origin.

Executive Order (EO) 12898 on Environmental Justice (EJ) was signed by President Clinton on February 11, 1994, and requires that, to the extent practicable and permitted by law, low-income or minority populations may not receive “disproportionately high and adverse” human health or environmental effects as a result of a proposed project. Federal agencies must take the appropriate and necessary steps to identify and address “disproportionately high and adverse” effects of federal projects on the health or environment of low-income and minority populations. Also, representatives of any low-income or minority populations in the community that may be affected by a project must be given the opportunity to be included in the impact assessment and public involvement process.

On June 14, 2012, FHWA issued Order 6640.23A – Actions to Address Environmental Justice in Minority Populations and Low-Income Populations³⁶, which established policies and procedures for the FHWA to use in complying with Executive Order 12898. As defined in FHWA Order 6640.23A, a “disproportionately high and adverse effect” on minority and low-income populations means “an adverse effect that: (1) is predominantly borne by a minority population and/or a low-income population; or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in

³⁶ More information on FHWA’s role in non-discrimination and protecting civil rights can be found at <http://www.fhwa.dot.gov/civilrights>.

magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

FHWA Order 6640.23A defines a minority as a person who is:

- Black: a person having origins in any of the black racial groups of Africa;
- Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
- Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent;
- American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or
- Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa or other Pacific Islands.

FHWA Order 6640.23A defines a low-income individual as a person whose median household income is at or below the Department of Health and Human Services poverty guidelines.

Minority and low-income populations are any readily identifiable group of these respective persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity.

3.4.1 CURRENT CONDITIONS

Consistent with the requirements of Title VI and EO 12898, potential EJ populations with respect to race, ethnicity, and income were determined by absolute and relative population measurements using information from the 2010 Census and the 2008-2012 *American Community Survey* (ACS) 5-Year Estimates, both provided by the U.S. Census Bureau. **Figure 3.9** shows the 2010 Census tracts and block groups.

For the purposes of this environmental justice analysis, minority populations (of a single race/ethnicity or when combined with other minorities) or low-income populations are considered to be present if they are greater than 50 percent of the total population, or are "meaningfully greater" than the comparable population percentage in the City or County averages.

Low-Income Populations

Table 3.2 shows household income data from the 2008-2012 ACS (Table DP03), comparing the affected tracts³⁷ to the City, Douglas County, and the State of Nebraska. In general, the census tracts adjacent to the Study Area have populations that are well above the State, County, and City median and mean

³⁷ Census tracts are the smallest geographic area for which income statistics are reported.

household incomes. There are, however, still a small percentage of families below the poverty level in these census tracts, but these percentages are well below the State, County and City averages.

Because the low-income population around the Study Area is not meaningfully greater than City and County averages, there are no low-income populations present for the purposes of this environmental justice analysis.

Minority Populations

Table 3.3 shows 2010 Census population data for residents in the affected tracts (by block groups), compared to the residents of the City, Douglas County, and the State of Nebraska.

While the area is almost entirely populated by persons with a white ethnicity, one group that appears to have a higher concentration of persons is those with an Asian race or ethnicity. According to the 2010 Census, one block group, Tract 74.51 BG3 (7.5 percent), has twice or greater the average number of persons in this category when compared to the County and City averages (2.7 and 2.4 percent respectively). Therefore, because the percentage of Asian individuals in this block group is “meaningfully greater” than County and City averages, they would be considered a minority population for the purposes of this environmental justice analysis.

Figure 3.9 Census Tracts and Block Groups

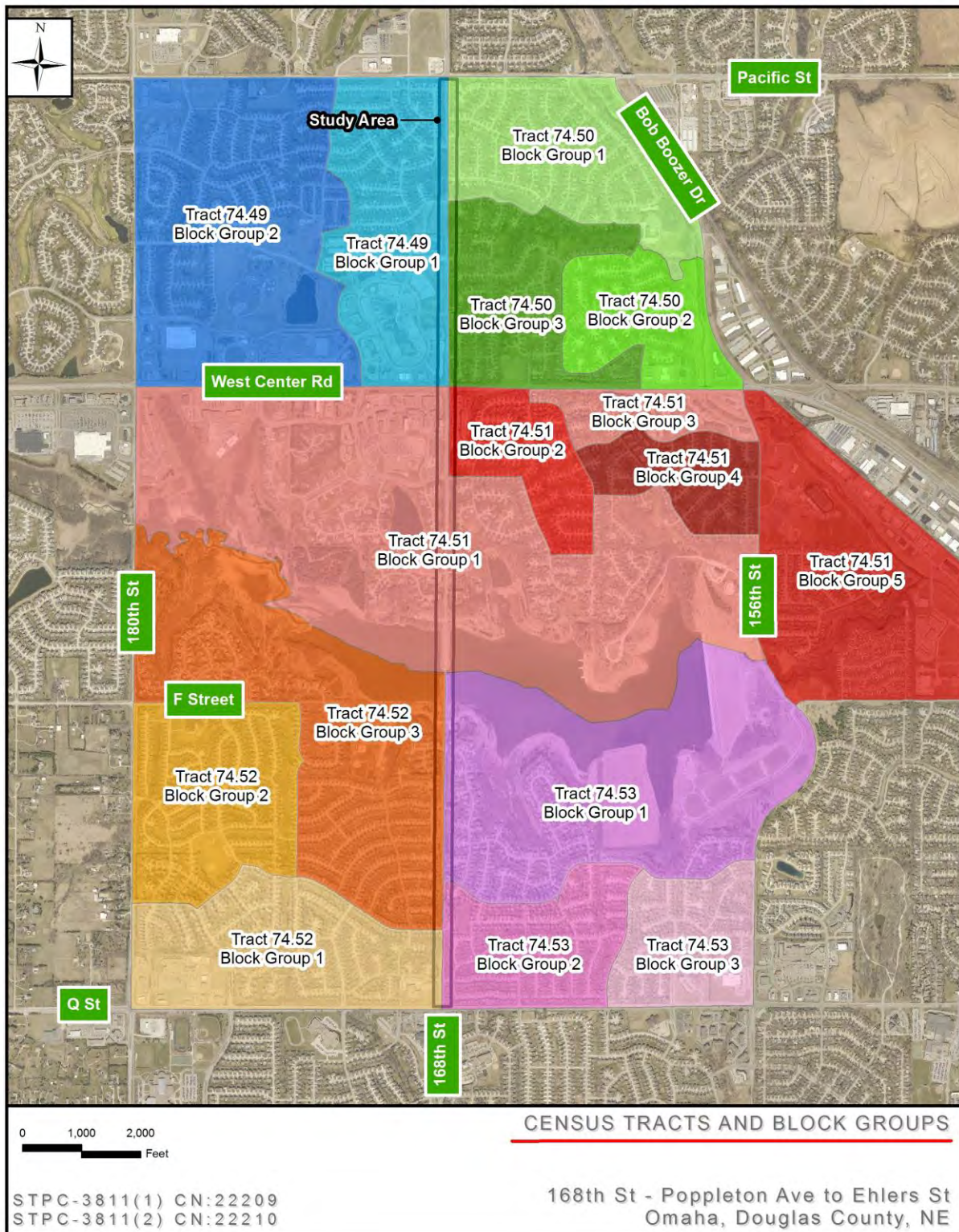


Table 3.2 Income and Poverty Statistics for the Study Area, 2008-2012 American Community Survey

2008-2012 ACS Statistic	Nebraska	Douglas County	City of Omaha	Census Tract 74.49	Census Tract 74.50	Census Tract 74.51	Census Tract 74.52	Census Tract 74.53
Median Household Income	\$64,820	\$69,729	\$62,000	\$108,250	\$82,159	\$88,763	\$119,517	\$102,228
Mean Household Income	\$79,249	\$89,640	\$81,593	\$124,400	\$85,702	\$111,210	\$146,031	\$108,840
Individuals Below Poverty	12.4%	14%	16.4%	1.9%	1.8%	9.3%	1.9%	5.6%

Table 3.3 Minority Populations Statistics for the Study Area, 2010 Census

2010 Census Statistic	Nebraska		Douglas County		City of Omaha		Census Tract 74.49					
							CT ¹	CT	BG1 ²	BG1	BG2	BG2
	#	%	#	%	#	%	#	%	#	%	#	%
Total Persons	1,826,341	--	517,110	--	408,958	--	3,180	--	1,229	--	1,951	--
White	1,572,838	86.1	395,025	76.4	298,815	73.1	3,005	94.5	1,185	96.4	1,820	93.3
African American	82,885	4.5	60,071	11.6	55,950	13.7	25	0.8	7	0.6	18	0.9
Asian	32,293	1.8	13,755	2.7	10,014	2.4	91	2.9	12	1.0	79	4.0
American Indian and Alaska Native	18,427	1.0	3,731	0.7	3,391	0.8	9	0.3	2	0.2	7	0.4
Native Hawaiian and Pacific Island	1,279	0.1	394	0.1	326	0.1	0	0.0	0	0.0	0	0.0
Other Race	79,109	4.3	29,645	5.7	28,193	6.9	15	0.5	9	0.7	6	0.7
Two or More Races	39,510	2.2	14,489	2.8	12,269	3.0	35	1.1	14	1.1	21	1.1
Hispanic Origin (of any race)	167,405	9.2	57,804	11.2	53,553	13.1	77	2.4	38	3.1	39	2.0

¹ CT = Census Tract

² BG = Block Group

Table 3.3 Minority Populations Statistics for the Study Area, 2010 Census (Continued)

2010 Census Statistic	Census Tract 74.50							
	CT ¹	CT	BG1 ²	BG1	BG2	BG2	BG3	BG3
	#	%	#	%	#	%	#	%
Total Persons	3,494	--	1,228	--	1,004	--	1,262	--
White	3,269	93.6	1,160	94.5	918	91.4	1,191	94.4
African American	62	1.8	17	1.4	22	2.2	23	1.8
Asian	49	1.4	17	1.4	18	1.8	14	1.1
American Indian and Alaska Native	14	0.4	9	0.7	4	0.4	1	0.1
Native Hawaiian and Pacific Island	1	0.03	1	0.1	0	0.0	0	0.0
Other Race	37	1.1	14	1.1	22	2.2	1	0.1
Two or More Races	62	1.8	10	0.8	20	2.0	32	2.5
Hispanic Origin (of any race)	120	3.4	30	2.4	52	5.2	38	3.0

Table 3.3 Minority Populations Statistics for the Study Area, 2010 Census (Continued)

2010 Census Statistic	Census Tract 74.51											
	CT ¹	CT	BG1 ²	BG1	BG2	BG2	BG3	BG3	BG4	BG4	BG5	BG5
	#	%	#	%	#	%	#	%	#	%	#	%
Total Persons	5,146	--	1,413	--	706	--	734	--	831	--	1,462	--
White	4,795	93.2	1,313	92.9	675	95.6	649	88.4	776	93.4	1,382	94.5
African American	55	1.1	8	0.6	3	0.4	9	1.2	15	1.8	20	1.4
Asian	153	3.0	61	4.3	15	2.1	55	7.5	8	1.0	14	1.0
American Indian and Alaska Native	21	0.4	2	0.1	0	0.0	5	0.7	6	1.8	8	0.5
Native Hawaiian and Pacific Island	1	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Other Race	34	0.7	2	0.1	5	0.7	3	0.4	4	0.5	20	1.4
Two or More Races	87	1.7	26	1.8	8	1.1	13	1.8	22	2.6	18	1.2
Hispanic Origin (of any race)	138	2.7	17	1.2	11	1.6	8	1.1	6	0.7	96	6.6

Table 3.3 Minority Populations Statistics for the Study Area, 2010 Census (Continued)

2010 Census Statistic	Census Tract 74.52							
	CT	CT	BG1	BG1	BG2	BG2	BG3	BG3
	#	%	#	%	#	%	#	%
Total Persons	5,277	--	1,523	--	1,799	--	1,955	--
White	4,943	93.7	1,434	94.2	1,689	93.9	1,820	93.1
African American	39	0.7	14	0.9	7	0.4	18	0.9
Asian	193	3.7	50	3.3	67	3.7	76	3.9
American Indian and Alaska Native	6	0.1	5	0.3	1	0.1	0	0.0
Native Hawaiian and Pacific Island	9	0.2	0	0.0	4	0.2	5	0.3
Other Race	30	0.6	6	0.4	13	0.7	11	0.6
Two or More Races	57	1.1	14	0.9	18	1.0	25	1.3
Hispanic Origin (of any race)	126	2.4	22	1.4	61	3.4	43	2.2

Table 3.3 Minority Populations Statistics for the Study Area, 2010 Census (Continued)

2010 Census Statistic	Census Tract 74.53							
	CT	CT	BG1	BG1	BG2	BG2	BG3	BG3
	#	%	#	%	#	%	#	%
Total Persons	3,445	--	892	--	1,574	--	979	--
White	3,260	94.6	845	94.7	1,476	93.8	939	95.9
African American	16	0.5	1	0.1	3	0.2	12	1.2
Asian	77	2.2	21	2.4	44	2.8	12	1.2
American Indian and Alaska Native	5	0.1	3	0.3	0	0.0	2	0.2
Native Hawaiian and Pacific Island	0	0.0	0	0.0	0	0.0	0	0.0
Other Race	25	0.7	16	1.8	4	0.3	5	0.5
Two or More Races	62	1.8	6	0.7	47	3.0	9	0.9
Hispanic Origin (of any race)	60	1.7	11	1.2	27	1.7	22	2.2

Alternate Routes for Construction

Because there would be a three-month-long full closure of 168th Street required for the reconstruction of 168th Street between the east leg of Pine Street and Frances Street and the replacement of the box culvert under 168th Street within this section (see **Section 3.20 Temporary Construction Related Considerations**), an analysis of the surrounding area potentially affected by these routes was also conducted. The alternate routes would utilize West Center Road, Pacific Street, 180th Street, and/or Bob Boozer Drive to travel around the full closure of 168th Street (see **Figure 3.18** in **Section 3.20 Temporary Construction Related Considerations**). Therefore, the census tracts and block groups immediately west of 180th Street (Tract 75.14 BG2 and Tract 75.13 BG2), north of Pacific Street (Tract 75.13 BG3 and Tract 74.46 BG1, BG2, BG3, and BG4), and east of Bob Boozer Drive (Tract 74.29 BG1, BG2, and BG3) were also evaluated to determine if there were any minority or low-income populations present.

According to the 2008-2012 ACS, all four of these potentially affected census tracts have median and mean household incomes that are well above the State, County, and City averages; and the percentage of individuals below the poverty level are well below the State, County, and City averages for these statistics. Therefore, there are no low-income populations potentially affected by the alternate routes.

Of the block groups that border the alternate routes, two lack connectivity to the affected roadways; the block groups east of Bob Boozer Drive do not have access to the roadway because they are separated by the Union Pacific Railroad tracks. The remaining block groups north of Pacific Street and west of 180th Street may be able to utilize these roadways; therefore, they were evaluated for the presence of minority populations. Generally, all of these block groups have populations that are of a white ethnicity; however, according to the 2010 Census, two block groups, Tract 75.13 BG3 and Tract 74.46 BG1 also have Asian populations that are higher (5.7 percent and 7.5 percent, respectively) than the County and City averages. Therefore, these groups would be considered minority populations for this environmental justice analysis.

In consideration of LEP, in the four census tracts potentially affected by the alternate routes during construction, 96.3 percent of the population speaks English, while less than one percent of the population speaks another language and also speaks English “less than very well.” Furthermore, the total number of these persons in the four census tracts (even when added to the number of persons in the Study Area itself) does not exceed the NDOR LEP outreach thresholds of five percent or 1,000 persons.

3.4.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no impacts to minority or low-income populations because construction activities and potential alternate routes arising from construction activities would not occur. Under the No-Action Alternative, these populations would not realize the benefits of improved roadway and pedestrian facilities.

Proposed Alternative

As defined in FHWA Order 6640.23A, a "disproportionately high and adverse effect" on minority and low-income populations means "an adverse effect that: (1) is predominantly borne by a minority population and/or a low-income population; or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population."

The Proposed Alternative would have no impact on low-income populations, as there were none identified in the Study Area or along the alternate routes.

To determine the potential for possible community-wide impacts (including the potential impacts from alternate routes during construction) on the identified Asian minority population, a review of businesses, services, employers, and other cultural gathering places in the area was conducted. The review of businesses in the area does indicate several businesses that could be slightly more dependent on or that cater to an Asian population; however, these businesses are mainly restaurants, which are likely frequented by both Asians and non-Asians alike. Additionally, there do not appear to be any Asian cultural destinations or services offered to or for Asian persons that could indicate a large "pocket population" of persons of Asian ethnicity within the area. Also, while there are several Asian food-markets and Asian-language churches in Omaha, they are all well outside the Study Area.

Next, the types of possible direct impacts on this population were evaluated. The Proposed Alternative does have the potential to result in minor socio-economic (i.e. human health) impacts to residents directly along the study area including: noise impacts, right-of-way acquisition, changes in vehicular accessibility during and following construction, and temporary impacts such as increased dust and noise during construction. There are also minor impacts to the environment along the study area including: impacts to wetlands, streams, and floodplains, vegetation and tree removal, and temporary impacts to water quality during construction. There are also beneficial impacts such as improved vehicular mobility, reduced wait times at intersections, increased pedestrian access, and improved safety. However, because none of the block groups with an Asian minority population are located directly along the study area, there would not be any direct impacts on this minority population.

Overall, impacts to this minority population would not be appreciably greater or more severe because they would be experienced by all residents and travelers in a similar manner. In addition, these impacts are either temporary or are being mitigated due to other requirements (e.g. noise walls are being evaluated in compliance with NDOR's Noise Policy, compensation for right-of-way would be provided in conformance with the Uniform Act). Furthermore, the temporary construction impacts such as alternate routes, erosion, or noise during construction are not permanent, and would be offset by the beneficial impacts of reduced congestion and improved mobility.

There would be no loss of access to essential services used by minority populations; no permanent loss of access to individual residences; no relocations or building removal from minority neighborhoods; and no isolation or exclusion of the minority community or individuals as a result of this project.

For these reasons, there would be no disproportionately high and adverse human health or environmental effects visited upon minority and low-income populations, as defined in FHWA Order 6640.23A. NDOR's office of Civil Rights concurred with these findings in a memo dated October 22, 2014 (**Appendix C**).

3.4.3 PROPOSED MITIGATION

No mitigation for Environmental Justice is proposed.

3.5 RIGHT-OF-WAY, ACQUISITIONS, AND RELOCATIONS

Residential displacements typically result from the conversion or redevelopment of an area and the loss of housing for affected residents, and are considered to be direct adverse impacts. Displacements can occur by demolition of housing units, conversion of housing units from ownership to rental (or vice versa). Displacements can also occur by the process of neighborhood gentrification³⁸, in which a neighborhood or housing area changes in such a way that influences home prices so greatly that individuals are forced to move. Secondary adverse impacts resulting from displacements can include loss of family unity, overcrowding, homelessness, acceptance of inadequate or substandard housing, physiological and psychological stress, loss of social cohesion, segregation, increased demand for social services, and increased demand on public transportation systems.

Acquisitions and relocations must be conducted in accordance with the *Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (Uniform Act), as amended (42 USC 4601 et seq.), and the *Nebraska Relocation Assistance Act* (Neb. Rev. Stat. Section 76-1214 et seq.).

The Uniform Act provides protections and benefits for people affected by federal and federally assisted projects. Its purpose is to provide for uniform and equitable treatment of all persons relocated from their homes, businesses, and farms, without discrimination on any basis. The Uniform Act ensures fair compensation of property owners for their residential structures. It requires that the sponsor of a project provide financial and technical relocation assistance for relocated residents. The Uniform Act also contains allowances for renters. A one-time rental assistance payment is available for the tenant to find a decent, sanitary, safe dwelling for a period of 42 months. NDOR's guidelines for complying with the Uniform Act are contained in NDOR's *Right of Way Manual, Third Edition* (NDOR, 2009).

3.5.1 EXISTING CONDITIONS

With the exception of the Edward Zorinsky Recreation Area, the entire study area is already developed, primarily with residential neighborhoods. The existing ROW is between 85 and 100-feet- wide. Numerous homes are along the roadway, many of which have trees and fences along the ROW line. Additional improvements exist in close proximity to (or within) the ROW, including landscaping, retaining walls, irrigation systems, neighborhood signs, and fencing.

³⁸ Gentrification is defined as "the process of renewal and rebuilding accompanying the influx of middle-class or affluent people into deteriorating areas that often displaces poorer residents" (<http://www.merriam-webster.com/>).

As previously mentioned, an approximately 250-foot-wide ROW easement was granted by the USACE to Douglas County for future roadway improvements along 168th Street through Dam Site 18, and in 2007 this easement was transferred to the City during an annexation process. This easement precedes the recreation lease for Dam Site 18, which is subject to all existing easements and established access routes for roadways and utilities located, or to be located on the premises. See **Section 3.2 Zorinsky Lake and Edward Zorinsky Recreation Area (Papillion Creek Dam Site 18)** for more information on the ROW easement and recreation lease.

3.5.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no permanent impacts to ROW, nor would it require acquisitions or relocations, and it would not result in any residential displacements.

Proposed Alternative

The Proposed Alternative would, for the most part, be built within the existing ROW. However, there are several locations where minor property acquisitions would be required for roadway and utility improvements. For example, approximately 14 to 17 feet of ROW would be acquired for roadway improvements in areas where the existing ROW is less than 100-foot-wide, small areas of ROW would be acquired at the corners of most intersections for the construction of sidewalks, and small strips of ROW would be acquired beyond the 100-foot-wide ROW in areas where additional turn lanes are being added.

There is one residence at 16761 Pine Street that may be relocated. Due to the orientation of this house (i.e. its side yard is adjacent to roadway) and the 17 feet of ROW required for widening (i.e. because this house was platted when the area was still in the County, the existing ROW is 83-foot-wide), the resulting distance from the roadway improvements to the west wall of this house would be approximately 10 feet. Therefore, depending on the monetary damages resulting from these impacts (i.e. if the monetary damages are greater than 50 percent of the value of the house), this residence may be relocated in accordance with the proposed mitigation explained below. The City has been coordinating with the homeowner about this potential relocation.

Additionally, permanent and temporary construction easements would be needed along the most of the study area for grading, paving, utility relocations, and in certain places, to construct retaining and/or noise walls. The exact locations of these easements would be determined during final design, and impacted properties would be coordinated with in accordance with the proposed mitigation explained below.

Approximately 17 feet of ROW would be acquired from Pinewood Park to build a retaining wall and sidewalk, and a temporary construction easement would also be required for replacement of the culvert under 168th Street. See **Section 3.7, Parks, Recreation Areas, and Trails (Section 4(f) Resources)** for more information regarding the approval of this acquisition.

The existing 250-foot-wide ROW easement for 168th Street through Dam Site 18 allows for the widening of the roadway and reconstruction of the Zorinsky Lake Bridge; therefore, no additional ROW would be required from the USACE for roadway improvements. However, the excavation sites (i.e. flood storage

mitigation sites) and resulting stormwater detention basins at Dam Site 18 would extend outside of the limits described in the ROW easement; therefore, a new permanent easement would be required for the excavation activities and future maintenance of the stormwater detention basins. Additionally, a temporary construction license from the USACE would be required for all project construction activities at Dam Site 18. See **Section 3.2 Zorinsky Lake Edward Zorinsky Recreation Area (Papillion Creek Dam Site 18)** and **Section 3.9, Water Resources and Water Quality** for more information pertaining to the excavation sites and resulting stormwater detention basins. See **Appendix B** for the USACE Missouri River Project Office's Easement/License Application Checklist. See **Section 3.7, Parks, Recreation Areas, and Trails (Section 4(f) Resources)** for more information regarding the approval by the USACE as it relates to the protection of Section 4(f) Resources. Impacts to neighborhood fencing, monuments, and entrance signs, as well as impacts to visual resources are discussed in greater detail in **Section 3.18, Visual Impacts and Aesthetic Considerations**. Temporary construction impacts are discussed in greater detail in **Section 3.19, Temporary Construction Related Considerations**.

The Proposed Alternative would not create the conditions for the secondary impacts from displacements resulting from the potential impacts described above such as conversion of a whole neighborhood, gentrification, redevelopment, overcrowding, homelessness, loss of family unity, loss of social cohesion, segregation, increased demand on social services, or increased demand on public transportation systems.

3.5.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- If the acquisition of the residence at 16761 Pine Street is found to be necessary, the acquisition and relocation would be conducted in accordance with the Uniform Act. (City of Omaha)
- The City would acquire all ROW and permanent and temporary easements in accordance with the Uniform Act and NDOR's *Right of Way Manual*. (City of Omaha)
- Impacts to fencing, landscaping, neighborhood monuments, and sprinklers would be handled in accordance with NDOR's *Right of Way Manual*. (City of Omaha)
- Impacts to trees on private property would be mitigated by compensating the owner during the acquisition process. (City of Omaha)
- Tree and vegetation removal at Edward Zorinsky Recreation Area and Pinewood Park (outside of the existing ROW and existing easements) would be mitigated according to the proposed re-vegetation plan developed in coordination with the City's Parks, Recreation, and Public Property Department. A copy of the re-vegetation plan would be provided to the USACE for review during the Draft Environmental Assessment comment period. (City of Omaha)
- Tree impacts in the existing ROW for 168th Street would not be mitigated. Instead, the City's Public Works Department would continue its practice of providing funding to the Planning Department to create tree planting projects to implement as necessary to meet the requirements

of the *Green Streets Plan for Omaha*³⁹, in which 168th Street is considered as both a “Major Arterial” and a “Minor Arterial” Green Street. (City of Omaha)

- ROW impacts would be minimized through the use of retaining walls, to reduce the additional grading needed on adjacent property. (City of Omaha)
- Prior to construction, the City would obtain a temporary construction license from the USACE for project construction activities at and through Dam Site 18, including the excavation of the flood storage mitigation sites. (City of Omaha)
- The City would obtain a new permanent easement from the USACE for the conversion of the flood storage mitigation sites into stormwater detention basins and for their long-term maintenance. (City of Omaha)

Standard Specifications (NDOR, 2007):

- Standard Specification 104.05 - Scope of Work - Maintenance of Detours and Shooflies
 - Requires the Contractor, the extent practicable, to provide private dwellings, commercial properties, business, and public facilities access to the nearest public road.
- Standard Specification 104.08 - Scope of Work - Final Cleaning Up
 - Requires the Contractor to remove all rubbish, excess material, and equipment from the project site, and to leave the site in a neat and presentable condition. Also requires the Contractor to fill borrow sites.
- Standard Specification 105.12 - Control of Work - Use of Land
 - Requires the Contractor to leave any lands outside the ROW used for construction in a neat and presentable condition.
- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.
- Standard Specification 107.09 - Legal Relations and Responsibility to the Public - Preservation and Restoration of Property, Trees, Monuments, etc.
 - Requires the Contractor to preserve, protect, and prevent damage to all public and private property, including utilities, structures, and facilities, and shall be responsible for damage from neglect or misconduct.
- Standard Specification 107.12 - Legal Relations and Responsibility to the Public - Responsibility for Damage, Injury, or Other Claims
 - Requires the Contractor to be responsible for all damage to property used during construction resulting from neglect or misconduct. The Contractor shall also be required

³⁹ The *Green Streets Plan for Omaha* is a document that considers the nature of Omaha’s street system as a public space, defines the City’s proposed Green Street System, established design and landscape guidelines for the Green Streets network, presents maintenance concepts and standards for this part of the public landscape, and establishes a process to help city decision-maker and public and private funders set implementation priorities (City of Omaha, 2007).

to meet with local government entities to advise them of their intentions to use local roads, and is responsible for damage from such use.

Special Provisions:

- Status of Right-of-Way
 - Requires the Contractor to work only within the ROW until property acquisition is complete and easements are obtained, and to also verify this with the Engineer prior to entering any private property.

3.6 PEDESTRIANS, BICYCLISTS, AND ACCESSIBILITY FOR INDIVIDUALS WITH DISABILITIES

This section focuses mainly on sidewalks and accessibility. Recreational trails are explained further in **Section 3.7, Parks, Recreation Areas and Trails (Section 4(f) Resources)**.

The *Americans with Disabilities Act of 1990* (ADA) prohibits discrimination on the basis of disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications. Other Federal laws affecting the design, construction, alteration, and operation of facilities include the *Architectural Barriers Act of 1968* (ABA), and the *Rehabilitation Act of 1973*, which apply to all federally funded facilities. The ADA applies to public facilities (title II) and private facilities (title III) that are not federally funded. Newly constructed and altered facilities covered by titles II and III of the ADA must be readily accessible to and usable by people with disabilities.

More specifically, the U.S. Department of Justice's (DOJ) regulations in 28 CFR 35, which implement title II of the ADA, describe the obligations of State and local governments for existing facilities and programs. For newly constructed or altered facilities, the DOJ regulations require title II entities (State and local government entities) to comply with either: the *Uniform Federal Accessibility Standards* (UFAS), the standard referenced in the ABA; or the *Americans with Disabilities Act Accessibility Guidelines* (ADAAG), developed by the U.S. Architectural and Transportation Barriers Compliance Board (the Access Board). The Access Board is currently undergoing final rulemaking to eliminate differences between UFAS and ADAAG. These new regulations, referred to as the PROWAG, are expected to be finalized by the time this project is constructed, and would be used to develop accessible facilities for the project⁴⁰.

3.6.1 CURRENT CONDITIONS

Sidewalks

Existing sidewalks are located adjacent to 168th Street as described below. See **Figure 1.11** for a depiction of existing sidewalks along 168th Street.

- West side (from north to south): from Pacific Street to Pine Street; approximately 385 feet north of Frances Street to approximately 450 feet north of Ontario Street (connects to the Lakeside Park Trail which extends to the west); the Zorinsky Lake Trail from the Zorinsky Lake

⁴⁰ More information on FHWA's role in accessibility can be found on their website at <http://www.fhwa.dot.gov/civilrights>.

Northwest Access Drive to the north side of the Zorinsky Lake Bridge; the Zorinsky Lake Trail from the south side of the Zorinsky Lake Bridge to approximately 330 feet north of the Zorinsky Lake Southwest Access Drive; and from approximately 50 feet south of Orchard Avenue to Q Street.

- East side (from north to south): from Pacific Street to Poppleton Avenue; West Center Road to Oak Street; the Zorinsky Lake Trail from the Zorinsky Lake Northeast Access Drive to 167th Avenue; and from Rolling Ridge Road to Q Street.

In addition to sidewalks, the Zorinsky Lake Trail provides pedestrian accessibility along 168th Street within the Edward Zorinsky Recreation Area. On the west side of 168th Street, the Zorinsky Lake Trail extends from the south side of the Zorinsky Lake Bridge to approximately 330 feet north of the Zorinsky Lake South Access Drive; however, this portion of the trail is approximately 50 feet away from the road and approximately 10 feet lower in elevation than the road. The Zorinsky Lake Trail is explained further in ***Section 3.7, Parks, Recreation Areas and Trails (Section 4(f) Resources)***.

The intersections of 168th Street and West Center Road, 168th Street and Oak Drive/Oak Street, and at a location approximately 120 feet north of P Street/Ehlers Street (just north of Willowdale Elementary School) currently have signalized, marked pedestrian crosswalks. The intersections of 168th Street and Pacific Street, Frances Street, Lakeside Hills Plaza, Patterson Drive, and Rolling Ridge Road are currently signalized, but do not have marked pedestrian crosswalks.

This intermittent pattern of sidewalks is not conducive to pedestrian safety as it necessitates multiple crossings of 168th Street (at unmarked crossings) to stay on a paved sidewalk. Also, as described previously, in a mostly residential corridor, it is required by City ordinances to have sidewalks along both sides of the street.

3.6.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no beneficial impacts to pedestrians or bicyclists; there would continue to be a lack of connectivity between sidewalks and to the regional trail system; and there would still be concerns from pedestrians and bicyclists about safety along the study area.

Proposed Alternative

The Proposed Alternative would include ADA compliant sidewalks along all portions of the study area, in accordance with city ordinances, providing safe access for pedestrians and bicyclists, especially to the elementary school, recreation areas and parks, and shopping centers. The Proposed Alternative would also include connecting the sidewalks along 168th Street to the Zorinsky Lake Trail, providing a beneficial impact by improving pedestrian access and connectivity to this resource, as well as improving overall pedestrian access and connectivity in the Study Area. The Zorinsky Lake Trail is discussed further in ***Section 3.7, Parks, Recreation Areas, and Trails (Section 4(f) Resources)***. Temporary sidewalk closures during construction would be required; however, accommodations would be made during these times to allow access.

Additionally, all existing east-west pedestrian crosswalks would be improved with ADA access, and signalized and/or marked east-west pedestrian crosswalks would be added at several intersections along 168th Street where none exist today, creating a beneficial impact for those wishing to cross 168th Street. Specifically, new east-west ADA accessible pedestrian crossings would be provided along 168th Street at the following locations: Shirley Street/Hickory Street, Frances Street, Lakeside Hills Plaza, Zorinsky Lake South Access Drive, Patterson Drive, and Rolling Ridge Road. With the exception of the Shirley Street/Hickory Street intersection, all of the east-west pedestrian crossings would be signalized.

The improvements mentioned above would have beneficial impacts by improving pedestrian access, connectivity, and safety throughout the study area.

3.6.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- During construction, existing pedestrian access would be maintained (i.e. sidewalks would be kept open) to the maximum extent practicable along the entire study area. If closures are necessary, temporary alternate routes or advanced notice of closures would be provided for pedestrians and bicyclists. (City of Omaha, Contractor)
- Pedestrian access at the 168th Street crosswalk just north of P Street/Ehlers Street would be maintained all times, and no barriers or equipment would be staged on the crossing. (City of Omaha, Contractor)
- Audible crossing signals for visually impaired persons would be installed if the individual requesting these devices provide the documentation required by the City's policy. The City's policy regarding the installation of audible crossing signals requires that the City be presented with medical documentation from a physician, physician's assistant, or nurse practitioner for the individual's impairment prior to installing the device. (City of Omaha)
- During construction, temporary at-grade crossings would be provided for trail users to maintain mobility between the east and west segments of the Zorinsky Lake Trail. These temporary crossings are planned to be located at the north and south lake access drives, and would be painted and signed during construction. Additionally, because the temporary at-grade crossing at the south access drive would become permanent following construction and would be signalized, the City would use a temporary signal or would have the permanent signal operational prior to closing the trail underpasses for bridge reconstruction. (City of Omaha, Contractor)
- The City would identify persons with individual concerns for special access during construction (e.g. elderly or disabled persons temporarily affected by driveway or sidewalk reconstruction) by placing door hangers on affected property owners' front doors prior to construction. The City would coordinate directly with these individuals to arrange solutions to provide access during construction, which could including special timing, temporary paving, providing assistance for trips, or other acceptable measures. **If you or someone you know may require special access or provisions during construction, please contact the City at 402-444-5000.** (City of Omaha, Contractor)

3.7 PARKS, RECREATION AREAS, AND TRAILS (SECTION 4(F) RESOURCES)

Section 4(f) of the *U.S. Department of Transportation Act of 1966*, states that FHWA “...may approve a transportation program or project...requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) **only if**...there is no prudent and feasible alternative to using that land; and...the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use” (49 USC 303[c]) (emphasis added).

