CITY OF GUNNISON U.S. HIGHWAY 50 ACCESS STUDY

US 50A: R.P. 157.934 (SH 135A) to R.P. 161.199

November 2013

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U.S. HIGHWAY 50
ACCESS STUDY

US 50A: R.P. 157.394 (SH 135A) to R.P. 161.199

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Prepared for:

City of Gunnison
201 West Virginia Avenue
Gunnison, CO 81230
Steve Westbay, Director of Community Development

Colorado Department of Transportation
Region 3 – Traffic and Safety
222 South 6th Street, Room 100
Grand Junction, Colorado 81501
Dan Roussin, Permit Unit Manager

In cooperation with:

Gunnison County
195 Basin Park Drive
Gunnison, Colorado 81230
Marlene Crosby, Director of Public Works

Prepared by:

Stolfus & Associates, Inc.
5690 DTC Boulevard, Suite 101W
Greenwood Village, Colorado 80111
Michelle Hansen, P.E., Project Manager

SAI Reference No. 12026/12030

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EXECUTIVE SUMMARY

Background and Purpose

United States Highway 50 (US 50), known locally in Gunnison as Tomichi Avenue, is an important regional and local transportation route for Colorado's Gunnison Valley and the State of Colorado. Beginning in Grand Junction, US 50 provides a continuous east-west route through Colorado to the Kansas border. The Gunnison Valley Transportation Planning Region (TPR) has identified US 50 from Montrose to Sargents, as a high priority corridor in the 2035 Regional Transportation Plan (2035 RTP).

In 2009, the City of Gunnison approved Gunnison Rising, a 633-acre planned unit development (PUD) annexation located east of the City along US 50. Through the annexation process, transportation elements, including access to US 50, were identified as critical elements of the Gunnison Rising PUD by the City and CDOT. As part of the annexation agreement, the City required Gunnison Rising to complete an Access Plan prior to construction.

In support of the City's previous planning efforts with Gunnison Rising, to advance the goals from the 2035 RTP, and to address anticipated growth in the area, the City and CDOT have partnered to develop an Access Plan for US 50 in cooperation with Gunnison County between the intersection of SH 135 (Main Street)(RP 157.394) and the private access located at RP 161.199 (west of the Industrial Park Drive intersection).

The purpose of this study effort is to coordinate development and growth anticipated in the area with transportation needs for the local community and the traveling public. The goals for the project are as follows:

- Identify locations and level of access for existing and future highway intersections that balance state and local transportation planning objectives.
- Provide a plan that is adoptable by all entities through a respectful and collaborative partnership.
- Provide safe and efficient access to and from US 50 for businesses and residents.
- Provide safe, effective, and efficient travel for traffic on US 50.
- Support economic viability of the project area. Maintain compatibility with the intent of previous local planning efforts.
- Allow for phased implementation of improvements.
- Support the accommodation of alternative modes, including City and County trail systems.
- Maintain compatibility with existing and proposed off-highway circulation routes.

This report summarizes the study process and analyses, findings and recommendations for access modifications within the US 50 corridor.

Study Area

The study area encompasses approximately 3.8 miles of State Highway that falls under a combination of City of Gunnison and Gunnison County jurisdiction. Land use within the westernmost ½ mile of the project is urban and commercial in nature. East of the developed edge of the City, land uses are predominantly agricultural and rural residential.

There are currently 66 access points on US 50 within the study area. The access points are classified as follows:

- 2 signalized public road intersections
- 21 unsignalized public road intersections
- 2 unsignalized private road intersections
- 22 business access points
- 4 residential access points
- 15 field access points

Coordination and Public Involvement

Although the City of Gunnison and CDOT Region 3 partnered to initiate this study, the process was a cooperative effort between the City, Gunnison County, and CDOT. In addition, input from corridor stakeholders, including property owners, tenants, potential developers and the general public, was a critical element of the project. Multiple techniques were used to engage stakeholders including: two advertised public open houses; one-on-one meetings with interested stakeholders; public presentations with City Council and Board of County Commissioners (BOCC); and project information posted on the City's website. Exhibits presenting access management principles, the study process, and the recommended Access Plan were displayed at Open Houses and on the City's website. Representatives from the City, CDOT, and consultant team were available for questions and discussion at public outreach events.

Development of the Plan

In preparation for this study, the existing physical and operational characteristics of US 50 were established. The project team also developed a compatibility index to evaluate how the plan met the project objectives. Next, future physical and operational characteristics were projected for a 20-year planning period based on anticipated development in the area. Using this information, a draft Access Plan was developed and evaluated. The Access Plan considered access points in logical groupings, State Highway Access Code guidance, and alternative local routes. Based on input from the project team, agency representatives, and the public, the draft plan was refined and evaluated using criteria identified in the compatibility index. The evaluation resulted in a favorable rating overall; therefore, adoption of the Access Plan by the three entities is recommended.

Access Plan

Figures 5A-5E found in Section 7 of this report, illustrate the recommended Access Plan graphically. Technical Appendix F contains the specific recommendations for each individual access point. In general, the Access Plan limits full movement access to major intersections. Access for parcels between major intersections is either limited or relocated to an alternate route/cross street. In addition, highway access is reduced to one location per ownership unless additional access points are needed to address out-of-direction travel or improve operations. Where feasible, access is shared between adjacent properties. ¾ movement intersections are identified at key minor public road intersections where providing the left-turn movement to the major road improves operations and/or circulation.

With consideration for pedestrian and business access in the established commercial area, out-of-direction travel created by restricting movements at right-in/right-out access points is limited to a maximum distance of four blocks (2 blocks each way) between SH 135 (Main Street) and

Adams Street. East of Adams Street, out of direction travel was generally limited to a maximum distance of one mile (½ mile each way). Out-of-direction travel was limited by providing full movement intersections at necessary intervals.

