

Purpose and Need

The project team shared the preliminary purpose and need statements at the July public meeting/open house and solicited your input. Preliminary build options for each intersection have been developed to satisfy the identified project needs.

As the project team refines the purpose and need and build options, we are asking you to provide any additional input that should be considered during the next phase of project development, including compliance with the National Environmental Policy Act (NEPA).

US16 / NECK YOKE ROAD INTERSECTION

Purpose: To improve safety and access management in the area of Neck Yoke Road.

Needs:

- **High crash rate.** This intersection has a weighted crash rate that is in the top 5 along US 16. The severity of crashes includes one fatality and two incapacitating crashes in the past five years. It experiences a diverse range of vehicle types and driver familiarity as it provides access to several tourist destinations and also services rural residences and a school.
- **Multiple access points.** Neck Yoke Road is the southern-most access in a series of four access points to US 16. An increased number of access point introduces opportunities for additional conflict points between vehicles and can lead to an increase in crashes, depending on the traffic control and geometrics of the access points.
- **Narrow median separation.** The median width in this location of US 16 is approximately 26 feet. It does not facilitate a two-stage crossing of US 16, meaning that cars making left turns do not have a place to wait between the two opposing lanes of traffic before continuing the left turn maneuver to their intended travel direction.

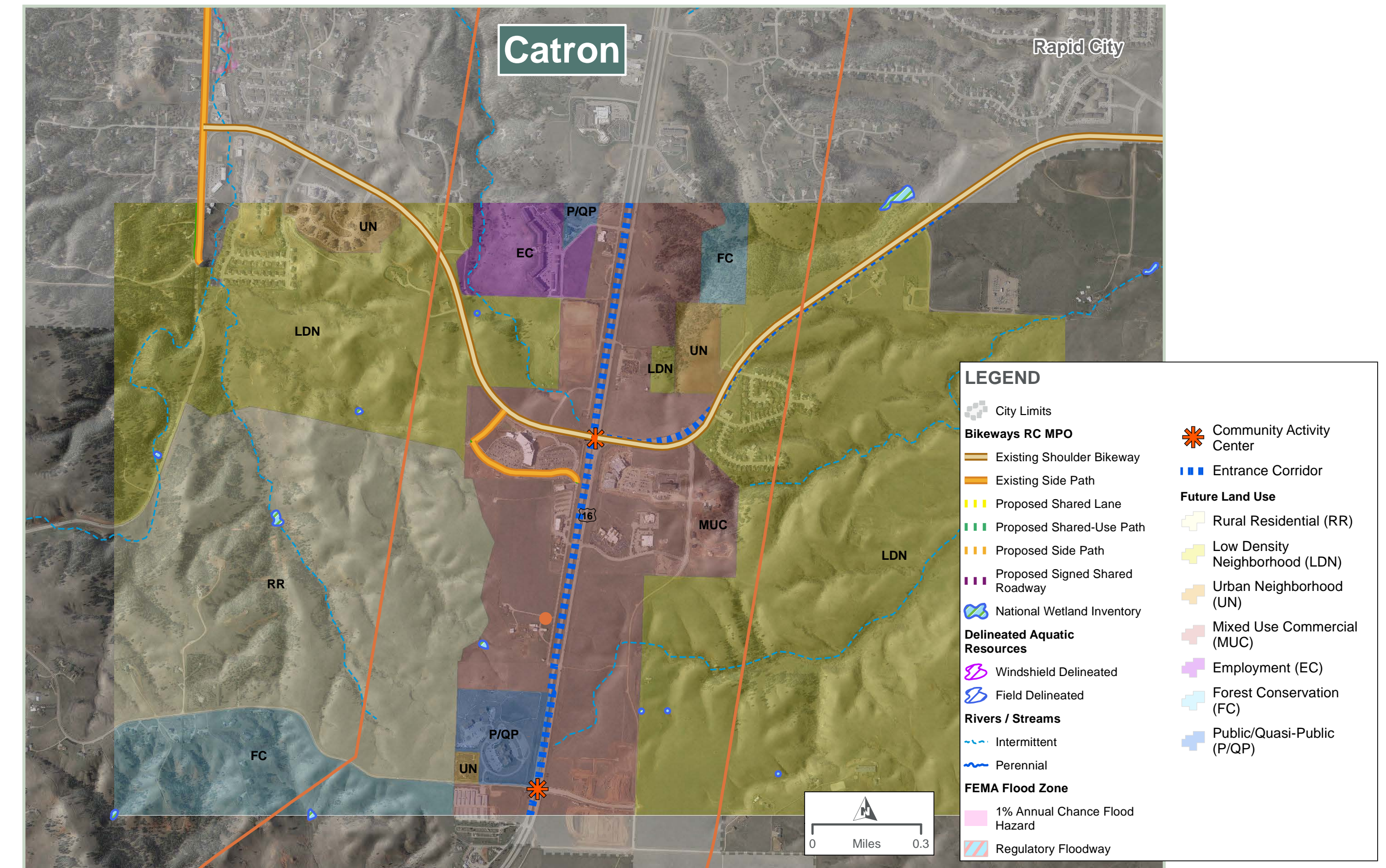
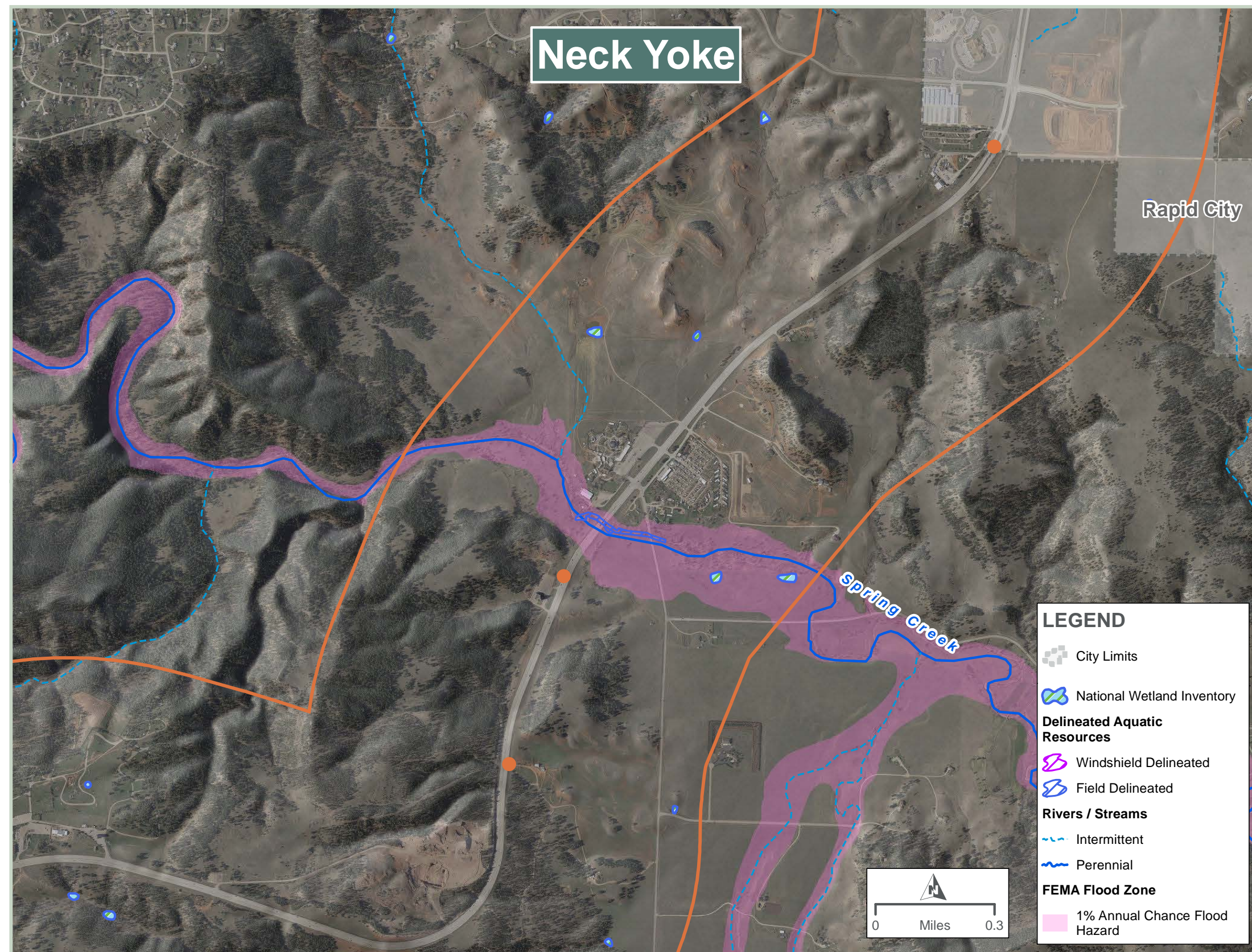
US16 / 16B / CATRON BOULEVARD INTERSECTION