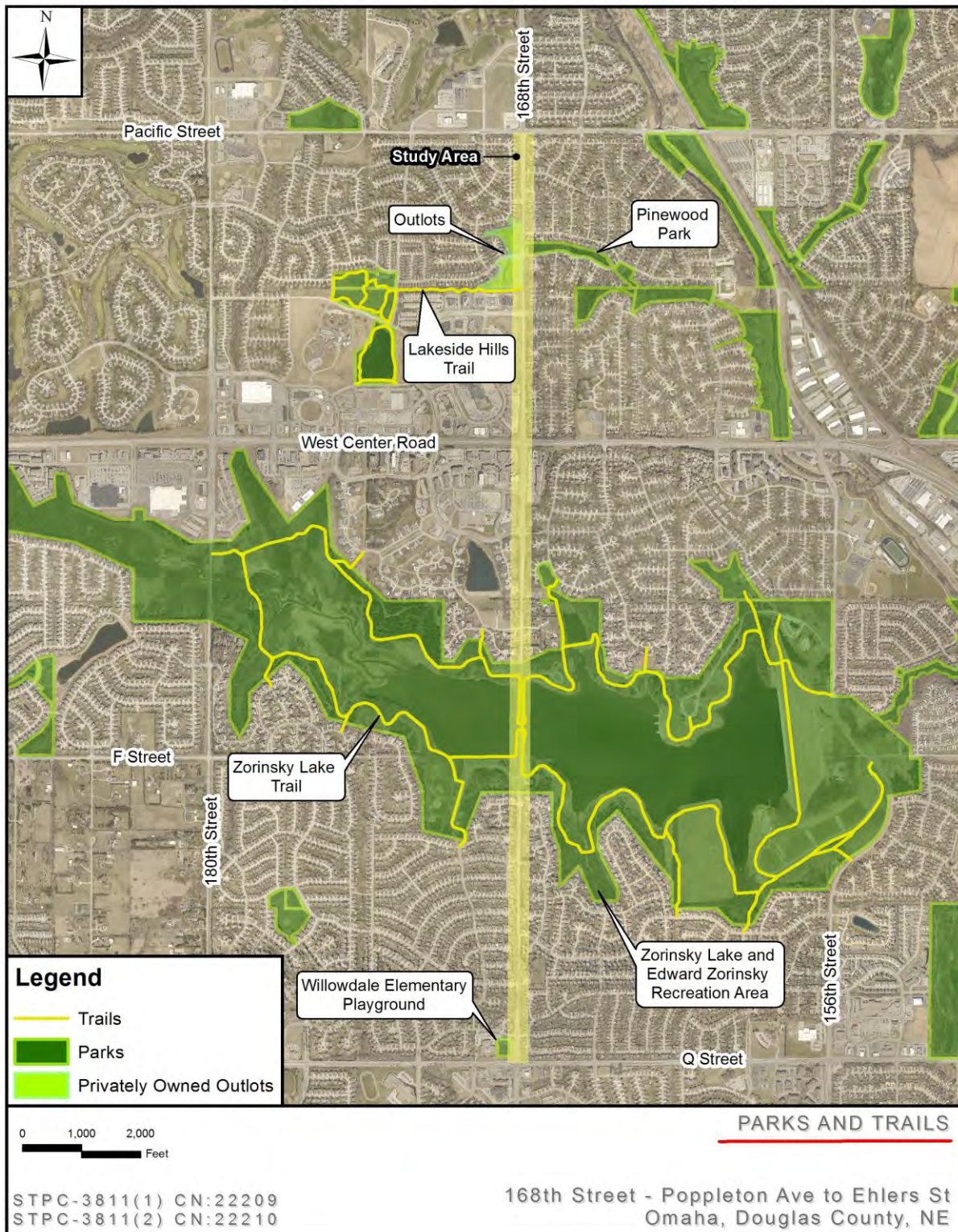
Section 4(f) protection applies to parks, recreation, and refuge areas where the property is publicly owned, open to the public, its major purpose must be for park, recreation, or refuge activities, and it must be significant. Section 4(f) protection applies to historic sites of national, state, or local significance that are on, or eligible for listing on, the National Register of Historic Places (NRHP), regardless of ownership.

A “use” of a Section 4(f) resource, as defined in 23 CFR 774.17, occurs: (1) when land is permanently incorporated into a transportation facility, (2) when there is a temporary occupancy of land that is adverse in terms of the statute’s preservationist purpose, or (3) when there is a “constructive” (i.e. indirect) use of land. A constructive use of a Section 4(f) resource, which is rare, occurs when the transportation project does not incorporate land from the Section 4(f) resource, but the project’s proximity and impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. For example, a property considered a Section 4(f) resource based on peace and tranquility could have noise or vibration impacts from a nearby project.

3.7.1 CURRENT CONDITIONS

An assessment for potential Section 4(f) resources (i.e. parks, recreation areas, wildlife or waterfowl refuges, or historic properties) was conducted. A number of sources were consulted to determine if any of these resources exist in or around the Study Area, including publicly available maps and data, conversations with local and state agencies, and public input. The result of this investigation was that several potential Section 4(f) resources are within the vicinity of the project. These resources are shown on **Figure 3.10**. Specific determinations of whether or not they are considered Section 4(f) resources and whether or not they may be potentially affected by the Proposed Alternative are presented below. Properties outside the Study Area that would not be affected in any way by the Proposed Alternative are not described in detail. In addition, there are no wildlife or waterfowl refuges or historic properties in the Study Area. For more information regarding the identification of historic properties see **Section 3.8, Historic and Archeological Resources**. There are also no Section 4(f) resources within the Study Area that would need to be considered for “constructive” use impacts.

Figure 3.10 Parks and Trails



Parks and Recreation Areas

The City's Parks, Recreation, and Public Property Department maintains several city parks in the Study Area. In addition, there are two areas of open space that are privately owned, and one school playground in the Study Area.

Pinewood Park

Pinewood Park is a City park located east of 168th Street on the south side of Pine Street and Wood Drive in the Pacific Heights subdivision. The western three-quarters of this park consist of a wooded ravine with a small creek with no park amenities or public access signage. The eastern one-quarter of the park contains the main park features including a playground and basketball court. The main park is located at the corner of Hickory Street and Wood Drive, well outside of the Study Area. The western section of the park abuts 168th Street. Since this park is publicly owned and is intended for general use by the public, it is considered a Section 4(f) resource. Pinewood Park would be impacted by the Proposed Alternative; therefore, this park is discussed further in the following sections.

Outlots in Rose Garden Estate Subdivision

These two outlot properties are owned by McNeil and Company Builders, and are not publicly accessible parks or recreation areas, nor are they intended for use by the public; therefore they would not be considered Section 4(f) properties.

Willowdale Elementary School Playground

The playground and baseball field at Willowdale Elementary School are located on the east side of the school, just west of 168th Street. While the playground and baseball field are publicly accessible, and available to be used outside school hours, they would not be permanently or temporarily affected by the construction of the Proposed Alternative. Since the playground is outside the limits of construction and would not be directly or indirectly affected by the Proposed Alternative, no further consideration as a Section 4(f) resource is required.

Edward Zorinsky Recreation Area

This public recreation area is situated generally between West Center Road and Q Street, and 156th and 192nd Streets, and is crossed by 168th Street. Within the Study Area, the recreation area lies between Pasadena Plaza (which is actually a private driveway) and 167th Avenue/H Circle. The land is owned by the USACE, and the recreation area is managed by the City. Edward Zorinsky Recreation Area includes Zorinsky Lake, which has a surface area of 255 acres and a maximum depth of 30 feet and is stocked with fish, making fishing a popular recreational activity at the lake. Boating is also a popular activity at the lake; however, boats at Zorinsky Lake are restricted to 5 mph (no wake) (NGPC, 2015). Since it is a no wake lake, the primary recreational boating at Zorinsky Lake consists of canoeing, kayaking, and sailing, although fishing boats are often used on the lake as well. Boating primarily occurs in the east basin as it is larger, deeper, and more easily accessible than the west basin, and because the only boat ramp is located at the east basin. Boaters wanting to access the west basin must either pass under the Zorinsky Lake Bridge or

launch their boat from the shores of the west basin. For this reason, larger boats are generally more restricted to the east basin.

The lake is surrounded by 768 acres of parkland, 190 acres of which are dedicated as “wildlife lands”⁴¹. The Edward Zorinsky Recreation Area includes the 40-acre Bauermeister Prairie⁴², which is one of the few native tall grass prairies remaining in eastern Nebraska. This recreation area also features an aquatic center, three playgrounds, five baseball fields, three soccer fields, two horse corrals⁴³, hiking and bicycle trails, a fishing dock/pier, a boat ramp, three fishing jetties, multiple picnic shelters, and restroom facilities. The locations of several of these recreational features are depicted on **Figure 3.3** in **Section 3.2, Zorinsky Lake and Ed Zorinsky Recreation Area**. Since Edward Zorinsky Recreation Area is publicly owned and maintained for recreation and is intended for use by the general public, it is considered a Section 4(f) resource. This park is located within the Study Area and would be impacted by the Proposed Alternative; therefore, it is discussed further in the following sections.

Pedestrian and Bicycle Trails

The City and the Papio-Missouri River Natural Resources District (P-MRNRD) maintain the region’s trail network, which includes over 130 miles of existing trails, and numerous additional miles of planned trails. According to the City’s Parks, Recreation, and Public Property Department and the P-MRNRD, there are no planned trails along 168th Street.

Within the Study Area, the Zorinsky Lake Trail runs alongside a segment of 168th Street. Another bicycle trail, Lakeside Hills trail, connects at the sidewalk just north of Frances Street and is perpendicular to the Study Area. These trails are described further below and are also shown on **Figure 3.10**.

Zorinsky Lake Trail

The Zorinsky Lake Trail is one of the most utilized trails in Omaha. This trail provides a 7.4 mile loop around Zorinsky Lake, with portions of the trail running alongside 168th Street. The trail also provides a crossing for trail users over Zorinsky Lake via the east side of the Zorinsky Lake Bridge. The west side of the trail runs along 168th Street, however there is no pedestrian bridge access on the west side of the bridge. South of the bridge, the west side of the trail is situated along the shore of the lake, approximately 50 feet from the roadway and approximately 10 feet lower in elevation. The Zorinsky Lake Trail wraps under the Zorinsky Lake Bridge on both the north and south sides of the bridge, providing a connection between the east and west side of the trail system, and also providing trail users safe passage under 168th Street. Trail users on the west side of the trail system (i.e. west of 168th Street) wishing to cross over the lake at 168th Street must

⁴¹ According to the USACE’s *Re-vegetation Plan – Site 18; Design Memorandum No MPC-47*, the “wildlife lands” begin approximately ¼ mile east of 180th Street, and extend to the western limits of the site. The remainder of the site is “recreation lands.” The wildlife lands are not considered a wildlife management area or a wildlife refuge.

⁴² Bauermeister Prairie is located approximately ½ mile to the east of 168th Street on the south side of Zorinsky Lake.

⁴³ The horse corrals are no longer officially in use. Outreach with local horse groups is currently underway to determine if there is any usage of the corrals at Edward Zorinsky Recreation Area. The City of Omaha Parks, Recreation, and Public Property has not mowed any horse trails around Zorinsky Lake for at least ten years, and their website does not list the horse corrals as amenities at the park.

wrap under the bridge to the east side of the trail where they can then cross the lake via the bridge. These underpasses are the only existing connection between the east and west segments of the Zorinsky Lake Trail.

The existing vertical clearance between the south trail underpass and the bridge is approximately 8 feet, while the clearance at the trail underpass on the north side of the bridge is currently seven-foot-nine-inches (7'9"). According to American Association of State Highway and Transportation Officials' (AASHTO's) *Guide for the Development of Bicycle Facilities, 4th Edition*, the minimum vertical clearance for bicycle facilities should be 8.3 feet (100 inches); therefore, the clearance at the north underpass does not currently meet this criteria (AASHTO, 2012). The Zorinsky Lake Trail also connects to multiple surrounding neighborhoods, nearby parks, the north section of the West Papillion Trail, and the Walnut Grove Park Trail. The Zorinsky Lake Trail is a publicly owned, shared-use path designated primarily for recreation; therefore, it is considered a Section 4(f) resource. Because the Zorinsky Lake Trail would be impacted by the Proposed Alternative, it is described further in the following sections.

Lakeside Hills Trail

The Lakeside Hills Trail connects perpendicularly to the sidewalk along the west side of 168th Street at a point approximately 360 feet north of Frances Street. The trail is located outside of the ROW at its connection with the sidewalk (DOGIS, 2016). From its connection with the sidewalk, the trail exits the Study Area to the west and continues approximately 2,000 feet to Lakeside Hills Park. Although this trail is located on private land, the City's Parks Department, Park Planning Division confirmed that this trail is meant for public use (Dennis Bryers, Park Planner, personal communication, September 20, 2013). This trail connects to Banyan Hills, Spring Ridge, and Lakeside Hills Park, as well as the lake and trails at the Lakeside Village retirement community (which is privately owned). All of these properties are outside of the Study Area. Although this trail is meant for public use, it is not publicly owned; therefore, the Lakeside Hills Trail is not considered a Section 4(f) resource.

Other Trails

There are several other existing bicycle trails outside of the Study Area that run through nearby neighborhoods and parks, and along nearby creeks and various roadways. Because these trails are situated outside of the Study Area, they would not be impacted by the Proposed Alternatives or any other alternative; therefore, no further consideration as Section 4(f) resources is required.

3.7.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no impacts to existing parks, recreation areas, or Section 4(f) resources. The No-Action Alternative would also not construct new sidewalks through or adjacent to park properties, reconfigure existing trails, or improve access or connectivity to parks and/or trails.

Proposed Alternative

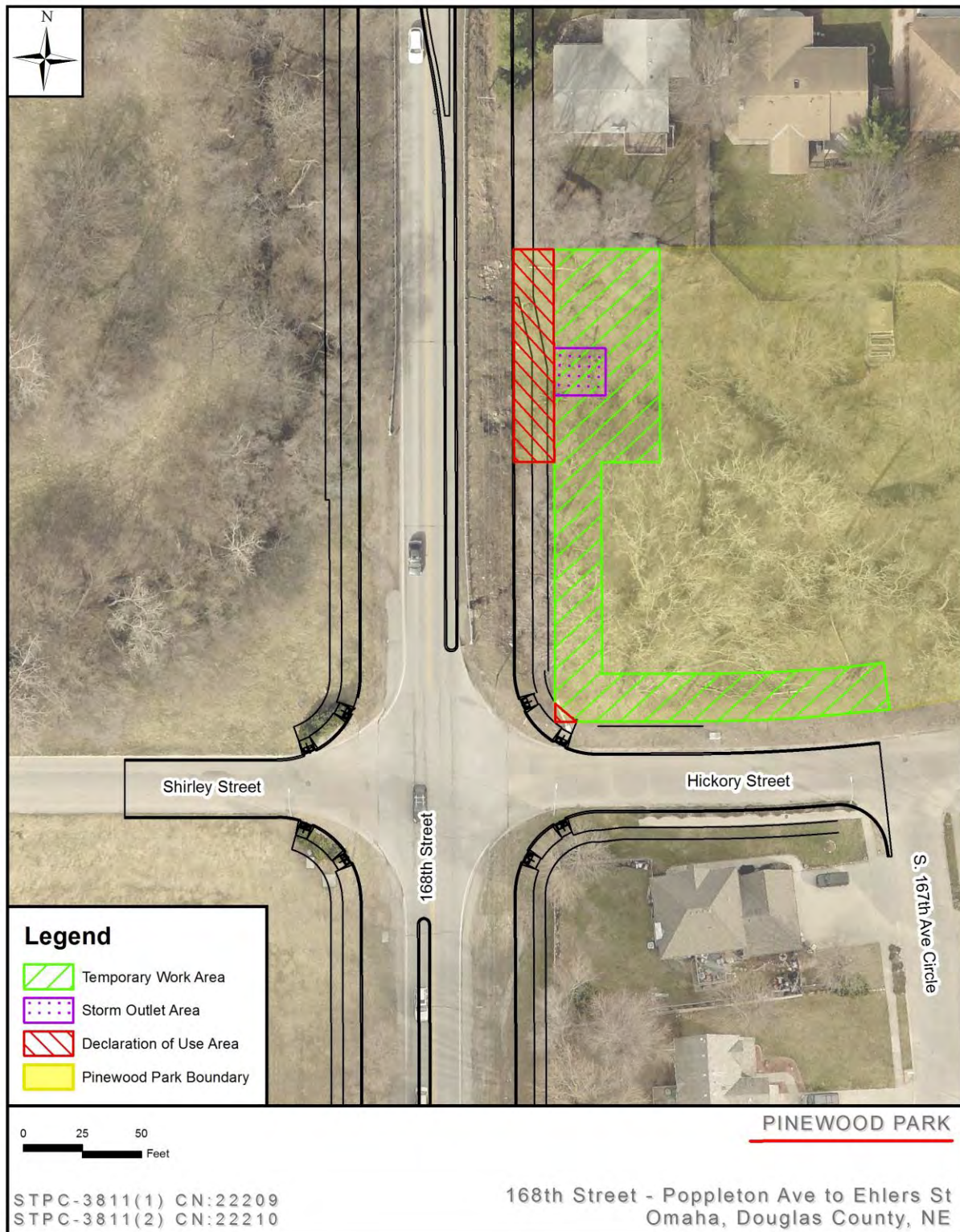
The Proposed Alternative would have direct impacts to Pinewood Park, Edward Zorinsky Recreation Area, and the Zorinsky Lake Trail. Impacts to these Section 4(f) resources would be considered *de minimis* “uses.” Concurrence from the officials with jurisdiction (i.e. The City and USACE) would be obtained after receiving public input during the Public Comment Period. These impacts are described in greater detail in the following subsections.

Pinewood Park

The Proposed Alternative would have direct impacts to the westernmost portion of Pinewood Park that abuts 168th Street. The Proposed Alternative would require the conversion of a narrow strip of ROW from Pinewood Park (approximately 17-feet-wide, or 0.04 acres) in order to widen the roadway and construct a sidewalk and retaining wall along the east side of 168th Street (see **Figure 3.11**). The retaining wall would minimize the extent of grading into the park. Additionally, the replacement of the drainage structure (i.e. culvert) which carries the unnamed tributary under 168th Street and through Pinewood Park would require a temporary easement for construction on Pinewood Park property. Approximately 0.25 acres of the park would be temporarily impacted by construction. The permanent impacts to Pinewood Park would be approved through a Declaration of Use which would be approved by the City Council. The 0.29 acres total that would be impacted constitute less than 1 percent of the approximately seven acre park. The Proposed Alternative would provide beneficial impacts at Pinewood Park by fixing the ponding of the stream at the culvert outlet in the park, preserving the stream that extends through the park, and preventing further erosion along the western edge of the park. The Proposed Alternative would not impact the main area of Pinewood Park (i.e. the area with recreational amenities) as it is situated well outside of the Study Area. Construction activities would also involve tree removal at Pinewood Park, which would be limited to the Declaration of Use area, temporary easement areas, and culvert outlet dissipation area. Preliminary plans indicate that 47 trees would be removed. Tree removals would be mitigated according to the proposed re-vegetation plan developed in coordination with the City’s Parks, Recreation, and Public Property Department (**Appendix J**).

These actions would not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection, and constitute a *de minimis* “use” of a Section 4(f) resource. Coordination with the Official with Jurisdiction (City of Omaha Parks, Recreation and Public Property Department) regarding the impacts to Pinewood Park has occurred and would continue throughout the NEPA process.

Figure 3.11 Pinewood Park



Edward Zorinsky Recreation Area

The Proposed Alternative would also have impacts to Zorinsky Lake and Edward Zorinsky Recreation Area as it would convert land that is currently being managed for recreation into a transportation facility; however, because the original plans for 168th Street included the future widening of the roadway, the USACE granted a ROW easement for 168th Street through Dam Site 18 (i.e. Zorinsky Lake and Edward Zorinsky Recreation Area) that allows for roadway improvements. The only existing park features that would be directly impacted by the proposed project are the trails and the lake; all other features, facilities, and amenities offered at Zorinsky Recreation Area are outside of the Study Area and would not be impacted. The impacts to the trails and the lake are described further below.

The ROW easement for 168th Street through Dam Site 18 was granted prior to the recreation lease for Dam Site 18. Specifically, Condition 19 of the recreation lease states that ***“this lease is subject to all existing easements, easements subsequently granted, and established access routes for roadways and utilities located, or to be located, on the premises [Dam Site 18], provided that the proposed grant of any new easement or route will be coordinated with the Lessee, and easements will not be granted which will, in the opinion of the District Engineer, interfere with developments, present or proposed, by the Lessee...”*** (emphasis added). Since the ROW easement pre-dates the recreation lease and 168th Street is an established roadway located on Dam Site 18 (Condition 19), the roadway improvements occurring within the limits of the ROW easement would ***not***, alone, constitute a “use” of a Section 4(f) resource. The land within the ROW easement boundary was planned to be used for roadway improvements prior to the land being used for recreation. While the USACE has already been coordinated with regarding this determination, final concurrence would be obtained from them during ongoing Section 4(f) coordination, after the Public Hearing.

To offset the placement of fill material to widen and raise the profile of the roadway, the Proposed Alternative would also include two excavation sites (i.e. flood storage mitigation sites) at Dam Site 18 which would extend outside of the area described in the ROW easement (***Figure 3.12***). The impacts at Dam Site 18 occurring outside of the ROW easement would constitute as a “use” of a Section 4(f) resource. Approximately two acres would be excavated outside of the ROW easement area at the north site, and approximately three acres would be excavated outside of the ROW easement at the south site. The approximately five acres that would be excavated outside of the ROW easement constitutes less than one percent of the overall park land (768 acres, not including the lake). The excavation activities would not impact any recreational facilities (e.g. playgrounds, picnic shelters) since these areas are undeveloped. The horse corral located at the northwest parking lot would be removed; however, as previously stated, this facility is either minimally used or is no longer in use. Outreach with local horse groups is currently underway to determine the usage of the corrals at Edward Zorinsky Recreation Area. Tree removal would occur at the park due to excavation, but would be limited to the ROW and easement areas. Preliminary plans indicate that 117 trees would be removed (92 at the north

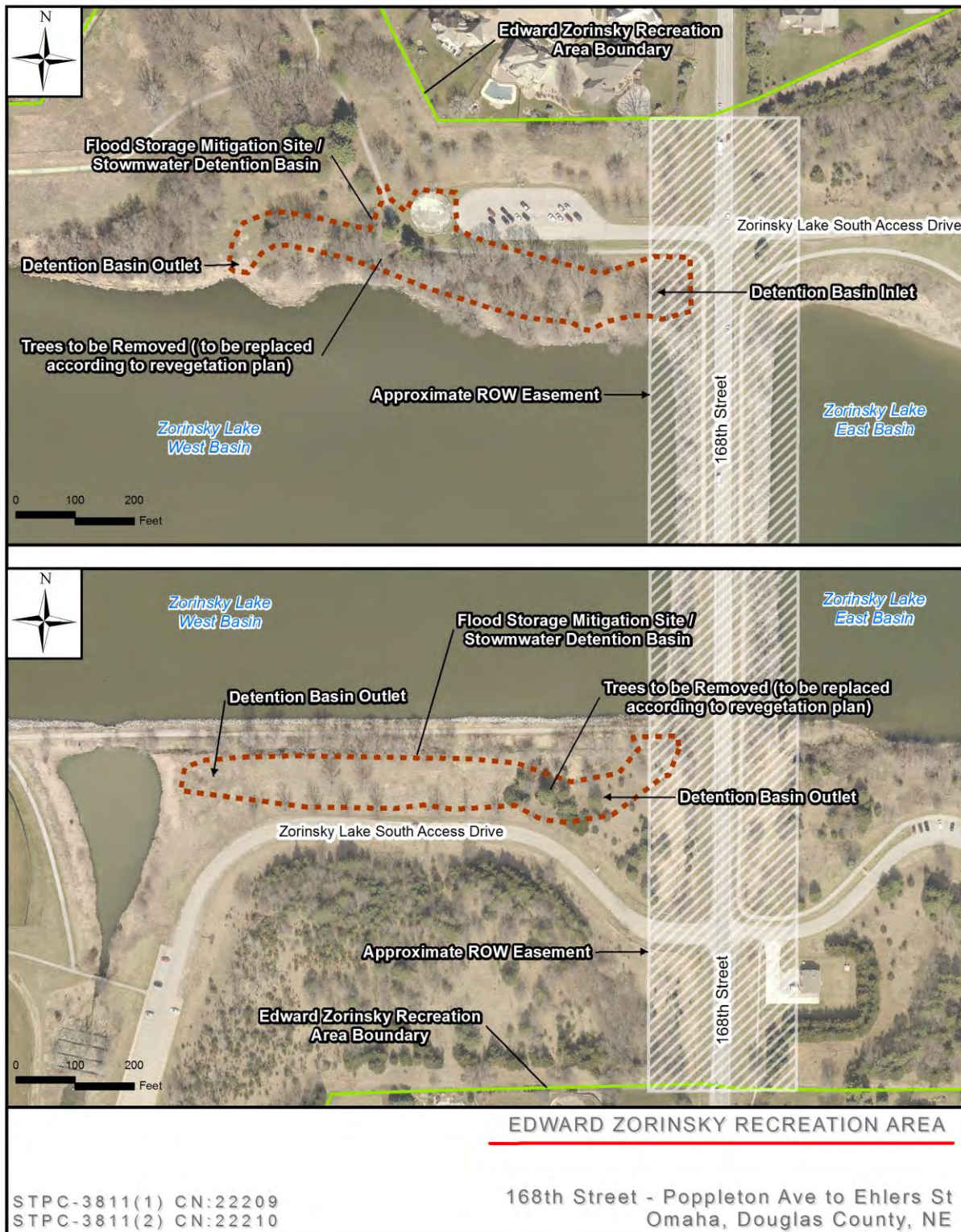
site, 25 at the south site). Tree removals would be mitigated according to the proposed re-vegetation plan developed in coordination with the City's Parks, Recreation, and Public Property Department (**Appendix J**).

Following excavation, these sites would be converted into permanent stormwater detention basins. The project specifications would contain a "critical milestone" timeline for all work in the Edward Zorinsky Recreation Area from the Zorinsky Lake South Access Drive to the North Access Drive to be completed within one year from when the temporary trail and signal are operational (temporary trail and signal are discussed further under "Zorinsky Lake Trail"). These actions would not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection, and would constitute a *de minimis* "use" of a Section 4(f) resource. A temporary construction license and a new permanent easement would be required from the USACE for project construction activities at Dam Site 18 and the long-term maintenance of the stormwater detention areas. See **Appendix B** for the USACE Missouri River Project Office's Easement/License Application Checklist. See **Section 3.2** and **Section 3.9** for more information on the excavation sites and stormwater detention basins.

The Proposed Alternative would have minor, temporary impacts to boaters at Zorinsky Lake. During construction activities on the Zorinsky Lake Bridge, boats would not be allowed to pass under the bridge for safety reasons, which would prevent boats from moving freely between the east and west basins of Zorinsky Lake. The boat ramp is located at the southeast corner of the east basin of the lake, so boat access to the main basin would not be impacted. Although boaters would not be allowed to access the west basin via the bridge underpass, boating would still be allowed in the west basin. To access the west basin, boaters would be able to carry and launch their boat from the shorelines of the west basin. The closure of the bridge underpass would primarily impact larger boats as they would not be able to access the west basin; however, this is only a minor impact as the more utilized east basin of the lake would remain accessible throughout construction. The closure is anticipated to be in place for up to one year, with both projects taking approximately 3 years overall. The City's Parks, Recreation, and Public Property Department (Parks Department) has been informed of the closure. They indicated that west basin is primarily used by fishermen, and that individuals would still be able to fish and launch small watercraft from the shores of the west basin. Additionally, the Parks Department indicated that providing a temporary boat ramp to mitigate the underpass closure was not desirable due to the cost and additional impacts from constructing a temporary ramp, as well as the need to cross Zorinsky Lake Trail when launching boats from the ramp (Dennis Bryers, personal communication, October 19, 2016). The USACE would be informed of this closure after the Public Comment Period. The action of temporarily closing the bridge underpass to boaters would not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection, and would constitute a *de minimis* "use" of a Section 4(f) resource.

Coordination with the Officials with Jurisdiction (USACE and City of Omaha Parks, Recreation and Public Property Department) regarding the impacts to Edward Zorinsky Recreation Area (including Zorinsky Lake) has already occurred and would continue throughout the NEPA process.

Figure 3.12 Zorinsky Lake and Edward Zorinsky Recreation Area



Zorinsky Lake Trail

The Proposed Alternative would reconfigure the segments of the Zorinsky Lake Trail that run alongside 168th Street. Although the segments of trail alongside 168th Street are within the boundary of the ROW easement area that is not subject to Section 4(f), the Zorinsky Lake Trail is still considered a separate Section 4(f) resource since the trail extends outside of the Study Area.

The existing 8-foot-wide trails on both sides of 168th Street through the Edward Zorinsky Recreation Area would be replaced with 10-foot-wide trails. A new 10-foot-wide trail would be constructed along the west side of the roadway south of the lake and existing trail, where no trail exists today (**Figure 3.13**). On the Zorinsky Lake Bridge there would be a 12-foot-wide trail on the east side, with a 7-foot-wide sidewalk on the west side. A new 5-foot-wide sidewalk would continue north and south from the bridge along the west side of 168th Street to connect with the Zorinsky Lake Trail. The reconfigured trails would be slightly shifted outward in order to accommodate the wider roadway, with the exception of the segment of trail along the west side of 168th Street and south of the lake, which would be shifted toward the road in order to match the road grade and tie in with the new sidewalk and trail segment. The reconfiguration of the Zorinsky Lake Trail along 168th Street would cause the segments of the trail alongside 168th Street to be temporarily closed during construction, but would result in improved trails after construction. Additionally, an approximately 270-foot-long segment of the Zorinsky Lake Trail located near the west end of the northwest parking lot would also be reconfigured in order to accommodate the north excavation area/stormwater detention basin. This segment of trail would also be replaced with a 10-foot-wide trail. The Proposed Action would also construct a 6-foot-wide temporary segment of trail near the southeast corner of Zorinsky Lake's west basin, which would maintain connectivity between the east and west trail systems during construction.

Approximately 0.8 miles of the 7.4 mile Zorinsky Lake Trail (10.8% of the entire trail) would be closed during construction. The closure is anticipated to be in place for up to one year, with both projects taking approximately 3 years overall. The project specifications would contain a "critical milestone" timeline for all work in the Edward Zorinsky Recreation Area, including the Zorinsky Lake Trail, from the Zorinsky Lake South Access Drive to the North Access Drive to be completed within one year from when the temporary trail and signal are operational. A preliminary timeline is presented at the end of this section. The locations of the closed trail segments, temporary trails, reconfigured trails, and new trails and sidewalks are depicted on **Figure 3.13**. The construction of the temporary trail segment near the southeast corner of the west basin, and the reconfiguration of the trail segment at the northwest parking lot would be completed prior to the temporary trail closures along 168th Street in order to maintain connectivity between the east and west trail systems. While the trail along 168th Street would be closed for up to a year during construction, the rest of the trail around Zorinsky Lake would remain open at all times.

As part of the roadway improvements, a permanent signalized at-grade crossing would be constructed at the Zorinsky South Access Drive, which would ultimately provide an additional connection and safe at-grade crossing point between the east and west segments of the Zorinsky

Lake Trail. This crossing would also result in increased mobility between the east and west trail segments upon completion of construction, and would maintain connectivity during construction. At the south access drive crossing, the City would use a permanent or temporary signal during construction and prior to closing the trail underpasses for bridge reconstruction. A temporary at-grade crossing would be constructed at the Zorinsky Lake North Access Drive to maintain connection between the east and west trail systems during construction. See **Figure 3.13** for the location of the at-grade crossings.

Additionally, in order to excavate and haul material from the north excavation site (i.e. flood storage mitigation site), it would be necessary for construction vehicles and machinery to cross the Zorinsky Lake Trail. The hauling of excavated material across the Zorinsky Lake Trail would occur at the locations of trail that are already being closed and would coincide with the reconfiguration of the trail alongside 168th Street to avoid additional trail impacts. If there is any unforeseen damage to the trail as a result of vehicles or machinery crossing it, the trail would be returned to as good or better condition than pre-construction.

The Proposed Alternative would provide at least 8 feet of vertical clearance for the trail underpasses at the bridge⁴⁴, which would be in compliance with the minimum trail design standards listed in AASHTO's *Guide for the Development of Bicycle Facilities, 4th Edition*. This would actually slightly improve conditions at the north underpass, as the existing clearance at the lowest point is approximately 7-feet and 9-inches (7'9"). A request by the City to utilize the minimum 8 feet of vertical clearance (i.e. a design exception) was approved by NDOR on November 14, 2013 (**Appendix A**). It should also be noted that increasing the vertical clearance at the underpasses to meet the desirable criteria of 10 feet would have resulted in increased and unnecessary impacts to Edward Zorinsky Recreation Area and Zorinsky Lake.

The proposed changes to the trail system at Zorinsky Lake would have a beneficial impact to trail users and other pedestrians by improving access along 168th Street and increasing overall connectivity, mobility, and safety.. The reconfiguration of the trail along 168th Street would require these segments of trail to be temporarily closed; however, the closures would be mitigated by providing temporary crossings and a temporary trail segment (as discussed above) prior to closing the trail. Therefore, it has been determined that these actions would not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection, and would constitute a *de minimis* "use" of a Section 4(f) resource.