Major intersections that are identified as full movement intersections with a traffic signal or the potential for warranting a traffic signal or other traffic control measure in the future are as follows:

- SH 135 (Main Street)
- Colorado Street
- Adams Street
- Access B (Access #68 and #69)
- Access D (Access #71 and #72)
- Ute Lane (West)
- Ute Lane (East)
- Access #55 and #56
- Future Tomichi Gravel Pit (Access #60 and #61)

In support of the recommended access modifications, development of a local street network that serves the proposed Gunnison Rising development, similar to the street network illustrated in Figures 5A-5C, is also recommended. The local street system should provide logical, continuous connections to existing City Streets and should create circulation opportunities to provide alternatives that support restricted turning movements on US 50. In addition, the Plan also considered alternative modes, including the following: compatibility with the City of Gunnison's Non-Motorized Transportation Plan; incorporating pedestrian crossings at major intersections; and compatibility with the Gunnison Valley Rural Transportation Authority routes.

Implementation

The improvements recommended in the Access Study represent a long-range plan that will be implemented over time as traffic and safety needs arise and as funding becomes available. Construction of the recommended improvements may be completed using public and/or private funding. The following cases, or any combination, will trigger construction:

1. A property develops, redevelops or changes use, resulting in an increase in traffic to and from the site of 20% or more. (Private Funding)

2. The City and/or County obtain funding to complete improvements to a segment of the US 50 corridor or a local route. (Public Funding)

3. State and/or Federal Funds are obtained to complete improvements to a segment of the US 50 corridor as identified in the Statewide Transportation Improvement Program (STIP). (Public Funding)

4. A safety or operational issue develops that can be mitigated through the implementation of access management techniques consistent with the Access Plan. Public funding from any combination of agencies may be obtained to construct improvements. (Public Funding)

To provide for continued commitment to the access modifications recommended by this study, we recommend that the City, County, and CDOT adopt an Access Control Plan through the execution of an Intergovernmental Agreement (IGA). An Access Control Plan identifies access locations and levels of access by reference point for US 50, within the project limits. Due to the long-range nature of the plan and the potential for conditions to change over time, the IGA defines a process to complete plan modifications. The Access Control Plan should be included in future transportation and land use planning efforts that may involve US 50.

1.0 INTRODUCTION

1.1 Project Background

United States Highway 50 (US 50), known locally in Gunnison as Tomichi Avenue, is an important regional and local transportation route for Colorado's Gunnison Valley and the State of Colorado. Beginning in Grand Junction, US 50 provides a continuous east-west route through Colorado to the Kansas border. Through Gunnison County, US 50 provides one of few east-west routes in the entire county; providing critical access for both the City's and County's tourism and educational economies.

The City of Gunnison, the Colorado Department of Transportation (CDOT) and Gunnison County recognize that good mobility and safe access along US 50 are essential to the on-going vitality of the City and the region. In 2009, the City of Gunnison approved Gunnison Rising, a 633-acre planned unit development (PUD) annexation located east of the City along US 50. Gunnison Rising is a master-planned, mixed-use community that includes residential, light industrial, and commercial land uses. Through the annexation process, transportation elements, including access to US 50, were identified as critical elements of the Gunnison Rising PUD by the City and CDOT. As part of the annexation agreement, the City required Gunnison Rising to complete an Access Plan prior to construction.

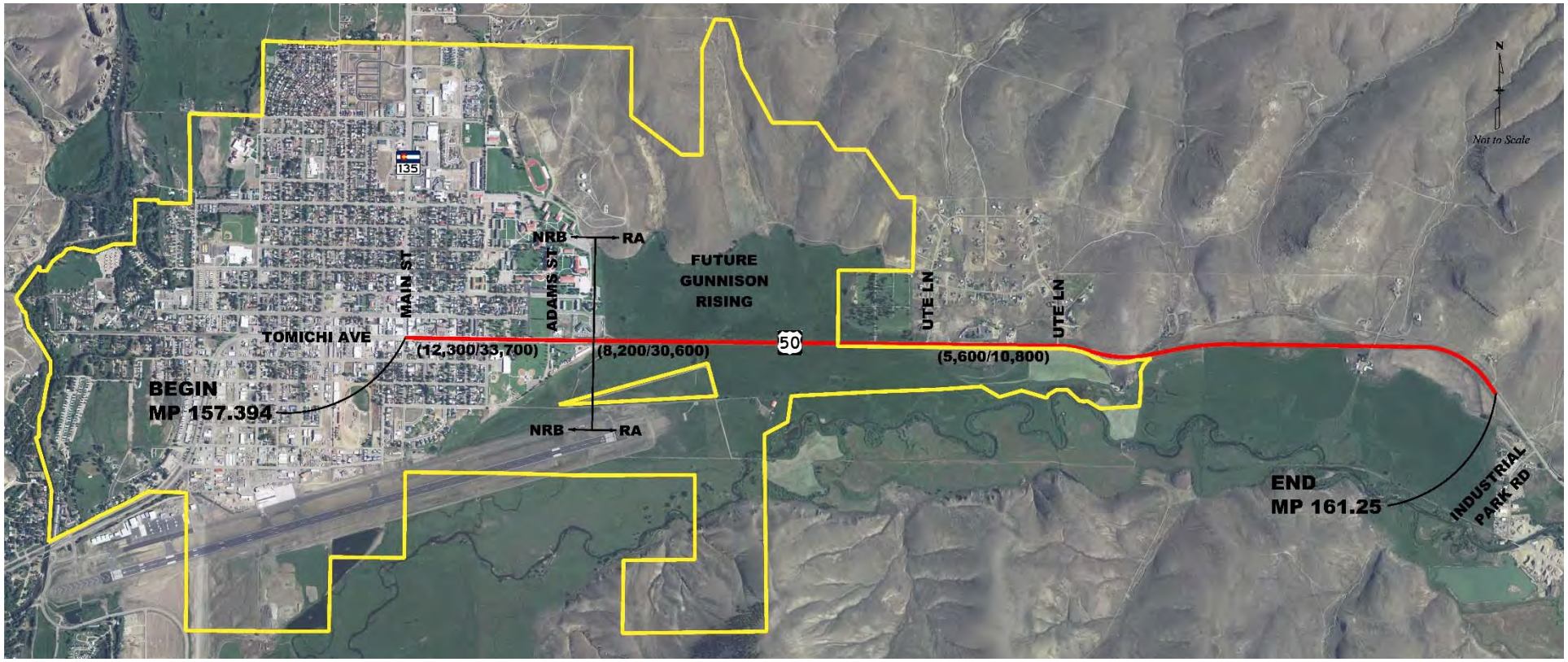
On a broader scale, the Gunnison Valley Transportation Planning Region (TPR) has identified US 50 from Montrose to Sargents, as a high priority corridor in the 2035 Regional Transportation Plan (2035 RTP). Two of the major goals for this segment of US 50 in the 2035 RTP are to:

