



Informational Meeting #1

Wednesday, June 12, 2013

Missoula Senior Citizens Center

705 South Higgins Avenue

6:00 p.m. to 8:00 p.m.



Welcome & Introductions

Meeting Format

Part 1 - Presentation

- Overview of planning study process
- Key findings from draft existing and projected conditions report
 - ⊙ Transportation system
 - ⊙ Environmental conditions

Part 2 – Breakout Session

- Public input on issues and concerns



The Missoula Bridges Planning Study IS:

- A **planning-level evaluation** of the Higgins Avenue and Madison Street Bridges

The Missoula Bridges Planning Study IS NOT:

- A design, right-of-way acquisition, or construction project
- An environmental compliance document
- A lane configuration study for Higgins Avenue (*a separate study would be needed to evaluate options identified in the LRTP and Downtown Master Plan*)

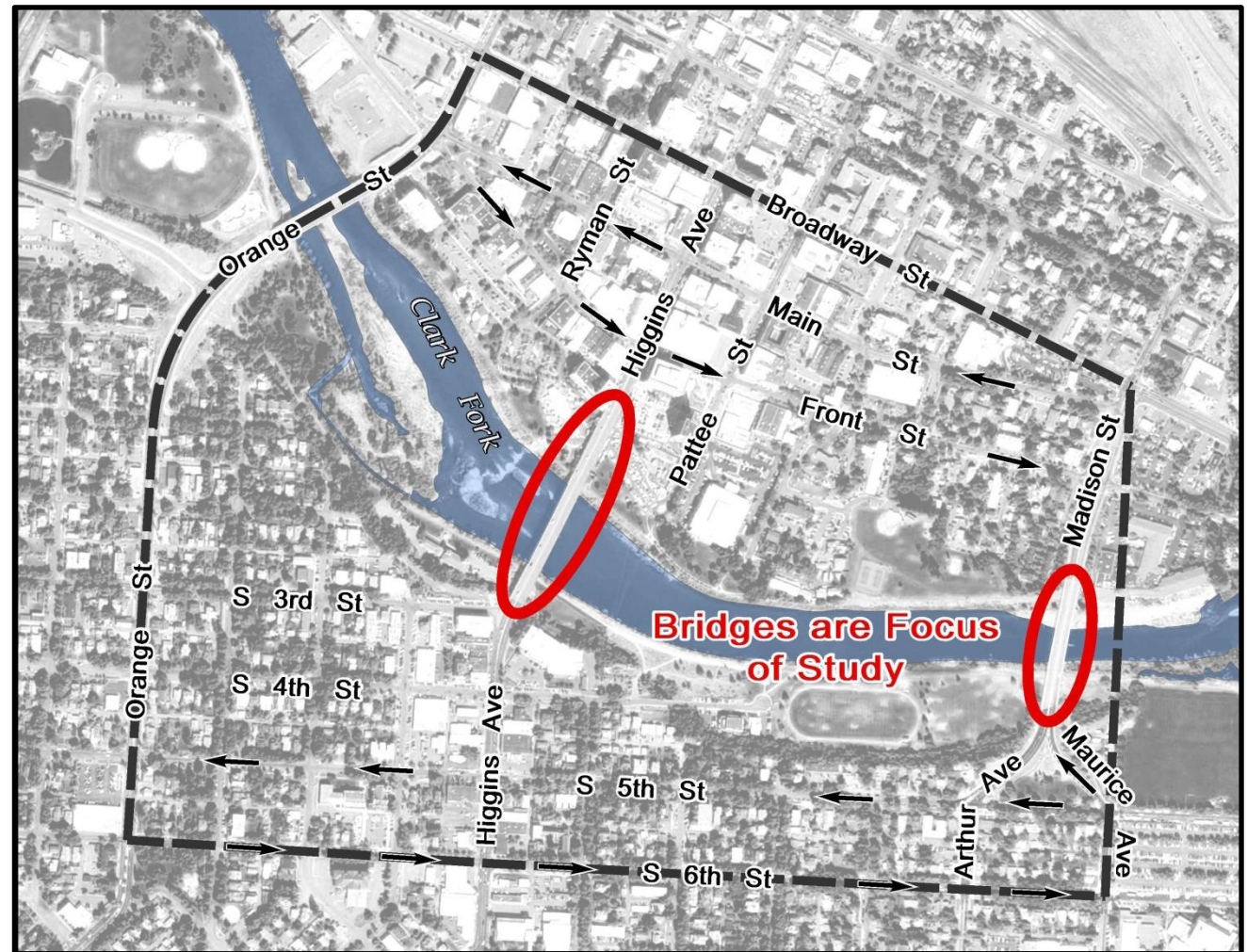
What are the Steps?

- Existing and Projected Conditions
- **Informational Meeting # 1**
- Resource Agency Meeting
- Needs and Objectives
- Potential Improvement Options
- Informational Meeting # 2
- Draft Study Report
- Public/Agency Review Period
- Final Study Report



We Are Here

Study Area





Transportation System Conditions

Standards, Guidelines, and Local References

Design Standards and Guidelines

Guided bridge analysis

- ⦿ Montana Department of Transportation (MDT)
- ⦿ American Association of State Highway and Transportation Officials (AASHTO)
- ⦿ Federal Highway Administration (FHWA)
- ⦿ Transportation Research Board (TRB)

Local Planning Documents and Regulations

Provided context for study

- ⦿ City of Missoula
- ⦿ Missoula County
- ⦿ Missoula Urban Transportation District

Bridge Characteristics

● Higgins Avenue Bridge (MDT Route U-8113 at RP 0.23)