Coordination with the Officials with Jurisdiction (USACE and City of Omaha Parks, Recreation and Public Property Department) regarding the impacts to the Zorinsky Lake Trail has already occurred and would continue throughout the NEPA process.

⁴⁴ Preliminary design plans for the bridge have been conservative in allowing for vertical clearance for the trails. The south underpass would have approximately 9 feet of clearance, and the north underpass would have, at an absolute minimum, 8 feet of vertical clearance. However, it is likely that the vertical clearance would be closer to 8.3 feet given the conservative estimates used for the bridge design.

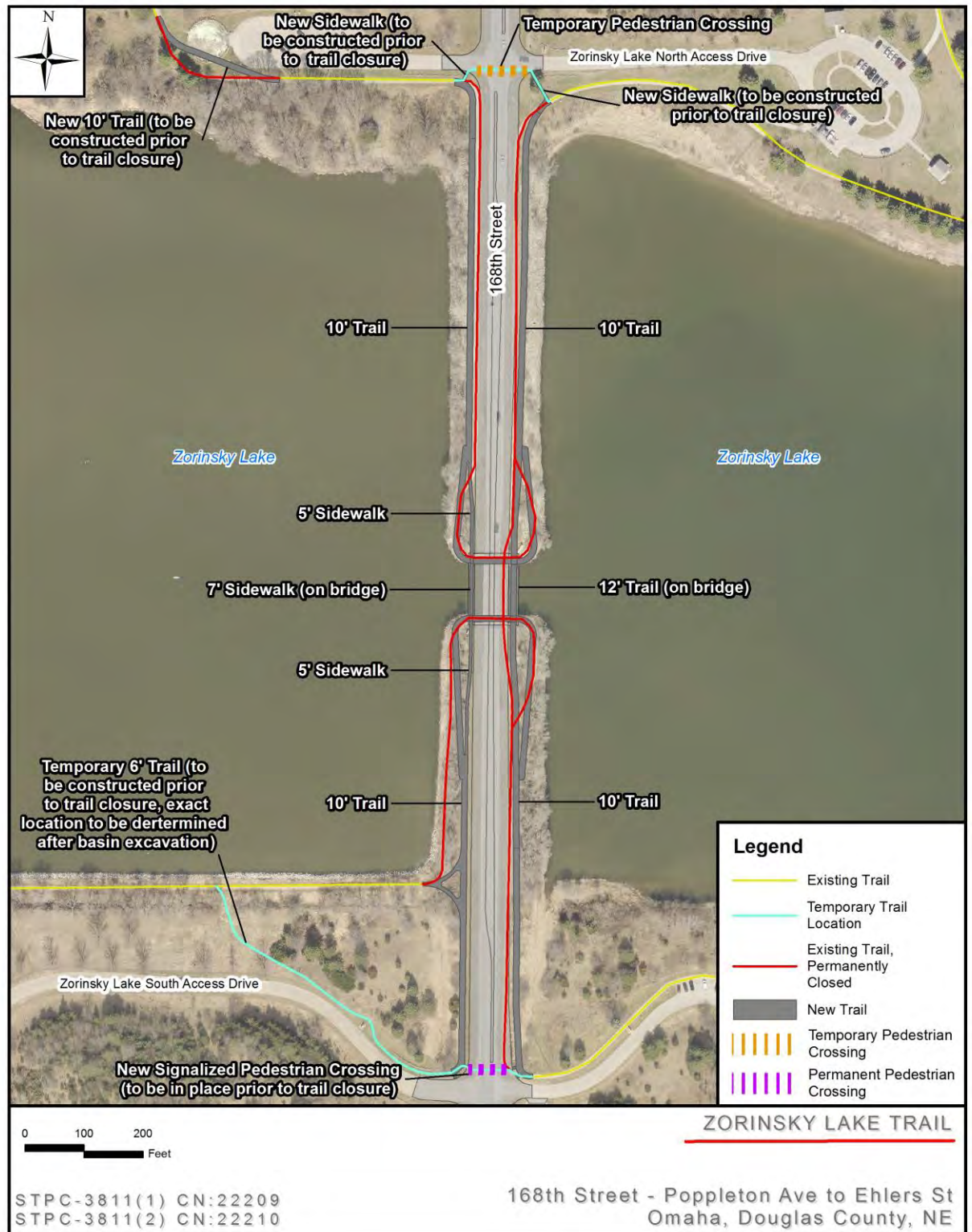
Planned Zorinsky Lake Trail Construction Phasing (Preliminary at this time)

1. Construct new trail segment at the west end of the northwest parking lot along 168th Street; construct at-grade crossing of 168th Street at north entrance road; and construct new sidewalk connections to the trail for the at-grade crossing.
2. Remove old trail segment near the west end of the northwest parking lot.
3. Construct temporary trail connection at south entrance road, including detention basin grading, seeding, and erosion control west of the temporary trail connection.
4. Install temporary or permanent traffic signal with operational pedestrian crossing at south entrance road.
5. Close the trail segment along 168th Street between the south and north entrances roads, including the trail over the bridge and underpasses. Closure anticipated to be up to one year.
6. Excavate north and south detention basins.
7. Construct new trails, bridge, retaining walls, and widen 168th Street.
8. Remove temporary trail upon completion of all reconfigured trails and sidewalks at Edward Zorinsky Recreation Area. Remove temporary signal and install permanent signal at south entrance road, if not completed earlier.

Lakeside Hills Trail

Although the Lakeside Hills Trail is not a Section 4(f) resource, impacts to the trail are discussed. The trail itself is entirely situated outside of the ROW and would not be directly impacted by construction activities; however, a small portion of the Lakeside Hills Trail which currently connects to the sidewalk on 168th Street would be temporarily closed in order to reconstruct the existing sidewalk south of the trail, as well as to construct a new sidewalk to north of the trail. The new sidewalk would provide a beneficial impact by increasing connectivity to the trail.

Figure 3.13 Zorinsky Lake Trail



3.7.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- The City would construct a retaining wall along the western edge of Pinewood Park to minimize the extent of grading into the park. (City of Omaha, Contractor)
- The conversion of an approximately 17-foot-wide (or 0.04 acre) strip of Pinewood Park land from park use to ROW and the temporary construction limits at Pinewood Park would be defined in a Declaration of Use document that would be approved by the City Council. (City of Omaha)
- Prior to construction, the City would obtain a temporary construction license from the USACE for project construction activities at and through Dam Site 18, including the excavation of the flood storage mitigation sites. The flood storage mitigation sites would be located adjacent to 168th Street and the northeast and southeast corners of the west basin of Zorinsky Lake. The area of impact at the north site would be no greater than two acres outside of the existing ROW and no greater than three acres outside the existing ROW at the south site. (City of Omaha)
- The City would obtain a new permanent easement from the USACE for the conversion of the flood storage mitigation sites into stormwater detention basins and for their long-term maintenance. (City of Omaha)
- During construction, temporary at-grade crossings would be provided for trail users to maintain mobility between the east and west segments of the Zorinsky Lake Trail. These temporary crossings are planned to be located at the north and south lake access drives, and would be painted and signed during construction. Additionally, because the temporary at-grade crossing at the south access drive would become permanent following construction and would be signalized, the City would use a temporary signal during construction, which would be operational prior to closing the trail underpasses for bridge reconstruction. (City of Omaha, Contractor)
- Prior to closing the Zorinsky Lake Trail segments along 168th Street, the City would construct the temporary trail segment near the southeast corner of Zorinsky Lake's west basin in order to maintain connectivity between the east and west trail systems. (City of Omaha)
- The reconfiguration of the trail segment near the west end of the northwest parking lot would be completed prior to closing the 168th Street portions of the Zorinsky Lake Trail. (City of Omaha)
- The new sidewalk connections to the trail at the Zorinsky Lake North Access Drives would be completed prior to closing the 168th Street portions of the Zorinsky Lake Trail.
- If necessary, the City would use flaggers while vehicles or machinery are crossing the Zorinsky Lake Trail during excavation activities at the north flood storage mitigation site. The hauling of excavated material across the Zorinsky Lake Trail would occur at the locations of trail that are already being closed and would coincide with the reconfiguration of the trail alongside 168th Street to avoid additional trail impacts. If there is any unforeseen damage to the trail as a result of vehicles or machinery crossing it, the trail would be returned to as good or better condition than pre-construction. (City of Omaha, Contractor)
- The temporary closure of the 168th Street segments of the Zorinsky Lake Trail would be no longer than one year in duration. The duration of the closure would be less than the time needed for the construction of the overall project. (City of Omaha, Contractor)

- The project specifications would contain a “critical milestone” timeline for all work in the Edward Zorinsky Recreation Area, including the Zorinsky Lake Trail, from the Zorinsky Lake South Access Drive to the North Access Drive to be completed within one year from when the temporary trail and signal are operational. (City of Omaha)
- The temporary closure of the bridge underpass to boaters would be no longer than one year in duration. The duration of the closure would be less than the time needed for the construction of the overall project. (City of Omaha, Contractor)
- Tree and vegetation removal at Edward Zorinsky Recreation Area and Pinewood Park (outside of the existing ROW and existing easements) would be mitigated according to the proposed re-vegetation plan developed in coordination with the City’s Parks, Recreation, and Public Property Department. A copy of the re-vegetation plan would be provided to the USACE for review during the Draft Environmental Assessment comment period. (City of Omaha)
- The City would obtain concurrence from the USACE that the utilization of the ROW easement at Dam Site 18/Edward Zorinsky Recreation Area would not constitute a use of a Section 4(f) property. (City of Omaha)
- Following the public comment period for the Draft EA, the City would request concurrence from the USACE on the *de minimis* impact determinations for the use of the Zorinsky Lake Trail and Edward Zorinsky Recreation Area (including Zorinsky Lake). (City of Omaha)
- Following the public comment period for the Draft EA, the City would request concurrence from the City’s Parks, Recreation, and Public Property Department on the *de minimis* impact determinations for the use of Pinewood Park, the Zorinsky Lake Trail, and Edward Zorinsky Recreation Area (including Zorinsky Lake). (City of Omaha)

3.8 HISTORIC AND ARCHEOLOGICAL RESOURCES

Section 106 of the *National Historic Preservation Act of 1966* (NHPA) requires that Federal agencies take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The revised regulation, *Protection of Historic Properties* (36 CFR Part 800), which became effective on January 11, 2001, outlines the guidelines for federal agencies to comply with Section 106. The *Archeological and Historic Preservation Act of 1960* (16 USC 469-470), and EO 11593 – *Protection and Enhancement of the Cultural Environment*, issued in 1971, provide additional directives to Federal agencies on historic preservation.

The Section 106 compliance process consists of the following steps:

1. Identify consulting parties (includes tribes and local historic preservation entities).
2. Identify and evaluate historic properties located within the Area of Potential Effects (APE)⁴⁵ established for an undertaking.

⁴⁵ Area of Potential Effects means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 CFR 800.16(d)).

3. Assess adverse effects to properties listed on, or eligible for listing on, the NRHP.
4. Consult with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), and, as appropriate, the ACHP and other interested parties to resolve adverse effects.

The *Native American Graves Protection and Repatriation Act of 1990* (NAGPRA) provides for the protection of Native American graves, and for other purposes. NAGPRA protects the ownership or control of Native American cultural items which are excavated or discovered on Federal or tribal lands. NAGPRA requires that any person inadvertently discovering Native American cultural items on Federal land notifies the proper agency and the appropriate Native American Tribe. This act also provides that the intentional excavation and removal of Native American Human remains shall not occur unless a section 4 permit under the Archaeological Resources Protection Act is issued or consent of the appropriate Indian tribe or Native Hawaiian organization is given.

The *Nebraska Unmarked Human Burial Sites and Skeletal Remains Act* (Neb. Rev. Stat. § 12-1201 to 12-1212) provides protection for unmarked human burial sites and human skeletal remains located on all private and public lands within the state. This Act prohibits disturbance of unmarked human burial sites; establishes procedures for the care and protection of unmarked human burial sites, human skeletal remains, and burial goods within the state; and ensures that all unmarked human burial sites discovered in this state are to be left undisturbed to the maximum extent possible.

3.8.1 CURRENT CONDITIONS

The 168th Street study area has undergone significant suburban development within the last 30 years. Many of the buildings built before this period of development (i.e. pre-1983) have been removed to make way for suburban residential subdivisions, commercial development, and Dam Site 18. The APE for this project was identified as the roadway ROW and 50 feet beyond, as well as the two borrow areas west of 168th Street, north and south of Zorinsky Lake. A Cultural Resources Survey was conducted in January of 2014 of the entire APE to identify potential archeological and historic properties; none were identified.

3.8.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no adverse impacts to historic or archeological resources because ground disturbance, property encroachments, or acquisitions would not occur.

Proposed Alternative

In compliance with state and federal regulations, FHWA and NDOR consulted with the Nebraska State Historical Society (NSHS) and the Nebraska SHPO by submitting a request for Section 106 concurrence on February 18, 2014, and on March 13, 2014 the SHPO concurred with FHWA's finding of "no historic properties affected" (**Appendix D**). Because the excavation sites at Dam Site 18 were included in the APE and reviewed as part of the project, this satisfies the SHPO consultation required by USACE when excavation is to occur on their property.

Additionally, the Tribal Historic Preservation Officer (THPO) for the Iowa Tribe of Kansas and Nebraska was consulted⁴⁷. Following a 30-day comment period, the Tribe did not respond. Therefore, according to a memo provided by NDOR on April 2, 2014, in compliance with guidance from FHWA regarding Tribal consultation, the project may proceed as planned due to the 30-day comment period expiring without receiving comments from the Tribe (**Appendix D**).

The Proposed Alternative would have no impacts to historic or archeological resources.

3.8.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- During construction, the City and Contractor would follow standard provisions of the unintended discovery of unknown artifacts, or unidentified human remains, in compliance with the *Nebraska Unmarked Human Burial Sites and Skeletal Remains Act*, and the *Native American Graves Protection and Repatriation Act*. (City of Omaha, Contractor)

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.
- Standard Specification 107.10 - Legal Relations and Responsibility to the Public - Archaeological and Paleontological Discoveries
 - In the event of a late discovery of archeological materials, this specification states “The Engineer would be promptly notified when any such articles are uncovered and the Contractor shall suspend operations in the area involved until such time that arrangements are made for their removal and preservation.”

3.9 WATER RESOURCES AND WATER QUALITY

The *Clean Water Act of 1972* (CWA), the *Safe Drinking Water Act of 1974*, and several other laws provide protection for water quality and public water systems. Therefore, potential impacts to water resources were considered with respect to groundwater and surface water resources, quantity and quality of runoff, and regulatory requirements. A number of agencies, including the Nebraska Department of Natural Resources (NDNR), the Nebraska Department of Environmental Quality (NDEQ), the City, the USACE, and the P-MRNRD have primary responsibilities for these resources.

⁴⁷ The Iowa Tribe of Kansas and Nebraska has requested to be consulted on all projects requiring SHPO consultation in Douglas County.

3.9.1 EXISTING CONDITIONS

Groundwater Resources

Current Nebraska law requires that all water wells must be registered with the State. Exceptions to the law include test holes in existence for ten days or less, dewatering wells with intended use of ninety days or less, and domestic or livestock wells completed prior to September 9, 1993. In addition to private groundwater wells, municipalities maintain groundwater wells for public drinking water supplies.

Registered Wells

There are three active groundwater wells mapped on private properties within the Study Area, which are all located between Oak Street and the Zorinsky Lake North Access Drive (**Figure 3.11**). Two of the wells are listed as “groundwater heat exchange” (i.e. geothermal heating systems) and the other is listed as “domestic” (i.e. drinking water).

Municipal Wells and Wellhead Protection

The goal of Nebraska’s Wellhead Protection Program is to protect the land and groundwater surrounding public drinking water supply wells from contamination. Since approximately 85 percent of Nebraskans receive their drinking water from groundwater, preventing groundwater contamination is vital (NDEQ, Wellhead Protection, 2012).

Nebraska’s Wellhead Protection Program is a voluntary program which assists communities and other public water suppliers in preventing contamination of their water supplies. The Nebraska Legislature passed LB 1161 in 1998 (Neb. Rev. Stat. §46-1501 – 46-1509), authorizing the *Wellhead Protection Area Act*. This Act sets up a process for public water supply systems to use if they choose to implement a local Wellhead Protection Area (WHPA). The NDEQ is the lead agency for approval of WHPA and Wellhead Protection Plans (WHPP). WHPAs are drawn to encompass the 20-year time-of-travel for protected wells. Often times, the extents of a WHPA are generalized, and follow commonly recognized straight-line boundaries such as major roads and property or section lines. WHPAs are not routinely updated on a regular basis, and do not always reflect the abandonment or closure of municipal wells, or the addition of new wells.

Within the vicinity of the Study Area, there is one WHPA, which is for the Metropolitan Utilities District (MUD) Millard Wellfield (**Figure 3.14**). This WHPA covers a large portion of the Study Area, beginning at West Center Road and extending south past Q Street and out of the Study Area to just north of Cornhusker Road in Sarpy County (NDEQ, 2010). The locations of the municipal drinking-water supply wells protected by this WHPA are shown on **Figure 3.15**. According to NDEQ, these wells are not used on a regular basis, but rather, are “peak shaving” wells, used only during times of peak usage (i.e. summer), and are pumped directly into the water supply (Ryan Chapman, Wellhead Protection Program Coordinator, NDEQ, personal communication, January 22, 2014). The figure also shows the time-of-travel lines for each well, which indicates that only a small portion of the Study Area could potentially affect the 10-20 year zone for one well, which is located at 162nd Street and Q Street. Furthermore, this WHPA does not currently have an approved WHPP (NDEQ, 2010).

Figure 3.14 Water Resources and Water Quality

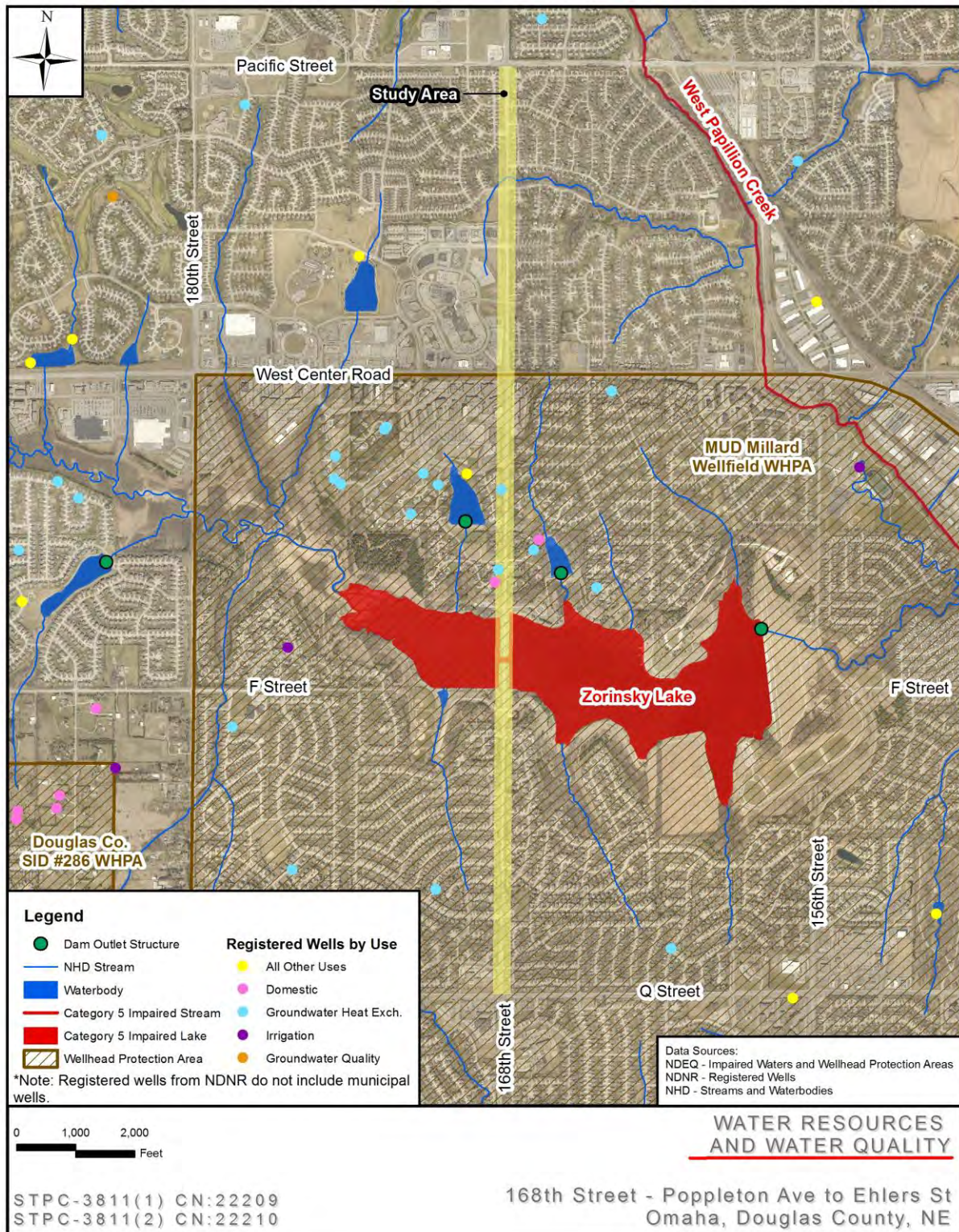
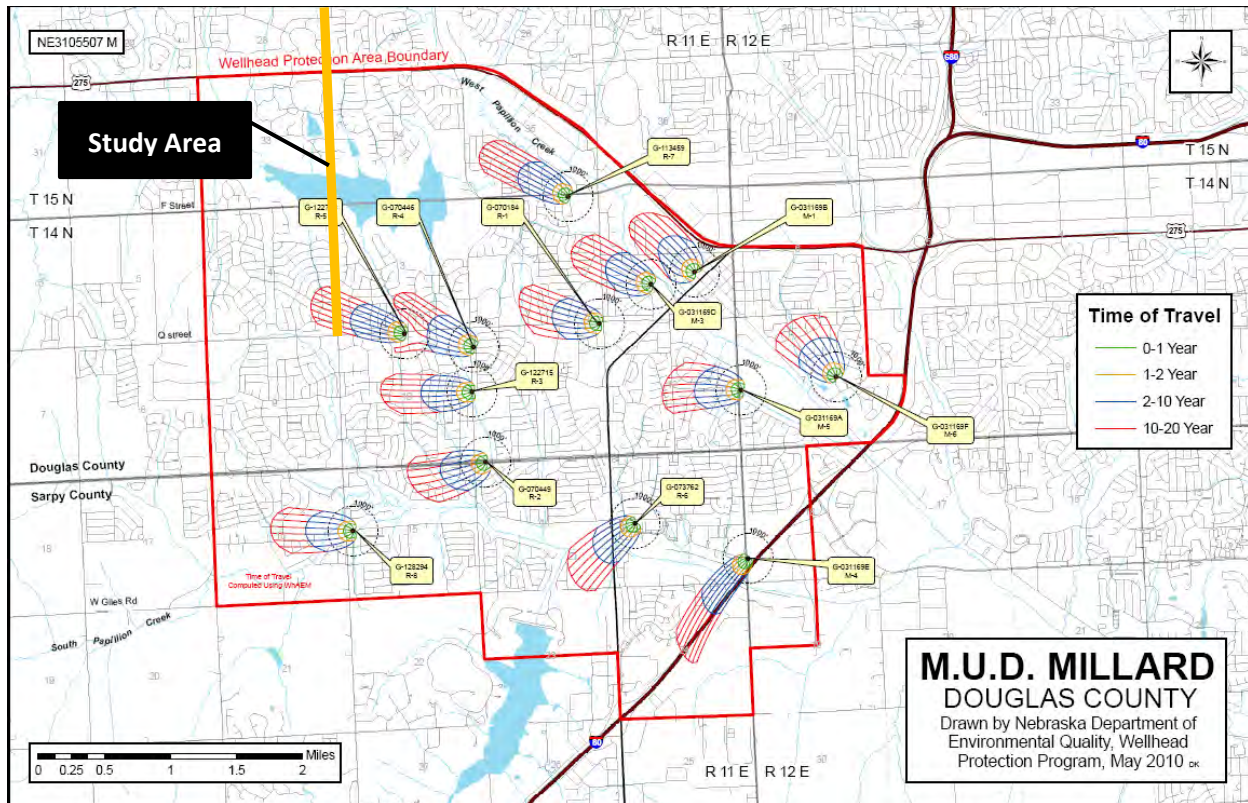


Figure 3.15 MUD Millard Wellfield Wellhead Protection Area and Municipal Wells



Surface Water Resources

The *Omaha Regional Stormwater Design Manual*, prepared by the Papillion Creek Watershed Partnership (Papio Partnership), a regional coalition of cities and municipalities, governs the design for stormwater runoff and conveyance systems, as well as requirements for improving stormwater quality in the overall Papillion Creek Watershed, which covers an area approximately 402 square miles in size (Papio Partnership, 2009).

Surface water in the Study Area between West Center Road to Q Street flows to Zorinsky Lake, and then into Boxelder Creek, which eventually flows into West Papillion Creek. Surface water between West Center Road and Pacific Street flows to an unnamed tributary to West Papillion Creek. The West Papillion Creek flows into the Big Papillion Creek, which ultimately empties into the Missouri River.

Currently, surface water within the 168th Street ROW flows directly off the asphalt roadway, into mowed roadside ditches and enclosed storm sewer pipes, and empties into Zorinsky Lake or the unnamed tributary to the West Papillion Creek (located north of Shirley and Hickory Streets) with minimal filtration or treatment.

The watershed for the unnamed tributary is approximately 410 acres in size, consisting primarily of residential and commercial development. The Zorinsky Lake watershed is approximately 16.4 square miles (10,500 acres) and also consists primarily of residential and commercial development. These

watersheds have several factors currently affecting water quality, including incised stream channels and eroding stream banks, and enclosed stormwater systems that carry large volumes of runoff to the unnamed tributary to West Papillion Creek and Zorinsky Lake. These watersheds also contain large commercial areas, which contribute to an increased area of impervious surface. The runoff within these watersheds is already affected by typical urban pollutants, such as hydrocarbons, fertilizers and pesticides, fecal coliforms, increased temperature, and increased volume. Also, the existing Zorinsky Lake Bridge contributes directly to water pollution, as the open guard rails on the bridge allow roadway runoff to directly enter the lake. These factors, along with the amount of enclosed drainages draining toward the roadway corridor, has already degraded water quality in these watersheds.

Impaired Waters

Among other regulations and requirements, the CWA requires states to prepare a list of impaired surface waters every even numbered year. From this list, referred to as the 303(d) List of Impaired Waters, states prepare Total Maximum Daily Loads (TMDLs) that include the pollution control goals and strategies necessary to improve the quality of these waters and remove the identified impairments. The waters on the 303(d) list do not support their assigned beneficial uses as listed in Title 117 – *Nebraska Surface Water Quality Standards*. NDEQ is also required to provide a surface water quality report every two years, known as the Section 305(b) Water Quality Integrated Report, which describes the status and trends of existing water quality for all waters of the state and provides information as to the extent to which designated uses are supported (NDEQ, 2014).

NDEQ's 2016 *Water Quality Integrated Report* and the 303(d) list were approved by the U.S. Environmental Protection Agency (EPA) on April 1, 2016. The 2016 Integrated Report identifies five categories of waters, with Category 5 being the most impaired. There are two impaired Category 5 waterways in or near the Study area; Zorinsky Lake and West Papillion Creek (**Figure 3.15**). The listed impairments for Zorinsky Lake are for aquatic life nutrients, chlorophyll a, and an advisory for fish consumption. The listed impairment for the West Papillion Creek is an advisory for fish consumption (NDEQ, 2016). Complete details of the 2016 Integrated Report are available at <http://www.deq.state.ne.us/> by clicking on "Surface Water Quality Standards" under "Publications and Forms."

National Pollutant Discharge Elimination System

The CWA also established the basic structure for regulating discharges of pollutants into the waters of the United States and regulating water quality standards for surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. The EPA regulates point discharges through the National Pollutant Discharge Elimination System (NPDES), the authority for which in Nebraska has been delegated to NDEQ. Point sources are discrete conveyances such as pipes or man-made ditches. Industrial, municipal, or other facilities must also obtain permits if they discharge directly to surface waters. In recent years, NPDES permits have been expanded to also cover construction sites and non-point sources of pollution flowing through municipal separate storm sewer systems (MS4s). Non-point source pollution occurs when rainfall, snowmelt, or irrigation runs over land (and construction sites) and transports pollutants and eroded sediment to surface waters.

Douglas County and the City have received authorization from NDEQ to discharge stormwater under NPDES guidelines, in accordance with their regional Permit. MS4 permits authorize new or existing stormwater discharges in designated urbanized areas into waters of the state as defined by NDEQ Title 119 – *Rules and Regulations Pertaining to the Issuance of Permits under the National Pollutant Discharge Elimination System*.

The terms and conditions of MS4 permits require all entities, including Douglas County and the City, to develop specific Stormwater Management Programs (SWMP). The development of these programs increases the likelihood of maintaining and protecting local water quality conditions that are protected under the terms of NDEQ Title 117 – Nebraska Surface Water Quality Standards. Implementation of the SWMP constitutes compliance with the MS4 Permit.

Each jurisdiction is ultimately responsible for ensuring compliance with the SWMP conditions within the drainage in their jurisdictional limits; however, the MS4 permit requirements for these two entities have many similarities. Two primary elements include “Construction Site Stormwater Management Minimum Control Measures” and “Post-Construction Stormwater Management Control Measures.” The common goals of these elements are discussed below:

Construction Site Stormwater Management Minimum Control Measures – Reduce the amount of stormwater pollution from construction sites (sediment, building materials, oil, etc.). Require, review, inspect, and enforce proper management practices and material disposal on construction sites including procedures for site plan review, inspections during construction, and reporting protocols to the MS4 to evaluate compliance. Require the construction site owners or operators to implement erosion and sediment control BMPs and to control other waste such as discarded building materials.

Post-Construction Stormwater Management Minimum Control Measures – Develop and implement comprehensive planning procedures and enforcement controls to reduce the discharge of non-point source pollutants after construction is complete from areas of new development and significant redevelopment. Develop and implement strategies which include a combination of structural and/or non-structural BMPs; ensure adequate long-term operation and maintenance of BMPs.

These program elements outline the Construction and Post-Construction Stormwater Management minimum requirements that must be considered for proposed projects in the City and Douglas County, including City-sponsored projects. The goals of these programs are to minimize water quality impacts to the maximum extent, conform to the requirements of the CWA, and comply with Nebraska Title 117 Water Quality Standards (City of Omaha, 2012).

It should be noted that the City has made great strides to improve water quality through its Combined Sewer Overflow (CSO) program, which is separating sanitary and storm sewers throughout eastern Omaha, as well as through other educational initiatives and installation of structural and non-structural BMPs throughout the region. However, when implementing these measures on roadway projects,

especially those with limited ROW (i.e. 100-foot-wide corridors), the costs for acquiring additional ROW and the potential for resulting adverse impacts such as residential and commercial relocations are not typically prudent. Therefore, the City attempts to improve water quality with structural BMPs, where it can and within reason, and continues to make other improvements to water quality. Other non-structural BMP's that the City has already implemented on a regional basis include encouraging residents in the City to decrease the amount of fertilizer applications, to install rain barrels or rain gardens in their yards, to pick up pet waste, and other educational measures to improve the water quality of urban runoff (Selma Kessler, Post-Construction Application Reviewer, City of Omaha, May 21, 2014).

3.9.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no adverse or beneficial effects on groundwater or surface water quality, wellhead protection areas, or impaired waters because ground disturbance and activities in surface waters would not occur.

Proposed Alternative

The three registered wells for groundwater heat exchange and domestic use are outside of the ROW and would not be impacted by the proposed project.

The Proposed Alternative would not have any adverse or beneficial effects on groundwater quality or wellhead protection areas. However, due to the grading proposed for the roadway, the rehabilitation of the bridge, re-construction of culverts, and other project activities, there could be minor temporary impacts to surface water. In particular, the proposed grading would require a NPDES permit from NDEQ for grading areas over one acre and compliance with the City and County MS4 permits.

The Proposed Alternative would result in a slightly larger impervious surface (i.e. due to the addition of lanes, medians, and sidewalks), resulting in greater stormwater runoff. However, this increase in impervious area would be negligible when compared to its contribution to the immediate watershed, as well as the greater Papillion Creek Watershed. If the majority of the ROW for 168th Street between Poppleton Avenue and Gold Street, and between Oak Street and Ehlers Street were considered to be impervious following construction, this would only represent an increase in impervious surface from approximately 3.8 acres to 9.5 acres, and 6.6 acres to 18.4 acres, or approximately 1.4 percent and 0.1 percent of the corresponding watersheds. Furthermore, the conversion of roadside ditches to enclosed stormwater pipes would also represent only a minor change in the characteristics of the overall flow regime, considering that much of the rest of the watersheds also drains into enclosed stormwater pipes.

As a result of the excavation required to mitigate for the loss of flood storage volume of Zorinsky Lake, the Proposed Alternative would have a beneficial effect on stormwater runoff into the lake. The Proposed Alternative would excavate approximately 11,000 cu yds of fill material from two areas located immediately west of 168th Street at the northeast and southeast corners of the west basin of Zorinsky Lake (**Figure 3.4** in **Section 3.2**). Following excavation, these sites would be converted into permanent

stormwater detention basins⁴⁸ to improve the water quality of the roadway runoff from 168th Street before eventually being released into Zorinsky Lake. The detention basins would also capture runoff from the rehabilitated Zorinsky Lake Bridge, thus eliminating an existing source of pollution. The construction of these stormwater detention areas would increase filtration, reduce sedimentation, and improve overall water quality in Zorinsky Lake. These excavation sites would not expose any groundwater. A permanent easement between the City and USACE would be required for the long-term maintenance of the stormwater detention basins. For more information on the easement, see **Section 3.2, Zorinsky Lake and Edward Zorinsky Recreation area (Papillion Creek Dam Site 18)**. The new outfalls (i.e. discharge points) from the stormwater detention basins would not empty directly into Zorinsky Lake, but would rather be designed so that water would flow over land before reaching the lake. However, the new outfalls would still be considered new point sources and would require a NPDES permit from the NDEQ. In the event of a hazardous materials spill occurring on the adjacent roadway and entering the stormwater detention basins, spill response and cleanup would follow NDEQ and Nebraska Emergency Management Agency (NEMA) regulations and guidelines.