- Reduce fatalities, injuries and property damage crash rate.
- Increase travel reliability and improve mobility.

In support of the City's previous planning efforts with Gunnison Rising, to advance the goals from the 2035 RTP, and to address anticipated growth in the area, the City and CDOT have partnered to develop an Access Plan for US 50 in cooperation with Gunnison County between the intersection of SH 135 (Main Street)(RP 157.394) and the private access located at RP 161.199 (west of the Industrial Park Drive intersection). The limits of the study area span approximately 3.8 miles of State Highway. Limits of the project are defined by reference point (RP) as defined by CDOT Highway Segment Descriptions based on a beginning point at SH 135 (RP 157.394). The study limits are illustrated on the Vicinity Map in Figure 1.

The purpose of this study effort is to coordinate development and growth anticipated in the area with transportation needs for the local community and the traveling public. The goals for the project are as follows:

- Identify locations and level of access for existing and future highway intersections that balance state and local transportation planning objectives.
- Provide a plan that is adoptable by all entities through a respectful and collaborative partnership.
- Provide safe and efficient access to and from US 50 for businesses and residents.
- Provide safe, effective, and efficient travel for traffic on US 50.
- Support economic viability of the project area.



LEGEND

= **Project Limits**

= **City Limits**

NRB = **Access Category, Non-Rural Arterial**

RA = **Access Category, Regional Highway**

(x,xxx/x,xxx) = (Existing ADT/Projected ADT)

Figure 1. Vicinity Map

- Maintain compatibility with the intent of previous local planning efforts.
- Allow for phased implementation of improvements.
- Support the accommodation of alternative modes, including City and County trail systems.
- Maintain compatibility with existing and proposed off-highway circulation routes.

This report summarizes the study process and analyses, findings and recommendations for access modifications within the US 50 corridor.

1.2 Project Coordination

The project area falls within the boundaries of both the City of Gunnison and Gunnison County with a majority of the project within the City's jurisdiction. Operations and maintenance of US 50 are managed by CDOT – Region 3. Although the City initiated this project in partnership with CDOT, the process was a cooperative effort between all three entities.

The primary project team for development of the Access Plan consisted of representatives from City Community Development Staff, County Public Works Staff, and CDOT – Region 3, Traffic and Safety Departments. Input from other departments within the City and County was collected by project team staff representatives. Coordination with local elected officials and project stakeholders, including property owners, tenants, developers and the general public is described in the next section.

1.3 Public Involvement

Input from corridor stakeholders, including property owners, tenants, potential developers and the general public, was a critical element of the project. Multiple techniques were used to engage stakeholders including: two advertised public open houses; one-on-one meetings with interested stakeholders; public presentations with City Council and Board of County Commissioners (BOCC); and project information posted on the City's website.

Two advertised public open houses were held at the Fred R. Field Western Heritage Center at the Gunnison County Fairgrounds to present and discuss the recommended Draft Access Plan for US 50, review access management principles and techniques, and gather public input on the draft plans. The first meeting was held on April 3, 2013 and the second meeting was held on August 21, 2013. In conjunction with the April, 2013 Open House, an Agency Staff Open House was held for review and comment by City, County, and CDOT staff. Attendees included staff from the County Planning Department, City Building Department, and emergency services representatives from multiple agencies.

Corridor property owners, local government representatives, potential developers and other interested parties who contacted the project team prior to the Open Houses were invited to attend the Open House by first class mail and e-mail, when provided. 118 post cards were mailed for the April, 2013 Open House, and 122 post cards and 35 e-mails were sent for the August, 2013 Open House. City Community Development staff also walked door to door on Tomichi Avenue between Main Street and Adams Street to discuss the project with business owners and personally invite business owners to the April, 2013 Open House. In addition, to inform the general public of the Open Houses, an advertisement was placed in two issues of the Gunnison Country Shopper, and a legal public notice was posted in two issues of the Gunnison Country Times, the City's and County's legal notice paper.

Exhibits presenting access management principles, the study process, and the recommended draft Access Plan were displayed at both Public Open Houses. The exhibits were also available for review on the City's website. Representatives from the City, CDOT, and consultant team were available for questions and discussion at both Open Houses. Approximately 15 people and 7 people signed in at the April, 2013 and August, 2013 Open Houses, respectively.