- ⦿ Urban minor arterial
- ⦿ Constructed in 1962
- ⦿ Approximately 972 feet long

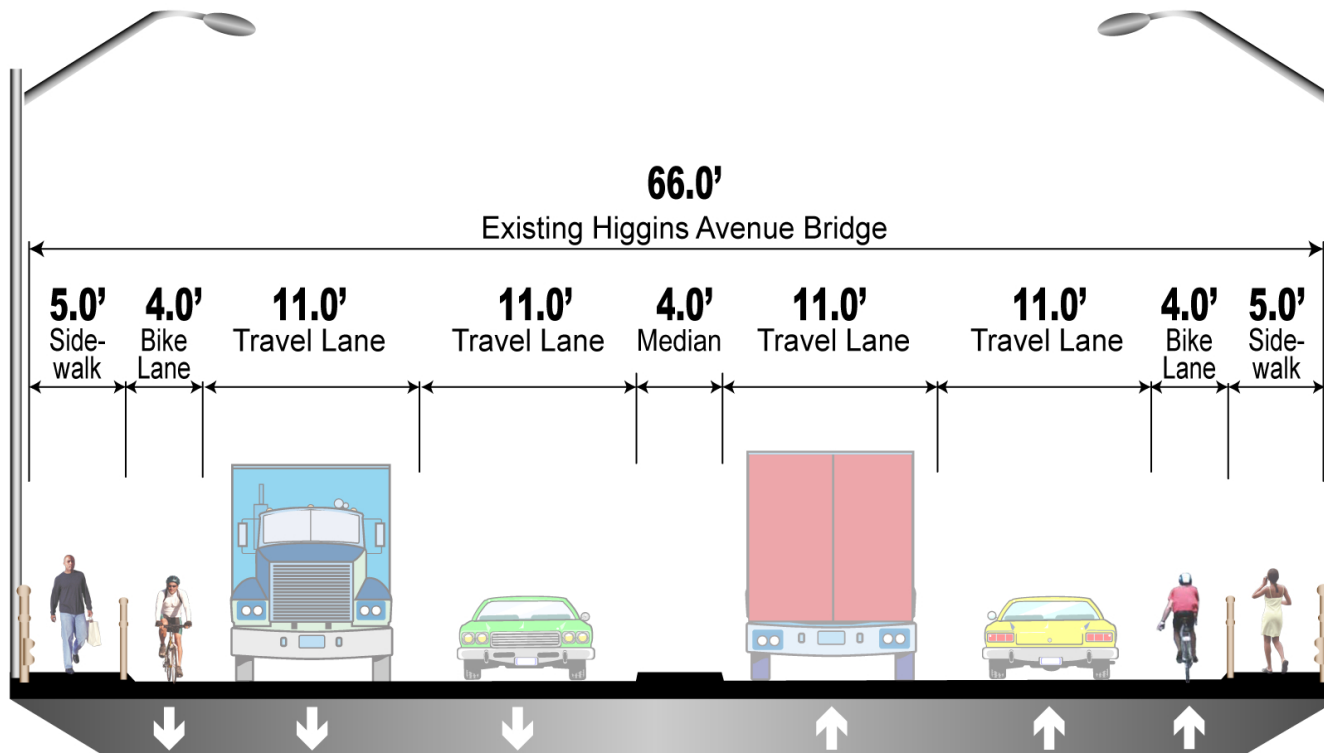


● Madison Street Bridge (MDT Route P-7 at RP 95.05)

- ⦿ Urban principal arterial
- ⦿ Constructed in 1958
- ⦿ Approximately 552 feet long



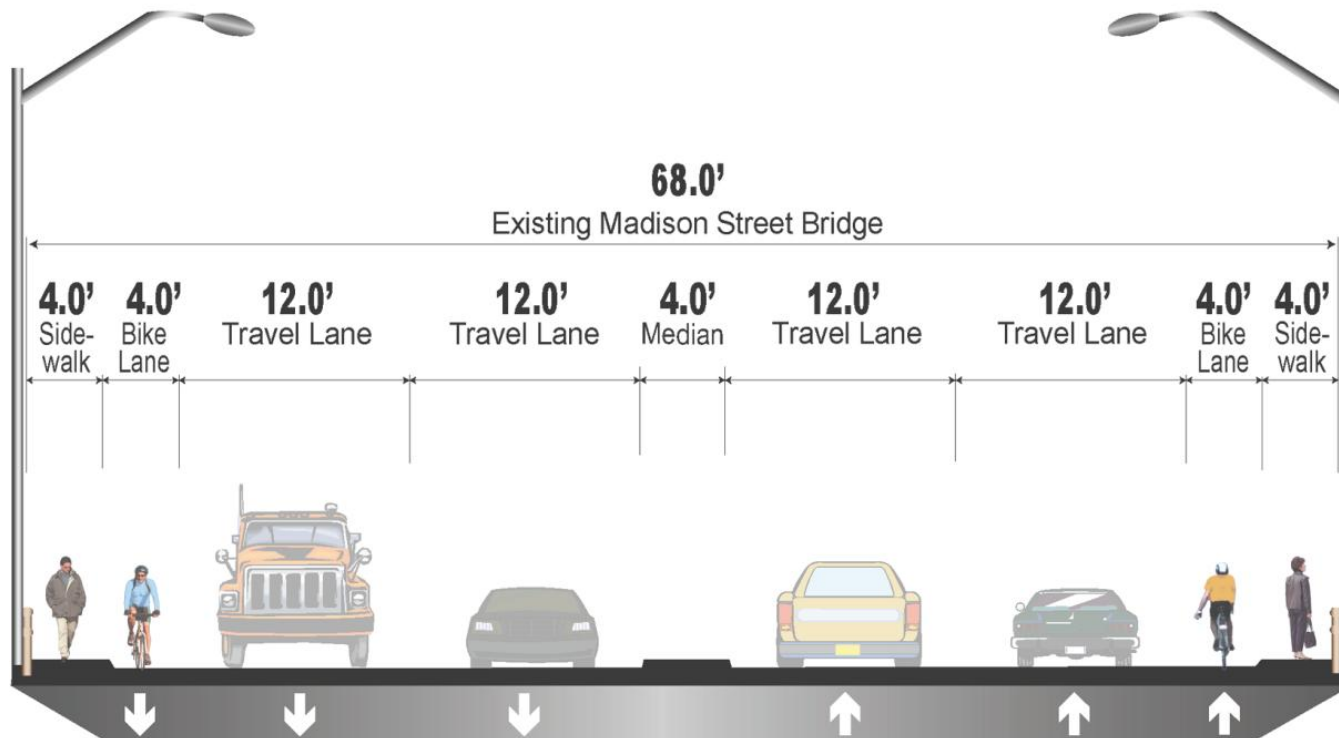
Higgins Avenue Bridge Existing Lane Configuration



Note: Dimensions include striping and railing widths.

Madison Street Bridge

Existing Lane Configuration



Note: Dimensions include striping and railing widths.

Structural/Functional Definitions

● Structurally Deficient

- ⊙ Structural elements are in poor condition or bridge was designed using smaller loads than current legal load limit.

● Functionally Obsolete

- ⊙ Bridge was built to standards no longer used today.

● Fracture Critical

- ⊙ Bridge does not include redundant supporting elements.

Terms do not imply bridges are unsafe.

Bridges do not meet current standards and may require higher maintenance/repair to remain in service.

