Environmental Services
MONTANA DEPARTMENT OF TRANSPORTATION
Helena, Montana 59620

Memorandum

To: Lisa Hurley
Fiscal Programming Section Supervisor

From: Heidy Bruner, P.E.
Environmental Engineering Section Supervisor

Date: August 12, 2015

Subject: Categorical Exclusion (c)(23)
3M SE Whitefish – BR Deck
NHPB 38-1(13)1
Control Number: 8088000

Environmental Services Bureau has reviewed the proposed project and concluded that it will not involve unusual circumstances as described under 23 CFR 771.117(b). As a result, the project qualifies as a Categorical Exclusion under the provisions of 23 CFR 771.117(c), part (23), which describes Federally-funded projects that receive less than $5,000,000 of Federal funds. The proposed action also qualifies as a Categorical Exclusion under the provisions of ARM 18.2.261 (Sections 75-1-103 and 75-1-201, MCA).

The project is located on MT 40 in Flathead County approximately 3 miles southeast of Whitefish at RP 1.69. The proposed project involves rehabilitating the bridge deck in order to extend the service life of the structure. No additional right of way will be required. The total estimated cost of the project at this time including CN + CE w/INF + IDC = $1,536,108.

In accordance with the Federal Highway Administration (FHWA) letter of March 29, 1999, please notify FHWA that the proposed action is being processed in accordance with 23 CFR 771.117(c).

e-copies: Ed Toavs, Missoula District Administrator
Chris Hardan, P.E., Missoula Bridge Area Engineer
Kent Barnes, P.E., Bridge Engineer
Robert Stapley, Right-of-Way Bureau Chief
Suzy Price, Contract Plans Bureau Chief
Tom Martin, P.E., Environmental Services Bureau Chief
Susan Kilcrease, Environmental Services Project Development Engineer
Gene Kaufman, P.E., FHWA Operations Engineer
Tom Erving, Fiscal Programming
Montana Legislative Branch Environmental Quality Council
copy: Environmental Services Bureau File

HB:smk:S:\PROJECTS\MISSOULA\8088000\8088000ENCEC23001.DOC

Montana Department of Transportation
PO Box 201001
Helena, MT 59620-1001

Memorandum

To: Kent Barnes, P.E.
Bridge Engineer

From: Chris Hardan, P.E. CWH
Bridge Area Engineer, Missoula District

Date: September 2, 2014

Subject: NHPB 38-1(13)1
3M SE Whitefish-BR Deck
8088000
232-Minor Bridge Rehabilitation

Please approve the attached Preliminary Field Review Report.

Approved Kent Barnes Date 9/2/2014
Kent Barnes, P.E., Bridge Engineer

We are requesting comments from those on the distribution list. We will assume their concurrence if we receive no comments within two weeks of the approval date.

Distribution:
Ed Toavs, Missoula District Administrator
Kent Barnes, Bridge Engineer
Paul Ferry, Highways Engineer
Roy Peterson, Traffic and Safety Engineer
Robert Stapley, Right-of-Way Bureau Chief
Tom Martin, Environmental Services Bureau Chief
Lynn Zanto, Rail, Transit, & Planning Division Administrator
Jake Goettle, Construction Engineering Services Bureau
Matt Strizich, Materials Engineer
Jon Swartz, Maintenance Division Administrator

cc:
Chris Hardan, Project Design Manager, Missoula District
Bridge File
David Prunty, Flathead County
Dawn Stratton, Fiscal Programming Section
Damian Krings, Road Design Engineer