Purpose: To improve traffic operations and safety and support the planned mix use urban development that is occurring in the area.

Needs:

- **Poor traffic operations.** The existing intersection is functioning at a level of service (LOS) D for AM and LOS E for PM peak hour traffic. Future 2045 traffic operations are expected to worsen to LOS F. LOS C or above is considered acceptable congestion and traffic operation.
- **High crash rates.** High speed and increased traffic volumes contribute to high crash rates. The high speed contributes to fixed object crashes, merge area crashes, and disregard signal crashes. Of the 88 total crashes, 48 were angle and 32 were rear end.
- **Rapidly urbanizing land use.** The area around the intersection is currently undergoing a transition from rural to urban uses. The Rapid City Comprehensive Plan identifies the area around the intersection as a community activity center. As urbanization continues, the number of vehicle trips to and from the new urban uses will continue to increase.

Environmental Considerations



US16 / NECK YOKE ROAD INTERSECTION

- Water Resources:**
 - Wetlands and 100-year floodplains along Spring Creek are present
- Wildlife:**
 - Habitat surrounds intersection area
 - Deer using bridge at Spring Creek to cross under US 16
- Hazardous Materials:**
 - Active underground storage tank (UST) site (Happy Holiday RV Resort)
- Cultural Resources:**
 - Four historic-age properties need to be evaluated for National Register of Historic Places (NRHP) eligibility
 - Archaeology surveys to be completed for previously undisturbed areas, especially along Spring Creek
- Noise:**
 - Three areas [●] with measured noise above 66 dBA (see map)

US16 / 16B / CATRON BOULEVARD INTERSECTION

- Water Resources:**
 - No wetlands, streams, or floodplains are present
- Socioeconomic:**
 - Future land use designated as mixed use commercial with several employers
 - US 16 is considered an Entrance Corridor for Rapid City
 - Bicycle and pedestrian accommodations are being coordinated with Rapid City Area MPO planning efforts
 - No environmental justice populations present
- Cultural Resources:**
 - Three historic-age properties need to be evaluated for NRHP eligibility
- Hazardous Materials:**
 - Active underground storage tank (UST) site (Holiday Gas Station)
- Noise:**
 - One area [●] with measured noise above 66 dBA (see map)