Structural/Functional Status

Element	Higgins Avenue Bridge	Madison Street Bridge
Structure Status	Structurally Deficient	Structurally Deficient
Functional Status	Not Functionally Obsolete	Functionally Obsolete
Fracture Critical Status	Fracture Critical	Fracture Critical
Structure Condition	Poor	Poor
Deck Condition	Poor	Poor
Eligibility Status	Eligible for Repair or Replacement	Eligible for Repair or Replacement

Field Review – Structural Elements



Confirmed MDT Inspection Reports

- Concrete deterioration
- Corroding steel
- Leaking joints

Seismic Rating

○ Criteria

- Bridge's structural vulnerability
- Seismicity of the bridge site
- Bridge's importance as a vital transportation link

○ Range

- 7 (least vulnerable) to 100 (most vulnerable)
- Montana average is 24.4
- Most vulnerable in Montana is 66

○ Higgins Avenue Bridge: 45

○ Madison Street Bridge: 46

Bicycle/Pedestrian Elements

● Higgins Avenue Bridge

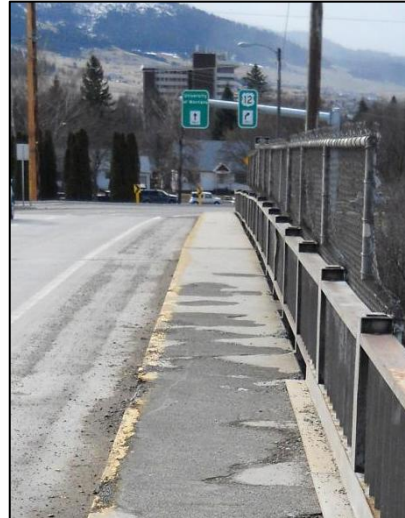
- ⊙ Dedicated 4-foot bicycle lanes
- ⊙ 5-foot sidewalks
- ⊙ Bridge railings on outside edges and pedestrian railings on inside edges of sidewalks

● Madison Street Bridge

- ⊙ Dedicated 4-foot bicycle lanes
- ⊙ 4-foot sidewalks
- ⊙ Bridge railings on outside edges of sidewalks
- ⊙ Separate bicycle/pedestrian bridge underneath the main roadway bridge



Field Review – Bicycle/Pedestrian Elements



- Concrete deterioration
- Ramp discontinuities
(i.e., trip hazards)
- Railing type and height
 - ⊙ Crashworthy barrier required
 - ⊙ Minimum height of 43 inches
- Usable width

Bicycle/Pedestrian Usage



**Higgins Avenue and
Madison Street**

- High-use corridors

Crash Analysis

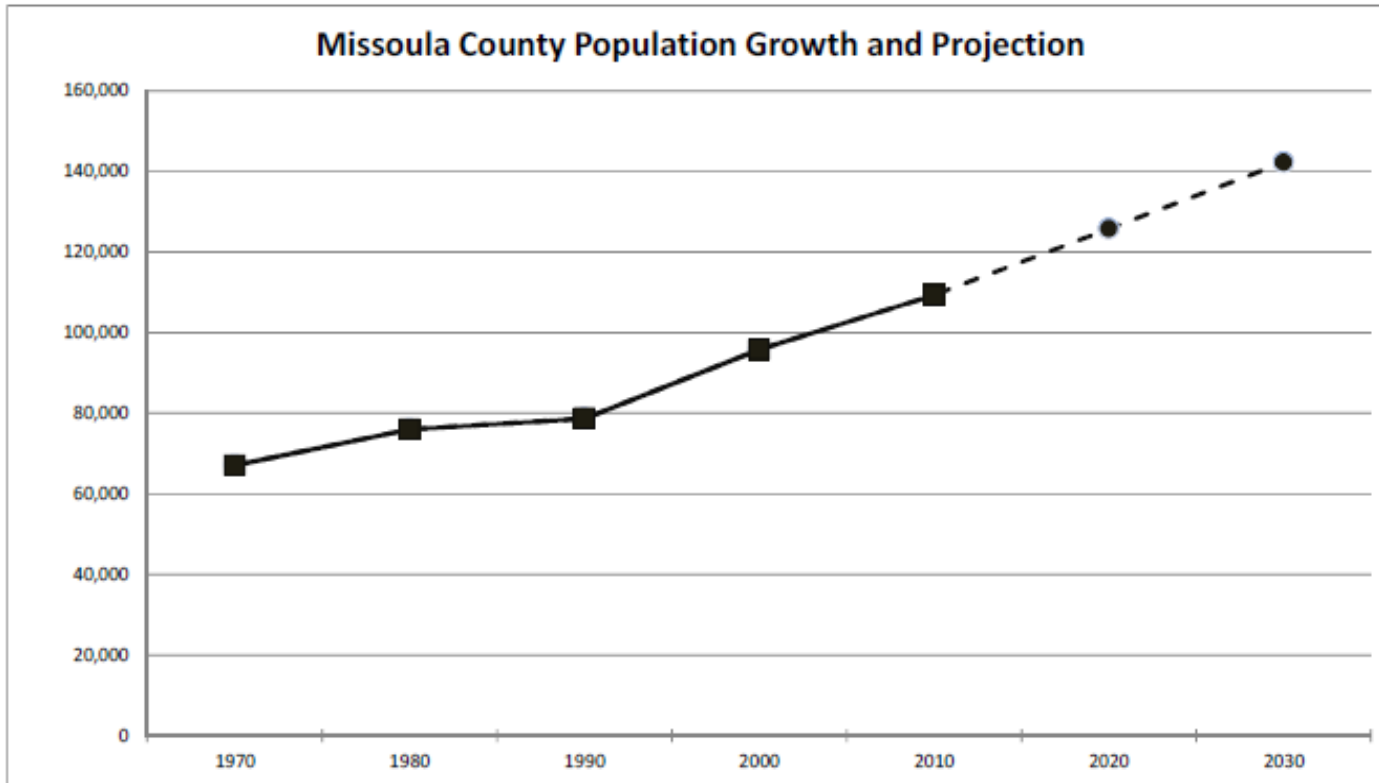
● Higgins Avenue Bridge

- ⊙ 6 crashes reported (2008-2012)
- ⊙ One injury, no fatalities
- ⊙ No vehicle crashes involving pedestrians/bicycles

● Madison Street Bridge

- ⊙ 12 crashes reported (2008-2012)
- ⊙ One injury, no fatalities
- ⊙ No vehicle crashes involving pedestrians/bicycles

Population Growth



Source: Montana Department of Commerce with permission from NPA Data Services, Inc.,







Operational Analysis

● Annual Average Daily Traffic (AADT) Volumes – 2012 LRTP

- 2010 AM Peak Hour
(existing infrastructure)
- 2040 AM Peak Hour
(existing, committed, and recommended infrastructure)

● Level of Service (LOS)