Following the April, 2013 Public Open House, the project team held a series of one-on-one meetings with corridor property owners. Face-to-face meetings were held at the Gunnison County Blackstock Building on April 24 and 25, 2013. Approximately ten (10) interested parties participated in the one-on-one meetings, including property owners, business owners, and public agency representatives. City, CDOT, and consultant team representatives participated in these meetings. In addition, the project was discussed with several property owners via e-mail and telephone at various times during access plan development. Specifically, meetings, conference calls, and phone and e-mail correspondence with the Gunnison Rising representatives were held throughout the project. These meetings and telephone calls gathered data, discussed access issues for both individual properties and the entire corridor, and provided opportunities for participants to ask questions and to share input for plan development.

Public comments were accepted at all public outreach events and via e-mail throughout the project. Open House sign-in sheets and comment sheets, as well as a list of one-on-one meeting participants can be found in Technical Appendix A.

The team updated and engaged the City Council and the BOCC on project progress and development on multiple occasions. All of these meetings were open to the public. Presentations were made at joint City Council and BOCC meetings held on March 5, 2013 and June 18, 2013.

Final presentations to both City Council and BOCC are anticipated for plan adoption at separate regularly scheduled City Council and BOCC meetings on November 5, 2013.

2.0 ACCESS MANAGEMENT – BENEFITS, PRINCIPLES & TECHNIQUES

As defined by the *Access Management Manual, TRB, 2003*, "Access management is the systematic control of the location, spacing, design, and operation of driveway median openings, and street connections to a roadway." Access management along Colorado State Highways is generally administered by CDOT on a case by case basis, as prescribed by the *State of Colorado State Highway Access Code, latest edition*. Per Section 2.12 of the Access Code, CDOT or a local authority may develop an Access Control Plan for a segment of highway that defines access locations, level of access and traffic control for future conditions. Developing an Access Control Plan provides CDOT and the local authorities with the opportunity to develop a single transportation plan that considers multiple access points along a segment of highway as a network rather than as individual access points. Corridor-specific issues such as intersection spacing, traffic movements, circulation, land use, topography, alternative access opportunities, and other local planning documents may be considered in developing an Access Control Plan. The Plan does not define capacity improvements, off-network improvements, or funding sources for access improvements, although local governments often consider off-network improvements for their communities in conjunction with an Access Control Plan. The Plan is a long-range planning document that identifies access conditions that will be implemented as highway and land-use characteristics change. Access Control Plans for State Highways are adopted by CDOT and the local authorities.

2.1 Access Management Benefits

Access management provides the means to balance good mobility along the highway with local access needs of businesses and residents. Implementation of access management principles and techniques on State and local transportation networks can provide the following long-term benefits for highway users, communities, and businesses:

- Safety
  - Fewer decision points and potential for conflicts for motorists, cyclists, and pedestrians results in a reduced number of accidents.
  - Safe access to businesses is provided.
- Increased ability to accommodate traffic demands
  - Limiting full movement access within a corridor favors through movements and strategically identifies locations for vehicles to enter and exit the corridor.
  - Reduces congestion, thereby discouraging thru traffic from seeking alternative local routes to avoid congestion.
  - Improved operations on the highway also provides increased opportunities to reduce delay on the local street system.
- Preserves property values and the economic viability of abutting development
  - A more efficient roadway system captures a broader market area.
  - A more predictable and consistent development environment is created.
  - Well-defined driveways with suitable spacing make it easier for customers to enter and exit businesses safely, thereby encouraging customers to patronize corridor businesses.

- Encourages use and development of local streets
  - Alternative local routes allow traffic to access local amenities conveniently without using the highway, thereby providing both convenient local access and circulation and reduced volumes on the highway.
- Enhanced Corridor Appearance
  - Businesses are easily located
  - Well-defined access points with suitable spacing provides more opportunities for streetscaping/landscaping.

2.2 Guiding Principles

Access management centers around limiting and consolidating access along major roadways and focusing access for development on a supporting local street network and circulation system. The following guiding principles to access management were applied in the development of the Access Control Plan for US 50:

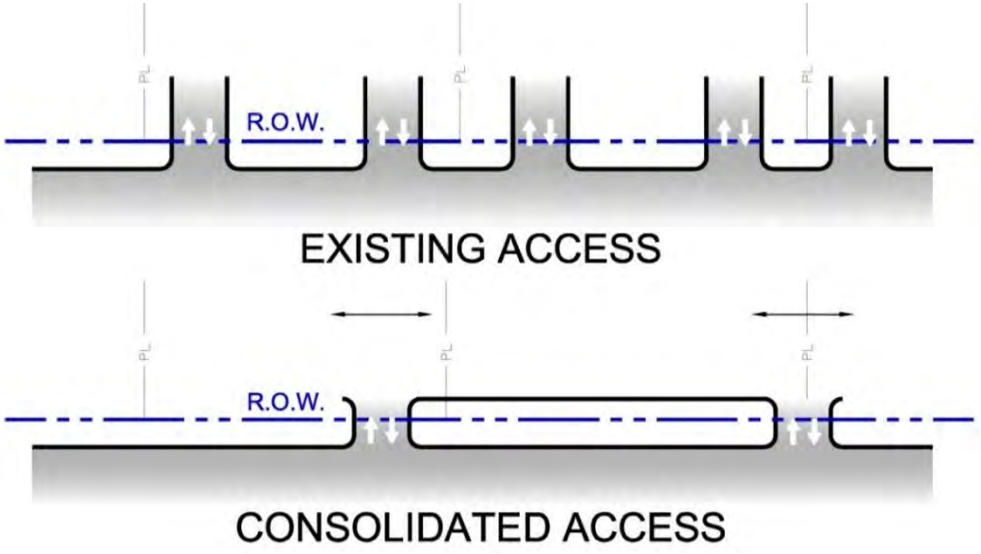
- Limit the number of direct access points to major roadways
- Locate signals and intersections to favor through movements
- Minimize the number of locations where vehicles merge, split, or cross
- Remove turning vehicles from through traffic lanes
- Provide a supporting local street network and circulation system

2.3 Techniques

Several access management techniques, illustrated below, may be used to achieve the principles outlined above and to realize the benefits of access management along US 50.