The Proposed Alternative would not impact or affect the existing sedimentation processes between the east and west basins of Zorinsky Lake because the existing connection between the basins would not be altered by the proposed project (i.e. the Zorinsky Lake Bridge and the distance between the embankments would not be lengthened).

In addition, the Proposed Alternative would involve direct impacts to an unnamed tributary to West Papillion Creek. These impacts would include the replacement of an existing culvert under 168th Street, the installation of bank stabilization measures, and the addition of a new stormwater outfall pipe. These impacts would require permits from the USACE (described in greater detail in **Section 3.10, Wetlands and Waters of the United States**) and Water Quality Certification under Title 117 from NDEQ.

For all of the improvements on the 168th Street Project, the City would implement a Post-Construction Stormwater Management Plan (PCSMP), which would include submitting design plans, construction certifications, and a long-term maintenance commitment to the Environmental Quality Control Division of Public Works. Measures being taken to protect water quality during construction would include submitting for an NPDES permit from NDEQ, due to construction activities being greater than one acre. The NPDES permit would include requirements for monitoring, inspections, and closure of the permit once the site has been re-vegetated.

⁴⁸ The excavation sites would not be refilled with soil, but would remain as depressions which would allow stormwater to be held. Rip rap flumes, drainage pipes, and overflow outlet pipes would be incorporated into the stormwater detention basins.

3.9.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- Comply with the City's MS4 Permit, including applying for and following all provisions of a Stormwater Pollution Prevention Plan (SWPPP) and Water Quality Certification from NDEQ; implementing BMPs as required by City, NDEQ, the P-MRNRD, and the USACE; and following design guidelines of the *Omaha Regional Stormwater Manual*. (City of Omaha, Contractor, Engineer)
- The City would obtain a Clean Water Act (CWA) Section 402 NPDES permit from NDEQ for grading activities greater than one acre in size and for new outfalls. The permit would require submission of a SWPPP, a Notice of Intent (NOI), and a Notice of Termination (NOT) following re-vegetation of the site. All provisions of the permit would be incorporated into the construction specifications and would be implemented to minimize impacts to water quality. (City of Omaha, Engineer, Contractor)
- Permanent changes to runoff would be mitigated by following design guidelines in the *Omaha Regional Stormwater Manual*. (City of Omaha, Engineer)
- Following excavation, the flood storage mitigation sites would be converted to stormwater detention basins. (City of Omaha)
- The City would implement a Post-Construction Stormwater Management Plan (PCSMP) for the two permanent stormwater detention basins, which would include submitting design plans, construction certifications, an owner's certification, and a long-term maintenance commitment from the City to the Environmental Quality Control Division (EQCD) of the Public Works Department. (City of Omaha)
- Prior to construction, the City would obtain a temporary construction license from the USACE for project construction activities at and through Dam Site 18, including the excavation of the flood storage mitigation sites. (City of Omaha)
- The City would obtain a new permanent easement from the USACE for the conversion of the flood storage mitigation sites into stormwater detention basins and for their long-term maintenance. (City of Omaha)
- The stormwater detention areas would be planted with appropriate flood-tolerant vegetation, and would be maintained by the Environmental Quality Control Division (EQCD) of the City's Public Works Department. A maintenance commitment with the EQCD would be in place prior to construction. (City of Omaha)

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.

3.10 WETLANDS AND WATERS OF THE UNITED STATES

Wetlands and other waters of the United States are regulated by the USACE under Section 404 of the CWA and are also protected under EO 11990 - *Protection of Wetlands*, which requires federal agencies (including FHWA) to implement “no net loss” measures for wetlands (42 FR 26961). These no net loss measures include a phased approach of wetland impact avoidance, then minimization of impacts if wetlands cannot be avoided, and finally mitigation.

Wetlands are areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated-soil conditions. In addition to providing ecological benefits, such as supporting commercial fisheries and performing water filtration, they provide habitat for many plant and animal species, including economically valuable waterfowl and one-third of the nation’s endangered species.

3.10.1 CURRENT CONDITIONS

A Wetland Delineation was conducted to identify potential wetlands or other waters of the United States (WUS) along the 168th Street study area and within the flood storage mitigation excavation areas. Eleven areas of potential wetlands and WUS were identified (**Figure 3.16**). The first area consists of two intermittent streams that connect within the Study Area to form one intermittent stream, which is a tributary to the West Papillion Creek. The two intermittent streams connect on the west side of 168th Street before flowing into a culvert that passes under 168th Street and continuing east. Ponding occurs at the culvert outlet on the east side of 168th Street due to the elevation of the outlet being depressed below the surrounding ground, resulting in a “sump” condition (i.e. the water sits continuously in the culvert until a heavy rainfall when it is pushed out due to upstream water pressure). The intermittent stream(s) are located just north of Shirley and Hickory Streets. No wetlands were identified along these streams. The eight remaining areas consist of four wetlands associated with the Zorinsky Lake shoreline, three wetlands in a remnant road ditch, and one wetland occurring in a roadside ditch. The wetlands associated with the lake shoreline are located along the northern shore of the west basin of Zorinsky Lake, and at the northwest corner, southwest corner, and southern shore of the east basin of Zorinsky Lake. The three wetlands in the remnant road ditch are located along the south side of the Zorinsky Lake Trail, south of Zorinsky Lake. The wetland occurring in the roadside ditch is located west of 168th Street between Zorinsky Lake and the Zorinsky Lake South Access Drive. In addition, Zorinsky Lake itself is a jurisdictional WUS. NDOR approved the Waters of the United States Investigation Report and Addendum 1 in memorandums dated November 7, 2013 and June 20, 2014 (**Appendix E**).

A Preliminary Jurisdictional Determination was obtained from the USACE in 2007 which indicated that the unnamed tributary appears to be jurisdictional, and that Zorinsky Lake is jurisdictional. The wetlands adjacent to Zorinsky Lake were not included in the Preliminary JD, but are assumed to be jurisdictional. Zorinsky Lake and its adjacent wetlands, and the unnamed tributary to the West Papillion Creek are shown on **Figure 3.13**.

3.10.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no impacts to wetlands or other WUS because ground disturbance, fill activities, and activities in surface waters would not occur.

Proposed Alternative

The Proposed Alternative would require impacts to the unnamed tributary to West Papillion Creek and Zorinsky Lake and its adjacent wetlands.

The impacts to the unnamed tributary would include replacing the 92-foot-long culvert under 168th Street with an approximately 110-foot-long culvert. These impacts would be minimized by the installation of retaining walls along both sides of the road. These retaining walls would be constructed outside of the ordinary high water mark (OHWM), and impacts to the stream would be confined to the areas at the culvert inlet and outlet. Additionally, the current ponding of the stream on the east side of 168th street at the culvert outlet would be corrected and eliminated by culvert modifications, which would be a beneficial impact as the ponding currently impedes some water from flowing downstream .

The impacts to wetlands adjacent to Zorinsky Lake would include the wetlands located along the northern shore of the west basin, the wetlands in the remnant road ditch along the south side of the Zorinsky Lake Trail, and the wetlands in the roadside ditch along the west side of 168th Street south of Zorinsky Lake. These impacts would be required primarily for the excavation of fill material to offset the loss of flood storage, and for the subsequent conversion of these excavation sites into permanent stormwater detention basins. This conversion would potentially transition these two sites from upland habitat to wetland habitat (i.e. it could result in the creation of wetlands). Minor impacts to Zorinsky Lake itself would also be required for the reconstruction of the bridge, which would include widening the piers. The impacts to wetlands are expected to be over 1/10 of one acre, but less than 1/2 of one acre.

Figure 3.16 Wetlands and Waters of the U.S.



The final wetland and WUS impacts would be determined during the final design and Section 404 permitting stages. These impacts are expected to be authorized by one or more Nationwide Permits (NWP), which would contain general and special conditions for their use.

3.10.3 COMPLIANCE WITH EXECUTIVE ORDER 11990

The Proposed Alternative would impact over 1/10 of one acre, but less than 1/2 of one acre of wetlands along Zorinsky Lake. The existing roadway is situated such that any improvements to widen the road would impact the lake and adjacent wetlands to some degree, and all possible measures have been taken to minimize these impacts, while also taking into consideration the existing residences, businesses, and utilities in the vicinity. The existing Zorinsky Lake Bridge would be reconstructed, rather than replaced, thus reducing the need for additional fill material to be placed into the lake itself. Finally, the existing ROW easement for 168th Street through Dam Site 18 makes this the most practical location, as a relocation of the roadway would be unfeasible and would likely have impacts to wetlands.

3.10.4 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- Prior to letting the project for bids, the City would submit for and obtain a Clean Water Act (CWA) Section 404 Permit for impacts to the unnamed tributary to the West Papillion Creek and Zorinsky Lake and adjacent wetlands. (City of Omaha, Engineer)
- All provisions of the permit would be incorporated into the construction specifications and would be implemented to minimize impacts to wetlands. (City of Omaha, Contractor)
- Mitigation requirements contained in the Section 404 permit would be implemented. (City of Omaha, Contractor)
- BMP's for impacts to wetlands and waters of the U.S. would be implemented. (City of Omaha, Contractor)
- In order to minimize impacts to the stream at Shirley and Hickory Streets, permanent retaining walls would be constructed alongside both sides of 168th Street. (City of Omaha, Engineer, Contractor)
- Temporary fencing would be utilized to avoid impacts to the stream channel during construction. (City of Omaha, Engineer, Contractor)
- If an on-site or off-site mitigation site is needed, it will be evaluated for potential resource impacts as part of a re-evaluation of this EA. (City of Omaha, NDOR)

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.

Based on the above considerations, it has been determined that there is no practicable alternative to the proposed construction in wetlands, and that the Proposed Alternative has included all practicable measures to minimize harm to wetlands which may result from such use.

3.11 FLOODPLAINS

EO 11988 – *Floodplain Management*, requires federal agencies to, among other directives, avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Agencies shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out their responsibilities. Specifically, FHWA shall comply with EO 11988 in providing for federally-undertaken, financed, or assisted construction and improvements (i.e. a federally funded roadway project).

23 CFR 650 Subpart A – *Location and Hydraulic Design of Encroachments on Flood Plains* prescribes FHWA policies and procedures for the location and hydraulic design of highway encroachment on floodplains. 23 CFR 650A states that a proposed action which includes a significant encroachment shall not be approved unless FHWA finds that the proposed significant encroachment is the only practicable alternative. 23 CFR 650 Subpart A ensures that FHWA complies with EO 11988 and is consistent with National Flood Insurance Program (NFIP) regulations and standards.

3.11.1 CURRENT CONDITIONS

The Federal Emergency Management Agency (FEMA) manages the National Flood Insurance Program (NFIP), and publishes and updates Flood Insurance Rate Maps (FIRMs) to illustrate those areas susceptible to flooding, and therefore requiring federal flood insurance. The FIRM for Douglas County (**Figure 3.17**) shows a portion of the Study Area for the segment of 168th Street that crosses Zorinsky Lake as being within a special flood hazard area (100-year floodplain) (FEMA, 2010). The special flood hazard area generally extends from the Zorinsky Lake North Access Drive to the Zorinsky Lake South Access Drive.

In addition, major culvert replacements or construction also requires compliance with NDNR Minimum Design Standards if the upstream watershed for such culverts is greater than 640 acres. The upstream watershed for the culvert under 168th Street between Pine and Shirley Streets is approximately 125 acres. Therefore, replacement of this culvert does not need to meet these standards.

3.11.2 ENVIRONMENTAL CONSEQUENCES

No-Action

The No-Action Alternative would have no adverse impacts on the FEMA designated floodplain because no fill placement or other actions within the floodplain would occur.

Proposed Alternative

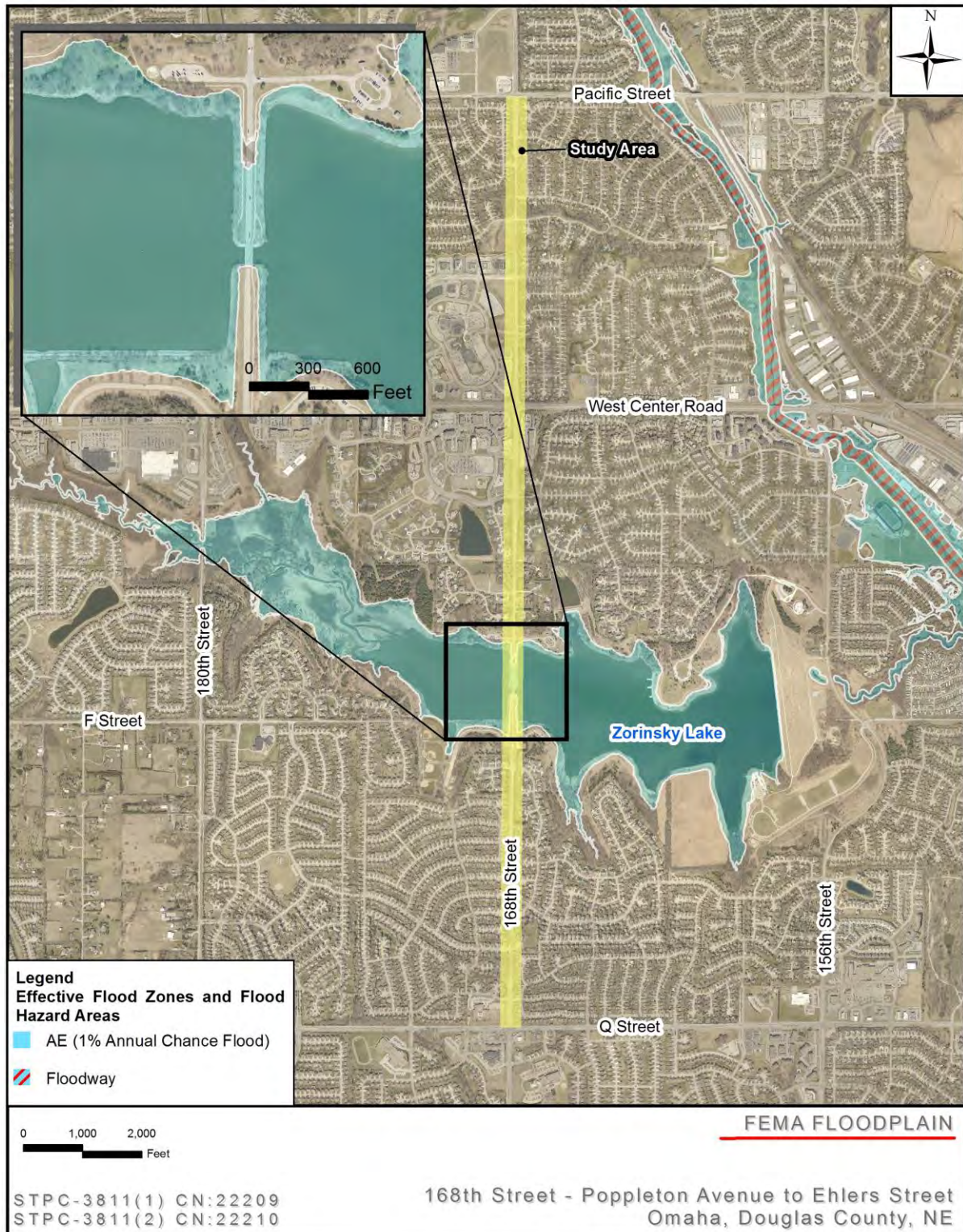
The Proposed Alternative would include the placement of 11,000 cu yds of fill material within the flood storage zone of Dam Site 18, most of which would be within the 100-year-floodplain. The placement of

this fill material would be offset by excavating 11,000 cu yds of fill material at two excavation sites within the flood storage zone. Nonetheless, the Proposed Alternative would still require a floodplain development permit from the local floodplain official, which for projects within in the City, is the Planning Department and the P-MRNRD.

A hydraulic analysis was performed for the 168th Street bridge over Zorinsky Lake to determine the impact of rehabilitating the bridge. The results showed that extending the bridge substructure would not adversely affect the floodplain, nor would it appreciably affect the scour under the bridge. This analysis was approved by NDOR on April 17, 2015 (**Appendix A**).

The Proposed Alternative is the only practicable alternative under 23 CFR 650 Subpart A because the existing roadway embankment already creates a narrow area of the roadway that is outside (i.e. above) the base floodplain for Zorinsky Lake; therefore, alternatives that would shift the roadway east or west would have increased floodplain impacts. In addition, due to the orientation of the floodplain (i.e. perpendicular to the roadway), and the existing ROW, there were no alternatives located entirely outside the base floodplain. The Proposed Alternative would conform to state and local floodplain regulations, there would be no significant adverse impact on the natural and beneficial floodplain values, there would not be a significant risk to life or property, and the project would not directly or indirectly encourage further development in the floodplain.

Figure 3.17 FEMA Floodplain



3.11.3 Compliance with Executive Order 11988

EO 11988 outlines an eight-step-process that agencies should carry out as part of their decision-making on projects that have potential impacts to or within the floodplain. These eight steps, and how they have been followed for this project, are presented below:

1. *Determine if the proposed action is in the base floodplain* – The proposed action is in the FEMA designated 100-year base floodplain (**Figure 3.17**).
2. *Conduct early public review, including public notice* – A public meeting was held for this project on May 17, 2007.
3. *Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside the floodplain* – The existing roadway embankment already creates a narrow area of the roadway that is outside (i.e. above) the base floodplain for Zorinsky Lake; therefore, alternatives that would shift the roadway east or west would have more floodplain impacts. In addition, due to the orientation of the floodplain (i.e. perpendicular to the roadway), and the existing ROW, there were no alternatives located entirely outside the base floodplain.
4. *Identify impacts of the proposed action* – The proposed action would have minor impacts to the floodplain, resulting from the placement of fill material to widen and slightly raise the roadway profile across Zorinsky Lake.
5. *If impacts cannot be avoided, develop measures to minimize the impacts and restore and preserve the floodplain as appropriate* – There were no alternatives that completely avoid impacts to the floodplain. As described above, a portion of the existing roadway embankment is already situated in an area that is outside the floodplain of Zorinsky Lake. Alternatives that would raise the roadway profile much higher or that would widen the roadway to one side or the other would result in additional impacts to the floodplain, as well as other resources, and were dismissed in the alternatives selection process. The Proposed Alternative would offset any fill material placed into the flood storage zone of Dam Site 18 by excavating an equal amount of material adjacent to the roadway at two borrow sites. These borrow sites would help restore floodplain functions by maintaining the flood storage volume at Dam Site 18 and also by mimicking natural floodplain functions such as filtration, infiltration, and reducing peak flow.
6. *Re-evaluate alternatives* – Through the alternatives selection process, multiple variations of each alternative were considered and re-considered as various other impacts were identified, including raising the roadway profile, widening the roadway to one side, and lengthening the bridge opening, all of which would result in additional impacts to the floodplain and other resources that are more adverse than the Proposed Alternative.
7. *Present the findings and a public explanation* – A Public Hearing will be held to review this Draft EA prior to a final decision by FHWA.
8. *Implement the action* – Pending approval of the EA, a floodplain development permit would be applied for and all conditions of the permit would be incorporated into the construction specifications, which would be followed by the contractor to minimize impacts to the floodplain.

3.11.4 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- The City would acquire the proper floodplain permits, and would certify that the construction activities are in compliance with the State of Nebraska floodplain regulations, prior to starting construction. Standard provisions included in the required floodplain permit would be incorporated into the construction specifications, and would be followed to minimize impacts on the floodplain. (City of Omaha, Contractor, Engineer)

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.

3.12 VEGETATION, WILDLIFE, AND HABITAT

3.12.1 CURRENT CONDITIONS

Vegetation

Currently, the 168th Street Study Area primarily consists of a disturbed roadway corridor and adjacent disturbed residential and commercial developments. Even the undeveloped areas around Zorinsky Lake have been disturbed by decades of agricultural practices, and more recently by the construction of the lake, trails, and recreational features. Typical vegetation in the Study Area includes planted and mowed grasses such as brome, fescue, and bluegrass, with trees such as Siberian elm, cottonwood, conifer, maple, and hackberry.

Wildlife

Typical wildlife in this region includes nesting waterfowl such as wood ducks, mallards, pintails, cormorants, blue and green herons, and hawks; grassland birds such as dickcissel, bobolink, and Swainson's hawk; and woodland birds such as Bell's vireo, black-and-white warbler, orchard oriole and other common species. Mammals include plains pocket gopher, thirteen-lined ground squirrel, white-tailed deer, coyotes, red fox, and other common species such as raccoons, opossums and rabbits. Fish species in this region include channel catfish, flathead chub, river carpsucker, and more, as well as game fish including northern pike, largemouth bass, crappie, walleye and bluegill. Amphibian and reptile species include salamanders, toads, frogs, turtles, lizards, and snakes (Schneider, et al., 2011).

Habitat

Habitat can consist of terrestrial, aquatic, riparian, and wetland habitat. Terrestrial habitat includes grasslands, prairies, woodlands, and other upland areas. Aquatic habitat includes lakes, streams, rivers, and other open bodies of water. Riparian and wetland habitats are the interface of terrestrial and aquatic habitats.

Riparian areas provide valuable wildlife habitat, serve as a buffer for runoff, provide shade to the adjacent waterbody, and offer other valuable benefits. While there are no federal laws that directly protect riparian areas, they are frequently afforded protection by the USACE if there are impacts to adjacent wetlands or other WUS.

The Study Area is primarily characterized by urban, developed land, with residential areas comprising the majority of the land uses. The ROW is predominantly mowed grasses, with scattered trees and bushes with very little terrestrial habitat. There are two areas along 168th Street that may offer appreciable wildlife habitat; the unnamed tributary to West Papillion Creek and Zorinsky Lake. The potential wildlife habitats present at these areas are described below.

Unnamed Tributary to West Papillion Creek

The unnamed tributary to West Papillion Creek and its corresponding riparian corridor is located north of Shirley and Hickory Streets and is divided by 168th Street. The riparian corridor on each side of 168th Street is characterized by a deeply incised stream channel surrounded by steep banks. The banks immediately along the stream are generally vertical and lack vegetation, and the riparian habitat immediately along the stream is basically non-existent due to these steep banks. Beyond the immediate banks of the stream, the riparian habitat consists of moderately wooded hillslopes featuring primarily upland species; however these riparian corridors are generally narrow, with the east riparian corridor being wider than the west.

The portion of the riparian corridor west of 168th Street contains two intermittent streams that connect to form one intermittent stream, which then runs through a culvert under 168th Street and continues through the riparian corridor on the east side of 168th Street. The west riparian corridor is narrow (mostly less than 15-feet-wide on either side) with steep vegetated and non-vegetated banks. Some banks within the west riparian corridor are vertical from being washed-out over time and offer very minimal habitat since these steep banks almost immediately transition to upland mowed areas surrounded by residential developments.

The portion of the riparian corridor east of 168th Street contains an intermittent stream which is immediately bordered by nearly vertical banks that lack vegetation. Beyond the immediate banks of the stream, the riparian habitat is a moderately wooded area situated on a steep slope consisting primarily of upland species. The east riparian corridor is wider than the west riparian corridor, with the wooded area surrounding the stream channel being mostly wider than 50 feet on either side. Since the east riparian corridor is wider, it would likely offer more habitat than the narrower west riparian corridor; however, the east riparian corridor also transitions to residential developments on both the north and south side, limiting its potential as suitable habitat.

The habitats present at the stream and the surrounding riparian areas are more likely to support terrestrial fauna rather than aquatic fauna, as the stream is shallow and usually does not contain water year-round. Due to the minimal riparian habitat present at this area, it is unlikely to offer suitable habitat for larger species; therefore, the majority of terrestrial fauna likely to be present

in this area includes birds and small mammals. In addition, this entire riparian corridor is bordered by residential developments, further limiting its use as suitable habitat.

Zorinsky Lake and Dam Site 18

Zorinsky Lake and Dam Site 18 provides suitable habitat for a variety of species, both terrestrial and aquatic. The lake itself provides habitat for aquatic vertebrates (e.g. fish), aquatic invertebrates (e.g. crawfish), reptiles (e.g. turtles), amphibians (e.g. frogs), waterfowl (e.g. ducks), and others. Other wildlife (e.g. mammals, birds, insects, etc.) also utilize and benefit from the lake as it provides a source of water, and for some, a source of food.

The east basin of the lake would be expected to provide more habitat for aquatic species as it is much larger and deeper than the west basin, and offers more cover and structure beneath its surface (i.e. aquatic habitat). The west basin is mainly used for sediment control, and generally offers less cover and structure than the east basin. Fish species in the lake include bluegill, blue catfish, channel catfish, common carp, crappie, largemouth bass, red-ear sunfish, and walleye. As mentioned, other aquatic species are present at the lake including crayfish, turtles, and frogs.

The land surrounding the lake consists of wetland, riparian, grassland, prairie (i.e. Bauermeister Prairie), and wooded habitats, as well as developed recreation areas. A large portion of the recreation area has been modified by the construction of trails, baseball and soccer fields, parking lots, restroom facilities, and other park features; this is especially seen on the east side of the recreation area (i.e. east of 168th Street), which features more recreational facilities and amenities and is more heavily used for recreational purposes. In general, the west side of recreation area surrounding the lake and Boxelder Creek is less developed and modified than the east side, leading to more natural and undisturbed habitat. The west side of the recreation area mainly consists of wetlands, riparian areas, grasslands, and wooded areas. The diversity of types of habitat surrounding Zorinsky Lake provide ample habitat for terrestrial wildlife, especially when compared to the surrounding developed areas. A variety of wildlife utilizes the habitats surrounding Zorinsky Lake, ranging from large mammals and birds (e.g. deer and turkey) to smaller species of mammals, birds, reptiles, insects, and others.

The habitat at the south flood storage mitigation excavation site is mainly an open grassed area with scattered trees. The north flood storage mitigation excavation site is more heavily wooded than the south site. The trees at both sites are mostly volunteer trees⁴⁹ with a few planted trees.

The riparian habitat within the Study Area between 168th Street and Zorinsky Lake consists mainly of riprap covered embankments scattered with volunteer trees. The riprap extends below the water surface into the lake. Riprap can provide favorable habitat for some species, and unfavorable habitat for others. For example, riprap can provide shelter for prey (e.g. crawfish)

⁴⁹ Volunteer trees are typically trees that produce large amount of seeds with a high germination rate and seed by themselves. Volunteer trees are often less than desirable species that can overtake areas and outcompete native or more desirable species. Volunteer trees include mulberry, Siberian elm, tree of heaven, and many others.

using the rocks to hide from predators (e.g. waterfowl or fish). On the other hand, the rip rap can be less favorable for the predators since the rocks add difficulty to catching prey. Overall, the addition of rip rap along riparian areas typically results in less vegetation, which could lead to a reduction of riparian flora and fauna utilizing these areas (Fischenich, 2003). Riprap is also used by some aquatic species as a hard substrate on which to lay eggs and as habitat for larvae.

3.12.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no impact on vegetation, wildlife, or habitat because ground disturbance and removals of potential habitat (e.g. trees) would not occur.

Proposed Alternative

The Proposed Alternative would impact the northern riparian area adjacent to the unnamed tributary between Pine Street and Hickory Street. Impacts would include tree removal and disturbances to other existing vegetation from grading, altering the existing habitat. The trees that would be removed from this area are mostly volunteer trees. These impacts would occur at the riparian areas on both sides of 168th Street. Additionally, retaining walls would be built along the portions of the stream banks that parallel 168th Street. These retaining walls would decrease riparian habitat; however, as mentioned, the existing riparian corridor in this area is narrow and provides minimal habitat.

The Proposed Alternative would impact the existing riparian corridor and aquatic habitat present along the 168th Street embankments at Zorinsky Lake, as well as at the two flood storage mitigation excavation sites. Impacts would include tree removal and disturbances to other existing vegetation from grading and excavation, temporarily altering the existing habitat. The trees that would be removed along the 168th Street embankments at Zorinsky Lake and at the excavation sites are mainly volunteer trees. Many of the trees along the embankment have grown through the rip rap that lines the bank. The excavation sites would be converted to stormwater detention areas, permanently altering the habitat in these areas. This conversion would potentially transition these two sites from upland habitat to wetland habitat. See **Section 3.9, Water Resources and Water Quality** for more information on the stormwater detention areas. Temporary impacts to aquatic habitat would mainly occur near the bridge in order to construct cofferdams to extend the bridge abutments; however, this area does not likely provide abundant aquatic habitat. Additionally, the cofferdams and any other bridge work would not fully impede/sever the connection between the east and west basins of the lake, allowing aquatic organisms to maintain their movement during construction.

3.12.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- Impacts to riprap habitat for aquatic species (e.g. spawning, shelter, foraging) would be mitigated by replacing any riprap removed during construction. (City of Omaha, Contractor)
- The excavation sites would be converted into stormwater detention areas, which would create new habitat in these areas, and would improve water quality in Zorinsky Lake. (City of Omaha)

- The stormwater detention areas would be planted with appropriate flood-tolerant vegetation. (City of Omaha)
- Tree and vegetation removal at Edward Zorinsky Recreation Area and Pinewood Park (outside of the existing ROW and existing easements) would be mitigated according to the proposed re-vegetation plan developed in coordination with the City's Parks, Recreation, and Public Property Department. A copy of the re-vegetation plan would be provided to the USACE for review during the Draft Environmental Assessment comment period. (City of Omaha)
- Tree impacts in the existing ROW for 168th Street would not be mitigated. Instead, the City's Public Works Department would continue its practice of providing funding to the Planning Department to create tree planting projects to implement as necessary to meet the requirements of the *Green Streets Plan for Omaha*. (City of Omaha)
- Impacts to trees on private property would be mitigated by compensating the owner during the acquisition process. (City of Omaha)
- The City would attempt to remove trees outside of the primary nesting season (April 1 – September 1). If the proposed construction project would occur during the primary nesting season or any other time which may result in the "take" of migratory birds, a qualified biologist would conduct a field survey in accordance with NDOR's Avian Protection Plan (APP) and *Special Prosecution and Progress for Migratory Birds* (A-42-0807). (City of Omaha, Contractor)
- Water flow and the movement of aquatic organisms between the east and west basins of Zorinsky Lake would be maintained at all times during construction. (City of Omaha, Contractor)

Standard Specifications (NDOR, 2007):

- Standard Specification 905 - Rock Riprap
 - Describes the material requirements, construction methods, and other stipulations for the placement of rock riprap.
- Standard Specification 907 - Gabions and Revet Mattresses
 - Describes the materials, construction methods, and other stipulations for the placement of rock filled gabions.

3.13 INVASIVE SPECIES

EO 13112 of February 3, 1999 on Invasive Species (64 FR 6183) was introduced to "prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause". According to EO 13112, it is each Federal agency's duty to,

"...subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent

introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them...”.

This EO builds on other previous acts including the *Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990*, the *Federal Plant Pest Act*, the *Federal Noxious Weed Act of 1974*, and the *Endangered Species Act of 1973* (ESA), which aim to prevent, control, and minimize the impacts of invasive species. According to FHWA’s website on wildlife and habitat, “invasive species can cause significant changes to ecosystems, upset the ecological balance, and cause economic harm to our Nation’s agricultural and recreational sectors” (FHWA, 1999). Invasive species include plants, insects and aquatic species. Invasive species can alter and degrade habitat, and are a major cause of biological diversity loss.

The *Nebraska Noxious Weed Control Act* states that “the failure to control noxious weeds on lands in this state is a serious problem which is detrimental to the production of crops and livestock and to the welfare of residents of this state and which may devalue land and reduce tax revenue.” This act also sets forth the *Nebraska Noxious Weed Regulations*.

3.13.1 EXISTING CONDITIONS

At least two invasive plant species are known to occur in the vicinity of Zorinsky Lake: reed canary grass (*Phalaris arundinacea*) and common reed (*Phragmites australis*). Additionally, zebra mussels (*Dreissena polymorpha*), an aquatic invasive species, were discovered in 2010 in Zorinsky Lake. These three invasive species are described below.

Reed Canary Grass

According to the *Nebraska Aquatic Invasive Species Guide*, reed canary grass grows in wet habitats such as wetlands, ditches, prairie potholes, and banks of streams, ponds, and lakes. Reed canary grass aggressively invades disturbed areas, and has other negative impacts including: competes with native species for limited resources, forces out other grasses, reduces biodiversity, and quickly forms monotypic stands. Because of the dense growth of this plant it can clog shallow streams and ditches. In addition, the dense growth of reed canary grass in wetland areas provides little value as wildlife cover, poor nesting habitat, and minimal forage value for wildlife (Nebraska Invasive Species Project, 2013).

Common Reed

According to the *Nebraska Invasive Plant Guide*, common reed is a state designated noxious weed which forms dense stands and can grow up to 20-feet-tall. This plant grows in wet habitats such as marshes, floodplains, ditches, ponds, and waterways. Common reed was originally introduced for erosion control, but has been found to have impacts such as restricting water movement, trapping sediment, causing changes in water quality, and competing with native vegetation (Nebraska Invasive Species Project, 2013).

Zebra Mussel

According to USACE’s *Assessment of the Water Quality Conditions at Ed Zorinsky Reservoir and the Zebra Mussel (Dreissena polymorpha) Population Emerged after the Drawdown of the Reservoir* report, zebra mussels are an aggressively invasive aquatic species which often disrupt habitat and wildlife. The veligers (microscopic larvae) of this species are free-living and are therefore easily carried by water currents. As

juveniles, the zebra mussel begins to settle, and as adults they are largely sessile⁵⁰ and attach to hard substrates such as pipes, riprap, and other submerged objects. Zebra mussels directly compete with populations of other native or desirable aquatic species by feeding on suspended material in the water column (e.g. algae, plankton, bacteria, organic matter, etc.), limiting the amount of available food resources. Zebra mussels also have the ability to significantly impact water quality (U.S. Army Corps of Engineers, 2012).