- Report card concept
- A = best conditions
- F = worst conditions

<u>Level of Service</u>	
A	
B	
C	
D	
E	
F	

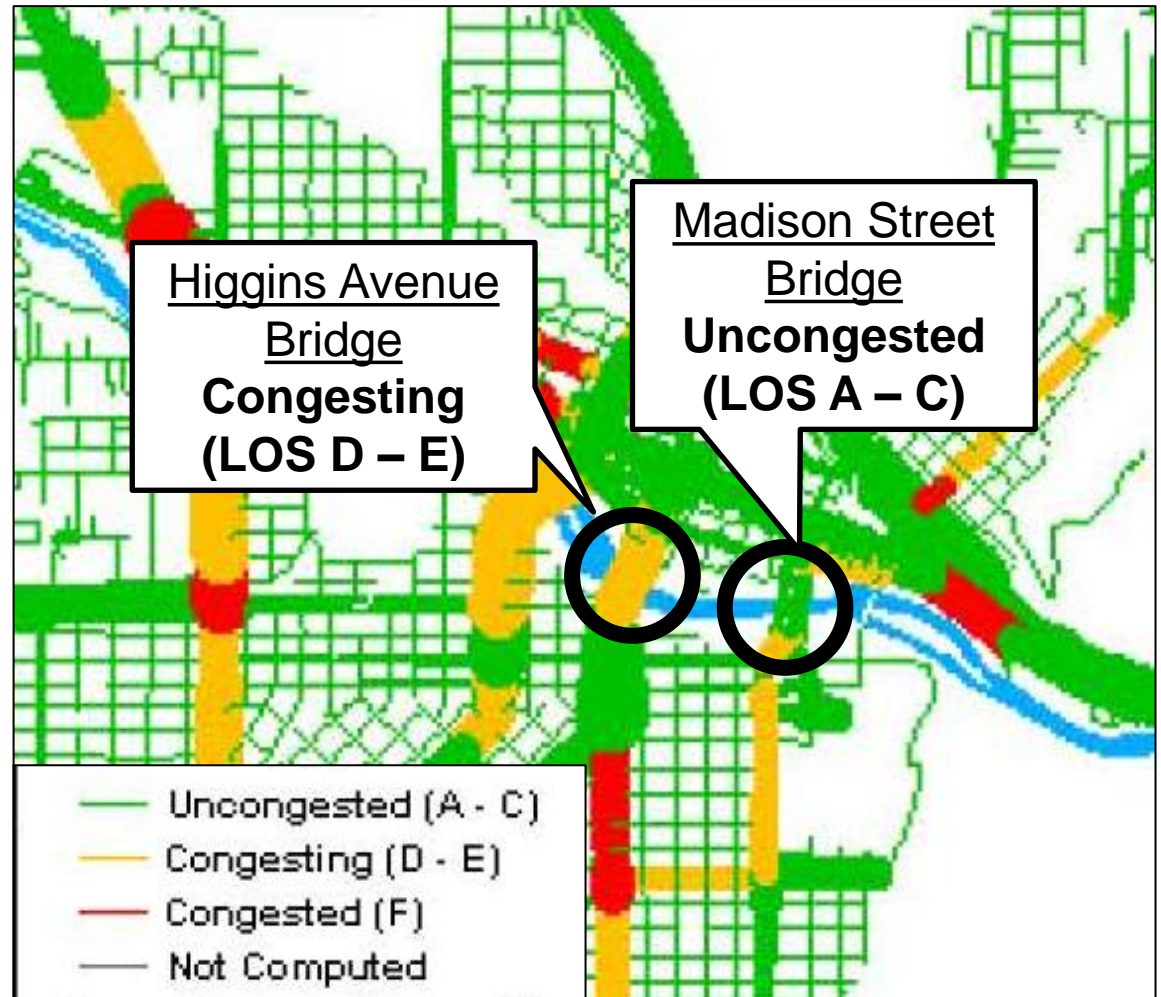
Bridge Segments

2010

AM Peak Hour
(Missoula LRTP)

Design target for
urban arterials is

LOS C



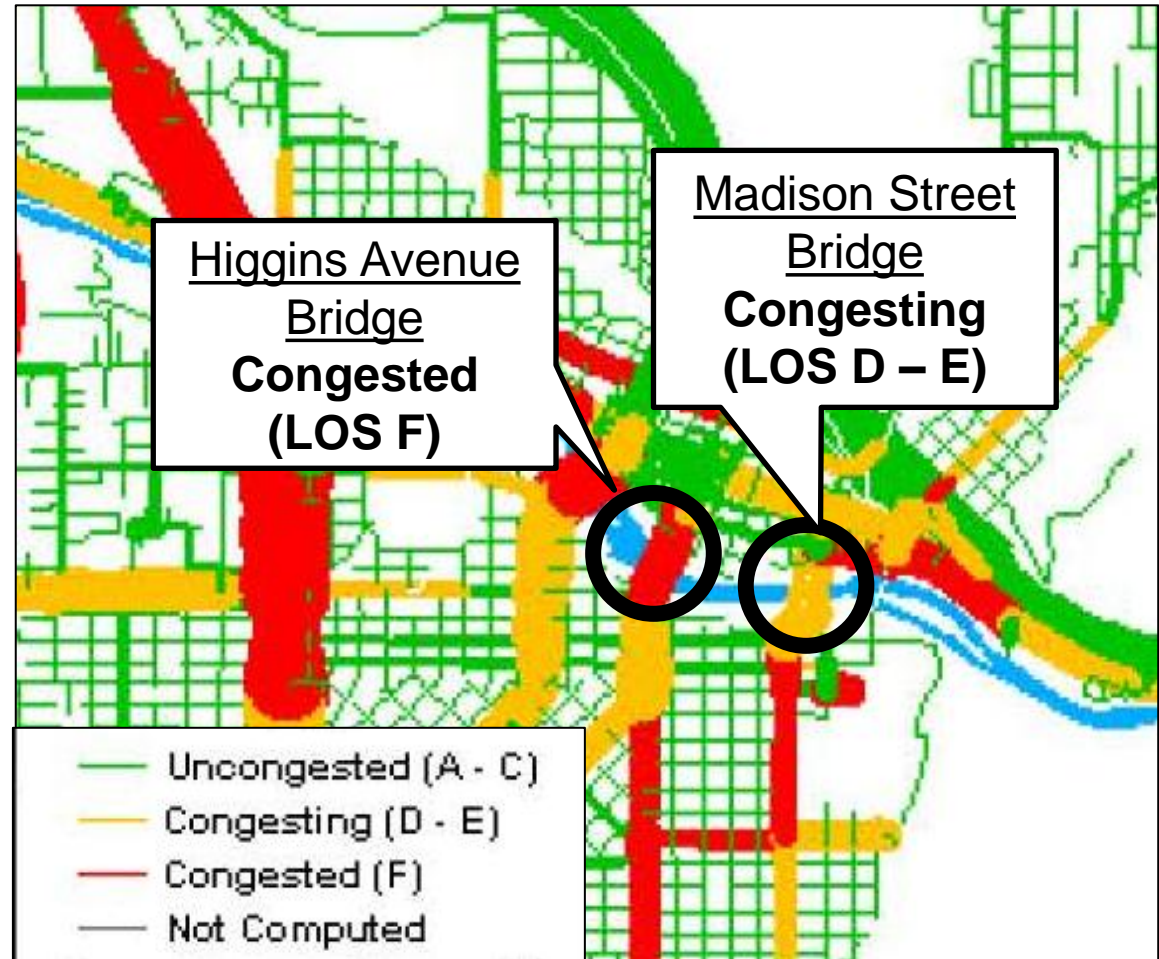
Bridge Segments

2040

AM Peak Hour
(Missoula LRTP)

Design target for
urban arterials is

LOS C






Note: 2040 volumes reflect existing, committed, and recommended infrastructure listed in 2012 LRTP.