e-copies:
Jim Walther, Engineering, Preconstruction Engineer
Lesly Tribelhorn, Highways Design Engineer
Mark Goodman, Hydraulics Engineer
KC Yahvah, District Hydraulics Engineer
Bill Semmens, Env. Resources Section Supervisor
Joe Weigand, District Biologist
Susan Kilcrease, District Project Development Engineer
Danielle Bolan, Traffic Operations Engineer
Ivan Ulberg, Traffic Design Engineer
Gabe Priebe, District Traffic Project Engineer
Kraig McLeod, Safety Engineer
Bill Squires, Missoula District Road Design
Michael Grover, Engineering Cost Analyst
Matt Wagner, Engineering Division Accountant
Paul Grant, Public Involvement Officer
Sue Sillick, Research Section Supervisor
Suzy Price, Contract Plans Bureau Chief
Alyce Fisher, Fiscal Programming Section
Robert Vosen, Missoula District Construction Engineer
Dean Jones, Operations Engineer
Becky Duke, Traffic Data Collection Sec. Super. (WIM)
Jake Goettle, Construction Bureau – VA Engineer
Shane Stack, District Preconstruction
Ben Nunnallee, District Projects Engineer
Mike Dodge, District Materials Lab
Gary Engman, District Maintenance Chief
Maureen Walsh, District Right of Way Supervisor
Phillip Inman, Utilities Engineering Manager
David Hoerning, Lands Section Supervisor
Greg Pizzini, Acquisition Section Supervisor
Joe Zody, R/W Access Management Section Manager
Matt Strizich, Materials Engineer
Jim Davies, Pavement Analysis Engineer
Jeff Jackson, Geotechnical Engineer
Bret Boundy, District Geotechnical Manager
Bryce Larsen, Supervisor, Photogrammetry & Survey
Paul Johnson, Project Analysis Bureau
Jean Riley, Planner
Dawn Stratton, Fiscal Programming Section
Michael Murphy, Eng. Manager, Bridge Management System
Duane Williams, Motor Carrier Services Division Administrator
Doug McBroom, Maintenance Division Operations Mgr (RWIS)

Introduction

An on-site field review for this project was held on August 20, 2013. The following personnel participated:

Chris Hardan	Bridge Area Engineer-Missoula District	Helena
Bill Squires	Project Design Engineer-Missoula District	Helena
Lotse Townsend	Design Supervisor-Missoula District	Helena
Ben Nunnallee	District Projects Engineer- Missoula District	Missoula
Lenci Kappes	Bridge Engineer-Missoula District	Helena

Proposed Scope of Work

The proposed project has been nominated to rehabilitate the bridge deck in order to extend the service life of the structure. The proposed rehabilitation work includes milling of the existing deck and placement of a modified concrete overlay. The concrete bridge approach slabs and joints will be removed and replaced with a 30 year bridge end treatment. The bridge rail and approach sections will also be updated with this project.