Zebra mussels were discovered in Zorinsky Lake on November 18, 2010. In order to attempt to control the potential spread to other water bodies and control the zebra mussels at Zorinsky Lake, the reservoir was drained approximately 17 feet in December 2010 and January 2011 over the winter months, and remained at this elevation until refilling began in July 2011. It was presumed that the drawdown of the lake significantly reduced the zebra mussel population in the reservoir (U.S. Army Corps of Engineers, 2012). However, in June 2016, water samples from Zorinsky Lake tested positive for zebra mussel veligers.

3.13.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no impact on invasive species because ground disturbance and construction activities in Zorinsky Lake would not occur.

Proposed Alternative

The Proposed Alternative does have the potential to excavate in areas containing invasive plants, specifically along the edges of Zorinsky Lake and within the proposed excavation areas for flood storage mitigation and stormwater detention. Therefore, prior to construction, these areas would be cleared of any current invasive species that are present, and any excavated material would be disposed of properly offsite at designated areas.

The Proposed Alternative could potentially result in contact with zebra mussels due to construction equipment and materials entering Zorinsky Lake. Precautions would be taken to inspect and, if needed, wash any machinery and materials that would be in direct contact with Zorinsky Lake prior to its first use in the lake and prior to leaving the construction site at the lake to ensure that no zebra mussels are attached.

3.13.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- The USACE would be consulted regarding any control measures that have been put in place to prevent reintroduction of zebra mussels, and these controls would be followed. (City of Omaha, Contractor)

⁵⁰ According to Merriam-Webster, sessile is defined as “permanently attached or established: not free to move about.”

- Prior to construction, precautions would be taken to inspect and wash if needed any machinery and materials that would be in direct contact with Zorinsky Lake to ensure that no zebra mussels are attached. (City of Omaha, Contractor)
- Machinery or materials that entered Zorinsky Lake would be inspected for zebra mussels and washed as necessary prior to leaving the construction site along Zorinsky Lake.
- If zebra mussels are found attached to machinery, riprap, debris, or along the shoreline at any time during construction, the proper authorities (i.e. USACE, NGPC) would be notified immediately. (City of Omaha, Contractor)
- The spread and transfer of invasive plant species would be prevented to the maximum extent practicable. If invasive plant species are excavated during construction, they would be disposed of properly offsite at designated areas. (Contractor)

The following standard specifications would be used to minimize the spread of invasive species and noxious weeds that could result from the ground disturbance and grading for the Proposed Alternative.

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01(6) Amended A-43-0210 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to prevent the transfer of invasive plant and animal species.
- Standard Specification 202.01(4)(d) - Clearing and Grubbing - Description
 - Trash, dead trees, and other vegetation in the ROW limits and beyond the limits of construction shall be disposed of by the Contractor.
- Standard Specification 803.02 - Seeding - Material Requirements
 - Specifies seeding methods, rates of application, and seed mixtures.
- Standard Specification 803.03 - Seeding - Construction Methods
 - Specifies planting seasons and methods.
- Standard Specification 806.02(4)(c) - Sodding - Material Requirements
 - Specifies that sod may not contain invasive plant species.
- Standard Specification 807 - Erosion Control
 - Specifies methods for erosion control.

3.14 THREATENED, ENDANGERED, AND PROTECTED SPECIES

Endangered Species Acts

Federally threatened and endangered species are protected under the ESA, as amended (16 USC 1531 et seq.). Significant adverse effects to a federally listed species or its habitat require consultation with the United States Fish and Wildlife Service (USFWS) under Section 7 of the ESA. Section 7 requires federal agencies to ensure that actions which they authorize, fund, or carry out are not likely to jeopardize the continued existence of currently listed or proposed threatened or endangered species or result in the destruction or adverse modification of their critical habitat. State listed threatened and endangered species are protected by NGPC under Nebraska's *Non-Game and Endangered Species Conservation Act* (Nebraska Revised State Statutes 37-801 to 37-811).

Migratory Bird Treaty Act

Under the *Migratory Bird Treaty Act of 1918* (MBTA) (16 USC 703-712: Chapter 128) construction activities in grassland, wetland, stream, and woodland habitats, and those that occur on bridges or culverts (e.g. which may affect swallow nests on bridge girders) that would otherwise result in the taking of migratory birds, eggs, young, and/or active nests should be avoided.

Bald and Golden Eagle Protection Act

The *Bald and Golden Eagle Protection Act of 1940* (16 USC 668-668c), as amended, provides protection for bald and golden eagles by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit.

3.14.1 CURRENT CONDITIONS

Endangered Species

There are no documented occurrences of state or federally listed threatened or endangered species in the Study Area, and no designated critical habitat. The Study Area is within the mapped range of the Northern Long-Eared Bat (*Myotis septentrionalis*), which was effectively federally listed as threatened on May 4, 2015.

Migratory Birds

The majority of the Study Area is residential and commercial developments, with the exception of an approximately 2,200 foot long segment that crosses Zorinsky Lake and Recreation Area. There are a large number of trees along the ROW, consisting of a mixture of landscape and volunteer trees, with the remainder of the ROW consisting of mowed grasses. The majority of the landscaping trees present along the ROW are coniferous trees; however, other trees are present as well. The volunteer trees along the ROW typically occur in linear bands between 168th Street and the adjacent residential and commercial areas, or are landscape trees in adjacent residential lawns. The trees present along the 168th Street embankment and flood storage mitigation excavation areas at Zorinsky Lake consist primarily of volunteer trees (e.g. Siberian elm, eastern red cedar) or planted landscape trees. A moderate amount of trees are also present at the riparian area surrounding the unnamed tributary between Pine Street and Hickory Street. In addition, some migratory birds, such as swallows, build nests under bridges and in larger box culverts. The bridge at Zorinsky Lake is the only structure within the Study Area that could be utilized by birds. The culvert at the tributary to West Papillion Creek is large enough for birds to utilize; however, it is a rounded structure, so birds would not be able to build their nests in this culvert.

Bald and Golden Eagles

The riparian areas between Pine Street and Hickory Street do not provide potential for eagle fishing; however, trees in the area are fairly large, and could provide opportunities for roosting. Zorinsky Lake could provide an opportunity for eagles to fish, and could also provide roosting opportunities for eagles, as the trees along 168th Street and Zorinsky Lake are fairly large. In addition to Zorinsky Lake, there are three other small reservoirs nearby; however, these are well outside of the ROW. No bald or golden eagles have been observed in or near the Study Area during any field visits for this study. There have been

bald eagles observed in the upper reaches of the western basin of Zorinsky Lake, as evidenced by photographs taken by local residents. However, it is assumed that these eagles are visitors to the lake on a temporary basis, as no active or inactive nests have been observed near Zorinsky Lake.

3.14.2 ENVIRONMENTAL CONSEQUENCES

No-Action

The No-Action Alternative would have no effect on threatened, endangered, or protected species because construction activities that could affect these species would not occur.

Proposed Alternative

A Biological Assessment (BA) was processed under the *Nebraska Biological Evaluation Programmatic Agreement*, which does not require signature by FHWA, USFWS, or NGPC. In accordance with the Programmatic Agreement, a concurrence request was sent to NDOR on January 6, 2014. Using the Biological Evaluation (BE) Matrix from the Programmatic Agreement, it was determined by NDOR on January 21, 2014 that the project would have “no effect” to all state and federally listed species or their designated critical habitat (**Appendix F**). On April 15, 2014, NDOR issued a re-evaluation for the project due to the proposed listing of the northern long-eared bat by the USFWS⁵¹ (**Appendix F**). NDOR determined that the proposed project “may affect, but is not likely to adversely affect” the northern long-eared bat, provided that specific conservation conditions are followed (see proposed mitigation below).

The proposed project would involve tree removal and bridgework, which could impact or result in a take of migratory birds; however, with the implementation of the proposed mitigation measures listed below, the project would not result in a take of migratory birds.

Additionally, it should be noted that Section 1439 of the *Fixing America’s Surface Transportation Act* (FAST Act), which was signed into law on December 4, 2015, provides a temporary authorization, between April 1 and August 31 of each year, for the take of nesting swallows on certain bridge construction projects⁵². This authorization will remain in full force until the effective date of a final rule from the USFWS authorizing the take of nesting swallows to facilitate bridge repair, maintenance, or construction. Section 1439 of the FAST Act does not authorize take of any other species protected by the MBTA. (FHWA, 2016)

This project was reviewed for potential impacts to bald and golden eagles. NDOR has indicated that the project site does not have appropriate habitat for eagles. Due to the lack of suitable habitat and information that there are no known eagle nests within the project area, NDOR has determined that there would be no impacts to these species.

⁵¹ USFWS proposed the northern long-eared bat for listing in October 2013. On April 1, 2015 the USFWS announced the listing of the northern long-eared bat as a threatened species under the ESA. This listing became effective on May 4, 2015, 30 days after the publication of the final listing determination in the Federal Register. The mitigation measures proposed by NDOR took into account the proposed listing and were approved by USFWS.

⁵² The temporary authorization of take of nesting swallows applies to bridge construction projects (1) that are eligible for funding under title 23, U.S.C., and (2) that have any component condition rated 3 or less as defined by the National Bridge Inventory General Condition Guidance (Fixing America’s Surface Transportation Act (FAST Act), 2015).

3.14.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- The City would attempt to remove trees and clear nests from the Zorinsky Lake bridge outside of the primary nesting season (April 1 – September 1). If tree removal or other nest clearing would occur during the primary nesting season or any other time which may result in the “take” of migratory birds, a qualified biologist would conduct a field survey in accordance with NDOR’s Avian Protection Plan (APP) and *Special Prosecution and Progress for Migratory Birds* (A-42-0807). (City of Omaha, Contractor)
- If eagle nests are identified within the study area, NDOR, in coordination with the City, would coordinate with the USFWS and NGPC. (City of Omaha, Contractor)

The following “General Conservation Conditions for All Projects” provided by NDOR would also be incorporated into the specifications for this project, and implemented as appropriate (responsible parties are noted):

- **A-1 – Changes in Project Scope.** If there is a change in the project scope, the project limits, or environmental commitments, the NDOR Environmental Section must be contacted to evaluate potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from the Federal Highway Administration. (District Construction, Contractor)
- **A-2 – Conservation Conditions.** Conservation conditions would be fully implemented within the project boundaries as shown on the plans. (District Construction, Contractor)
- **A-3 – Early Construction Starts.** Request for early construction starts must be coordinated by the Project Construction Engineer with NDOR Environmental for approval of early start to ensure avoidance of listed species sensitive lifecycle timeframes. Work in these timeframes would require approval from the Federal Highway Administration and could require consultation with the USFWS and NGPC. (District Construction, Contractor)
- **A-4 – E&T Species.** If federal or state listed species are observed during construction, contact NDOR Environmental. Contact NDOR Environmental for a reference of federal and state listed species. (NDOR Environmental, City of Omaha, Contractor)
- **A-5 – Refueling.** Refueling would be conducted outside of those sensitive areas identified on the plans, in the contract, and/or marked in the field. (Contractor)
- **A-6 – Restricted Activities.** The following project activities shall, to the extent possible, be restricted to between the beginning and ending points (stationing, reference posts, mile markers, and/or section-township-range references) of the project, within the right-of-way designated on the project plans: borrow sites, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage sites.
For activities outside the project limits, the contractor should refer to the NGPC website to determine which species ranges occur within the off-site area. The contractor should plan accordingly for any species surveys that may be required to approve the use of a borrow site, or

other off-site activities. The contractor should review Chapter 11 of the Matrix (on NDOR's website), where species survey protocol can be found, to estimate the level of effort and timing requirements for surveys.

Any project related activities that occur outside of these areas must be environmentally cleared/permitted with the NGPC as well as any other appropriate agencies by the contractor and those clearances/permits submitted to the District Construction Project Manager prior to the start of the above listed project activities. The contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of 4 different ground photos showing the existing conditions at the proposed activity site, depth to ground water and depth of pit, and the "Platte River depletion status" of the site. The District Construction Project Manager would notify NDOR Environmental which would coordinate with FHWA for acceptance if needed. The contractor must receive notice of acceptance from NDOR, prior to starting the above listed project activities. These project activities cannot adversely affect state and/or federally listed species or designated critical habitat. (NDOR Environmental, District Construction, Contractor)

- **A-7 – Waste/Debris.** Construction waste/debris would be disposed of in areas or a manner which will not adversely affect state and/or federally listed species and/or designated critical habitat. (Contractor)
- **S-3 – Re-vegetation.** All permanent seeding and plantings (excluding managed landscaped areas) shall use species and composition native to the project vicinity as shown in the *Plan for the Roadside Environment*. However, within the first 16 feet of the road shoulder, as within high erosion prone locations, tall fescue or perennial ryegrass may be used at minimal rates to provide quick groundcover to prevent erosion, unless state or federally listed threatened or endangered plants were identified in the project area during surveys. If listed plants were identified during survey, any seed mix requirements identified during resource agency consultation shall be used for the project. (NDOR Environmental)

The following specific conservation conditions for northern long-eared bat would also be followed:

- **NLEB-1** Tree clearing, bridge deck joint replacements over the bridge deck, bridge/>5-ft box-culvert removal activities would be scheduled to occur between October 1st – March 31st to avoid impacts to the northern long-eared bat roosting period. (NDOR Environmental, Construction, Contractor)

OR

- **NLEB-2** If tree clearing, bridge deck joint replacement over the bridge deck, or removal of bridge/>5-ft box-culvert structures occurs during the northern long-eared bat maternal roosting period (April 1st – September 30th), NDOR or a qualified biologist would perform surveys prior to the start of these activities at the following locations: entire length of the project (location of

suitable habitat). If the species is absent, work may proceed. If the species is found, NDOR Environmental Section would consult with the USFWS, NGPC, and FHWA prior to the start of construction. (NDOR Environmental, Construction, Contractor)

Standard Specifications (NDOR 2007):

- Standard Specification 107.01 – Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.

3.15 UTILITIES

3.15.1 CURRENT CONDITIONS

Numerous public and private utilities are located within the Study Area. Some of these are within the existing ROW, and others are within separate utility easements that may run adjacent to or within the ROW. Utility companies that typically operate utilities in the Omaha area, include, but are not limited to:

- | | |
|--------------------------------------|---|
| • Alltel Communications | • Metropolitan Utilities District (MUD) |
| • AT&T | • CenturyLink (formerly Qwest) |
| • Black Hills Energy | • Sprint-Nextel |
| • Cox Communications | • Magellan Midstream Partners |
| • Galaxy/Dark Fiber Solutions | • National Cooperative Refinery Association |
| • MCI | • Verizon Company |
| • Northern Natural Gas | • Windstream |
| • Omaha Public Power District (OPPD) | |

Typical utilities along the 168th Street study area include overhead and underground power and communication lines, transformer boxes, and underground sanitary, storm sewer, and natural gas lines.

Specific utility facilities in the Study Area include:

- A MUD pumping facility located just south of Zorinsky Lake Southeast Access Drive. This facility is for the sanitary sewer force mains that run along the east side of 168th Street and are attached to the bridge across the lake.
- A Douglas County Emergency Warning siren located at the northwest corner of 168th Street and Q Street.
- A CenturyLink communications building located just south of Pacific Street that backs to the east side of 168th Street. This facility is accessed from Pierce Circle.
- A flood warning system located near the southeast wingwall of the Zorinsky Lake Bridge. This system, which is owned by the USACE, consists of an automated flood detection gage and a staff gage that would provide warning to the USACE of a sudden rise in the reservoir pool

elevation. However, the USACE has indicated that the flood warning system is no longer operating, and has been out of use for several years.

A utility coordination meeting was held on July 7, 2015. Utilities companies in attendance included OPPD, MUD and CenturyLink. All three companies indicated that they have facilities along 168th Street and that relocations would be necessary. There were no oppositions to the proposed project.

3.15.2 ENVIRONMENTAL CONSEQUENCES

No-Action

The No-Action Alternative would have no impacts on public or private utilities since they would remain at their existing locations.

Proposed Alternative

The Proposed Alternative is likely to result in utility line and transformer relocations along the majority of the study area due to proposed grading work, retaining wall construction, and sanitary and storm sewer construction. During preliminary design for the Proposed Alternative, efforts were made to avoid and minimize utility impacts to the extent feasible. The horizontal and vertical alignments of the roadways were designed to minimize impacts. A final determination of conflicts would be made during final design.

There would not be any impacts to the Douglas County Emergency Warning Siren or the CenturyLink communications facility. There would also not be any impacts to the MUD pumping facility; however, the driveway apron for the facility would be replaced. The sanitary sewer force mains along the east side of 168th Street would be relocated to the west side of the new bridge following construction; specifically, the sewer force mains would remain along the east side of the bridge while the west side is being constructed, and then would be permanently moved to the west side of the bridge prior to constructing the east side. This is being done so that the road and utility lines can remain in operation during construction. The flood warning system for Zorinsky Lake would be removed in order to reconstruct the abutments (including the wingwalls) on the Zorinsky Lake Bridge. The USACE approved the removal of the flood warning system and confirmed that replacement of the system is not necessary in a letter dated April 6, 2015 (**Appendix B**). Other utilities would be relocated as appropriate.

It is anticipated that OPPD, MUD and CenturyLink will begin utility relocation work one year ahead of the 168th Street Improvements Project. Temporary traffic restrictions may occur during relocation work.

3.15.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- The City would send out coordination letters to all known utility companies that typically operate in the Omaha Area to make them aware of the project. The City would notify utility companies of the need for relocation during the design stage of the project so that utilities could be relocated ahead of roadway construction. Where relocations are required, designs to relocate the utility would be developed by the utility company. The cost of utility relocation and each party's responsibilities would be determined through coordination with each utility company and

evaluations of past agreements between the City and each utility company. The City's Construction Division would coordinate utility agreements with the utility companies prior to construction. (City of Omaha, Engineer)

- The Contractor shall follow the guidelines of NDOR's *Policy for Accommodating Utilities on State Highway ROW* (NDOR, 2001). (Contractor)
- The Contractor would be responsible for notifying utility companies of relocation needs during the construction phase of the project for utilities that were not relocated prior to construction. (City of Omaha, Contractor)
- Utility relocation or replacement using federal funds is not anticipated for the project. If utility relocation or replacement is required in a later phase of the project, a reevaluation shall be required if: (1) federal funds will be used for the utility work; or (2) the project construction contractor will be responsible for the work. If this utility work is identified during final design, the project sponsor shall initiate the reevaluation prior to project letting. If the work is identified during construction, the project sponsor shall initiate the reevaluation prior to commencing utility work. (NDOR Environmental, NDOR District)

If either one of the above two conditions does not apply, later relocation or replacement of utilities shall be coordinated through NDOR and the Contractor per NDOR's Standard Specifications for Highway Construction, Subsection 105.06. Any environmental permits required for these utility relocations or replacements shall be the responsibility of the Utility. (NDOR District, Utility Provider(s))

Standard Specifications (NDOR, 2007):

- Standard Specification 105.06 - Control of Work - Cooperation with Utilities
 - Requires the City to notify all utility companies, pipeline owners, railroads, or other parties affected by the proposed work.
- Standard Specification 107.09 - Legal Relations and Responsibility to the Public - Preservation and Restoration of Property, Trees, Monuments, etc.
 - Requires the Contractor to preserve, protect, and prevent damage to all public and private property.
- Standard Specification 107.16 - Legal Relations and Responsibility to the Public - Contractor's Responsibility for Utility Property and Services
 - Requires the Contractor to verify the location of existing utilities.
- Standard Specification 107.12 - Legal Relations and Responsibility to the Public - Responsibility for Damage, Injury, or Other Claims
 - Requires the Contractor to be responsible for all damage to property used during construction resulting from neglect or misconduct. The Contractor shall also be required to meet with local government entities to advise them of their intentions to use local roads, and is responsible for damage from such use.

Special Provisions:

- Status of Utilities
 - Presents a detailed plan for utility company coordination, including names, telephone numbers, stationing for utility conflicts, and other pertinent information for the Contractor.

3.16 NOISE IMPACTS

Title 23, Section 772 of the U.S. Code of Federal Regulations (23 CFR 772) was written by FHWA to provide procedures for noise studies, and noise abatement measures to help protect the public health and welfare, to supply Noise Abatement Criteria (NAC), and to establish requirements for traffic noise information to be given to those officials who have planning and zoning authority in the project area. The NAC are based on the Equivalent Continuous Noise Level (Leq) descriptor. Leq(h) is the equivalent steady state sound level, which during the hour under consideration contains the same acoustic energy as the time-varying traffic sound level during that same hour. **Figure 3.18** shows the range of common noise levels from everyday activities for a point of reference.

Figure 3.18 Typical Sound Pressure Level (A-weighted decibels (dBA))

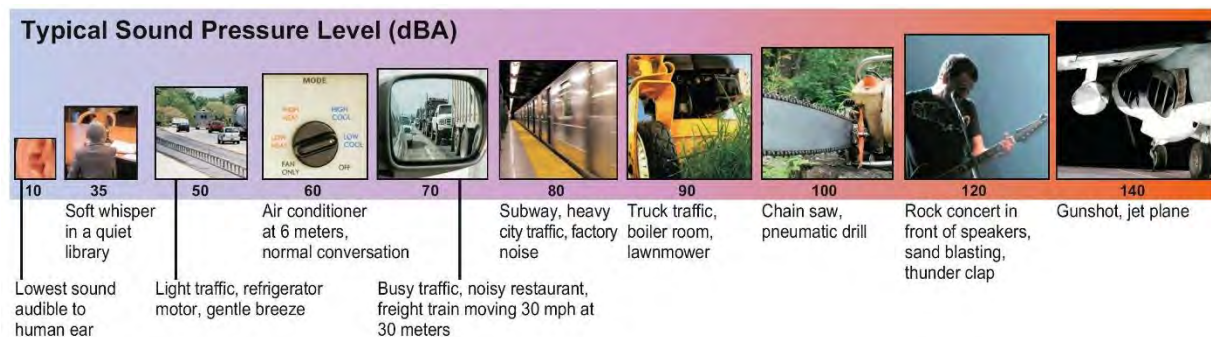


Table 3.4 (below) describes the upper limits of hourly Leq(h) desirable noise levels that are part of the NAC established by 23 CFR 772. Any noise levels that approach or exceed these criteria would not be desirable, and would be referred to as a noise impact (FHWA, 2010).

Table 3.4 Noise Abatement Criteria, Hourly A-Weighted Sound Level (in decibels) from 23 CFR 772

Activity Category	Activity ¹ Leq(h)	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ²	67	Exterior	Residential homes.
C ²	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structure, radio stations, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structure, radio studios, recording studios, schools, television studios.
E ²	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D, or F.
F	-----	-----	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities, (water resources, water treatment, electrical), and warehousing.
G	-----	-----	Undeveloped lands.

¹ The Leq(h) Activity Criteria values are Hourly A-weighted Sound Level decibels, dBA. The NAC are for impact determination only and are not design standards for noise abatement.

² Includes undeveloped lands permitted for this activity category.

3.16.1 CURRENT CONDITIONS

To analyze the potential impact of traffic noise, a *Traffic Noise Study Report* (Noise Study) was completed for the proposed project, which evaluated the existing noise levels, proposed noise levels in the design year, and also evaluated the feasibility and reasonableness of noise abatement measures to reduce noise levels for impacted receivers. The Noise Study (**Appendix G**) was completed using NDOR's *Noise Analysis and Abatement Policy* (NDOR, 2011). NDOR approved the Noise Study on September 30, 2014.

The Noise Study evaluated 345 receptors in the Study Area. Most of these receptors correspond to an individual single-family residential home (Activity Category B) adjacent to 168th Street. Multiple receptors correspond to a multi-family dwelling (i.e. The Heritage at Legacy) (Activity Category B), several receptors correspond to commercial businesses in the Lakeside Hills area (Activity Category E), and a few receptors correspond to Living Hope Lutheran Church and Edward Zorinsky Recreation Area (Activity Category C).

3.16.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The future noise impacts of the No-Action Alternative were not analyzed. According to NDOR's Noise Policy, traffic noise impacts are based only on the "design year build condition noise levels." Furthermore, no abatement measures were evaluated as part of the No-Action Alternative.

Proposed Alternative

According to the Noise Study (**Appendix G**), 136 of the analyzed receptors are anticipated to have a noise impact in the year 2035 due to noise levels approaching or exceeding FHWA's NAC. Abatement measures were evaluated for all impacted receptors, the results of which are presented in the following paragraphs.

Noise abatement measures (i.e. noise walls) were evaluated for twenty-three (23) sites along 168th Street where the potential existed to reduce noise levels below the NAC in the future year 2035, see **Figure 3.19**. Noise walls were found to be feasible and reasonable for ten (10) sites. The remaining thirteen (13) sites were either not feasible (i.e. did not meet acoustic reduction requirements and/or did not meet engineering design requirements), or were not reasonable (i.e. did not meet the cost effective threshold of \$40,000 per benefitted receptor).

Stakeholder meetings were held to discuss the noise impacts with benefitted receivers at the feasible and reasonable sites and to offer them an opportunity to vote on the approval and construction of noise abatement measures. Stakeholder meetings were held on November 18, 2014 between 6:30 pm and 8:00 pm at Ackerman Elementary School for eight of the feasible and reasonable sites, and on September 15, 2016 from 6:00 pm to 8:00 pm at The Heritage at Legacy for the other two feasible and reasonable sites. The City followed NDOR's July 2011 Noise Policy for the voting of benefitted receivers to determine which noise walls would be approved, and provided benefitted receivers a 30-day voting period, during which time two separate letters were sent to inform them of the voting process. According to NDOR's Noise Policy, only those sites receiving 75 percent approval of the returned ballots from all benefitted receivers behind each wall location would ultimately be constructed.

Following the voting process, all ten walls were approved by the respective benefitted receivers. Therefore, all of these walls are proposed to be designed and constructed along with the Proposed Alternative.

The proposed noise walls range in height from 6 feet to 17 feet; however, the majority of the walls are 12-feet-high or less. Noise wall designs would be consistent with other similar noise walls constructed recently within the City, and would include stamped or colored concrete, stone façades, or other similar materials, as shown on **Figure 3.20**. The front of the noise walls would be stained concrete, while the back side of the walls would be left unfinished.

Figure 3.19 Proposed Noise Wall Locations

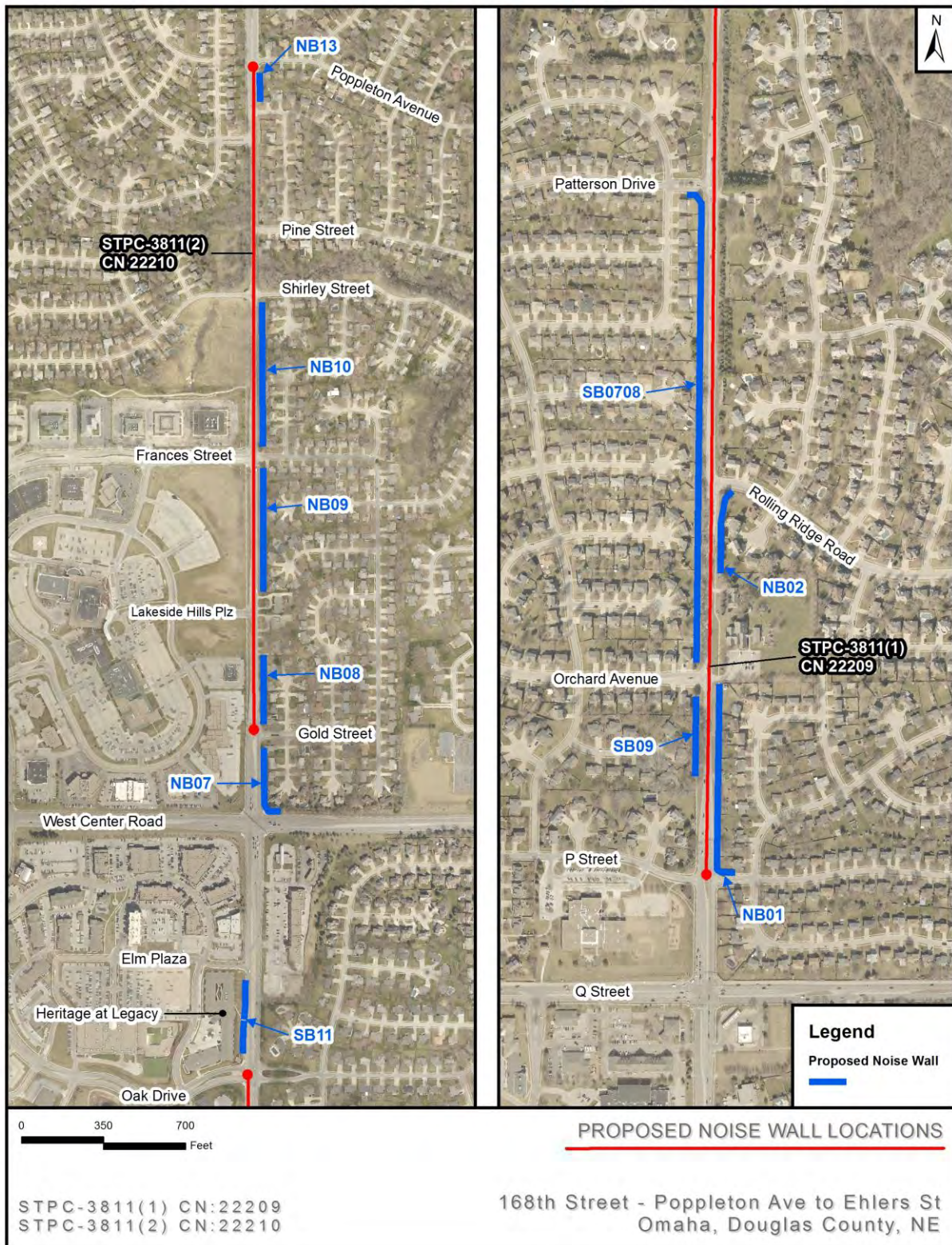


Figure 3.20 Typical Noise Walls



3.16.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- Noise walls would be constructed at the following locations: NB01, NB02, NB07, NB08, NB09, NB10, NB13, SB0708, SB09, and SB11. (City of Omaha, Engineer)
- Noise walls designs would be consistent with other similar noise walls constructed recently around the City, and would consist of stamped or colored concrete, stone façades, or other similar materials. The front of the noise walls would be stained concrete, while the back side of the walls would be left unfinished. (City of Omaha, Engineer)

3.17 AIR QUALITY, MOBILE SOURCE AIR TOXICS, AND GREENHOUSE GASES

Motor vehicle emissions are one of the major sources of air pollution. Such emissions vary with traffic volumes, distances traveled, travel speeds, and vehicle types. This section⁵³ focuses on the current air quality of the Study Area to determine the potential for air quality degradation with an increase in vehicles, due both to background socioeconomic growth and improvements that increase a facility's attractiveness to drivers.

The *Federal Clean Air Act of 1970 (CAA)*, and last amended in 1990, forms the basis for the national air pollution control effort. Basic elements of the act include National Ambient Air Quality Standards (NAAQS) for major air pollutants, hazardous air pollutants standards, state attainment plans, motor vehicle emissions standards, stationary source emissions standards and permits, acid rain control measures, stratospheric ozone protection, and enforcement provisions. Under the CAA, the EPA regulates air quality. Areas of the country where air pollution levels persistently exceed that NAAQS may be designated as "non-attainment" areas.

⁵³ The discussion of air quality in this section was developed in coordination with NDOR, and also utilizes guidance developed by FHWA for analysis of effects on regional air quality, mobile source air toxics, and greenhouse gases.

3.17.1 REGIONAL AIR QUALITY

All portions of the Study Area are currently in attainment, or un-classifiable with respect to all pollutants for which a NAAQS exists. According to EPA's National Criteria Pollutant Maps, Douglas County is designated as "maintenance" for one NAAQS pollutant (i.e. lead) (EPA 2013). In 1992 Omaha was designated as non-attainment for this pollutant; however, the area was re-designated as being in attainment in 2001 (NDEQ, 2008).

In 2004, NDOR, FHWA, and NDEQ signed an Air Quality Memorandum of Understanding (MOU) identifying the minimum threshold requirements for detailed air quality analysis on federal-aid roadway projects in the State of Nebraska (NDOR, NDEQ, and FHWA, 2004). According to the MOU, a detailed analysis only needs to be conducted on federal-aid projects when the 20-year projected ADT exceeds 100,000 vehicles per day.

The highest projected traffic volumes in the 20-year future conditions (i.e. 2040) along any segment within the Proposed Alternative, is approximately 33,000 vpd, which is well below the 100,000 vpd threshold agreed to by NDOR, FHWA, and NDEQ for a detailed air quality analysis. Therefore, a detailed air quality analysis does not need to be completed.

3.17.2 MOBILE SOURCE AIR TOXICS

FHWA's *Interim Guidance on Mobile Source Air Toxic Analysis* identifies three categories for analyzing Mobile Source Air Toxics (MSAT) in NEPA documents, depending on the potential for MSAT effects. The 168th Street Improvements project is categorized as level 2, or "projects with low potential MSAT effects," and therefore requires a qualitative assessment. The project is not anticipated to create a potential for meaningful increases of MSAT or MSAT effects for the following reasons:

- As a widening project there would not be a significant increase in vehicle miles traveled (VMT).
- This widening project is intended to improve traffic movement, and would not add substantial new capacity.
- This project would not serve any intermodal facilities.
- The projected design year traffic would not reach 140,000 AADT.

For both of the alternatives in this EA (i.e., the No-Action Alternative and the Proposed Alternative), the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the Proposed Alternative is anticipated to be slightly higher than that for the No-Action Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the Proposed Alternative along the roadway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to the Environmental Protection Agency's (EPA) MOVES2014 model, emissions of all of the priority MSAT decrease as speed increases. However, because the estimated VMT under both of the alternatives are nearly the same, it is expected there would be no appreciable difference in overall MSAT

emissions among the two alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Highway Administration, October 12, 2016). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the Proposed Alternative would have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under this alternative there may be localized areas where ambient concentrations of MSAT could be higher under the Proposed Alternative than the No-Action Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built along 168th Street from Poppleton Avenue to Gold Street and from Oak Street to Ehlers Street, under the Proposed Alternative. However, the magnitude and the duration of these potential increases compared to the No-Action Alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when a highway is widened, the localized level of MSAT emissions for the Proposed Alternative could be higher relative to the No-Action Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in mobile source air toxic (MSAT) emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The Environmental Protection Agency (EPA) is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, <https://www.epa.gov/iris/>). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are: cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI Special Report 16, <https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects>) or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (Special Report 16, <https://www.healtheffects.org/publication/mobile-source-air-toxicscritical-review-literature-exposure-and-health-effects>). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, “[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk (<https://www.epa.gov/iris>).”