Intersection LOS


Base Year (2013)

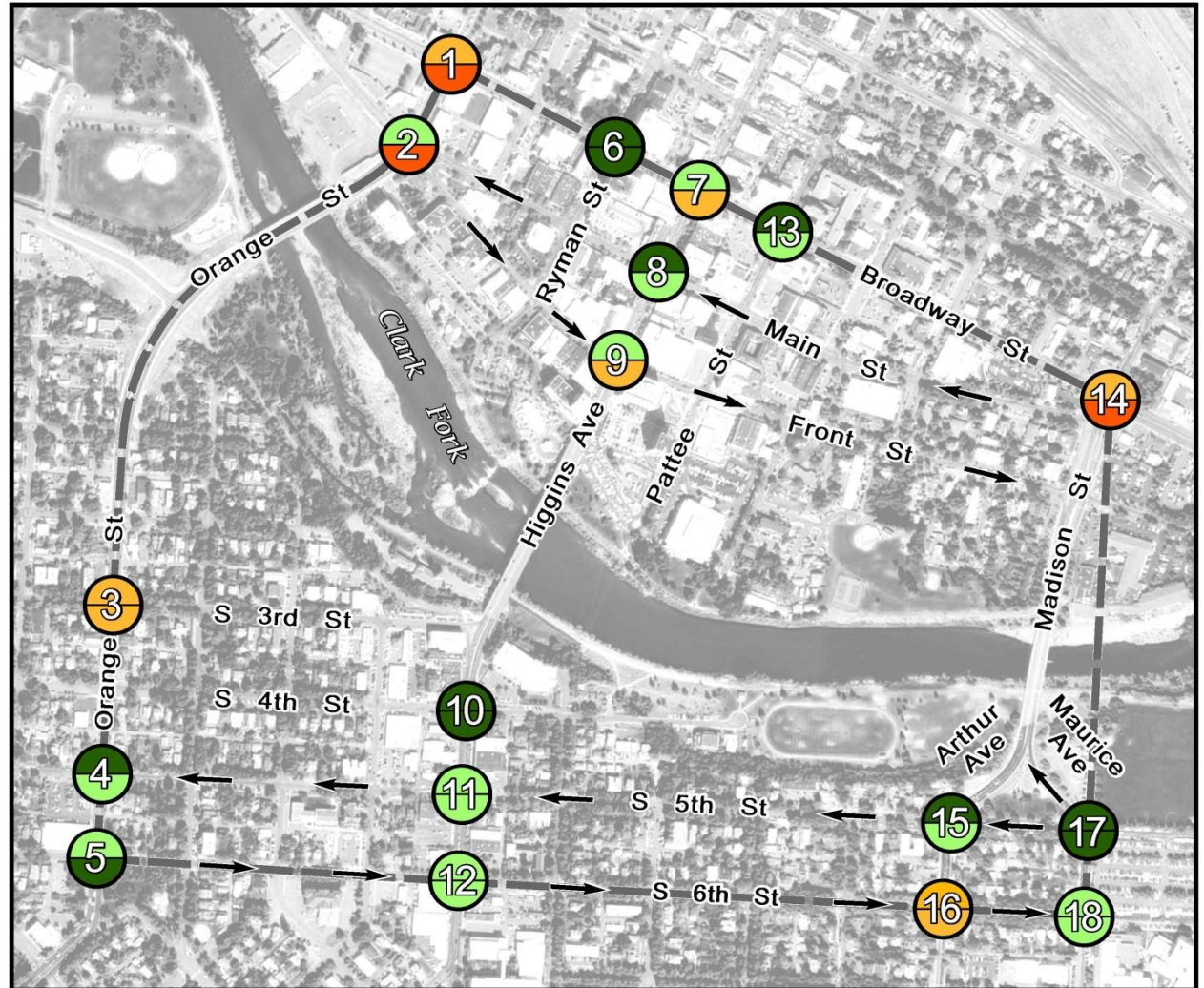
LEGEND

-  Level of Service - AM Peak Hour
-  Intersection Number
-  Level of Service - PM Peak Hour