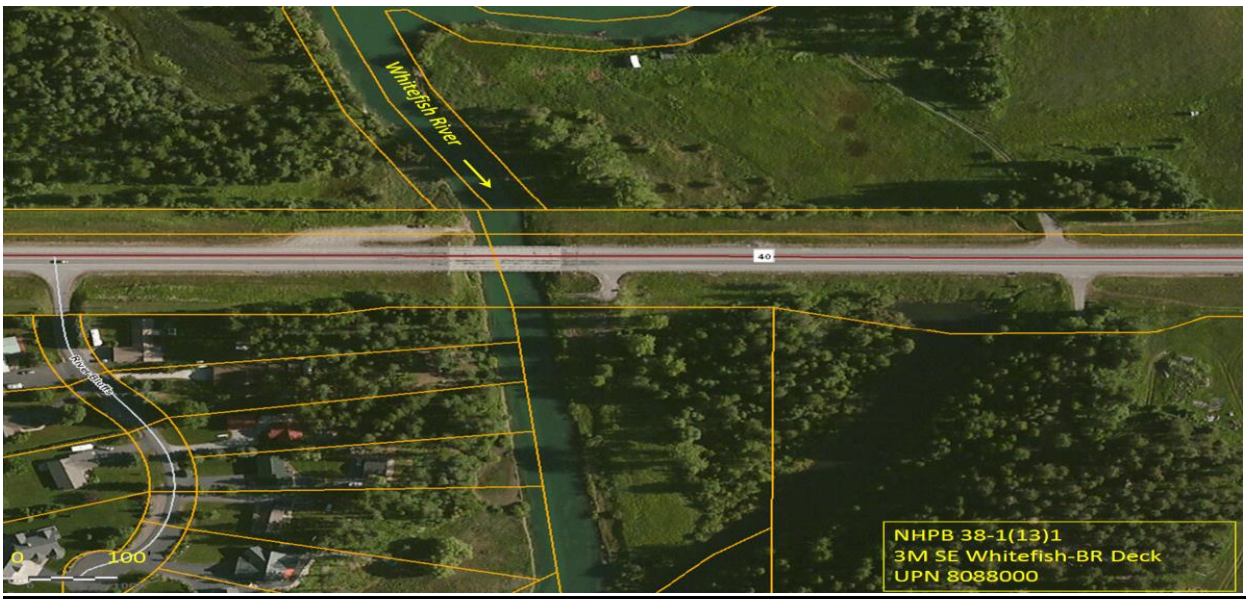
Purpose and Need

This bridge has been identified by the Bridge Management Section (BMS) as a candidate for rehabilitation. From the BMS inspection report 23% of the deck is delaminated with exposed rebar. Due to the extent of the delamination a modified concrete overly was selected as the appropriate treatment over deck patching and a thin overlay. Deck Rehabilitation has been determined as a cost-effective approach for extending the service life of not only the deck, but the overall structure as well. This project fits the Bridge Program objective under MAP-21 for bridge deck preservation.

Project Location and Limits

The project is located on MT-40 in Flathead County approximately 3 miles southeast of Whitefish at Reference Post 1.69. The project limits will extend approximately 200-ft from each bridge end.

The route is classified as a Principal Arterial-Non Interstate. The bridge crosses the Whitefish River and the NBI structure number is P00038001+06861.



Work Zone Safety and Mobility

At this time, Level 2 construction zone impacts are anticipated for this project as defined in the Work Zone Safety and Mobility (WZSM) guidance. The plans package will include a Transportation Management Plan (TMP) consisting mainly of a Traffic Control Plan (TCP). A limited Transportation Operations (TO) component and a limited Public Information (PI) component to address lane closures and wide load detours will also be included in the plan package. These issues are discussed in more detail under the Traffic Control and Public Involvement sections.

Physical Characteristics

The bridge was built in 1975 with the as-built project F-100(11). The bridge width is 47-6 from face of curb to face of curb with two 12-ft travel lanes and two 11-9 shoulders. The approach roadway at the bridge ends is 42-ft wide in both directions.

Generally, the terrain adjacent to MT-40 is level; the road has fairly low embankments and back slopes. However, the vertical alignment at the river crossing is more characteristic of rolling terrain. From the as-built plans the stream banks are at a slope of 2 to 1 from the roadway to the stream bed.

The horizontal alignment in on a tangent through the project limits. Virtually the entire project is within a 1000-ft. sag vertical curve that connects the -3.1242% grade west of the bridge to a +3.875% grade east of it. The vertical curve is centered about 37 feet east of the east bridge end, and provides stopping sight distance at 70 mph.

The vertical alignment may have to be raised slightly to accommodate an increase in the deck thickness but any change to the vertical alignment will be minimized as much as possible.

Montana 40 was reconstructed in 1975 under project F-100(11), Columbia Falls West. The plant mix surface was built 44 feet wide, with two 12 foot travel lanes and 10-ft shoulders. The 6:1 inslopes extend at least 26 feet beyond the current edge of driving lane. At that point the slope hinges to a generally 4:1 or flatter in fill sections, and to a 20:1 flat-bottom ditch 10 feet wide in cut sections.

The original surfacing consisted of 0.25’ of plant mix atop 0.20’ of crushed top surfacing (CTS) and 1.15’ of crushed base course (CBC). The current pavement width of 43 feet is the result of a 0.15’ plant mix overlay and chip seal placed in 1998 under STPN 38-1(8)0, Whitefish – East [3541]. The planned width for that project was 12.8 meters (42 feet).