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an “acceptable” level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than

1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable⁵⁴.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

3.17.3 GREENHOUSE GAS EMISSIONS

FHWA has developed four main mitigation strategies to reduce transportation greenhouse gas (GHG) emissions:

1. Improve system and operational efficiencies by optimizing the design, construction, operation, and use of transportation networks.
2. Reduce travel activity by reducing growth in vehicle-miles traveled.
3. Introduce low-carbon fuels.
4. Increase fuel efficiency by advancing and bringing to market advanced engine and transmission designs, lighter-weight materials, improved aerodynamics, and reduced rolling resistance.

Additionally, the EPA and National Highway Traffic Safety Administration, on behalf of the USDOT, have issued rules to reduce GHG emissions and improve fuel economy for light-duty vehicles. Over the lifetime of the model year (MY) 2017-2025 standards, this program is projected to save approximately 4 billion barrels of oil and 2 billion metric tons of GHG emissions (EPA, 2013).

While there would be an increase in AADT and VMT along the 168th Street corridor due to future growth, the Proposed Alternative would improve the system and operational efficiencies of 168th Street by improving traffic movement and decreasing backups, which would ultimately decrease idling and reduce energy use and GHG emissions.

⁵⁴ ([https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/\\$file/07-1053-1120274.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf))

3.18 HAZARDOUS MATERIALS AND RECOGNIZED ENVIRONMENTAL CONDITIONS

Environmental risk sites are those facilities and/or locations where hazardous substances, hazardous waste, or petroleum products were or can be released into the ground water, surface soils, or subsurface sediments. The term “Recognized Environmental Conditions” (RECs) means the presence of, or likely presence of, any hazardous substances or petroleum products on a property under consideration that may indicate an existing release, past release, or a material threat of a release of any hazardous substance or petroleum into the groundwater, surface water of that property or neighboring properties. RECs do not include “de minimis” conditions that do not present a threat to human health or the environment and that generally would not be subject to enforcement or regulation.

3.18.1 CURRENT CONDITIONS

The Study Area was evaluated for RECs and for their potential to impact, or be impacted by, the Proposed Alternative. A *Hazardous Materials Technical Review* describing these efforts is included in **Appendix H**. A regulatory agency database report, provided by Environmental Data Resources, Inc. (EDR) of Milford, Connecticut, was reviewed for information regarding reported releases of hazardous substances and petroleum products on or near the Study Area. The center of the search radius for the project was the intersection of 168th Street and West Center Road, and EDR conducted a search using appropriate search radii in general conformance with the scope and limitations of American Society of Testing and Materials (ASTM) Standard Practice E1527-05.

A limited review of the unmapped (also known as “orphan sites”) listings within the database report was also conducted, cross-referencing available address information and facility names, where feasible. Unmapped sites are listings that could not be plotted by EDR with confidence, but are potentially in the vicinity of the Study Area, based on the partial street address, city, or zip code that is provided. Any unmapped site that was identified as being within the approximate minimum search distance⁵⁵ from the Study Area based on the site reconnaissance and/or cross-referencing to mapped listings was also evaluated. A copy of the EDR regulatory agency database report is provided in the *Hazardous Materials Technical Review*.

Based on the results of the 168th Street study area database review, site reconnaissance, NDEQ file search, and historical research information as provided in the *Hazardous Materials Technical Review*, no evidence of current RECs were identified within the Study Area, or in the immediate vicinity. Therefore, no further assessment of parcels located within the study area was recommended. In addition, a lead and asbestos survey was conducted in 2013 for the Zorinsky Lake bridge. The survey found that there was no suspect lead or asbestos containing material and that no further testing was required. NDOR approved the *Hazardous Materials Technical Review* on August 16, 2013 (**Appendix H**).

⁵⁵ Minimum search distances vary by the type of database being searched, and the type of hazardous material being searched for, which are outlined in the ASTM Standard Practice E 1527-05. Minimum search distances used in this evaluation are included in **Appendix H**.

3.18.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no effect on hazardous materials or RECs because none were identified within the Study Area.

Proposed Alternative

There are no RECs within the Study Area. Therefore, there would be no impacts to, or from, RECs.

3.18.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- If contaminated soils and/or water or hazardous materials are encountered, then all work within the immediate area of the discovered hazardous material would stop until NDOR/FHWA is notified and a plan to dispose of the Hazardous Materials has been developed. Then DEQ would be consulted and a remediation plan would be developed for this project. (City of Omaha, Contractor)
- The potential exists to have contaminants present resulting from minor spillage during fueling and service associated with construction equipment. Should contamination be found on the project during construction, the DEQ would be contacted for consultation and appropriate actions be taken. (City of Omaha, Contractor)
- If the property at 16761 Pine Street is acquired, the City will perform due diligence (i.e., a Phase I ESA) on the property to identify any potential contamination. (City of Omaha)

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01 as Amended A-43-0210 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to notify the Engineer if previously unidentified hazardous materials are encountered during construction.

3.19 VISUAL IMPACTS AND AESTHETIC CONSIDERATIONS

3.19.1 CURRENT CONDITIONS

The surrounding area is primarily residential, with a few commercial, retail and recreational uses. The majority of the homes in the study area face away from the roadway, and are shielded by fences and trees; however, there are several homes that do face the roadway, most of which are also shielded by trees. In general, the majority of the study area is lined with trees, and many of these trees that provide shielding for homes are within or in close proximity to the ROW. In addition to providing shielding from the roadway, many of these trees are also visually aesthetic (i.e. provide a pleasing appearance), specifically for homeowners in the study area and pedestrians utilizing the sidewalks and/or trails along 168th Street.

Additionally, there are several features associated with the neighborhoods that warrant consideration. There are several neighborhood, recreational, and other privately owned entrance signs or monuments (Rose Garden Estates, Shaker Heights⁵⁶, Lakeside Hills, Leawood Southwest, Zorinsky Lake and Edward Zorinsky Recreation Area, The Pointe, Bay Shores, Lakeshore, South Shore Heights, and Living Hope Lutheran Church) present in the study area, and represent significant investment by the City, the original developers, and the current Sanitary Improvement District (SID) or HOA groups that maintain them. In addition, several of these neighborhoods have consistent and continuous neighborhood fences that run along the entire length of their neighborhood that were likely installed by the original subdivision developer, and may be maintained by a HOA (Leawood Southwest, Armbrust Acres, Lakeshore, Autumn Woods, Autumn Ridge, and Prairie Pointe). These features contribute to the overall character of the area, and provide an individual identity to each neighborhood.

Zorinsky Lake and Edward Zorinsky Recreation Area also provide a visual resource for recreationalists, adjacent homes, trail users, other pedestrians, and passing traffic. The open spaces around the lake consist primarily of undeveloped and minimally developed areas with trees, grasses and flowers, and open water, which provide somewhat more of a natural environment than the surrounding developed area. Along the roadway for 168th Street, there currently exists two asphalt and concrete trails, a bridge, and other roadway infrastructure (signs, utilities).

3.19.2 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would have no impacts on existing visual or aesthetic resources because the roadway would remain in its existing configuration and removals (e.g. trees) would not occur.

Proposed Alternative

The Proposed Alternative would require grading outside the existing roadway to widen and create the new roadway profile. This grading would result in the removal of existing fences, entrance signs or monuments, and volunteer vegetation that has grown along the ROW, as well as landscaping vegetation that has been planted within or in close proximity to the ROW.

Currently, the only neighborhood monument signs that would need to be entirely removed are the “Rose Garden Estates” signs on the northwest and southwest corners of 168th Street and Shirley Street and the “Shaker Heights” sign on the northeast corner of 168th Street and Hickory Street. Other neighborhood monument signs would not need to be removed; however, the landscaping in front of them may need to be removed to allow for the reconstruction of sidewalks. Four entrance signs for Edward Zorinsky Recreation Area would need to be relocated due to the excavation for the detention basins.

The Proposed Alternative would remove trees in the study area. Most of the trees that would be removed are within the ROW; however, there are also numerous trees outside of the ROW, located in residential

⁵⁶ The “Shaker Heights” sign is located at the northeast corner of 168th Street and Hickory Street; however, it is unknown if there still remains a Shaker Heights subdivision. This sign may be owned by the Pacific Heights HOA.

lawns, commercial areas, or parks, which would also need to be removed. The removal of trees from homes that abut directly to 168th Street would likely result in increased impacts for these homes since the trees provide them with visual shielding from 168th Street.

Additionally, residences that face directly to 168th Street would have increased visual impacts due to construction activities (e.g. concrete removal, grading); however, most of these impacts would be temporary and would only last during construction. Following construction, although the roadway would be wider, and could be closer to some homes, these permanent visual impacts are considered minor because a road currently exists at this location.

The Proposed Alternative includes the construction of a grassed median along the majority of study area. In the future, as funding becomes available, these areas may be landscaped in accordance with the Green Streets Plan for Omaha by the City's Planning Department, which is being provided funds by the Public Works Department for such projects in the future.

The Proposed Alternative would also remove volunteer trees at Zorinsky Lake along the 168th Street embankment. Additional fill material would also be placed along the embankment to allow for the widening of the roadway, creating a temporarily un-vegetated embankment. The removal of trees and vegetation and the placement of fill would create temporary visual and aesthetic impacts to the Zorinsky Lake area; however, the embankment would be replanted with native vegetation and trees.

In addition to these temporary visual impacts at Zorinsky Lake, some visual and aesthetic impacts would be permanent. The existing bridge over the lake would be reconstructed, the asphalt and concrete trails would be replaced with new concrete trails, and new retaining walls would be added where none exist today. Roadway signage would be replaced with new signage, and some new signs would be added where none exist today, included a traffic light at the south access road. These improvements would be an improvement over the existing conditions, as the materials would be newer and in better condition.

Visual and aesthetic changes would also occur at the excavation sites at Dam Site 18 (i.e. Edward Zorinsky Recreation Area). These impacts would likely be considered permanent as the areas topographies, landscapes, and vegetation would be altered by the construction of stormwater detention areas. However, these changes would not be considered adverse impacts since the areas would become re-vegetated shortly after construction. Most of the visual and aesthetic impacts would be temporary and would only last during construction and for a brief period after construction.

3.19.3 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- Lighting would be designed to avoid intrusion into the back yards of residences. Specifically, lighting would only be installed at intersections. (City of Omaha)
- Noise walls designs would be consistent with other similar noise walls constructed recently around the City, and would consist of stamped or colored concrete, stone façades, or other similar

materials. The front of the noise walls would be stained concrete, while the back side of the walls would be left unfinished. (City of Omaha, Engineer)

- Neighborhood monument signs impacted by the project would be mitigated in accordance with NDOR's *Right of Way Manual*. (City of Omaha)
- Four entrance signs for Edward Zorinsky Recreation Area would be relocated in accordance with the Parks Department's Sign Manual. (City of Omaha)
- Landscaping and fencing removed by the project would be mitigated through the acquisition process, in coordination with the appropriate HOA or homeowner, whichever owns the landscaping or fencing. (City of Omaha)
- Mitigation measures being taken to reduce visual effects to the nearby residences include minimizing the removal of trees outside of the ROW to the extent possible, especially in those areas where homes front the roadway.
 - Impacts to trees on private property would be mitigated by compensating the owner during the acquisition process. (City of Omaha)
 - Tree impacts in the existing ROW for 168th Street would not be mitigated. Instead, the City's Public Works Department would continue its practice of providing funding to the Planning Department to create tree planting projects to implement as necessary to meet the requirements of the Green Streets Plan for Omaha. (City of Omaha)
- Disturbed areas shall be re-vegetated with native species where appropriate. (City of Omaha, Contractor)
- Tree and vegetation removal at Edward Zorinsky Recreation Area and Pinewood Park (outside of the existing ROW and existing easements) would be mitigated according to the proposed re-vegetation plan developed in coordination with the City's Parks, Recreation, and Public Property Department. A copy of the re-vegetation plan would be provided to the USACE for review during the Draft Environmental Assessment comment period. (City of Omaha)

3.20 TEMPORARY CONSTRUCTION RELATED CONSIDERATIONS

Temporary construction impacts typically include the following types of impacts: work zone traffic control, project phasing, detours and alternate routes, and minor and temporary air quality or water quality impacts. Temporary impacts to other natural and socio-economic resources are discussed in their respective sections elsewhere in this document.

3.20.1 ENVIRONMENTAL CONSEQUENCES

No-Action Alternative

The No-Action Alternative would not have any temporary construction related impacts because there would be no construction.

Proposed Alternative

The Proposed Alternative would result in minor and temporary construction-related impacts. Those that would be mostly confined to the Study Area and immediately adjacent properties include increased noise levels, dust, emissions from equipment, vibration, restricted or modified access, temporary paving,

removal of vegetation or landscaping, and removal of fences. Mail and trash service would not be affected. Temporary impacts to the traveling public may include typical work zone traffic control measures such as restriction or modification of travel lanes and access, lane closures, reduced speeds, and modified pedestrian access. All temporary paving would be constructed adjacent to the roadway and within the ROW, or within existing or proposed easements.

The Proposed Alternative would be constructed in phases. As mentioned previously, the two segments are programmed for three separate construction seasons, with the first construction season of 2017 focusing on the segment between Poppleton Avenue and Gold Street (CN 22210), and the second and third construction seasons of 2018 and 2019 focusing on the segment between Oak Street and Ehlers Street (CN 22209). Specifics of the phasing plan for each segment are presented below:

Poppleton Avenue to Gold Street (CN 22210) (2017)

- **Phase 1** – Remove and reconstruct southbound lanes between Gold Street and Frances Street, and between the east leg of Pine Street and Poppleton Avenue. Temporary paving used to maintain north/south travel in both directions.
- **Phase 2** – Shift north/south traffic to newly constructed southbound lanes, reconstruct northbound lanes (same segments).
- **Phase 3** – Full closure of 168th Street, between just south of the east leg of Pine Street to just north of Frances Street, for approximately 3 months to allow for reconstruction of the culvert for the unnamed tributary, and lowering the roadway profile between Shirley Street and Frances Street (during the summer while school is out of session).
- **Phase 4** – Shift north/south traffic to outside lanes in each direction and construct medians.

Oak Street to Ehlers Street (CN 22209) (2018-2019)

- **Phase 1** – Southbound lanes removed and reconstructed. Temporary paving used to maintain north/south travel in both directions.
- **Phase 2** – Shift north/south traffic to newly constructed southbound lanes, reconstruct northbound lanes.
- **Phase 3** – Shift north/south traffic to outside lanes in each direction and construct medians.

During construction, the existing dedicated left-turn lanes at Frances Street (northbound and southbound), Lakeside Hills Plaza (northbound), Patterson Drive (northbound), and Rolling Ridge Road (southbound), would be maintained. The dedicated left-turn lane for Gold Street (southbound) would be closed, primarily due to its proximity to the existing four-lane segment of 168th Street where traffic would be transitioned during construction⁵⁷. However, residents wanting to turn left onto Gold Street would still be able to turn left onto Frances Street to access the neighborhood.

⁵⁷ The southbound left-turn lane for Gold Street will remain permanently closed upon project completion. This is discussed further in **Section 3.3**.
February 2017

Phasing for the reconstruction of the bridge would allow one lane in each direction to remain open for vehicular traffic throughout construction of the project (see **Appendix A**). Preliminary phasing plans for the bridge reconstruction first call for the railings on the bridge to be removed, the west portion of the existing bridge to be removed, and routing all traffic onto the east portion of the bridge while the western half of the new bridge deck is constructed. Once the reconstruction of the western half is completed, traffic would be routed onto the new bridge deck, and the eastern portion of the existing bridge deck would be removed and reconstructed. Finally, once the eastern half is completed, traffic would then be routed to the outside lanes while the raised center median is constructed.

The reconstruction of the bridge would require the closure of the Zorinsky Lake Trail across the bridge, so accommodations would be made for at-grade crossings at the Zorinsky Lake North Access Drive and South Access Drive. In addition, because a signal would be installed for the South Access Drive, the City would use a temporary signal or would have the permanent signal installed prior to the closure of the trail across the bridge.

Alternate routes would be available during the full closure of 168th Street from the east leg of Pine Street to Frances Street, and would use either Pacific Street or West Center Road and either Bob Boozer Drive or 180th Street. In addition, while not required, motorists would be able to use other alternate routes of Q Street or Pacific Street and 156th Street or 180th Street to avoid the area completely during construction (**Figure 3.21**). No improvements would be made to any of these routes.

Properties with direct access to 168th Street (i.e. those described in detail in **Section 3.3, Social and Economic Considerations**), as well as the following properties with direct access to side streets also affected by construction: 16815 Ontario Street, 16761 Frances Street, 16761 Pine Street⁵⁸, and 16764 William Street, would have minor and temporary access restrictions during construction, resulting from the need to reconstruct their driveways or private access roads.

3.20.2 PROPOSED MITIGATION

The following mitigation commitments would be implemented:

- Temporary fences would be installed upon removal of existing fences and maintained throughout construction until permanent fences are installed. Impacts to fencing, landscaping, and sprinklers would be handled in accordance with NDOR's *Right of Way Manual*. (Contractor)
- Impacts to trees on private property would be mitigated by compensating the owner during the acquisition process for permanent and temporary easements. (City of Omaha)
- Neighborhood monument signs impacted by the project would be replaced in accordance with NDOR's *Right of Way Manual*. (City of Omaha)
- ROW impacts would be minimized through the use of retaining walls, to reduce the additional grading needed on adjacent property. (City of Omaha, Engineer)

⁵⁸ This residence may be relocated due to impacts from the Proposed Alternative. If this residence is relocated, the access restrictions and mitigation commitments for this residence may no longer be applicable.

- Dust emissions would be controlled throughout the construction project in compliance with Nebraska State Code (Title 129, Chapter 32). (Contractor)
- During construction, temporary at-grade crossings would be provided for trail users to maintain mobility between the east and west segments of the Zorinsky Lake Trail. These temporary crossings are planned to be located at the Zorinsky Lake North and South Access Drives, and would be painted and signed during construction. Additionally, because the temporary at-grade crossing at the South Access Drive would become permanent following construction and would be signalized, the City would use a temporary signal or would have the permanent signal operational prior to closing the trail underpasses for bridge reconstruction. (City of Omaha, Contractor)
- Residences with direct driveway access to 168th Street would be provided access to their property at all times. (Contractor)
- For those driveways (including private access roads) that are being reconstructed in place, the driveways would be constructed in phases (i.e. one side of the driveway would be removed and re-poured, and the other side would be removed and re-poured several days later to allow the concrete to cure) allowing for vehicular access at all times. For driveways that are to be relocated, the new driveway would be poured before the old driveway is removed. When traffic is shifted to the opposite side of the street, property owners would be provided with temporary surfacing or allowed to drive on the improved portions of 168th Street to access their driveways. These individuals would be contacted directly by the City to discuss specific accommodations that could be made to maintain access to their properties during construction. (City of Omaha, Contractor)
- The City would notify the trash hauler (currently Deffenbaugh) and the United States Postal Service prior to construction, and would make accommodations for the removal and replacement of mailboxes during the acquisition process. Trash pickup⁵⁹ and mail delivery would not be disrupted. (City of Omaha, Contractor)
- For individuals with concerns for special access (e.g. elderly or disabled persons temporarily affected by driveway or sidewalk reconstruction) along the study area, the City would identify these individuals by placing door hangers on affected property owners' front doors prior to construction. The City would coordinate with these individuals directly during the final design phase to work out solutions to provide access during construction. Examples of solutions may include special timing, temporary paving, providing assistance for trips, or other acceptable measures. **If you or someone you know may require special access or provisions during construction, please contact the City at 402-444-5000.** (City of Omaha, Contractor)
- Temporary impacts to the traveling public would be mitigated by providing signage and information prior to lane closures, modifying side street access, making temporary alternate routes (i.e. detours) available using adjacent major roadways (e.g. 156th Street, 180th Street, Pacific Street, West Center Road, Q Street), and/or other acceptable measures to provide safe

⁵⁹ The currently scheduled days for trash service for properties along 168th Street are Monday and Tuesday. For updated information regarding trash service, visit <http://www.wasteline.org/> or call 402-444-5238.

vehicular access. No improvements would be made to the temporary alternate routes. (City of Omaha, Contractor)

- Vehicular access would be maintained at all times in priority areas, particularly at Lakeside Hills and CHI Lakeside Hospital, the Edward Zorinsky Recreation Area access drives, the KWAA Baseball Complex during times of peak usage (i.e. weekends and evenings from March to October), at Living Hope Lutheran Church on Sundays, and at Willowdale Elementary School while school is in session. (City of Omaha, Contractor)
- Pedestrian access would be maintained at all times in priority areas, particularly at the pedestrian crossing at 168th Street north of P Street/Ehlers Street, at Willowdale Elementary School when school is in session, and at the Zorinsky Lake Trail through the use of temporary at-grade crossings. (City of Omaha, Contractor)

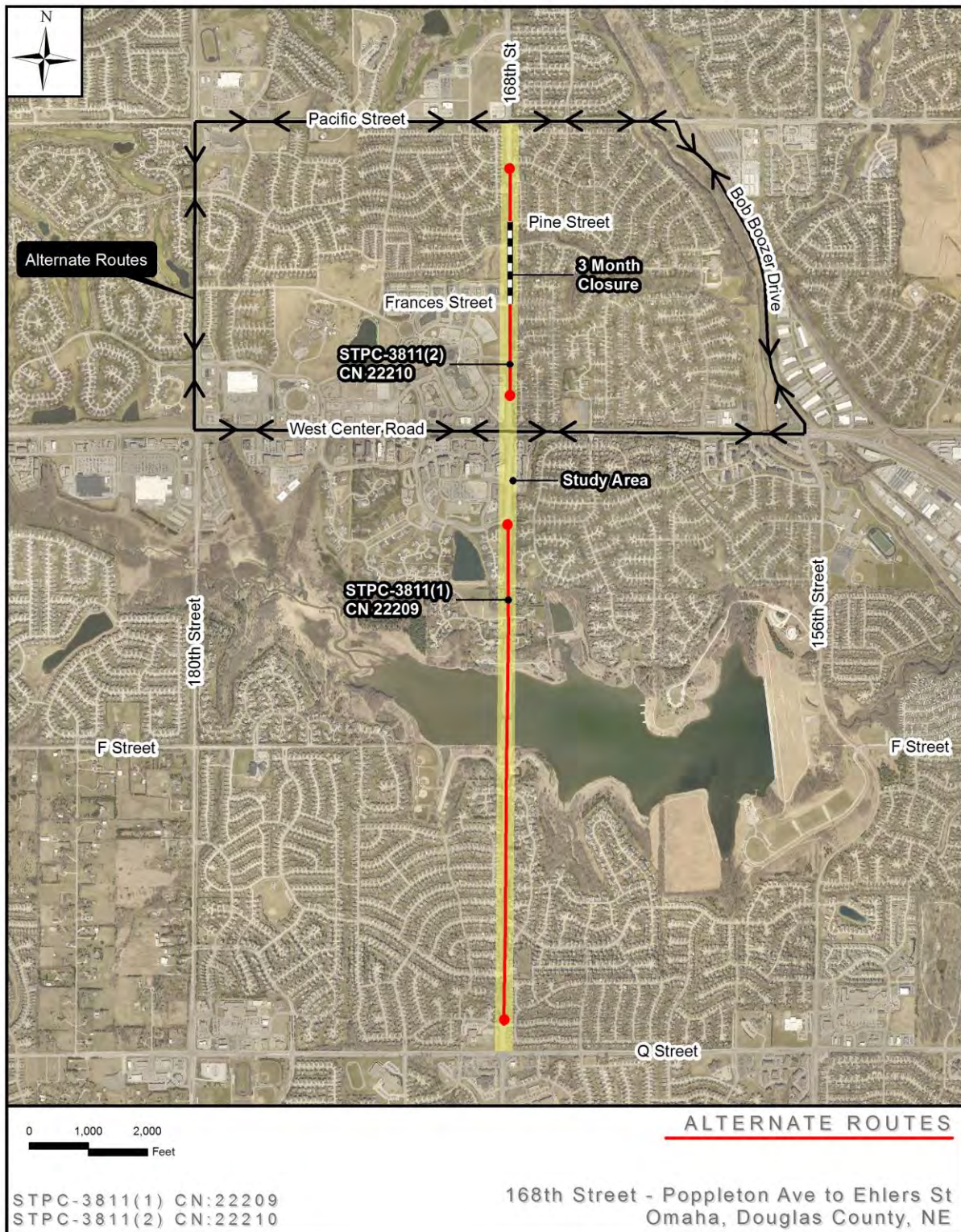
Standard Specifications (NDOR, 2007):

- Standard Specification 104.05 - Maintenance of Detours and Shooflies
 - Requires the Contractor, the extent practicable, to provide private dwellings, commercial properties, business, and public facilities access to the nearest public road.
- Standard Specification 104.08 - Scope of Work - Final Cleaning Up
 - Requires the Contractor to remove all rubbish, excess material, and equipment from the project site, and to leave the site in a neat and presentable condition. Also requires the Contractor to fill borrow sites.
- Standard Specification 105.12 - Control of Work - Use of Land
 - Requires the Contractor to leave any lands outside the ROW used for construction in a neat and presentable condition.
- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.
- Standard Specification 205.02 - Excavation and Embankment - Material Requirement
 - Specification for earthwork materials and borrow sites.
- Standard Specification 208 - Borrow and Waste Site Restoration
 - Specifications for restoration of borrow sites.
- Standard Specification 301.02(1a, 1b) - General Requirements - Equipment
 - Requires the Contractor to keep equipment in satisfactory working condition and to operate equipment in the manner it was intended.

Special Provisions:

- Disposition of Materials
 - Requirements for the Contractor to deliver surplus materials to the City, and disposal of all other waste materials.

Figure 3.21 Alternate Routes



3.21 SECONDARY AND CUMULATIVE IMPACTS

In compliance with NEPA and CEQ regulations, the secondary and cumulative impacts of a project should be examined as part of the analysis of environmental consequences.

The CEQ defines secondary (or indirect) effects as:

“...effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water on other natural systems, including ecosystems” (40 CFR 1508.8(b)).

The CEQ defines a cumulative impact as one that:

“...results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time” (40 CFR 1508.7).

Additionally, Section 106 of the NHPA requires that a federal agency evaluate potential adverse effects to historic properties, including “reasonably foreseeable effects caused by an undertaking that may occur later in time, be farther removed in distance or be cumulative” (36 CFR 800.5 (a)(1)). However, as discussed in **Section 3.8, Historic and Archeological Resources**, there would be no impacts to historic resources from the Proposed Alternative; therefore, they are not addressed further in this section.

Secondary Impacts

The Proposed Alternative would construct a four-lane roadway with adjacent sidewalks, a shared pedestrian/bicycle trail, improved lighting, and improved intersection configurations. The direct impacts and secondary impacts, where applicable, for these improvements have been described elsewhere in this document. Additional beneficial secondary impacts would likely include improved traffic circulation, increased commerce at the commercial areas, improved access to the hospital, reduced “cut-through” traffic through adjacent neighborhoods currently trying to avoid 168th Street during peak hours, increased pedestrian/bicycle use, and fewer accidents, or at least a reduction in the number of “near-misses” as vehicles attempt to exit or enter the adjacent neighborhoods or residences along 168th Street.

Cumulative Impacts

The steps necessary to evaluate cumulative impacts are as follows:

1. Identify which resources are more likely to be substantively impacted by the proposed action.
2. Determine the trend in the existing and future condition of these resources.
3. Describe the general impacts to these resources from other actions (past, present, and reasonably foreseeable actions) in the area.
4. Determine if the combined impacts from the proposed action and other actions is significant.

Key concepts for the assessment of cumulative impacts are as follows:

Geographic Extent

The geographic extent is the extent to which impacts to the environment could reasonably be expected to be accounted for, and from which the impacts from the Proposed Alternative would have a measurable effect. For instance, impacts from a proposed commercial development in eastern Omaha would not have to be accounted for in this assessment, nor would the Proposed Alternative be expected to have a measurable effect on alleviating traffic issues in the same area. The geographic extent should also be contingent on the individual resource being evaluated and the potential for cumulative impacts. In some cases, such as several of the resources being evaluated in this analysis, the geographic extent is limited to the resource itself.

Time Period

The assessment of secondary and cumulative impacts should focus on projects in the recent past, the current time period, or foreseeable future. The time period for assessment of secondary and cumulative impacts should also be somewhat consistent with the time period of the Proposed Alternative. Therefore, the general time period for this assessment is the past and future 20 years from the construction years (i.e. 2017-2019), thus spanning from approximately 1997 to 2039. This time period generally coincides with the past development of the surrounding suburban area, as well as the future expansion/widening of roadways to serve the resulting increased population.

Available Data

This assessment has been conducted using readily available data, observed local trends, and discussions with knowledgeable persons. It has not included developing specific predictive modeling or other tools. Examples of these data sources include many documents that have been described previously in this document, such as the MAPA 2035 Long Range Transportation Plan, several “Elements” of the City's Master Plan, discussions with local officials from the City, the P-MRNRD, Douglas County, NDOR, other consulting engineers, local business leaders, the public, and other individuals contacted during the development of this document.

The environmental resources selected for the cumulative impacts analysis were identified through the results of the resource-specific impact assessments presented in **Section 3.1** through **Section 3.20**. The resources assessed in this cumulative impacts analysis are: impacts to the flood control features of Dam Site 18/Zorinsky Lake; impacts on the recreational features of Edward Zorinsky Recreation Area/Zorinsky Lake Trail; impacts on the travelling public from the use of alternate routes/detours; and impacts on sensitive receptors from increased traffic noise.

Past Projects Relevant to this analysis

Past projects in this geographic extent and time period include the development of many of the suburban neighborhoods, as well as the roadways themselves, along 156th Street, 168th Street, 180th Street, West Center Road, Pacific Street, and Q Street, and the construction of the Lakeside commercial area, Alegent Lakeside Hospital, the Shops of Legacy, Armbrust Village, and other commercial areas along Pacific Street,

West Center Road, and Q Street. This area has been in a rapid development phase for the last 20 years, with private development leading the way. As these subdivisions were developed, additional projects, utilities, and other minor roadway improvements were also constructed, resulting in additional impacts to environmental resources. Recent roadway projects include widening of Q Street from 168th to 180th Streets, 168th Street from Pacific Street to West Dodge Road, and portions of 168th Street immediately north and south West Center Road to accommodate new commercial developments.

Proposed Future Projects relevant to this analysis

The majority of the study area has already been developed, with the exception of a few small parcels of land along 168th Street, Pacific Street, and West Dodge Road, so there is limited opportunity for major suburban developments that would contribute to additional traffic and change the travel patterns in the area. Some of the existing developments are not entirely developed, so the possibility of in-fill development does exist in these areas. For example, in Lakeside there are still some outlots that could be developed into retail or office buildings, or these areas may remain as open space or parking lots. The same could be said for the Shops of Legacy and other commercial developments along West Center Road and Q Street. These types of in-fill development would not be expected to generate large amounts of additional traffic or dramatically change the character of the surrounding area.

Currently proposed roadway projects for the next 20 years in the geographic extent of this assessment include the following (preliminary dates for each project are taken from the MAPA 2040 LRTP):

- 168th Street - West Dodge Road and West Maple Road, from two-lanes to four-lanes (2018 - 2020).
- 168th Street - West Maple Road and State Street, from two-lanes to four-lanes (2031 - 2035).
- 168th Street - State Street to N-36, from two-lanes to three-lanes (2036 - 2040).
- 156th Street - Pacific Street to West Dodge Road, from two lanes to three lanes (after 2021).
- Pacific Street - 168th Street to 192nd Street, from two lanes to four lanes (after 2021).
- 180th Street - Harrison Street to West Dodge Road, from two lanes to four lanes (2036-2040).

Dam Site 18/Zorinsky Lake

While the Proposed Alternative would not have any direct impacts to the permanent pool of Zorinsky Lake, there would be impacts to Dam Site 18 resulting from the need to place fill in the flood pool of the USACE flood control facility. These impacts would be offset by the excavation of an equal or greater amount of earthen material at two nearby areas, which will eventually be turned into detention basins for stormwater runoff. This mitigation measure will maintain the ability of the USACE to manage Dam Site 18 for flood control.

When considering the potential for cumulative impacts, it is not known if there have been other projects in the past that have resulted in fill and offsetting excavation; however, there are likely to be future projects that may result in similar impacts. In particular, when 180th Street is eventually widened, it is likely that fill material would need to be placed in the flood pool area. It is anticipated that these impacts would be permitted by the USACE through a similar process that was used for the Proposed Alternative on 168th Street. The resulting excavation areas could possibly also become stormwater detention basins,

thus resulting in improved water quality in the lake. Because these impacts would need to be approved by the USACE, and are likely able to be mitigated, they would not be considered significant cumulative impacts.

Edward Zorinsky Recreation Area/Zorinsky Lake Trail

The impacts to this resource are related to the need to temporarily close a portion of the Zorinsky Lake Trail for up to one year during the construction of the bridge over the lake, restricted access to the west basin of the lake (i.e., from the east basin) to watercraft during the same time period, and the construction of two stormwater detention basins. These impacts are all being addressed through the use of mitigation commitments to provide temporary trail access, crossings, signage and signals, and re-vegetating disturbed areas; and are all necessary for safety and contractor operation during construction of the bridge and re-construction of the trail. Furthermore, the impacts for the Proposed Alternative would be considered a *de minimis* use under Section 4(f).

When considering the potential for cumulative impacts, there have been past impacts to the recreation area, including the drawdown of the lake in 2010 and 2011 to attempt to eradicate zebra mussels, temporary trail closures for trail or bridge repairs, bank stabilization projects, other maintenance activities, and addition of new recreation features (e.g., Zorinsky Aquatic Center). There are also likely to be future projects that may include additional drawdowns of the lake, trail closures, maintenance, or new recreational features being constructed. These impacts will all need to be approved by the City of Omaha and the USACE, and would all likely require permits and additional mitigation. While these impacts are likely to occur, they would be coordinated by the City Parks Department so that additional closures do not occur at the same time as those caused by the Proposed Alternative. For these reasons, they would not be considered significant cumulative impacts.