Level of Service

-  A
-  B
-  C
-  D

 Study Area Boundary

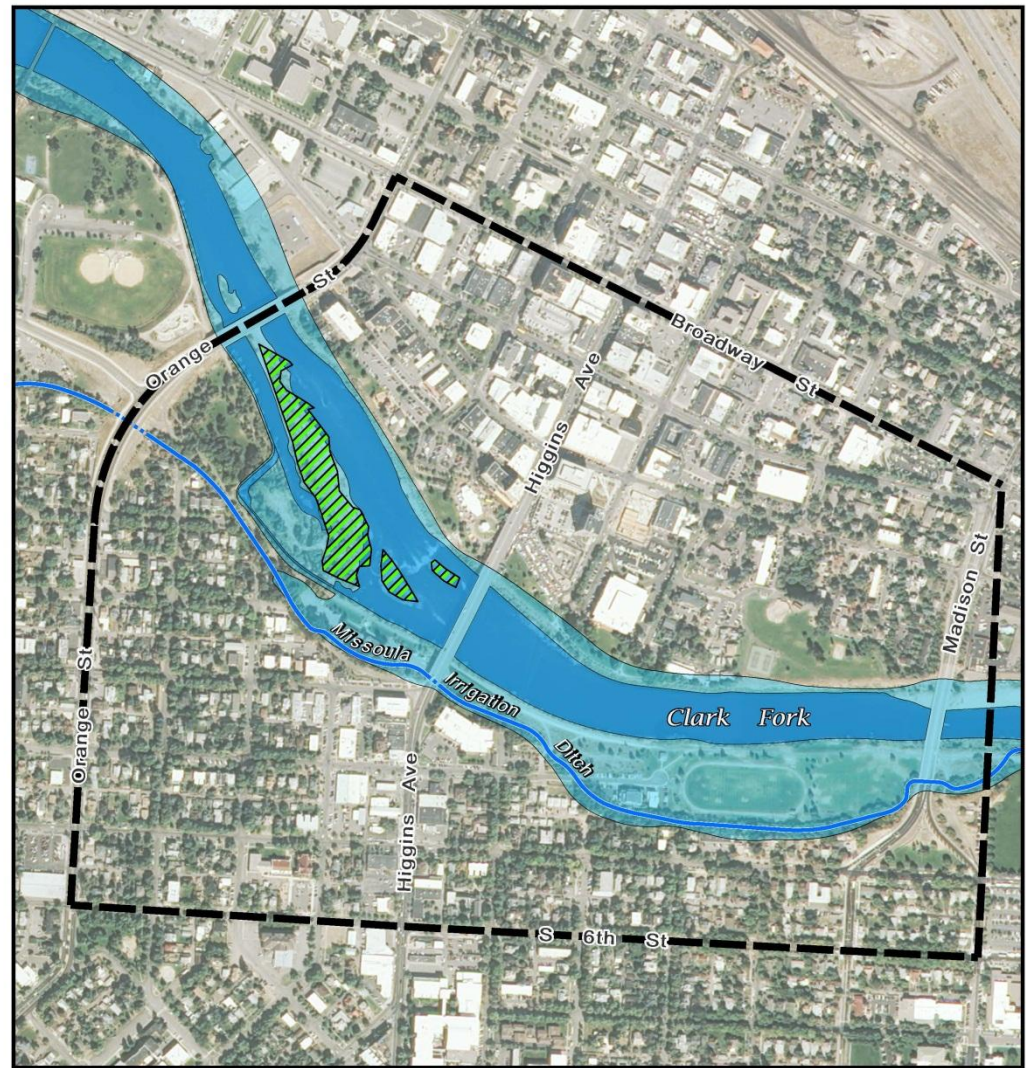




Environmental Conditions

Surface Waters, Wetlands, & Floodplains

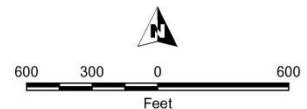
- Clark Fork River
 - Impaired under Section 303(d) of the Clean Water Act
 - Considered navigable by the state
- Freshwater forested/shrub wetlands
- Within 100-year floodplain of the Clark Fork River



Surface Waters, Wetlands, and Floodplain

LEGEND

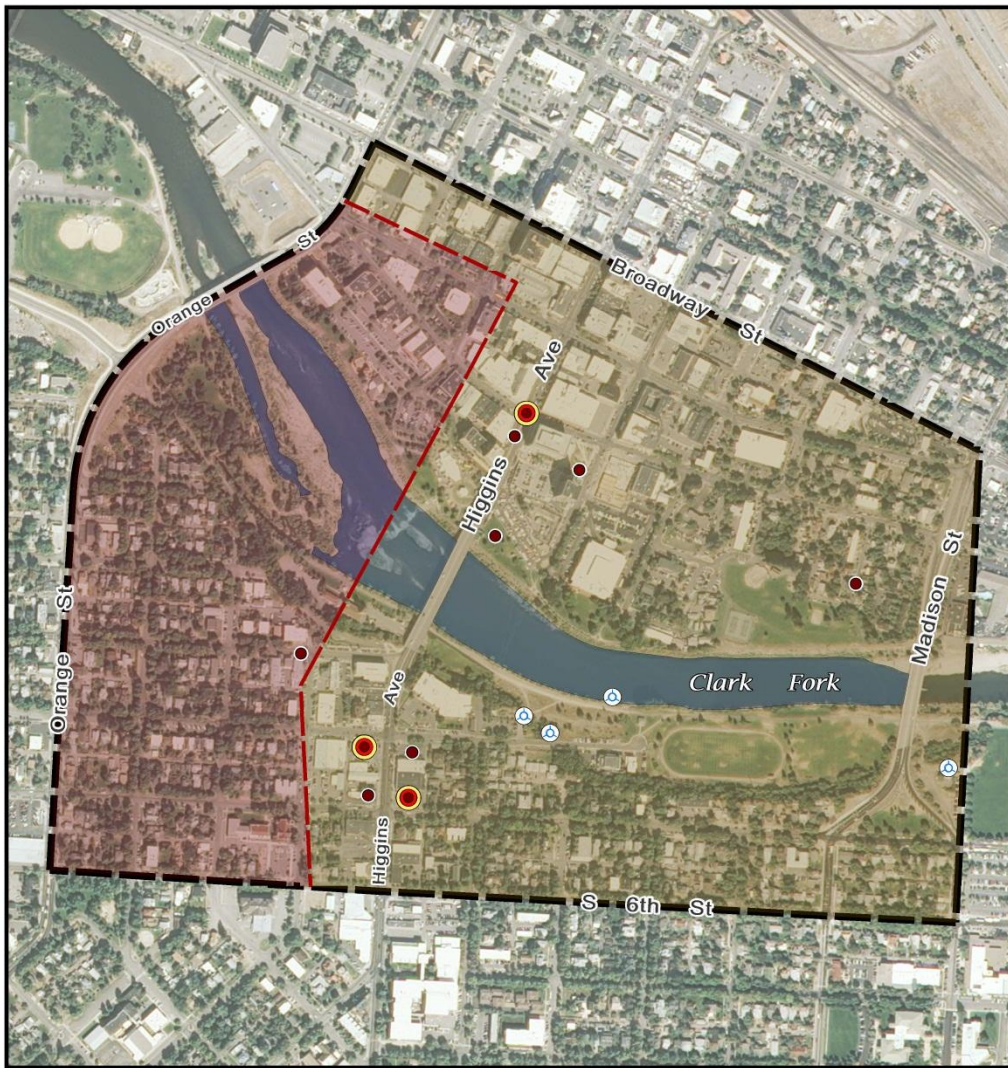
-  Clark Fork
-  FIRM 100-Year Flood Boundary
-  NWI - Freshwater Forested/Shrub Wetlands
-  Missoula Irrigation Ditch
-  Study Area Boundary



Source: FEMA FIRM MAP 30063C14800
USFWS NWI Wetland Mapper, Date 2013
Montana NRIS Digital Atlas

Hazardous Materials and Public Water Supplies

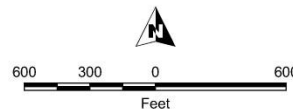
- Ten UST sites in proximity to bridges
- Three of the ten sites are reported as leaking
- Four public water supply locations in proximity to bridges



Hazardous Materials and Public Water Supplies

LEGEND

- Underground Storage Tanks
 - Leaking Underground Storage Tanks
 - Petroleum Release Compensation Sites
 - Public Water Supplies
- Mining Districts
- Petty Creek
 - Woodman
 - Study Area Boundary



Source: Hazmat Environmental Data obtained from: Montana NRIS, DEQ Remediation Division Data, Updated 9/26/2011 (website date). Data Accuracy and Location has not been verified by DOWL HKM.