Bridge Information for P00038001+06861	
Year Built	1975
Year Reconstructed	N/A
Total Length (feet)	141’-6”
Width (curb to curb) (feet)	47’-6”
Number of Spans	2
Bridge Rail Type	T-5 Bridge Rail
Superstructure Type	Type A Concrete Beams
Deck Joint Characteristics	N/A
Drawing Number	11070
Sufficiency Rating	82
Deck Rating	4-Poor
Deck Health Index	25

Traffic Data

Based on the limited scope of work anticipated for the project, a traffic data analysis study has not been requested at this time. The Traffic by Sections Report shows the MT-40 AADT within the project limits as 12,520 based on 2012 traffic data. Traffic data collected in 2008 for a safety project about one mile to the east calculated Daily ESALs at 277, with design year (2029) Daily ESALs of 630.

Crash Analysis

Based on the limited scope of work anticipated for this project, a crash analysis study has not been requested at this time.

Major Design Features

a. **Design Speed.** Due to the nature of this project, the design speed will not be a major design criterion. However, it may be necessary for determining clear zone distances and in the design of guardrail lengths. The design speed for a Principal Arterial-Non Interstate in level terrain is 70 mph.

b. **Horizontal Alignment**. The existing horizontal alignment will be maintained.

c. **Vertical Alignment**. The vertical alignment may need to be raised to match the elevation of the bridge ends. The approaches will be milled and tapered as necessary to match the new elevations.

d. **Typical Sections and Surfacing**. We propose to remove the 20-ft, concrete bridge approach slabs (which have settled and are covered with asphalt) and replace them with the 30-year bridge end treatment for roadways with >500 ESALs.

   Specifically, we propose 0.50' of Commercial Mix PG 70-28 atop 1.25' of Crushed Aggregate Course (extended 200' from bridge end) and 2.0' of special borrow (extended 100' from bridge end). Bridge end backfill is proposed below the special borrow (extending 10 feet from bridge end, or as recommended by Geotech. The new pavement will be chip sealed.

e. **Geotechnical Considerations**. No geotechnical involvement is anticipated. If during design it is determined a geotechnical investigation is needed the Geotechnical Section will be contacted.

f. **Hydraulics**. The Hydraulics Section will evaluate the bridge deck for runoff.

g. **Bridges.** The proposed work for this bridge is milling of the top section of the bridge deck to remove the unsound concrete and placement of a modified concrete overlay. The existing Type No. 5 bridge rail will be replaced with either concrete barrier or W830 bridge rail. New approach rail will be required to connect to the new bridge barrier or rail. No work to the bearings and substructure is anticipated at this time.

h. **Traffic.** The existing geometric traffic conditions will be maintained. The modified concrete overlay and the new bridge approach surfacing will require new striping. There are several signs that may require resetting (or replacement) if impacted by construction activities.

i. **Pedestrian/Bicycle/ADA**. There are no existing dedicated pedestrian, bicycle, or ADA features, and none are proposed.

j. **Miscellaneous Features**. The bridge approach guardrail sections will be replaced to accept

the new bridge barrier or rail. The existing rail at each corner of the bridge (including bridge approach section, w-beam guardrail, and end section is as follows:

- northwest: 100 feet
- northeast: 237.5 feet
- southwest: 175 feet
- southeast: 60± feet (includes a bridge approach section and a non-standard intersection roadway terminal (IRT) section)

We propose to replace all guardrail directly attached to the bridge ends. The guardrail along the eastbound lane that continues for about 525 feet east of the approach adjacent to the southeast bridge corner will be evaluated for possible replacement or adjustment.

There are approaches near the northwest and southeast corners of the bridge. The one west of the bridge is centered about 150 feet from the bridge end and is about 95 feet wide. It appears to function primarily as an informal river access (just beyond MDT right-of-way), and provides parking for a few vehicles towing trailers for small watercraft.

The approach east of the bridge is centered about 65 feet from the bridge end, and is about 25 feet wide. It also provides informal river access (within MDT right-of-way), but is much smaller and doesn't provide much room for parking.