Alternate Routes/Detours

The impacts to the traveling public from alternate routes and detours can be aggravating and cause driver frustration, confusion, and can also cause impacts to local businesses, schools, and other facilities. Because the Proposed Alternative would include an alternate route during the summer for the full 3-month closure of 168th Street between Pine Street and Frances Street, this resource was considered in the analysis of potential cumulative impacts.

As listed above, the potential exists for other roadways in the geographic extent and timeframe to be under construction at the same time as the Proposed Alternative. These projects include other segments of 168th Street, as well as intersecting and nearby roadways. However, due to the City and the County's coordination efforts, these roadways will not be closed at the same time, nor would they result in overlapping detours, or the need to re-route traffic from multiple projects onto the same alternate route. For these reasons, impacts from alternate routes would not be considered a significant cumulative impact.

Traffic Noise

The potential exists to have impacts to adjacent sensitive noise receptors along 168th Street due to the Proposed Alternative. These impacts have been evaluated, and mitigated where possible through the use of noise walls. Where the use of a noise wall is not feasible or reasonable, there would be impacts to these receptors. The evaluation of noise impacts for the Proposed Alternative took into consideration additional traffic along 168th Street using regional models and projected traffic counts.

In consideration of the potential for cumulative impacts on these and other sensitive noise receptors, while there will be additional traffic along 168th Street, resulting from the Proposed Alternative, as well as other adjacent or connected projects, these projects have been considered in the City, County, and MAPA's regional models. Further, any future project with federal funding along 168th Street or adjacent roadways would be required to analyze the potential for impacts from traffic noise, and potentially include noise walls if they were found to be feasible and reasonable to mitigate the impacts. For these reasons, impacts to adjacent sensitive noise receptors would not be considered significant cumulative impacts.

3.22 PERMITS AND APPROVALS

A number of permits and approvals would be required for the Proposed Alternative, which are listed in **Table 3.5**.

Table 3.5 Anticipated Permits and Approvals

Permit Name/Type	Permit Description	Issuing Agency	Permit Requirements
Clean Water Act – Section 404 (Wetlands and Waters of the U.S. Permit)	Regulates discharge of dredged or fill material into Waters of the United States	USACE	Submit plans and proposed impacts to USACE. Impacts less than 0.1 ac likely do not require mitigation. Impacts less than 0.50 ac can be authorized by one or more NWP. Impacts greater than 0.50 ac or 300 feet of stream channel require an IP.
Clean Water Act – Section 401 (Water Quality Certification), and Title 117 of the State of Nebraska Administrative Code (Nebraska Surface Water Quality Standards)	Water quality verification and compliance with state statutes	NDEQ	Submit plans and proposed impacts to NDEQ. If impacts are authorized by a NWP from the USACE that is pre-certified by NDEQ, no further action is required. Otherwise follow conditions in Individual water quality certification.
Clean Water Act – Section 402 (NPDES permit for new outfalls), and Title 119 of the State of Nebraska Administrative Code (Rules and Regulations Pertaining to the Issuance of Permits under NPDES)	Regulates discharges of pollutants from point sources	NDEQ/City of Omaha	Submit plans for new outfall locations to NDEQ and City for authorization. As required by USACE, submit authorized NPDES permits for new outfalls for approval of Section 404 NWP if needed.
Clean Water Act – Section 402 NPDES for Construction Grading (Agency Approval)	Regulates discharges of pollutants from non-point sources and construction sites greater than 1 acre.	NDEQ/City of Omaha/ Papio Partnership	Submit design plans and a SWPPP to NDEQ along with a Notice of Intent (NOI). Follow up during construction with inspections as required by the permit, and then submit a Notice of Termination (NOT) following construction.
Floodplain Development Permit	Regulates floodplain development (i.e. placement of fill material into the 100-year regulatory floodplain)	City of Omaha and P-MRNRD	Submit plans showing the proposed contours, hydrology studies, and a permit application to the City and P-MRNRD.

Permit Name/Type	Permit Description	Issuing Agency	Permit Requirements
Post-Construction Stormwater Management Plan (Agency Approval)	Regulates post-construction stormwater management activities	City of Omaha's Environmental Quality Control Division of the Public Works Department	Submit application, design plans, owner's certification, proposed maintenance activities, long-term maintenance schedule, as-built plans, and engineer's certificate.
Temporary Construction License (Agency Approval)	Authorizes construction on USACE property	USACE Real Estate Division/USACE Missouri River Project Office	Submit a letter to the USACE describing the entire project, including the design plans for relevant portions on USACE property, timing, and construction methods. See USACE Easement/Application Checklist for items required when submitting the formal request.
Permanent Easement (Deed Restriction)	Official approval for use of USACE property outside the existing roadway easement	USACE Real Estate Division/USACE Missouri River Project Office	Submit a letter to the USACE describing the legal limits of the permanent easement, and include a description of the long-term maintenance plans for the property. See USACE Easement/Application Checklist for items required when submitting the formal request.
Declaration of Use (City Resolution)	A resolution to formally dedicate the use of City-owned land from one type to another.	City of Omaha City Council	Prepare a resolution for approval by the City Council describing the legal limits of the property being converted from one type to another, and include an illustration showing the area to be permanently converted.
Re-Vegetation Plan (Agency Approval)	Describes the vegetation that would be planted to replace trees and vegetation removed at Pinewood Park and Edward Zorinsky Recreation Area	City of Omaha's Parks, Recreation, and Public Property Department and USACE	The Parks, Recreation, and Public Property Department would prepare a plan showing the proposed vegetation to be used to replace trees, shrubs, and grasses removed. This plan would need to be reviewed by the USACE for the Edward Zorinsky Recreation area.

Permit Name/Type	Permit Description	Issuing Agency	Permit Requirements
Pinewood Park Section 4(f) Concurrence and Declaration of Use	Section 4(f) Concurrence provides approval from the official with jurisdiction for impacts to a Section 4(f) resource Declaration of Use provides approval for the conversion of park land to ROW use.	City of Omaha's Parks, Recreation, and Public Property Department	Submit a Section 4(f) Concurrence Request letter describing the impacts to this Section 4(f) resources and how the <i>de minimis</i> determination was made. Preliminary approval has been granted for this <i>de minimis</i> impact. Final Section 4(f) concurrence would be obtained following the Public Hearing for the Draft EA, and would be included in the Final EA. FHWA must approve the Section 4(f) documentation. City Council must approve the Declaration of Use document.
Edward Zorinsky Recreation Area and the Zorinsky Lake Trail Section 4(f) Concurrence	Provides approval from the officials with jurisdiction for impacts to two Section 4(f) resources.	City of Omaha's Parks, Recreation, and Public Property Department and USACE	Submit two Section 4(f) Concurrence Request letters (one to the City and one to USACE) describing the impacts to these Section 4(f) resources and how the <i>de minimis</i> determinations were made. Preliminary approval has been granted for these <i>de minimis</i> impacts. Final Section 4(f) concurrence would be obtained following the Public Hearing for the Draft EA, and would be included in the Final EA. FHWA must approve the Section 4(f) documentation.

SECTION 4 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

In accordance with NEPA, and the following guidelines provided by FHWA, NDOR and the City, several opportunities for the public and resource agencies to provide input have been provided. This input helped develop the purpose and need for the project, the alternatives considered, the potential for impacts, as well as design modifications and enhancements for the Proposed Alternative.

4.1 AGENCY COORDINATION

The project was presented to NDOR, USACE and NDEQ at a project scoping meeting at the P-MRNRD District offices on May 17, 2007. In addition to these agencies, EPA, USFWS, NGPC, P-MRNRD, and the City's Parks, Recreation, and Public Property Department were also invited to the scoping meeting. The purpose of the meeting was to develop the scope of analysis and to determine major issues that would need to be analyzed in the EA. Coordination letters were sent on April 17, 2007 to the aforementioned resource agencies requesting review of the project and participation in the agency scoping meeting on May 17, 2007. Courtesy letters were also sent to other resource agencies and public officials to inform them of the public meeting (also on May 17, 2007) and solicit feedback on the project. The other resource agencies and public officials included: MAPA; NSHS/SHPO; Nebraska Indian Commission; Nebraska Department of Aeronautics; Nebraska Health and Human Services System; U.S. Housing and Urban Development; Offutt Air Force Base; Federal Aviation Administration; State, County, and City officials; and various City departments.

An additional agency scoping meeting was held on December 22, 2010 and included NDOR, FHWA, NSHS, and USACE. Several additional coordination meetings were held with the USACE from 2007 to 2013 to discuss potential impacts to Dam Site 18 and Zorinsky Lake. Agency comments and feedback from the scoping meeting, coordination letters, and courtesy letters are shown in **Table 4.1**. Specific agency coordination efforts and the results of that coordination are shown in **Table 4.2**. Copies of supporting information and agency concurrence letters are included in the noted **Appendices**.

Table 4.1 Agency Scoping Comments and Responses

Agency	Agency Comments/Feedback	Response
Federal Aviation Administration	No comments regarding environmental matters. If any part of the project exceeds notification criteria under FAR Part 77, notice should be filed at least 30 days prior to the proposed construction date.	The project would not exceed the notification criteria under FAR Part 77; therefore, a notice would not need to be filed.
Nebraska Department of Aeronautics	No concerns with the proposed project.	No response needed.
NDEQ	Permits from NDEQ may be required prior to beginning construction. NDEQ provided statements that this should be included in the EA.	NPDES permits and Water Quality Certification from NDEQ would be obtained prior to beginning construction. See Section 3.9 Water Resources and Water Quality and Section 3.20 Temporary Construction Related Impacts for more information.
NGPC	The proposed project would not impact any NGPC park areas or wildlife management areas, and was not likely to adversely affect state-listed threatened or endangered species. Also, NGPC expressed concerns about impacts to wetlands, streams, and riparian habitats, erosion control methods at Zorinsky Lake, and the take of migratory birds. Final concurrence from NGPC was obtained through the use of the <i>Programmatic Agreement</i> (BE Matrix) on January 21, 2014. The project was reevaluated on April 15, 2014 for impacts to the northern long-eared bat. See Section 3.14 Threatened, Endangered, and Protected Species .	See Section 3.7 Parks, Recreation Areas, and Trails (Section 4(f) Resources) for more information on park and wildlife management areas. See Section 3.14 Threatened, Endangered, and Protected Species for more information on threatened and endangered species and migratory birds. See Section 3.9 Wetlands and Waters of the United States for more information on impacts to wetlands and streams. See Section 3.12 Vegetation, Wildlife, and Habitat for more information on riparian habitats
P-MRNRD	Concerned about soil erosion into Zorinsky Lake and impacts to Zorinsky Lake flood pool capacity.	Erosion and sediment control BMPs would be implemented. Appropriate native vegetation would be used in high erosion prone areas. Retaining walls would be used at the stream crossing and Zorinsky Lake to minimize grading impacts and erosion. See Section 3.2 Zorinsky Lake and Edward Zorinsky Recreation Area (Papillion Creek Dam Site 18) for more information about flood storage capacity.
NSHS/SHPO	No historic properties affected by the proposed project. Notify SHPO should any archeological remains be uncovered during project construction. Final concurrence from SHPO was obtained through the Section 106 Consultation Process	See Section 3.8 Historic and Archeological Resources .

Agency	Agency Comments/Feedback	Response
	on February 21, 2014. See Section 3.8 Historic and Archeological Resources .	
USACE Regulatory Branch	The proposed project would require a Section 404 permit. The USACE provided a preliminary jurisdictional determination that Zorinsky Lake and the unnamed tributary to West Papillion Creek are jurisdictional for the USACE. The flood storage mitigation areas need to be investigated for wetlands, and if wetlands are present, potential impacts need to be identified.	See Section 3.9 Wetlands and Waters of the United States for more information on impacts to wetlands and streams.
USACE Operations Branch	Provided Zorinsky Lake pool data and information on allowable cut/fill activities at USACE projects. Stated that it will be necessary to mitigate any fill areas at Dam Site 18 with equal cut in order to maintain flood storage volume. The project would require a temporary construction license for construction activities on USACE property. A new permanent easement would be needed for the excavation areas and maintenance of the stormwater detention areas, which extend outside of the ROW easement for 168 th Street. USACE also expressed concerns for water quality at Zorinsky Lake, and their opposition to the Zorinsky Lake Bridge being lengthened. USACE provided a letter stating that the flood warning system at Zorinsky Lake could be removed without adverse impacts, and that replacement of the system is not necessary.	See Section 3.2 Zorinsky Lake and Ed Zorinsky Recreation Area (Dam Site 18) and Section 3.22 Permits and Approvals for more information pertaining to flood storage mitigation, the temporary construction license for construction activities on USACE property, and new permanent easement for stormwater detention areas on USACE property. See Section 3.9 Water Resources and Water Quality for more information on water quality at Zorinsky Lake. See Section 3.15 Utilities for more information on the flood warning system.
USFWS	The proposed project would not adversely affect federally listed threatened and endangered species, or their designated critical habitat. It was unlikely that the bald or golden eagle would be affected by the proposed project. The proposed project would not impact any USFWS wildlife areas. Additionally, the USFWS expressed concerns about impacts to wetlands and streams, soil erosion, animal passage and aquatic biota, use of borrow and disposal sites, and the take of migratory birds. Final concurrence from USFWS was obtained through the use of the <i>Programmatic Agreement</i> (BE Matrix) on January 21, 2014. The project was reevaluated on April 15, 2014 for impacts to the northern long-eared bat. See Section 3.14 Threatened, Endangered, and Protected Species .	See Section 3.14 Threatened, Endangered, and Protected Species for more information on threatened and endangered species and migratory birds. See Section 3.9 Wetlands and Waters of the United States for more information on impacts to wetlands and streams. Erosion and sediment control BMPs would be implemented, appropriate vegetation would be used in high erosion prone areas, and retaining walls would be used at the stream crossing and Zorinsky Lake to minimize grading impacts and erosion. No outside borrow sites would be used, and construction debris would be disposed of properly.

Table 4.2 Agency Concurrences Obtained

Agency	Type of Coordination	Result of Coordination	Required Mitigation	Supporting Information
SHPO/THPO	NDOR/FHWA Concurrence Request	"No historic properties affected"	Follow state and federal laws regarding discovery of unmarked burials or human remains	Appendix D
USACE	Preliminary Jurisdictional Determination	Unnamed tributary to North Branch of West Papillion Creek is jurisdictional. Zorinsky Lake and adjacent wetlands are jurisdictional	Submit Section 404 Permit Application for impacts to tributary and adjacent wetlands.	Appendix E
USFWS/NGPC	NDOR/FHWA Concurrence Request	"No Effect" to all state and Federal listed species	Follow "General Conservation Conditions for All Projects"	Appendix F

4.2 PUBLIC INVOLVEMENT

4.2.1 PUBLIC MEETINGS

A public meeting was held on May 17, 2007 at Willowdale Elementary School to solicit input from the public. Letters were sent to approximately 150 affected residents, property owners, HOA's, and businesses located adjacent to 168th Street, as well as other groups with potential interest (e.g. utilities companies, Zorinsky Lake Watershed Council), to inform them about the meeting. The meeting was advertised in April 2007, in accordance with NDOR and City standards, and the meeting place was ADA accessible. The meeting was also published in the Omaha World Herald three weeks prior to the meeting. Fifty-three (53) people signed in at the meeting. A detailed description of the meeting proceedings and comments received are contained in **Appendix I**. A summary of the comments and responses that were subsequently provided to commenters are provided below.

Notices for the public meeting were sent to representatives of the following neighborhood organizations which were in existence prior to May 2007:

- Southshore Heights HOA
- Lake Shore HOA
- Armbrust Acres HOA
- Leawood Southwest HOA
- Western Trails/Hidden Ridge HOA
- Pacific Heights Improvement Association
- Bay Shores HOA

Comments received as a result of this neighborhood outreach were collected during the public meeting time period and by email or telephone for those unable to attend the meeting, and are included in the summary below.

Comments received at the May 17, 2007 Public Meeting (and/or via email)

Comment 1: Two residents requested retaining walls for safety and noise reasons.

Response 1: Retaining walls would be built along multiple segments of the roadway where necessary to avoid grading impacts. While these retaining walls would not be built solely for safety or noise purposes, they may nonetheless address the underlying concerns expressed by these residents, which were focused on the existing higher elevation of the roadway. In several cases, retaining walls would include guardrails, or may be co-located with noise walls; therefore, these concerns would be addressed by these features. See **Response 2** and **Response 3** below for additional information pertaining to safety and noise.

Comment 2: Three residents indicated safety concerns due to the proximity of their property from the roadway.

Response 2: Six-inch-high integral curbs would be built along the edges of the roadway throughout the corridor. These curbs are designed to keep vehicles on the road, and according to AASHTO, integral curbs function as safety features. Additionally, guardrails and/or jersey barriers would be added at locations where the elevation of the surrounding land is greater than 5 feet lower than the roadway and the appropriate grading slopes cannot be obtained.

Comment 3: Three residents had concerns about existing and future noise levels from traffic on 168th Street.

Response 3: Noise abatement measures (i.e. noise walls) have been assessed according to FHWA's *Noise Abatement Criteria*. Noise walls would be added along 168th Street where deemed to be feasible and reasonable according to and NDOR's *Noise Abatement Policy*, and where at least 75 percent of the benefitted property owners are in favor of the noise wall. For more information on noise impacts and mitigation see **Section 3.16, Noise Impacts**.

Comment 4: Five residents expressed concern about the existing roadway profile and its effects on sight distance, safety, and runoff.

Response 4: The roadway profile would be altered in various locations in order to improve sight distance required for a 50 mile per hour (mph) design speed, safety, and runoff issues. Specifically, the two areas with the largest profile change (lowered profile) would be near Patterson Drive and between the east leg of Pine Street and Frances Street.

Comment 5: The Zorinsky Lake Watershed Council expressed concern for water quality and sedimentation at Zorinsky Lake.

Response 5: Two stormwater detention basins would be constructed, which would improve water quality in Zorinsky Lake. Additionally, the existing opening between the roadway embankments would be not be widened, and the sedimentation processes at the lake would function as it currently does.

Comment 6: Two residents were concerned about the possibility of affecting the Lakeshore neighborhood entrance signs.

Response 6: The Lakeshore entrance signs would not be affected by the proposed project. The only neighborhood signs that would be affected by the project are the Rose Garden Estates and Shaker Heights signs at 168th and Shirley/Hickory Streets. For more information on neighborhood signs, see **Section 3.19, Visual Impacts and Aesthetic Considerations**.

Comment 7: Two residents were concerned about their fences being removed.

Response 7: Fences would be replaced according to NDOR's *Right of Way Manual*. More specifically, homeowners would be compensated during the acquisition process for ROW, and permanent and temporary easements. Temporary fences would be installed during construction, and homeowners would be coordinated with directly on any special needs (i.e. taller fences as required for swimming pools or animals). For more information on fencing, see **Section 3.19, Visual Impacts and Aesthetic Considerations**.

Comment 8: One resident expressed concern about the roadway improvements encroaching on their property.

Response 8: Minor property acquisitions would be required for roadway improvements. For example, small strips of ROW would be acquired in areas where the existing ROW is less than 100-feet-wide, at intersection corners for sidewalk construction, and at some of the areas where additional turn lanes are being added. Permanent and temporary easements would be needed at several locations along the corridor for grading, paving, utility relocations, and to construct retaining walls and noise walls. For more information on ROW and acquisitions see **Section 3.5, Right-of-Way, Acquisitions, and Relocations**.

Comment 9: Three residents were concerned about the possibility of their trees being removed.

Response 9: Tree impacts in the existing ROW for 168th Street would not be mitigated. Tree impacts on private property either acquired for new ROW or impacted by construction would be mitigated by compensating the owner during the acquisition process. For more information on tree impacts and mitigation see **Section 3.5, Right-of-Way, Acquisitions and Relocations** and **Section 3.12, Vegetation, Wildlife, and Habitat**.

Comment 10: One resident was concerned about salt runoff.

Response 10: Storm sewers, inlets, and outlets would be constructed where open ditches currently exist, which would capture salt runoff. These improvements would meet the drainage requirements of the *Omaha Regional Stormwater Design Manual*.

4.2.2 ADDITIONAL PUBLIC OUTREACH

The City met with the Leawood Southwest HOA on October 10, 2006 and on April 23, 2015. No additional requests for public outreach have been received; however, phone calls and emails were received requesting that the project be built.

4.2.3 PUBLIC HEARING

The City will hold a public hearing on the proposed project and Draft Environmental Assessment (DEA). The hearing will be held at Russell Middle School at 6:30pm, on May 11, 2017. Public notices, letters and door-hangers will be prepared to inform members of the public and interested agencies of the upcoming meeting details. The first legal notice of the hearing would be published a minimum of 15 days prior to the hearing, not including the day of the hearing. Additionally, message boards will be placed along 168th Street seven to ten days prior to the hearing.

The City will provide an accessible meeting facility for all persons. Reasonable accommodations will be made for people who are hearing and visually challenged or who have limited English proficiency (LEP). The City will specifically invite all those that would be directly affected by the proposed project.

Design information will be displayed and personnel from the City will be present to answer questions and receive comments about the project. This hearing is being held as a coordination and fact-gathering meeting for the NEPA document, as well as to provide and receive information regarding environmental impacts. The project study team will be present to receive design input regarding the project. Design plans will be developed further after the public hearing.

The DEA will be available for public review at the hearing. Copies of the DEA will be available at:

- City of Omaha – Public Works, 1819 Farnam Street, 6th Floor Omaha, Nebraska
- City of Omaha – Equipment Maintenance, 4040 South 96th Street Omaha, Nebraska
- City of Omaha – Equipment Maintenance, 20567 Park Road Omaha, Nebraska
- Millard Branch Library, 13214 Westwood Lane, Omaha, Nebraska
- NDOR District 2 Office 108th Street Omaha, Nebraska
- NDOR Headquarters 1500 Highway 2 Lincoln, Nebraska
- FHWA Nebraska Division, 100 Centennial Mall North Lincoln, Nebraska

Prior to the public hearing, the DEA will be available at <https://publicworks.cityofomaha.org/public-works-projects> or <http://roads.nebraska.gov/projects/environment/pubs/project-docs/>, and clicking on the links for the “168th Street, Poppleton to Ehlers” project.

There will be a 30-day comment period for the DEA document, after which the Final EA would be prepared in errata format (i.e. FHWA would publish a summary list of corrections, changes, and additions, but would not reprint a fully revised version of the EA). All substantive public and agency comments on the DEA would be addressed in the Final EA.

4.2.4 LIMITED ENGLISH PROFICIENCY

According to the 2008-2012 ACS, 94.5 percent of the population in the four census tracts surrounding the project area speaks only English. The most frequently spoken language other than English is Spanish, which is spoken by approximately 2.0 percent of the population. Many of the people in these census tracts who speak Spanish also speak English; only 0.7 percent of the total population of these census tracts speaks Spanish and also speaks English "less than very well." These statistics do not indicate the presence of a limited English proficiency (LEP) population in the project area that reaches the NDOR LEP outreach thresholds of five percent of the population or 1,000 persons.

SECTION 5 MITIGATION MEASURES AND ENVIRONMENTAL COMMITMENTS

This section provides a summary of the mitigation measures and environmental commitments contained in this Draft Environmental Assessment. Final environmental commitments would be contained in the Final Environmental Assessment and Finding of No Significant Impact (FONSI), if issued. They would also be included on “Green Sheets” that would be used during construction to ensure compliance during routine inspections. Commitments are listed in order following the format of **Section 3, Affected Environment and Environmental Consequences**. Responsible parties for each commitment are also listed.

Land Use and Zoning

- The Proposed Alternative would be designed to be consistent with existing plans, such as future land use, future zoning, and *the Complete Streets Omaha Policy*. (City of Omaha)

Zorinsky Lake and Ed Zorinsky Recreation Area (Papillion Creek Dam Site 18)

- The City would submit the items identified in the USACE’s Easement/License Application checklist, which includes final plans, to the USACE for review and approval. (City of Omaha)
- Prior to construction, the City would obtain a temporary construction license from the USACE for project construction activities at and through Dam Site 18, including the excavation of the flood storage mitigation sites. (City of Omaha)
- Flood storage mitigation at Dam Site 18 would include the excavation of approximately 11,000 cu yds within the flood storage zone between elevations 1,110 feet msl and 1,128 feet msl at the proposed flood storage mitigation sites, which would be located at the northeast and southeast corners of the west basin of Zorinsky Lake. The excavation volumes needed would be determined during final design and permitting, and would be verified by a field survey before and after the excavation. (City of Omaha)
- The City would be responsible for designing the flood storage mitigation sites and ensuring the proper volumes are excavated. (City of Omaha)
- The City would obtain a new permanent easement from the USACE for the conversion of the flood storage mitigation sites into stormwater detention basins and for their long-term maintenance. (City of Omaha)
- Following excavation, the City would convert the flood storage mitigation sites into stormwater detention basins. (City of Omaha)
- The stormwater detention areas would be planted with appropriate flood-tolerant vegetation, and would be maintained by the Environmental Quality Control Division (EQCD) of the City’s Public Works Department. A maintenance commitment with the EQCD would be in place prior to construction. (City of Omaha)
- Tree and vegetation removal at the excavation sites would be mitigated according to the proposed re-vegetation plan developed in coordination with the City’s Parks, Recreation and Public Property Department. The re-vegetation plan would be submitted along with the USACE’s Easement/License Application checklist for the USACE’s review and approval. (City of Omaha)

- A copy of this Draft Environmental Assessment, including the proposed revegetation plan, would be provided to the USACE for review during the comment period. (City of Omaha)

Social and Economic Considerations

- Individuals directly affected by construction, Willowdale Elementary School, Russell Middle School, neighborhood associations, Kingswood Athletic Association, Living Hope Lutheran Church, the City's Parks and Recreation Department (for Edward Zorinsky Recreation Area), and CHI Lakeside Hospital and the businesses at Lakeside Hills would be notified of the construction schedule approximately four weeks prior to construction. (City of Omaha)
- The City would notify the general public of the start of construction by placing notices in the newspaper at least 10 calendar days prior to construction, and dynamic message signs would be used along 168th Street prior to the beginning of construction activities. (City of Omaha)
- The City would notify emergency services such as police and fire departments before construction activities begin, as well as maintain continued coordination throughout construction. Emergency services providers would be invited to the pre-construction meeting for this project. (City of Omaha)
- The City would notify emergency services, CHI Health Lakeside Hospital, and online mapping providers prior to temporarily closing 168th Street. (City of Omaha)
- The City would place temporary sign covers on the "Hospital" street signs in the project vicinity during the temporary closure of 168th Street, and use dynamic message signs to direct drivers to alternate routes to CHI Health Lakeside Hospital. (City of Omaha, Contractor)
- Throughout construction, the City would continue to coordinate with Willowdale Elementary School, Russell Middle School, neighborhood associations, Kingswood Athletic Association, Living Hope Lutheran Church, the City's Parks and Recreation Department (for Edward Zorinsky Recreation Area), and CHI Lakeside Hospital and the businesses at Lakeside Hills to provide up-to-date information regarding construction timing and maintenance of pedestrian and vehicular access. (City of Omaha)
- Temporary access would be provided for residents temporarily affected by construction through the use of existing side streets and on-street parking. (City of Omaha, Contractor)
- Residences with direct driveway access to 168th Street would be provided access to their property at all times. (Contractor)
- Phasing and alternate routes would be used to construct the portion of 168th Street between the east leg of Pine Street and Frances Street during the summer, most likely when school is out of session. (City of Omaha, Contractor)
- The Contractor would strive to limit the temporary road closure to the summer months when school is out of session. However, if temporary closures extend into the school year, they would be advertised. (City of Omaha, Contractor)
- Pedestrian access at the 168th Street crosswalk just north of P Street/Ehlers Street would be maintained at all times, and no barriers or equipment would be staged on the crossing. (City of Omaha, Contractor)

- Right-in/Right-out access would be maintained at 168th and P Streets while school is in session. (Contractor)
- The City would maintain the 25 mile per hour (mph) “school zone” on 168th Street for Willowdale Elementary School. (City of Omaha)
- Access to CHI Lakeside Hospital and Lakeside Hills from 168th Street would be maintained by keeping at least one of the direct access roads to and from 168th Street (i.e. Frances Street and Lakeside Hills Plaza) open at all times. Additionally, CHI Lakeside Hospital and Lakeside Hills would also remain accessible from West Center Road at all times. (City of Omaha, Contractor)
- Access to community mixed-use areas, gathering areas, and businesses would be maintained at all times. (City of Omaha, Contractor)
- The City would allow U-turns on 168th at the following locations: northbound to southbound at Lakeside Hills Plaza, northbound to southbound and southbound to northbound at West Center Road, and southbound to northbound at the Zorinsky Lake South Access Drive. These U-turns would be posted with signage and signals, and the intersection would be designed to properly accommodate turning vehicles. (City of Omaha, Engineer)

Right-of-Way, Acquisitions, and Relocations

- If the acquisition of the residence at 16761 Pine Street is found to be necessary, the acquisition and relocation would be conducted in accordance with the Uniform Act. (City of Omaha)
- The City would acquire all ROW and permanent and temporary easements in accordance with the Uniform Act and NDOR’s *Right of Way Manual*. (City of Omaha)
- Impacts to fencing, landscaping, neighborhood monuments, and sprinklers would be handled in accordance with NDOR’s *Right of Way Manual*. (City of Omaha)
- Impacts to trees on private property would be mitigated by compensating the owner during the acquisition process. (City of Omaha)
- Tree and vegetation removal at Edward Zorinsky Recreation Area and Pinewood Park (outside of the existing ROW and existing easements) would be mitigated according to the proposed re-vegetation plan developed in coordination with the City’s Parks, Recreation, and Public Property Department. A copy of the re-vegetation plan would be provided to the USACE for review during the Draft Environmental Assessment comment period. (City of Omaha)
- Tree impacts in the existing ROW for 168th Street would not be mitigated. Instead, the City’s Public Works Department would continue its practice of providing funding to the Planning Department to create tree planting projects to implement as necessary to meet the requirements of the *Green Streets Plan for Omaha*, in which 168th Street is considered as both a “Major Arterial” and a “Minor Arterial” Green Street. (City of Omaha)
- ROW impacts would be minimized through the use of retaining walls, to reduce the additional grading needed on adjacent property. (City of Omaha)
- Prior to construction, the City would obtain a temporary construction license from the USACE for project construction activities at and through Dam Site 18, including the excavation of the flood storage mitigation sites. (City of Omaha)

- The City would obtain a new permanent easement from the USACE for the conversion of the flood storage mitigation sites into stormwater detention basins and for their long-term maintenance. (City of Omaha)

Standard Specifications (NDOR, 2007):

- Standard Specification 104.05 - Scope of Work - Maintenance of Detours and Shooflies
 - Requires the Contractor, the extent practicable, to provide private dwellings, commercial properties, business, and public facilities access to the nearest public road.
- Standard Specification 104.08 - Scope of Work - Final Cleaning Up
 - Requires the Contractor to remove all rubbish, excess material, and equipment from the project site, and to leave the site in a neat and presentable condition. Also requires the Contractor to fill borrow sites.
- Standard Specification 105.12 - Control of Work - Use of Land
 - Requires the Contractor to leave any lands outside the ROW used for construction in a neat and presentable condition.
- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.
- Standard Specification 107.09 - Legal Relations and Responsibility to the Public - Preservation and Restoration of Property, Trees, Monuments, etc.
 - Requires the Contractor to preserve, protect, and prevent damage to all public and private property, including utilities, structures, and facilities, and shall be responsible for damage from neglect or misconduct.
- Standard Specification 107.12 - Legal Relations and Responsibility to the Public - Responsibility for Damage, Injury, or Other Claims
 - Requires the Contractor to be responsible for all damage to property used during construction resulting from neglect or misconduct. The Contractor shall also be required to meet with local government entities to advise them of their intentions to use local roads, and is responsible for damage from such use.

Special Provisions:

- Status of Right-of-Way
 - Requires the Contractor to work only within the ROW until property acquisition is complete and easements are obtained, and to also verify this with the Engineer prior to entering any private property.