Path: H:\3311156\AroGIS\Exhibits\2013\HazmatMaterials.mxd
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Threatened & Endangered Species

Missoula County

Category	Common Name	Federal Status
Fish	Bull trout	Listed Threatened, Critical Habitat
Mammals	Canada lynx	Listed Threatened
	Grizzly bear	Listed Threatened
	North American wolverine	Proposed Threatened
Plants	Water howellia	Listed Threatened
	Whitebark pine	Candidate
Birds	Yellow-billed cuckoo	Candidate

- Bull trout most likely to occur in study area

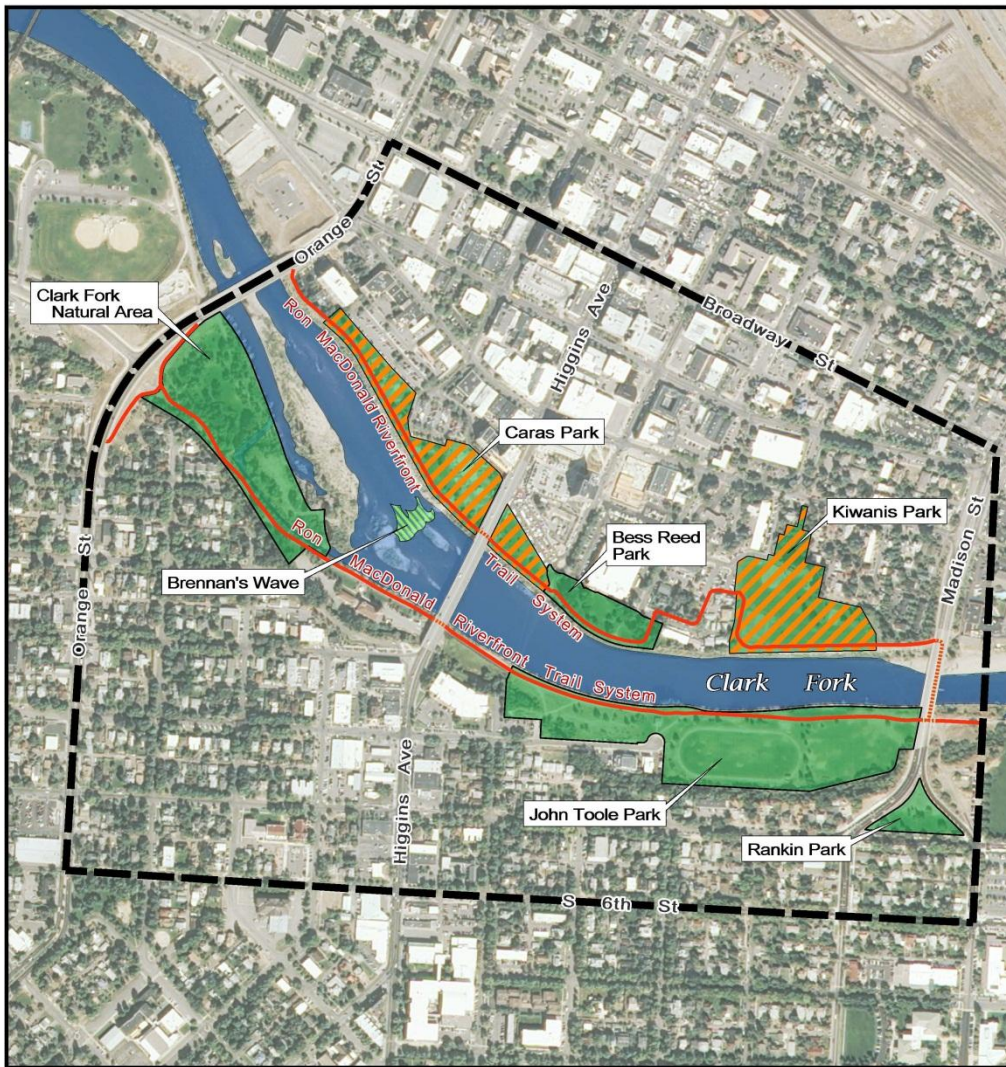
Species of Concern

Category	Common Name
Mammals	Fringed myotis
	Hoary bat
	Fisher
Birds	Great blue heron
	Harlequin duck
	Bald eagle
	Flammulated owl
	Pileated woodpecker
	Cassin's finch
Fish	Westslope cutthroat trout
	Lake trout
Reptiles	Western skink
Invertebrates	A subterranean amphipod
	A millipede
Plants	A lichen
	Obscure evening-primrose
	Missoula phlox







Recreational Resources

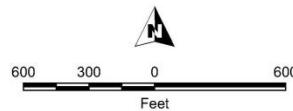
- Six public parks/open spaces in proximity to bridges
- Riverfront Trail System
- Brennan's Wave