2.3.1 Principle: Limit the number of direct access points to major roadways

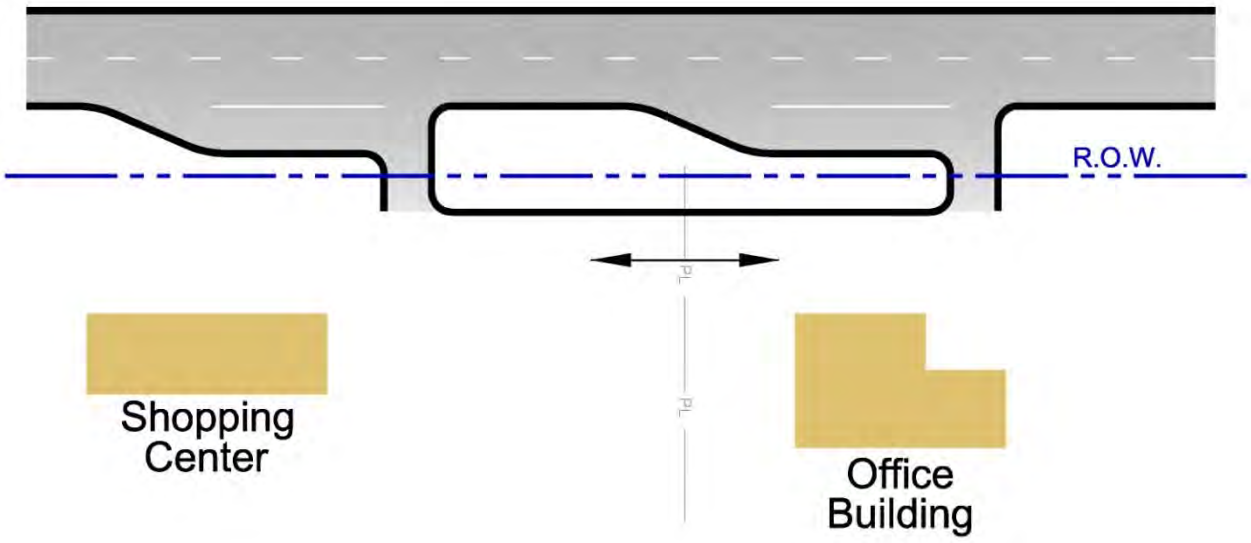
a. Technique: Consolidate Access



Consolidate access points by:

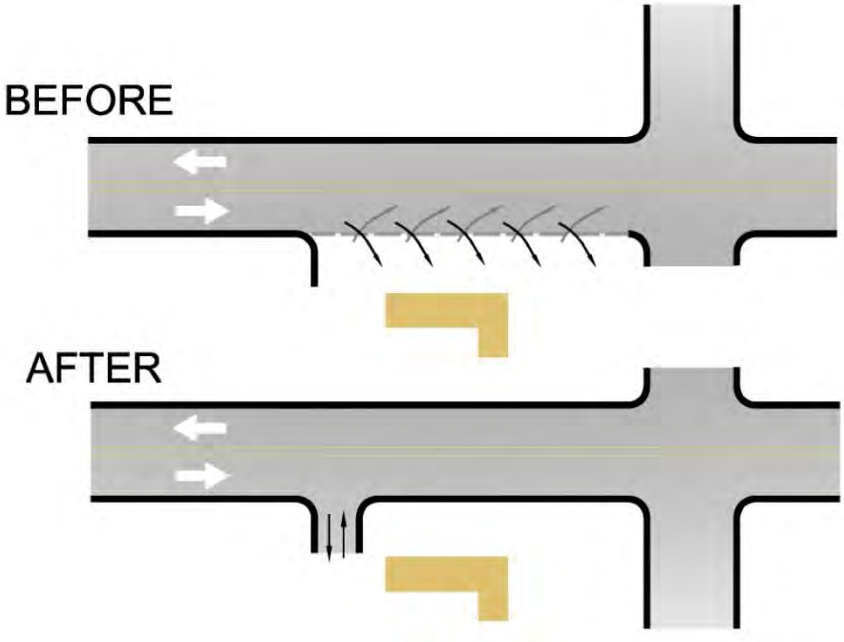
- *Reducing the number of access points that serve a single property*
- *Providing joint access for multiple properties at or near a property line*

b. Technique: Connect Adjacent Properties



Connect adjacent properties to provide circulation between properties and increase access opportunities for multiple properties.