Pedestrians, Bicyclists, and Accessibility for Individuals with Disabilities

- During construction, existing pedestrian access would be maintained (i.e. sidewalks would be kept open) to the maximum extent practicable along the entire study area. If closures are necessary,

temporary alternate routes or advanced notice of closures would be provided for pedestrians and bicyclists. (City of Omaha, Contractor)

- Pedestrian access at the 168th Street crosswalk just north of P Street/Ehlers Street would be maintained all times, and no barriers or equipment would be staged on the crossing. (City of Omaha, Contractor)
- Audible crossing signals for visually impaired persons would be installed if the individual requesting these devices provide the documentation required by the City's policy. The City's policy regarding the installation of audible crossing signals requires that the City be presented with medical documentation from a physician, physician's assistant, or nurse practitioner for the individual's impairment prior to installing the device. (City of Omaha)
- During construction, temporary at-grade crossings would be provided for trail users to maintain mobility between the east and west segments of the Zorinsky Lake Trail. These temporary crossings are planned to be located at the north and south lake access drives, and would be painted and signed during construction. Additionally, because the temporary at-grade crossing at the south access drive would become permanent following construction and would be signalized, the City would use a temporary signal or would have the permanent signal operational prior to closing the trail underpasses for bridge reconstruction. (City of Omaha, Contractor)
- The City would identify persons with individual concerns for special access during construction (e.g. elderly or disabled persons temporarily affected by driveway or sidewalk reconstruction) by placing door hangers on affected property owners' front doors prior to construction. The City would coordinate directly with these individuals to arrange solutions to provide access during construction, which could including special timing, temporary paving, providing assistance for trips, or other acceptable measures. **If you or someone you know may require special access or provisions during construction, please contact the City at 402-444-5000.** (City of Omaha, Contractor)

Parks, Recreation Areas, and Trails (Section 4(f) Resources)

- The City would construct a retaining wall along the western edge of Pinewood Park to minimize the extent of grading into the park. (City of Omaha, Contractor)
- The conversion of an approximately 17-foot-wide (or 0.04 acre) strip of Pinewood Park land from park use to ROW and the temporary construction limits at Pinewood Park would be defined in a Declaration of Use document that would be approved by the City Council. (City of Omaha)
- Prior to construction, the City would obtain a temporary construction license from the USACE for project construction activities at and through Dam Site 18, including the excavation of the flood storage mitigation sites. The flood storage mitigation sites would be located adjacent to 168th Street and the northeast and southeast corners of the west basin of Zorinsky Lake. The area of impact at the north site would be no greater than two acres outside of the existing ROW and no greater than three acres outside the existing ROW at the south site. (City of Omaha)
- The City would obtain a new permanent easement from the USACE for the conversion of the flood storage mitigation sites into stormwater detention basins and for their long-term maintenance. (City of Omaha)

- During construction, temporary at-grade crossings would be provided for trail users to maintain mobility between the east and west segments of the Zorinsky Lake Trail. These temporary crossings are planned to be located at the north and south lake access drives, and would be painted and signed during construction. Additionally, because the temporary at-grade crossing at the south access drive would become permanent following construction and would be signalized, the City would use a temporary signal during construction, which would be operational prior to closing the trail underpasses for bridge reconstruction. (City of Omaha, Contractor)
- Prior to closing the Zorinsky Lake Trail segments along 168th Street, the City would construct the temporary trail segment near the southeast corner of Zorinsky Lake's west basin in order to maintain connectivity between the east and west trail systems. (City of Omaha)
- The reconfiguration of the trail segment near the west end of the northwest parking lot would be completed prior to closing the 168th Street portions of the Zorinsky Lake Trail. (City of Omaha)
- The new sidewalk connections to the trail at the Zorinsky Lake North Access Drives would be completed prior to closing the 168th Street portions of the Zorinsky Lake Trail.
- If necessary, the City would use flaggers while vehicles or machinery are crossing the Zorinsky Lake Trail during excavation activities at the north flood storage mitigation site. The hauling of excavated material across the Zorinsky Lake Trail would occur at the locations of trail that are already being closed and would coincide with the reconfiguration of the trail alongside 168th Street to avoid additional trail impacts. If there is any unforeseen damage to the trail as a result of vehicles or machinery crossing it, the trail would be returned to as good or better condition than pre-construction. (City of Omaha, Contractor)
- The temporary closure of the 168th Street segments of the Zorinsky Lake Trail would be no longer than one year in duration. The duration of the closure would be less than the time needed for the construction of the overall project. (City of Omaha, Contractor)
- The project specifications would contain a "critical milestone" timeline for all work in the Edward Zorinsky Recreation Area, including the Zorinsky Lake Trail, from the Zorinsky Lake South Access Drive to the North Access Drive to be completed within one year from when the temporary trail and signal are operational. (City of Omaha)
- The temporary closure of the bridge underpass to boaters would be no longer than one year in duration. The duration of the closure would be less than the time needed for the construction of the overall project. (City of Omaha, Contractor)
- Tree and vegetation removal at Edward Zorinsky Recreation Area and Pinewood Park (outside of the existing ROW and existing easements) would be mitigated according to the proposed re-vegetation plan developed in coordination with the City's Parks, Recreation, and Public Property Department. A copy of the re-vegetation plan would be provided to the USACE for review during the Draft Environmental Assessment comment period. (City of Omaha)
- The City would obtain concurrence from the USACE that the utilization of the ROW easement at Dam Site 18/Edward Zorinsky Recreation Area would not constitute a use of a Section 4(f) property. (City of Omaha)

- Following the public comment period for the Draft EA, the City would request concurrence from the USACE on the *de minimis* impact determinations for the use of the Zorinsky Lake Trail and Edward Zorinsky Recreation Area (including Zorinsky Lake). (City of Omaha)
- Following the public comment period for the Draft EA, the City would request concurrence from the City's Parks, Recreation, and Public Property Department on the *de minimis* impact determinations for the use of Pinewood Park, the Zorinsky Lake Trail, and Edward Zorinsky Recreation Area (including Zorinsky Lake). (City of Omaha)

Historic and Archeological Resources

- During construction, the City and Contractor would follow standard provisions of the unintended discovery of unknown artifacts, or unidentified human remains, in compliance with the *Nebraska Unmarked Human Burial Sites and Skeletal Remains Act*, and the *Native American Graves Protection and Repatriation Act*. (City of Omaha, Contractor)

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.
- Standard Specification 107.10 - Legal Relations and Responsibility to the Public - Archaeological and Paleontological Discoveries
 - In the event of a late discovery of archeological materials, this specification states "The Engineer would be promptly notified when any such articles are uncovered and the Contractor shall suspend operations in the area involved until such time that arrangements are made for their removal and preservation."

Water Resources and Water Quality

- Comply with the City's MS4 Permit, including applying for and following all provisions of a Stormwater Pollution Prevention Plan (SWPPP) and Water Quality Certification from NDEQ; implementing BMPs as required by City, NDEQ, the P-MRNRD, and the USACE; and following design guidelines of the *Omaha Regional Stormwater Manual*. (City of Omaha, Contractor, Engineer)
- The City would obtain a Clean Water Act (CWA) Section 402 NPDES permit from NDEQ for grading activities greater than one acre in size and for new outfalls. The permit would require submission of a SWPPP, a Notice of Intent (NOI), and a Notice of Termination (NOT) following re-vegetation of the site. All provisions of the permit would be incorporated into the construction specifications and would be implemented to minimize impacts to water quality. (City of Omaha, Engineer, Contractor)
- Permanent changes to runoff would be mitigated by following design guidelines in the *Omaha Regional Stormwater Manual*. (City of Omaha, Engineer)

- Following excavation, the flood storage mitigation sites would be converted to stormwater detention basins. (City of Omaha)
- The City would implement a Post-Construction Stormwater Management Plan (PCSMP) for the two permanent stormwater detention basins, which would include submitting design plans, construction certifications, an owner's certification, and a long-term maintenance commitment from the City to the Environmental Quality Control Division (EQCD) of the Public Works Department. (City of Omaha)
- Prior to construction, the City would obtain a temporary construction license from the USACE for project construction activities at and through Dam Site 18, including the excavation of the flood storage mitigation sites. (City of Omaha)
- The City would obtain a new permanent easement from the USACE for the conversion of the flood storage mitigation sites into stormwater detention basins and for their long-term maintenance. (City of Omaha)
- The stormwater detention areas would be planted with appropriate flood-tolerant vegetation, and would be maintained by the Environmental Quality Control Division (EQCD) of the City's Public Works Department. A maintenance commitment with the EQCD would be in place prior to construction. (City of Omaha)

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.

Wetlands and Waters of the United States

- Prior to letting the project for bids, the City would submit for and obtain a Clean Water Act (CWA) Section 404 Permit for impacts to the unnamed tributary to the West Papillion Creek and Zorinsky Lake and adjacent wetlands. (City of Omaha, Engineer)
- All provisions of the permit would be incorporated into the construction specifications and would be implemented to minimize impacts to wetlands. (City of Omaha, Contractor)
- Mitigation requirements contained in the Section 404 permit would be implemented. (City of Omaha, Contractor)
- BMP's for impacts to wetlands and waters of the U.S. would be implemented. (City of Omaha, Contractor)
- In order to minimize impacts to the stream at Shirley and Hickory Streets, permanent retaining walls would be constructed alongside both sides of 168th Street. (City of Omaha, Engineer, Contractor)
- Temporary fencing would be utilized to avoid impacts to the stream channel during construction. (City of Omaha, Engineer, Contractor)

- If an on-site or off-site mitigation site is needed, it will be evaluated for potential resource impacts as part of a re-evaluation of this EA. (City of Omaha, NDOR)

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.

Floodplains

- The City would acquire the proper floodplain permits, and would certify that the construction activities are in compliance with the State of Nebraska floodplain regulations, prior to starting construction. Standard provisions included in the required floodplain permit would be incorporated into the construction specifications, and would be followed to minimize impacts on the floodplain. (City of Omaha, Contractor, Engineer)

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.

Vegetation, Wildlife, and Habitat

- Impacts to riprap habitat for aquatic species (e.g. spawning, shelter, foraging) would be mitigated by replacing any riprap removed during construction. (City of Omaha, Contractor)
- The excavation sites would be converted into stormwater detention areas, which would create new habitat in these areas, and would improve water quality in Zorinsky Lake. (City of Omaha)
- The stormwater detention areas would be planted with appropriate flood-tolerant vegetation. (City of Omaha)
- Tree and vegetation removal at Edward Zorinsky Recreation Area and Pinewood Park (outside of the existing ROW and existing easements) would be mitigated according to the proposed re-vegetation plan developed in coordination with the City's Parks, Recreation, and Public Property Department. A copy of the re-vegetation plan would be provided to the USACE for review during the Draft Environmental Assessment comment period. (City of Omaha)
- Tree impacts in the existing ROW for 168th Street would not be mitigated. Instead, the City's Public Works Department would continue its practice of providing funding to the Planning Department to create tree planting projects to implement as necessary to meet the requirements of the *Green Streets Plan for Omaha*. (City of Omaha)
- Impacts to trees on private property would be mitigated by compensating the owner during the acquisition process. (City of Omaha)

- The City would attempt to remove trees outside of the primary nesting season (April 1 – September 1). If the proposed construction project would occur during the primary nesting season or any other time which may result in the “take” of migratory birds, a qualified biologist would conduct a field survey in accordance with NDOR’s Avian Protection Plan (APP) and *Special Prosecution and Progress for Migratory Birds* (A-42-0807). (City of Omaha, Contractor)
- Water flow and the movement of aquatic organisms between the east and west basins of Zorinsky Lake would be maintained at all times during construction. (City of Omaha, Contractor)

Standard Specifications (NDOR, 2007):

- Standard Specification 905 - Rock Riprap
 - Describes the material requirements, construction methods, and other stipulations for the placement of rock riprap.
- Standard Specification 907 - Gabions and Revet Mattresses
 - Describes the materials, construction methods, and other stipulations for the placement of rock filled gabions.

Invasive Species

- The USACE would be consulted regarding any control measures that have been put in place to prevent reintroduction of zebra mussels, and these controls would be followed. (City of Omaha, Contractor)
- Prior to construction, precautions would be taken to inspect and wash if needed any machinery and materials that would be in direct contact with Zorinsky Lake to ensure that no zebra mussels are attached. (City of Omaha, Contractor)
- Machinery or materials that entered Zorinsky Lake would be inspected for zebra mussels and washed as necessary prior to leaving the construction site along Zorinsky Lake.
- If zebra mussels are found attached to machinery, riprap, debris, or along the shoreline at any time during construction, the proper authorities (i.e. USACE, NGPC) would be notified immediately. (City of Omaha, Contractor)
- The spread and transfer of invasive plant species would be prevented to the maximum extent practicable. If invasive plant species are excavated during construction, they would be disposed of properly offsite at designated areas. (Contractor)

The following standard specifications would be used to minimize the spread of invasive species and noxious weeds that could result from the ground disturbance and grading for the Proposed Alternative.

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01(6) Amended A-43-0210 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to prevent the transfer of invasive plant and animal species.
- Standard Specification 202.01(4)(d) - Clearing and Grubbing - Description
 - Trash, dead trees, and other vegetation in the ROW limits and beyond the limits of construction shall be disposed of by the Contractor.

- Standard Specification 803.02 - Seeding - Material Requirements
 - Specifies seeding methods, rates of application, and seed mixtures.
- Standard Specification 803.03 - Seeding - Construction Methods
 - Specifies planting seasons and methods.
- Standard Specification 806.02(4)(c) - Sodding - Material Requirements
 - Specifies that sod may not contain invasive plant species.
- Standard Specification 807 - Erosion Control
 - Specifies methods for erosion control.

Threatened, Endangered, and Protected Species

- The City would attempt to remove trees and clear nests from the Zorinsky Lake bridge outside of the primary nesting season (April 1 – September 1). If tree removal or other nest clearing would occur during the primary nesting season or any other time which may result in the “take” of migratory birds, a qualified biologist would conduct a field survey in accordance with NDOR’s Avian Protection Plan (APP) and *Special Prosecution and Progress for Migratory Birds* (A-42-0807). (City of Omaha, Contractor)
- If eagle nests are identified within the study area, NDOR, in coordination with the City, would coordinate with the USFWS and NGPC. (City of Omaha, Contractor)

The following “General Conservation Conditions for All Projects” provided by NDOR would also be incorporated into the specifications for this project, and implemented as appropriate (responsible parties are noted):

- A-1 Changes in Project Scope.** If there is a change in the project scope, the project limits, or environmental commitments, the NDOR Environmental Section must be contacted to evaluate potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from the Federal Highway Administration. (District Construction, Contractor)
- A-2 Conservation Conditions.** Conservation conditions would be fully implemented within the project boundaries as shown on the plans. (District Construction, Contractor)
- A-3 Early Construction Starts.** Request for early construction starts must be coordinated by the Project Construction Engineer with NDOR Environmental for approval of early start to ensure avoidance of listed species sensitive lifecycle timeframes. Work in these timeframes would require approval from the Federal Highway Administration and could require consultation with the USFWS and NGPC. (District Construction, Contractor)
- A-4 E&T Species.** If federal or state listed species are observed during construction, contact NDOR Environmental. Contact NDOR Environmental for a reference of federal and state listed species. (NDOR Environmental, City of Omaha, Contractor)

A-5 Refueling. Refueling would be conducted outside of those sensitive areas identified on the plans, in the contract, and/or marked in the field. (Contractor)

A-6 Restricted Activities. The following project activities shall, to the extent possible, be restricted to between the beginning and ending points (stationing, reference posts, mile markers, and/or section-township-range references) of the project, within the right-of-way designated on the project plans: borrow sites, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage sites.

For activities outside the project limits, the contractor should refer to the NGPC website to determine which species ranges occur within the off-site area. The contractor should plan accordingly for any species surveys that may be required to approve the use of a borrow site, or other off-site activities. The contractor should review Chapter 11 of the Matrix (on NDOR's website), where species survey protocol can be found, to estimate the level of effort and timing requirements for surveys.

Any project related activities that occur outside of these areas must be environmentally cleared/permitted with the NGPC as well as any other appropriate agencies by the contractor and those clearances/permits submitted to the District Construction Project Manager prior to the start of the above listed project activities. The contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of 4 different ground photos showing the existing conditions at the proposed activity site, depth to ground water and depth of pit, and the "Platte River depletion status" of the site. The District Construction Project Manager would notify NDOR Environmental which would coordinate with FHWA for acceptance if needed. The contractor must receive notice of acceptance from NDOR, prior to starting the above listed project activities. These project activities cannot adversely affect state and/or federally listed species or designated critical habitat. (NDOR Environmental, District Construction, Contractor)

A-7 Waste/Debris. Construction waste/debris would be disposed of in areas or a manner which will not adversely affect state and/or federally listed species and/or designated critical habitat. (Contractor)

S-3. Revegetation. All permanent seeding and plantings (excluding managed landscaped areas) shall use species and composition native to the project vicinity as shown in the *Plan for the Roadside Environment*. However, within the first 16 feet of the road shoulder, as within high erosion prone locations, tall fescue or perennial ryegrass may be used at minimal rates to provide quick groundcover to prevent erosion, unless state or federally listed threatened or endangered plants were identified in the project area during surveys. If listed plants were identified during survey, any seed mix requirements identified during resource agency consultation shall be used for the project. (NDOR Environmental)

The following specific conservation conditions for northern long-eared bat would also be followed:

NLEB-1 Tree clearing, bridge deck joint replacements over the bridge deck, bridge/>5-ft box-culvert removal activities would be scheduled to occur between October 1st – March 31st to avoid impacts to the northern long-eared bat roosting period. (NDOR Environmental, Construction, Contractor)

OR

NLEB-2 If tree clearing, bridge deck joint replacement over the bridge deck, or removal of bridge/>5-ft box-culvert structures occurs during the northern long-eared bat maternal roosting period (April 1st – September 30th), NDOR or a qualified biologist would perform surveys prior to the start of these activities at the following locations: entire length of the project (location of suitable habitat). If the species is absent, work may proceed. If the species is found, NDOR Environmental Section would consult with the USFWS, NGPC, and FHWA prior to the start of construction. (NDOR Environmental, Construction, Contractor)

Standard Specifications (NDOR 2007):

- Standard Specification 107.01 – Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.

Utilities

- The City would send out coordination letters to all known utility companies that typically operate in the Omaha Area to make them aware of the project. The City would notify utility companies of the need for relocation during the design stage of the project so that utilities could be relocated ahead of roadway construction. Where relocations are required, designs to relocate the utility would be developed by the utility company. The cost of utility relocation and each party's responsibilities would be determined through coordination with each utility company and evaluations of past agreements between the City and each utility company. The City's Construction Division would coordinate utility agreements with the utility companies prior to construction. (City of Omaha, Engineer)
- The Contractor shall follow the guidelines of NDOR's *Policy for Accommodating Utilities on State Highway ROW* (NDOR, 2001). (Contractor)
- The Contractor would be responsible for notifying utility companies of relocation needs during the construction phase of the project for utilities that were not relocated prior to construction. (City of Omaha, Contractor)
- Utility relocation or replacement using federal funds is not anticipated for the project. If utility relocation or replacement is required in a later phase of the project, a reevaluation shall be required if: (1) federal funds will be used for the utility work; or (2) the project construction contractor will be responsible for the work. If this utility work is identified during final design, the project sponsor shall initiate the reevaluation prior to project letting. If the work is identified

during construction, the project sponsor shall initiate the reevaluation prior to commencing utility work. (NDOR Environmental, NDOR District)

If either one of the above two conditions does not apply, later relocation or replacement of utilities shall be coordinated through NDOR and the Contractor per NDOR's Standard Specifications for Highway Construction, Subsection 105.06. Any environmental permits required for these utility relocations or replacements shall be the responsibility of the Utility. (NDOR District, Utility Provider(s))

Standard Specifications (NDOR, 2007):

- Standard Specification 105.06 - Control of Work - Cooperation with Utilities
 - Requires the City to notify all utility companies, pipeline owners, railroads, or other parties affected by the proposed work.
- Standard Specification 107.09 - Legal Relations and Responsibility to the Public - Preservation and Restoration of Property, Trees, Monuments, etc.
 - Requires the Contractor to preserve, protect, and prevent damage to all public and private property.
- Standard Specification 107.16 - Legal Relations and Responsibility to the Public - Contractor's Responsibility for Utility Property and Services
 - Requires the Contractor to verify the location of existing utilities.
- Standard Specification 107.12 - Legal Relations and Responsibility to the Public - Responsibility for Damage, Injury, or Other Claims
 - Requires the Contractor to be responsible for all damage to property used during construction resulting from neglect or misconduct. The Contractor shall also be required to meet with local government entities to advise them of their intentions to use local roads, and is responsible for damage from such use.

Special Provisions:

- Status of Utilities
 - Presents a detailed plan for utility company coordination, including names, telephone numbers, stationing for utility conflicts, and other pertinent information for the Contractor.

Noise Impacts

- Noise walls would be constructed at the following locations: NB01, NB02, NB07, NB08, NB09, NB10, NB13, SB0708, SB09, and SB11. (City of Omaha, Engineer)
- Noise walls designs would be consistent with other similar noise walls constructed recently around the City, and would consist of stamped or colored concrete, stone façades, or other similar materials. The front of the noise walls would be stained concrete, while the back side of the walls would be left unfinished. (City of Omaha, Engineer)

Hazardous Materials and Recognized Environmental Conditions

- If contaminated soils and/or water or hazardous materials are encountered, then all work within the immediate area of the discovered hazardous material would stop until NDOR/FHWA is notified and a plan to dispose of the Hazardous Materials has been developed. Then DEQ would be consulted and a remediation plan would be developed for this project. (City of Omaha, Contractor)
- The potential exists to have contaminants present resulting from minor spillage during fueling and service associated with construction equipment. Should contamination be found on the project during construction, the DEQ would be contacted for consultation and appropriate actions be taken. (City of Omaha, Contractor)
- If the property at 16761 Pine Street is acquired, the City will perform due diligence (i.e., a Phase I ESA) on the property to identify any potential contamination. (City of Omaha)

Standard Specifications (NDOR, 2007):

- Standard Specification 107.01 as Amended A-43-0210 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to notify the Engineer if previously unidentified hazardous materials are encountered during construction.

Visual Impacts and Aesthetic Considerations

- Lighting would be designed to avoid intrusion into the back yards of residences. Specifically, lighting would only be installed at intersections. (City of Omaha)
- Noise walls designs would be consistent with other similar noise walls constructed recently around the City, and would consist of stamped or colored concrete, stone façades, or other similar materials. The front of the noise walls would be stained concrete, while the back side of the walls would be left unfinished. (City of Omaha, Engineer)
- Neighborhood monument signs impacted by the project would be mitigated in accordance with NDOR's *Right of Way Manual*. (City of Omaha)
- Four entrance signs for Edward Zorinsky Recreation Area would be relocated in accordance with the Parks Department's Sign Manual. (City of Omaha)
- Landscaping and fencing removed by the project would be mitigated through the acquisition process, in coordination with the appropriate HOA or homeowner, whichever owns the landscaping or fencing. (City of Omaha)
- Mitigation measures being taken to reduce visual effects to the nearby residences include minimizing the removal of trees outside of the ROW to the extent possible, especially in those areas where homes front the roadway.
 - Impacts to trees on private property would be mitigated by compensating the owner during the acquisition process. (City of Omaha)
 - Tree impacts in the existing ROW for 168th Street would not be mitigated. Instead, the City's Public Works Department would continue its practice of providing funding to the Planning Department to create tree planting projects to implement as necessary to meet the requirements of the Green Streets Plan for Omaha. (City of Omaha)

- Disturbed areas shall be re-vegetated with native species where appropriate. (City of Omaha, Contractor)
- Tree and vegetation removal at Edward Zorinsky Recreation Area and Pinewood Park (outside of the existing ROW and existing easements) would be mitigated according to the proposed re-vegetation plan developed in coordination with the City's Parks, Recreation, and Public Property Department. A copy of the re-vegetation plan would be provided to the USACE for review during the Draft Environmental Assessment comment period. (City of Omaha)

Temporary Construction Impacts

- Temporary fences would be installed upon removal of existing fences and maintained throughout construction until permanent fences are installed. Impacts to fencing, landscaping, and sprinklers would be handled in accordance with NDOR's *Right of Way Manual*. (Contractor)
- Impacts to trees on private property would be mitigated by compensating the owner during the acquisition process for permanent and temporary easements. (City of Omaha)
- Neighborhood monument signs impacted by the project would be replaced in accordance with NDOR's *Right of Way Manual*. (City of Omaha)
- ROW impacts would be minimized through the use of retaining walls, to reduce the additional grading needed on adjacent property. (City of Omaha, Engineer)
- Dust emissions would be controlled throughout the construction project in compliance with Nebraska State Code (Title 129, Chapter 32). (Contractor)
- During construction, temporary at-grade crossings would be provided for trail users to maintain mobility between the east and west segments of the Zorinsky Lake Trail. These temporary crossings are planned to be located at the Zorinsky Lake North and South Access Drives, and would be painted and signed during construction. Additionally, because the temporary at-grade crossing at the South Access Drive would become permanent following construction and would be signalized, the City would use a temporary signal or would have the permanent signal operational prior to closing the trail underpasses for bridge reconstruction. (City of Omaha, Contractor)
- Residences with direct driveway access to 168th Street would be provided access to their property at all times. (Contractor)
- For those driveways (including private access roads) that are being reconstructed in place, the driveways would be constructed in phases (i.e. one side of the driveway would be removed and re-poured, and the other side would be removed and re-poured several days later to allow the concrete to cure) allowing for vehicular access at all times. For driveways that are to be relocated, the new driveway would be poured before the old driveway is removed. When traffic is shifted to the opposite side of the street, property owners would be provided with temporary surfacing or allowed to drive on the improved portions of 168th Street to access their driveways. These individuals would be contacted directly by the City to discuss specific accommodations that could be made to maintain access to their properties during construction. (City of Omaha, Contractor)
- The City would notify the trash hauler (currently Deffenbaugh) and the United States Postal Service prior to construction, and would make accommodations for the removal and replacement

of mailboxes during the acquisition process. Trash pickup⁶⁰ and mail delivery would not be disrupted. (City of Omaha, Contractor)

- For individuals with concerns for special access (e.g. elderly or disabled persons temporarily affected by driveway or sidewalk reconstruction) along the study area, the City would identify these individuals by placing door hangers on affected property owners' front doors prior to construction. The City would coordinate with these individuals directly during the final design phase to work out solutions to provide access during construction. Examples of solutions may include special timing, temporary paving, providing assistance for trips, or other acceptable measures. **If you or someone you know may require special access or provisions during construction, please contact the City at 402-444-5000.** (City of Omaha, Contractor)
- Temporary impacts to the traveling public would be mitigated by providing signage and information prior to lane closures, modifying side street access, making temporary alternate routes (i.e. detours) available using adjacent major roadways (e.g. 156th Street, 180th Street, Pacific Street, West Center Road, Q Street), and/or other acceptable measures to provide safe vehicular access. No improvements would be made to the temporary alternate routes. (City of Omaha, Contractor)
- Vehicular access would be maintained at all times in priority areas, particularly at Lakeside Hills and CHI Lakeside Hospital, the Edward Zorinsky Recreation Area access drives, the KWAA Baseball Complex during times of peak usage (i.e. weekends and evenings from March to October), at Living Hope Lutheran Church on Sundays, and at Willowdale Elementary School while school is in session. (City of Omaha, Contractor)
- Pedestrian access would be maintained at all times in priority areas, particularly at the pedestrian crossing at 168th Street north of P Street/Ehlers Street, at Willowdale Elementary School when school is in session, and at the Zorinsky Lake Trail through the use of temporary at-grade crossings. (City of Omaha, Contractor)

Standard Specifications (NDOR, 2007):

- Standard Specification 104.05 - Maintenance of Detours and Shooflies
 - Requires the Contractor, the extent practicable, to provide private dwellings, commercial properties, business, and public facilities access to the nearest public road.
- Standard Specification 104.08 - Scope of Work - Final Cleaning Up
 - Requires the Contractor to remove all rubbish, excess material, and equipment from the project site, and to leave the site in a neat and presentable condition. Also requires the Contractor to fill borrow sites.
- Standard Specification 105.12 - Control of Work - Use of Land
 - Requires the Contractor to leave any lands outside the ROW used for construction in a neat and presentable condition.

⁶⁰ The currently scheduled days for trash service for properties along 168th Street are Monday and Tuesday. For updated information regarding trash service, visit <http://www.wasteline.org/> or call 402-444-5238.

- Standard Specification 107.01 - Legal Relations and Responsibility to the Public - Laws to be Observed
 - Requires the Contractor to be fully informed of and observe local, state and federal laws and regulations.
- Standard Specification 205.02 - Excavation and Embankment - Material Requirement
 - Specification for earthwork materials and borrow sites.
- Standard Specification 208 - Borrow and Waste Site Restoration
 - Specifications for restoration of borrow sites.
- Standard Specification 301.02(1a, 1b) - General Requirements - Equipment
 - Requires the Contractor to keep equipment in satisfactory working condition and to operate equipment in the manner it was intended.

Special Provisions:

- Disposition of Materials
 - Requirements for the Contractor to deliver surplus materials to the City, and disposal of all other waste materials.

SECTION 6 LIST OF PREPARERS AND REVIEWERS

This EA was prepared by a number of qualified individuals, and reviewed by City, State and Federal officials. Their names, qualifications, and positions are listed below.

Alfred Benesch and Company

Craig Mielke, PWS: Environmental Scientist/NEPA Technical Lead, Alfred Benesch and Company. B.S. Agriculture (1998), Natural Resources and Environmental Science, Purdue University. (Contributions: Primary Author, Purpose and Need, Alternatives, Land Use, Socio-Economics, Pedestrians and Bicyclists, Parks and Recreation, Section 4(f) Resources, Section 106, Wildlife and Endangered Species, Wetlands, Water Quality, Floodplains, Secondary and Cumulative Impacts, Public Involvement)

Zach Kresl: Project Scientist I, Alfred Benesch & Company. B.S. Biology (2012) University of Nebraska Omaha. (Contributions: Document Preparation, Parks and Recreation, Trails, Section 4(f) Resources, Wetlands, Socio-Economics, Zorinsky Lake and Ed Zorinsky Recreation Area (Papillion Creek Dam Site 18), Wildlife and Habitat, Pedestrians and Bicyclists, Noise Study, GIS Mapping)

James Jussel, P.E., PTOE: Transportation Planner/Traffic Engineering Technical Lead, Alfred Benesch and Company. B.S. Civil Engineering (1995), University of Nebraska Lincoln. (Contributions: Traffic)

Patrick Sward, J.D.: Environmental Scientist, Alfred Benesch and Company. Juris Doctor Law (1986) University of Nebraska. B.S. Agriculture (1981) University of Nebraska. (Contributions: Hazardous Materials)

Sara Zink: Environmental Scientist II, Alfred Benesch and Company. B.S. Environmental Studies, Life Sciences (2010) University of Nebraska Omaha. (Contributions: Wetlands)

Stephanie Dostal, IAP2: Public Involvement Specialist, Alfred Benesch and Company. B.A. English (1993) Wayne State College. (Contributions: Public Involvement)

City of Omaha Public Works

Jon Meyer, P.E.: Engineer III.

Kirk Pfeffer, P.E.: Design Engineer.

Murthy Koti, P.E.: City Traffic Engineer.

Todd Pfitzer, P.E.: City Engineer.

Nebraska Department of Roads

Jon Barber: Highway Environmental Program Manager.

Zach Cunningham: Highway Environmental Biologist. (Contributions: Biological Evaluation)

Rob Bozell: Highway Archeology Program Manager. (Contributions: Archeological Evaluation Review)

Will Packard: Highway Environmental Specialist.

Federal Highway Administration

Melisa Maiefski: Program Delivery Team Leader.

Frank Rich, P.E.: Senior Transportation Engineer.

Scott Stapp: Environmental Protection Specialist.

Justin Luther: Transportation Planner, Realty Officer, Civil Rights.

David Mraz: Bridge Engineer.

SECTION 7 LIST OF ACRONYMS, ABBREVIATIONS, AND TERMS

ALPHABETICALLY

Advisory Council on Historic Preservation (ACHP)
American Association of State Highway and Transportation Officials (AASHTO)
American Community Survey (ACS)
American Society of Testing and Materials (ASTM)
Americans with Disabilities Act (ADA)
Americans with Disabilities Act Accessibility Guidelines (ADAAG)
Architectural Barriers Act (ABA)
Area of Potential Effect (APE)
Average Daily Traffic (ADT)
Avian Protection Plan (APP)
Best Management Practices (BMPs)
Biological Assessment (BA)
Biological Evaluation (BE)
Block Group (BG)
City of Omaha Capital Improvement Program (CIP)
Clean Air Act of 1970 (CAA)
Clean Water Act of 1977 (CWA)
Code of Federal Regulations (CFR)
Combined Sewer Overflow (CSO)
Control Number (CN)
Council on Environmental Quality (CEQ)
Cubic yards (cu yds)
Decibels, A-weighted sound level (dBA)
Department of Justice (DOJ)
Draft Environmental Assessment (DEA)
Endangered Species Act of 1973 (ESA)
Environmental Assessment (EA)
Environmental Data Resources, Inc. (EDR)
Environmental Justice (EJ)
Environmental Protection Agency (EPA)
Environmental Quality Control Division (EQCD)
Equivalent Continuous Noise Level (Leq)
Executive Order (EO)
Federal Acquisition Regulation (FAR)
Federal Emergency Management Agency (FEMA)
Federal Highway Administration (FHWA)
Federal Register (FR)

Finding of No Significant Impact (FONSI)
Flood Insurance Rate Maps (FIRMs)
General condition ratings (GCRs)
Greenhouse gas (GHG)
High-occupancy vehicle (HOV)
Homeowners Associations (HOA)
Individual Permit (IP)
Intelligent Transportation Systems (ITS)
Interagency Working Group on Environmental Justice (EJ IWG)
Kingswood Athletic Association (KWAA)
Level of Service (LOS)
Limited English Proficiency (LEP)
Local Public Agency (LPA)
Long Range Transportation Plan (LRTP)
Mean sea level (msl)
Memorandum of Understanding (MOU)
Metropolitan Planning Agency (MAPA)
Metropolitan Utilities District (MUD)
Migratory Bird Treaty Act (MBTA)
Mile(s) per hour (mph)
Mobile Source Air Toxics (MSATs)
Model Year (MY)
Municipal Separate Storm Sewer System (MS4)
National Ambient Air Quality Standards (NAAQS)
National Cooperative Highway Research Program (NCHRP)
National Environmental Policy Act of 1969 (NEPA)
National Flood Insurance Program (NFIP)
National Historic Preservation Act of 1966 (NHPA)
National Pollutant Discharge Elimination System (NPDES)
National Register of Historic Places (NRHP)
Nationwide Permits (NWP)
Native American Graves and Repatriation Act (NAGPRA)
Nebraska Department of Environmental Quality (NDEQ)
Nebraska Department of Natural Resources (NDNR)
Nebraska Department of Roads (NDOR)
Nebraska Game and Parks Commission (NGPC)
Nebraska State Historical Society (NSHS)
No date (n.d.)
Noise Abatement Criteria (NAC)
Notice of Intent (NOI)
Notice of Termination (NOT)

Omaha Public Power District (OPPD)
Ordinary High Water Mark (OHWM)
Papillion Creek Dam Site 18 (Dam Site 18)
Papio-Missouri River Natural Resources District (P-MRNRD)
Post-Construction Stormwater Management Plan (PCSMP)
Public Right-of-Way Accessibility Guidelines (PROWAG)
Recognized Environmental Condition (REC)
Recreational Vehicle (RV)
Right-of-way (ROW)
Sanitary Improvement District (SID)
State Historic Preservation Officer (SHPO)
Stormwater Management Program (SWMP)
Stormwater Pollution Prevention Plan (SWPPP)
Surface Transportation Program – Competitive (STPC)
Total Maximum Daily Loads (TMDLs)
Traffic Management Center (TMC)
Traffic Operations Center (TOC)
Transportation Improvement Plan (TIP)
Transportation System Management (TSM)
Tribal Historic Preservation Officer (THPO)
Uniform Federal Accessibility Standards (UFAS)
United States Architectural and Transportation Barriers Compliance Board (the Access Board)
United States Army Corps of Engineers (USACE)
United States Code (USC)
United States Department of Transportation (USDOT)
United States Fish and Wildlife Service (USFWS)
Vehicle miles traveled (VMT)
Vehicles per day (vpd)
Waters of the United States (WUS)
Wellhead Protection Area (WHPA)
Wellhead Protection Plans (WHPP)

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