No revisions are proposed to either approach. There may be short-term closures during construction.

k. **Context Sensitive Design Issues**. There was no context sensitive design issues noted during the review so no context sensitive design features are proposed.

Other Projects
There are thirty-six other active MDT projects in Flathead County. None are currently under construction or in design that will affect this project. This project may be tied for construction with a nearby project depending upon project schedules.

Location Hydraulics Study Report
Based on the limited scope of work for this project, a Locations Hydraulic Study Report will not be required. The Hydraulic section will evaluate the bridge decks for runoff.

Design Exceptions
No design exceptions are anticipated at this time.

Right-of-Way
The existing right-of-way is 100 feet on the north side and 90 to 140 feet on the south side. The proposed work is within the existing right-of-way limits. No new right-of-way acquisitions or construction permits are anticipated at this time.

Access Control
There will be no changes to access control on this project.

Utilities/Railroads
During the field review utilities were observed attached to the bridge on the south side. A utility survey by department forces will be requested.

No railroads will be affected by this project.

Maintenance Items
No maintenance items are anticipated for this project.

Intelligent Transportation Systems (ITS) Features
No ITS features are proposed for this project.

Experimental Features
There are no experimental features proposed for this project.

Survey
An engineering and utilities survey will be requested.

Public Involvement
Level A public involvement is being proposed with a news release explaining the project including a department point of contact.

Environmental Considerations
A Categorical Exclusion is anticipated for this project. Generally, the proposed project is not anticipated to adversely affect biological resources in the vicinity of the structures. No direct wetland impacts are anticipated at this time. As no impacts to the bed and bank of any stream are anticipated, a SPA 124 will not be required for the proposed work.

Energy Savings/Eco-Friendly Considerations
A modified concrete overlay was selected instead of a deck replacement to reduce the amount of material used.

Traffic Control
The work on the bridge will be completed in two phases. Traffic will be maintained with single lane closures and/or shifting of lanes to the shoulder during each phase. Temporary rail on bridge departure ends may be needed for temporary two way traffic.

A Transportation Management Plan (TMP) consisting of a Traffic Control Plan (TCP), a limited Transpiration Operations (TO) component and a limited Public Information (PI) component is appropriate for this project. The traffic control plan will specify that no short-term road closures will be permitted during the morning and afternoon peak commute times.

Project Management
The Bridge Bureau will manage the preconstruction phase of this project. Chris Hardan is the Design Project Manager.

Preliminary Construction Cost Estimate

	Estimated cost	Inflation (INF) (from PPMS)	TOTAL costs w/INF + IDC (from PPMS)
Road Work	$187,600		
Structure Rehab	$688,000		
Traffic Control (10%)	$88,600		
Subtotal	$964,200		
Mobilization (10%)	$96,400		
Subtotal	$1,060,600		
Contingencies (5%)	$53,000		
Total CN	**$1,113,600**	**$165,991**	**$ 1,396,417**
CE (10%)	**$111,400**	**$16,605**	**$ 139,691**
TOTAL CN+CE	**$ 1,225,000**	**$ 182,596**	**$ 1,536,108**

Note: Inflation is calculated in PPMS to the letting date. If there is no letting date, the project is assumed to be inside the current TCP and is given a maximum of 5 years until letting. IDC is calculated at 9.13% as of FY 2015.

Preliminary Engineering

It is not anticipated the project will require a significant addition or reduction to the nominated PE amount.

Project and Risk Management

Chris Hardan will be the Project Design Manager. This project is not a PoDI project by FWHA.