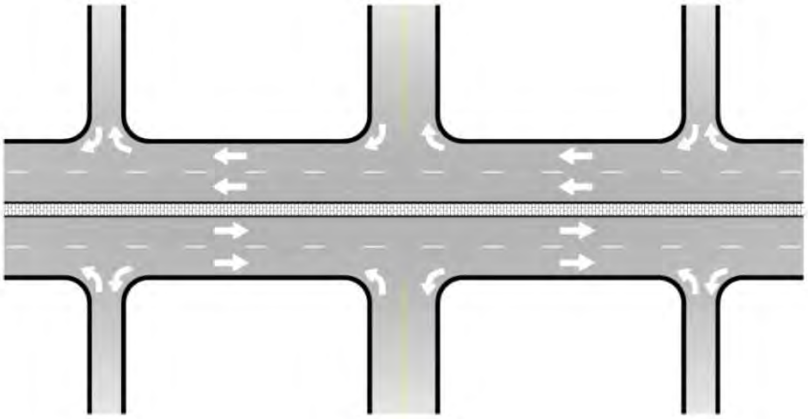
c. Technique: Define Driveways



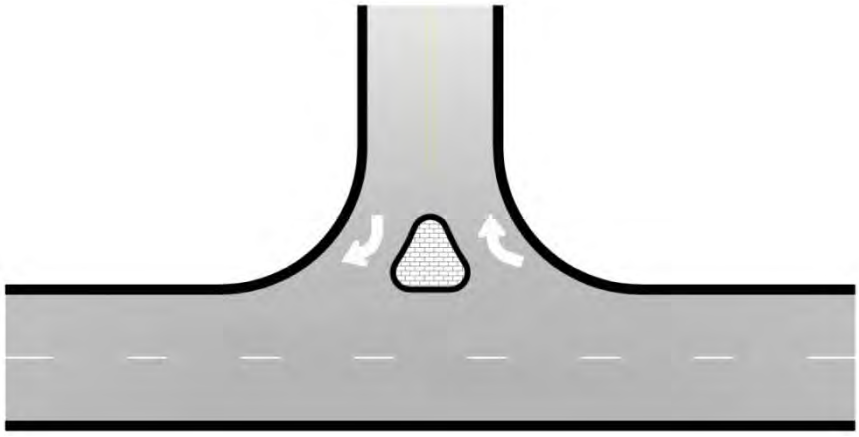
Define driveways to provide clear identification of entrance and exit locations.

2.3.2 Principle: Minimize locations where vehicles merge, split, or cross

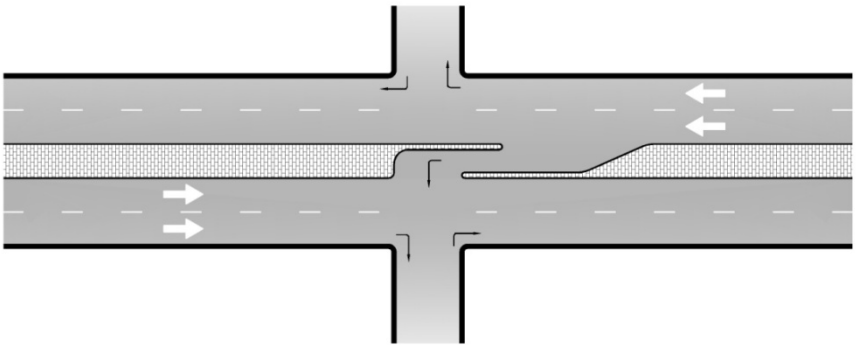
a. Technique: Install Medians and Islands



Right-in/right-out with raised median eliminates left turn movements between major intersections throughout a corridor.



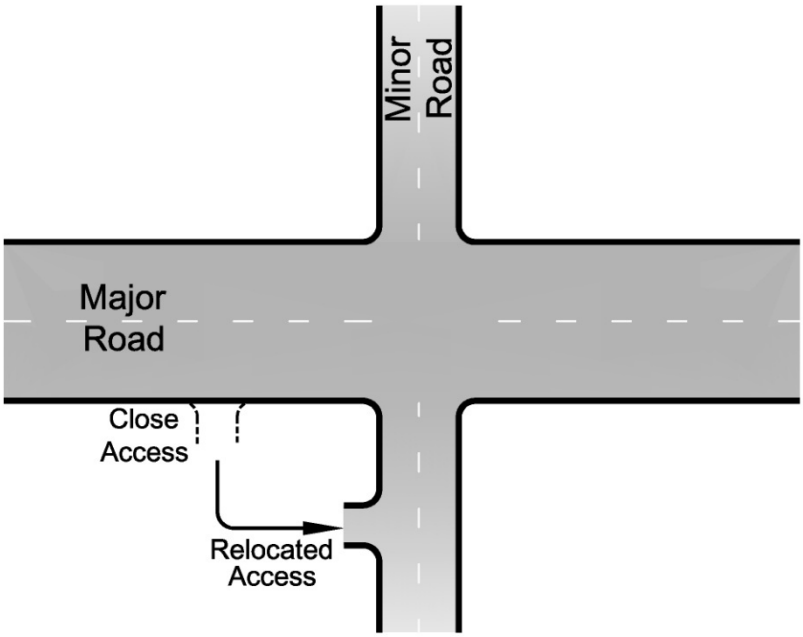
Right-in/right-out with channelizing island eliminates left turn movements at specific locations.



Directional median opening or a ¾ movement limits left turn movements to one direction at strategic locations where increased access is beneficial for safety or operational reasons.

2.3.3 Principle: Provide a supporting local street network & circulation system

a. Technique: Provide Cross Street Access



Relocate access to a side street to:

- Reduce the number of direct access points to the major roadway.
- Provide safe and easy access to a minor roadway intersection with the major roadway.
- Provide opportunities to use an alternate local route, thereby avoiding use of the major roadway completely.

3.0 EXISTING CONDITIONS

3.1 Land Use Characteristics

The study area encompasses approximately 3.8 miles of State Highway. Land adjacent to the defined highway segment falls under a combination of City of Gunnison and Gunnison County jurisdiction. The westernmost 1.5 mile segment of State Highway in the study area falls within Gunnison City limits and the easternmost 1.3 mile segment of State Highway falls within Gunnison County. The remaining 1 mile of State Highway between these two segments falls under both jurisdictions, with land on the south in City limits and land on the north in the County.