Recreational Resources

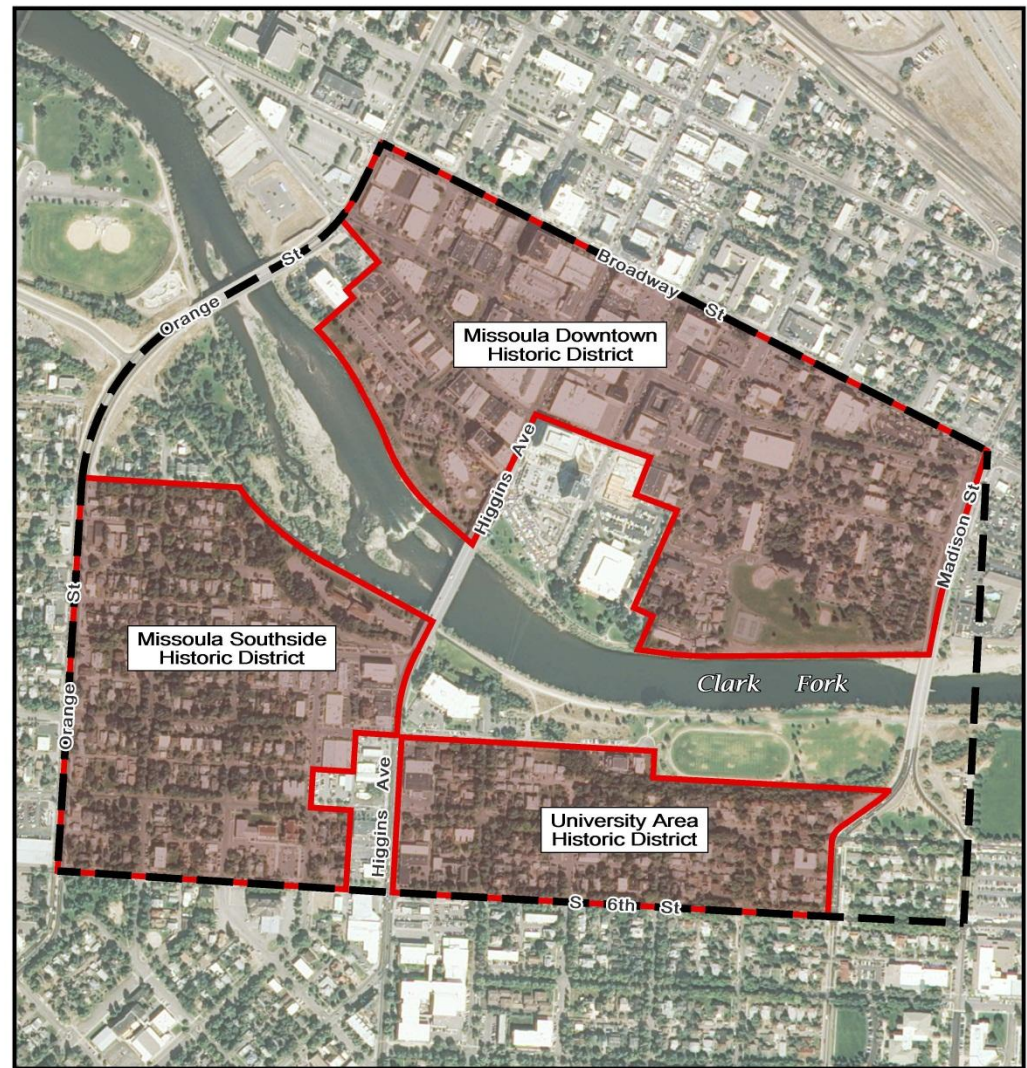
LEGEND

-  Potential Section 4(f) Resources
-  Potential Section 4(f) and Known Section 6(f) Resources
-  Portions May Be Potential Section 4(f) Resources
-  Study Area Boundary



Cultural Resources

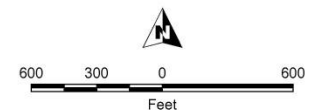
- Three historic districts within study area
- Individual properties within and outside the districts
- Bridges have not been surveyed or recorded as historic properties



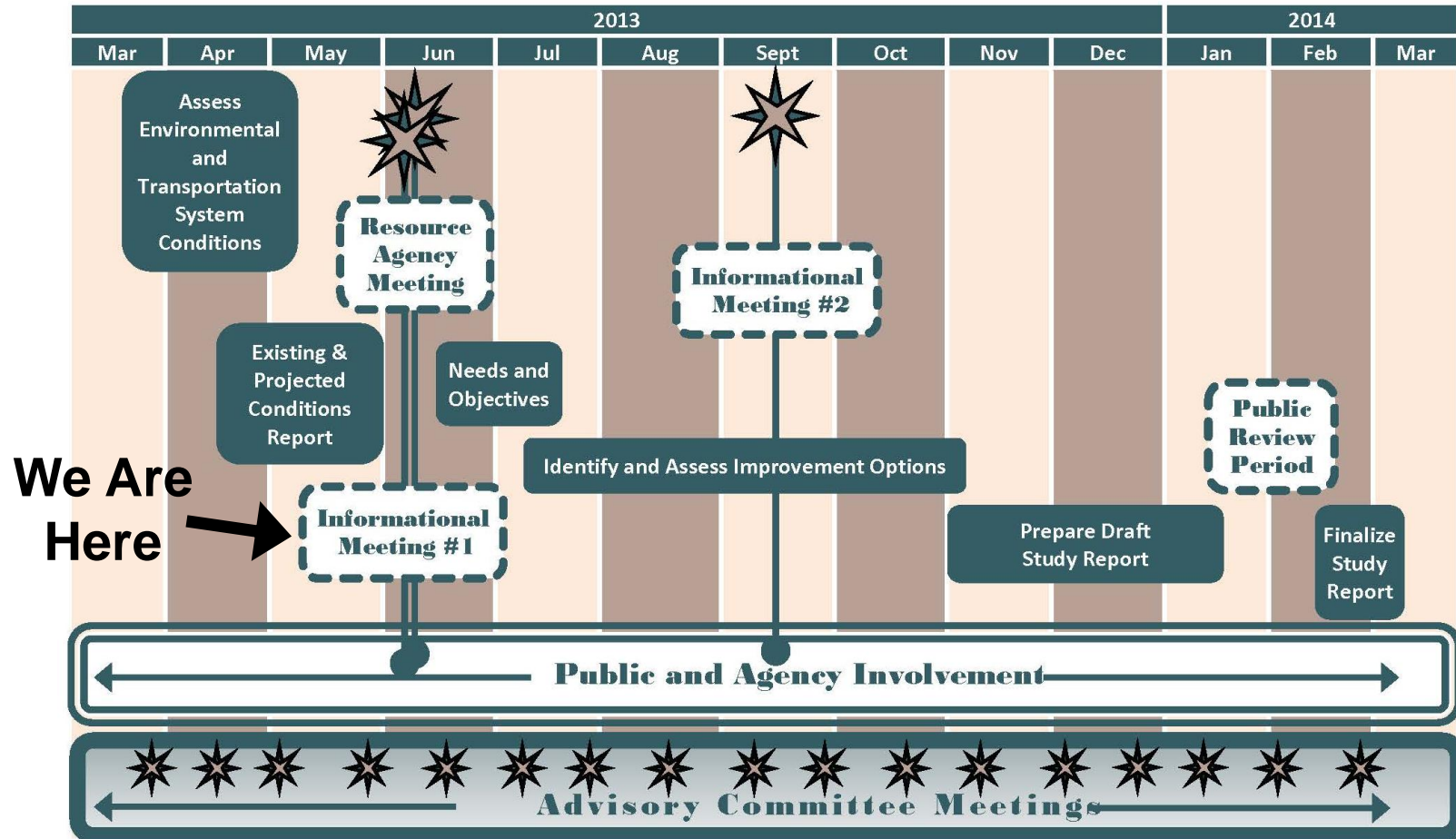
Historic Districts within Study Area

LEGEND

- Study Area Boundary
- ▭ Missoula Historic Districts



Next Steps



Part 2 – Breakout Session

Please join a station to discuss your issues/concerns!

Submit Comments:

- **Leave a comment sheet with us tonight**
- **Website** (<http://www.mdt.mt.gov/pubinvolve/missoulabridges>)
- **Mail/e-mail comments to:**

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