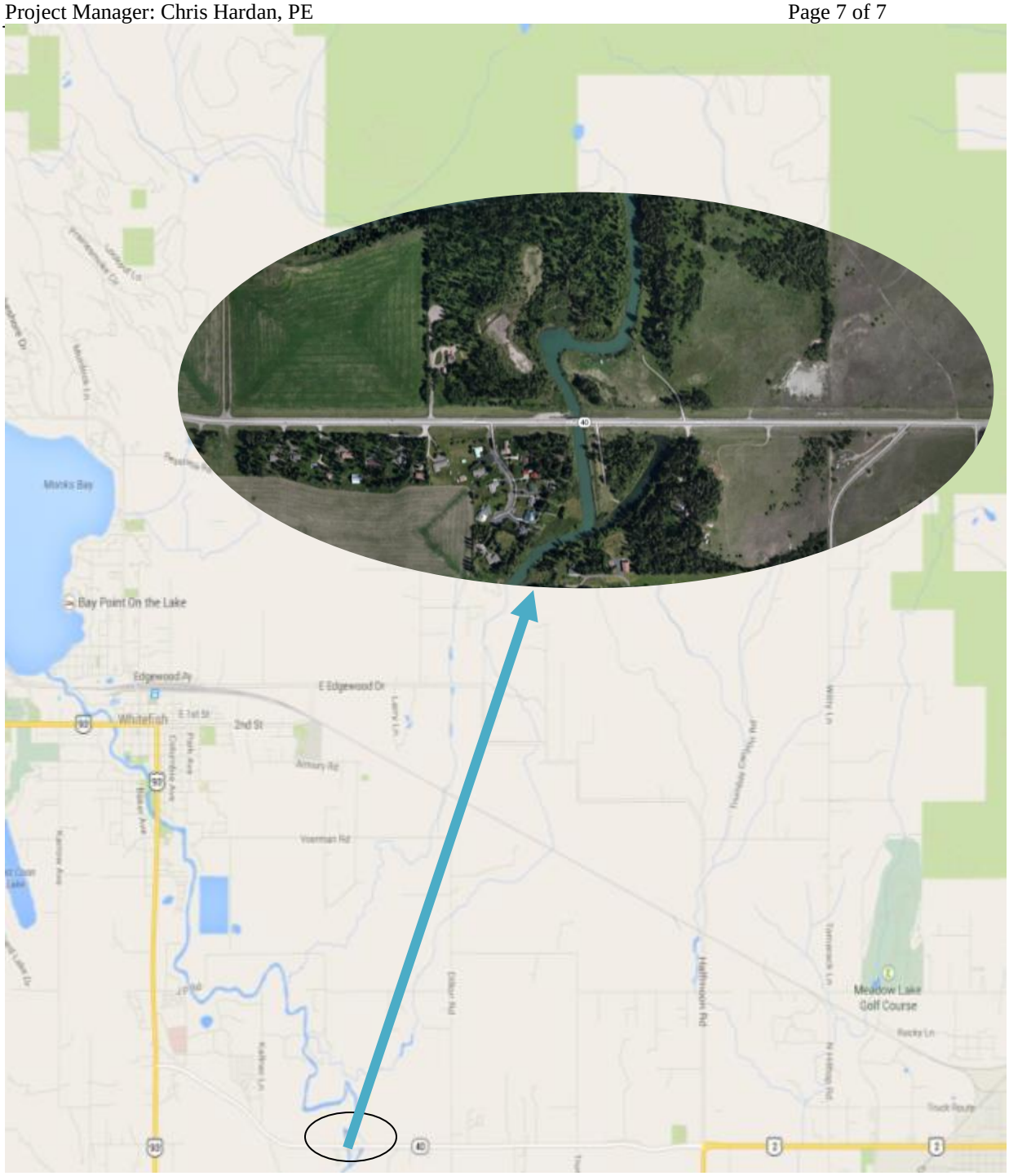
It is expected the overall level of risk is low to project costs and schedule. Additional bridge deck repair found during construction poses the greatest risk to the project cost. Bridge deck inspection reports will be used to more accurately estimate repair quantities to help mitigate the risk.

Ready Date

A ready date will be established once the override process is complete in OPX2.

Site Map

The project site map is attached.


Monks Bay
Bay Point On the Lake
Edgewood Pl
E Edgewood Dr
Whitefish
2nd St
Armory Rd
Meadow Lake
Golf Course