Land use within the westernmost ½ mile of the project between SH 135 (Main Street) and Adams Street is urban and commercial in nature. East of the developed edge of the City, land uses are predominantly agricultural and rural residential with some industrial uses. Significant destinations/uses within the study's influence area include the Gunnison – Crested Butte Regional Airport, Western State Colorado University, and the Gunnison Cemetery. Tomichi Heights is a developed residential neighborhood located in Gunnison County, north of US 50 between East Ute Lane and West Ute Lane. A large area owned by the Bureau of Land Management (BLM) is also located in the County north of US 50. Popular trails including the Contour Trail, Colorado Trail, and Cemetery Trail are located north of US 50. South of US 50, Tomichi Creek runs parallel to the highway.

3.2 Roadway Characteristics

The posted speed limit on US 50 ranges from 35 mph in the developed segment of the study area to 65 mph in the rural segment of the study area. Approximate locations of speed limit changes within the study area are summarized in Table 1 and Table 2.

TABLE 1 EASTBOUND SPEED LIMITS

Approximate Reference Point	Approximate Location	Eastbound Speed Limits (MPH)
157.394 - 158.11	SH 135 (Main Street) to box culvert crossing east of the Holiday Inn parcel	35
158.11 – 158.37	Box culvert crossing east of the Holiday Inn parcel to location approximately ½ mile east of Adams Street	55
158.37-161.199	Location approximately ½ mile east of Adams Street to end of study area	65

TABLE 2 WESTBOUND SPEED LIMITS

Approximate Reference Point	Approximate Location	Westbound Speed Limits (MPH)
161.199 - 158.35	East of study area to location approximately ½ mile east of Adams Street	65
158.35 – 158.07	Location approximately ½ mile east of Adams Street to east edge of Holiday Inn parcel	55
158.07 - 157.92	East edge of Holiday Inn parcel to Adams Street	40
157.92 – 157.394	Adams Street to SH 135 (Main Street)	35

The horizontal alignment of US 50 is generally straight with the exception of a large curve at the eastern end of the study limits and a set of reverse curves just east of Ute Lane (East). The highway profile along US 50 is generally gradual. There is a slight increase in the profile grade through the highway segment with the reverse curves due to the natural topography surrounding US 50 through this area. Steep cut slopes on either side of US 50 through this segment create sight distance challenges.

There are three basic roadway cross-sections present within the study area. Within the developed area in the City from SH 135 to Adams Street, US 50 includes four 12' through lanes with a two-way left turn lane and parking lanes on both sides. Curb, gutter and sidewalk exist through this section with the exception of the segment between Teller Street and Adams Street, where no sidewalk exists on the south side of US 50. The segment of US 50 between the cemetery and Ute Lane East includes two 12' through lanes with shoulders and a two-way left turn lane. The remainder of the corridor within the study limits consists of two undivided 12' through lanes with shoulders. Shoulder widths vary from 6 to 12 feet. The only right turn deceleration lane in the corridor is present at the Holiday Inn.

Guardrail protects slopes near box culvert crossings at two separate locations: approximate RP 158.10 east of the Holiday Inn site and approximate RP 160.03 at the Tomichi Ranch site. Pedestrian crossings are marked and signed at the following locations: both sides at SH 135, west side at Iowa Street, and east side at Teller Street. The following access points have configurations that may create operational or safety challenges:

- Adams Street (intersections are slightly offset)
- Access # 53 (residential access) (skewed with sight distance challenges created by nearby hillside and highway curves)

3.3 Right-of-Way

The right-of-way (ROW) width through the US 50 corridor within the study limits can be characterized by three different segments varying in width from 120' to approximately 300' at the widest point. Table 3 summarizes ROW widths and features by segment.

TABLE 3 RIGHT-OF-WAY (ROW) SUMMARY

Segment Description	Approximate Reference Point	Width	Notable Features
SH 135 to Holiday Inn	157.394 – 158.07	120'	Developed business area. ROW is generally centered on the US 50 centerline.
Holiday Inn to Ute Lane (East)	158.07 - 159.67	150'	Currently ranchland and residential. Gunnison Rising PUD surrounds this segment. ROW is offset to the north with about 100' north and 50' south of the US 50 centerline.
Ute Lane (East) to End of Study Limits	159.67 - 161.199	Varies (150'-300')	Ranchland and residential. ROW widens at horizontal curves. Short segments of steep terrain exist near the curves.

3.4 Access Category

Section Three of the *State of Colorado State Highway Access Code, latest edition*, establishes a system of eight highway categories for the purpose of defining the level of access for a highway segment based on the intended function of that segment. The Colorado Transportation Commission assigns a category to each state highway segment within Colorado. US 50 from the intersection of SH 135 to a location approximately 6537 feet west of Ute Lane (CR 72) (just east of the Holiday Inn access) (RP 157.394 to RP 158.000) is categorized as Non-Rural Arterial (NR-B). US 50 east of these limits and within the study area (RP 158.00 to RP 161.25) is categorized as Regional Highway (R-A). Access category limits are shown on Figure 1.

According to Section 3.11 of the Access Code, the major access control characteristics of a highway segment for Category NR-B are as follows:

- Provides service to through traffic movements while allowing more direct access to occur;
- Capacity for moderate speeds and moderate to high traffic volumes;
- "One access shall be granted to each parcel, if it does not create safety or operational problems;"
- Accesses will provide, as a minimum, right turns only;
- One-half mile spacing for full movement intersections or minimum 30% efficiency for signal progression;
- Three-quarter movements may be permitted if operations at adjacent full movement intersections are improved and design standards are met.

According to Section 3.8, the major access control characteristics of a highway segment for Category R-A are as follows:

- Through traffic movements take precedence over direct access needs;
- Capacity for medium to high speed and medium to high traffic volumes;
- "One access shall be granted per parcel of land if reasonable access cannot be obtained from the local street or road system;"
- One-half mile spacing for full movement intersections or minimum 35% efficiency for signal progression.

3.5 Existing Access Inventory

There are currently 66 access points on US 50 within the study area. All existing access points are full movement. There are four one-way access points. Many access points were developed prior to adoption of the *State Highway Access Code* in 1998 and do not have access permits filed with CDOT. Three (3) access points on US 50 have permits on file with CDOT. Approximately 70% of the existing access points are located within City limits. Of those, approximately 45% provide public road access, 40% provide direct business access, and the remaining 15% are field access points located along the newly annexed segment of US 50. Within Gunnison County, a majority of access points are field or residential accesses.

For the purposes of identifying the location of access points for this plan, all access points are defined by the approximate Department reference point (in thousandths of a mile) along US 50 based on CDOT Highway Segment Description Milepost for the SH 135 intersection at US 50 RP 157.394. All access points are located at the approximate centerline of the access (+/- 50 feet). A complete inventory of existing access points is provided in Technical Appendix B.

The following provides a description of the accesses by type:

Public Road Signalized (PRS) – Full movement, signal-controlled intersection providing direct access to a publicly owned roadway. The only PRS access within the study area is the highway to highway connection at the intersection of SH 135 (Main Street).

Public Road Unsignalized (PRU) –Full movement, stop-controlled intersection providing direct access to a publicly owned roadway. The PRU access points in the study area include all alleys and the following public streets:

- Iowa Street
- Taylor Street
- Colorado Street
- Teller Street
- Loveland Street
- Adams Street
- Ute Lane (West)
- Ute Lane (East)

Private Road Unsignalized (PVRU) – Unsignalized full movement intersection providing direct access to one or more private properties. These roadways are maintained privately. The cemetery access and the access at RP 160.755 that provides access to multiple residential sites are designated as PVRU access points.

Business Access (BA) – Full or partial movement highway access points serving businesses within the study area. These types of access points are typically used multiple times daily by a variety of traffic types. There are a total of 22 BA points in the study area.

Residential Access (RA) – Full or partial movement private highway access points used on a regular basis by limited traffic. These types of access points include single-family private driveways. There are 4 RA points in the study area, all located within the County.

Field Access (FA) – Full or partial movement access points that provide direct access from the highway to agricultural land. These types of access points are typically not well-defined and are used infrequently. There are 15 FA points in the study area.

According to these classifications, the access points are distributed as follows:

- 2 signalized public road intersections
- 21 unsignalized public road intersections
- 2 unsignalized private road intersections
- 22 business access points
- 4 residential access points
- 15 field access points

3.6 Crash History

Crash data for US 50 was compiled from the CDOT data base for the period of January 1, 2007 to December 31, 2011 between Milepost (MP) 157.39 and MP 161.25. In addition, CDOT conducted a Safety Assessment for the study area in December, 2012 based on data for the same period. A total of 46 accidents occurred on US 50 during that five year period; 22 accidents (48%) were access-related. Of these reported crashes, 3 (6.5%) had at least one injury, none were fatal, and the remaining 43 crashes (93.5%) resulted in property damage only. The most common accident types in the study section are wild animal, broadside, and rear end accounting for 22% (10 accidents), 17 % (8 accidents), and 13% (6 accidents), respectively.

Results of the Safety Assessment show that this segment of US 50 is performing well with only minor non-patterned accidents occurring at access points. Of the accidents occurring, there is a cluster of accidents at the intersection of SH 135 and the intersection of Iowa St; however, the analysis of the accident history did not reveal a discernible pattern to remedy. A detailed accident summary report and a detailed list of crashes by milepost are included in Technical Appendix C.

4.0 EXISTING TRAFFIC CONDITIONS

Daily traffic counts were collected at eight locations within the study area between Saturday, August 25th and Tuesday, August 28th, 2012. This data, along with that from CDOT Automatic Traffic Recorders (ATRs) was compared with a more comprehensive set of traffic data collected two years prior. The results and conclusion of the data comparison are discussed in the *Base Year Traffic Data and Historical Trend Analysis* memorandum included in the appendices. The memorandum concluded that 2010 weekday turning movement counts at eleven locations along US 50 can be assumed to approximate existing (2012) conditions. Existing traffic and intersection lane configurations are presented in Figure 2.

4.1 Existing Traffic Operations

Level-of-service (LOS) analyses were conducted at all intersections where turning movement counts were collected. Analyses were carried out using the methods described in the *Highway Capacity Manual 2010 (HCM2010)* published by the Transportation Research Board of the National Academies. LOS is a measure of the quality of traffic flow and is defined by a letter grade ranging from A (uninterrupted flow) to F (heavily congested conditions). Table 4 provides LOS criteria for signalized and unsignalized intersections. LOS D is generally considered acceptable (though not always attainable) for peak period conditions in urban areas.

TABLE 4. LEVEL-OF-SERVICE CRITERIA

Level of Service (LOS)	Average Delay		Traffic Characteristics
	Signalized Intersection (seconds/vehicle)	Unsignalized Intersection (seconds/vehicle)	
A	<= 10	0 – 10	Free Flow / Insignificant Delays
B	> 10 – 20	> 10 - 15	Stable Flow / Minimal Delays
C	> 20 – 35	>15 - 25	Stable Flow / Acceptable Delays
D	> 35 – 55	>25 - 35	Approaching Unstable / Tolerable Delays
E	> 55 – 80	> 35 - 50	Unstable Flow / Significant Delays
F	> 80	> 50	Forced Flow / Excessive Delays

Source: *Highway Capacity Manual 2010*

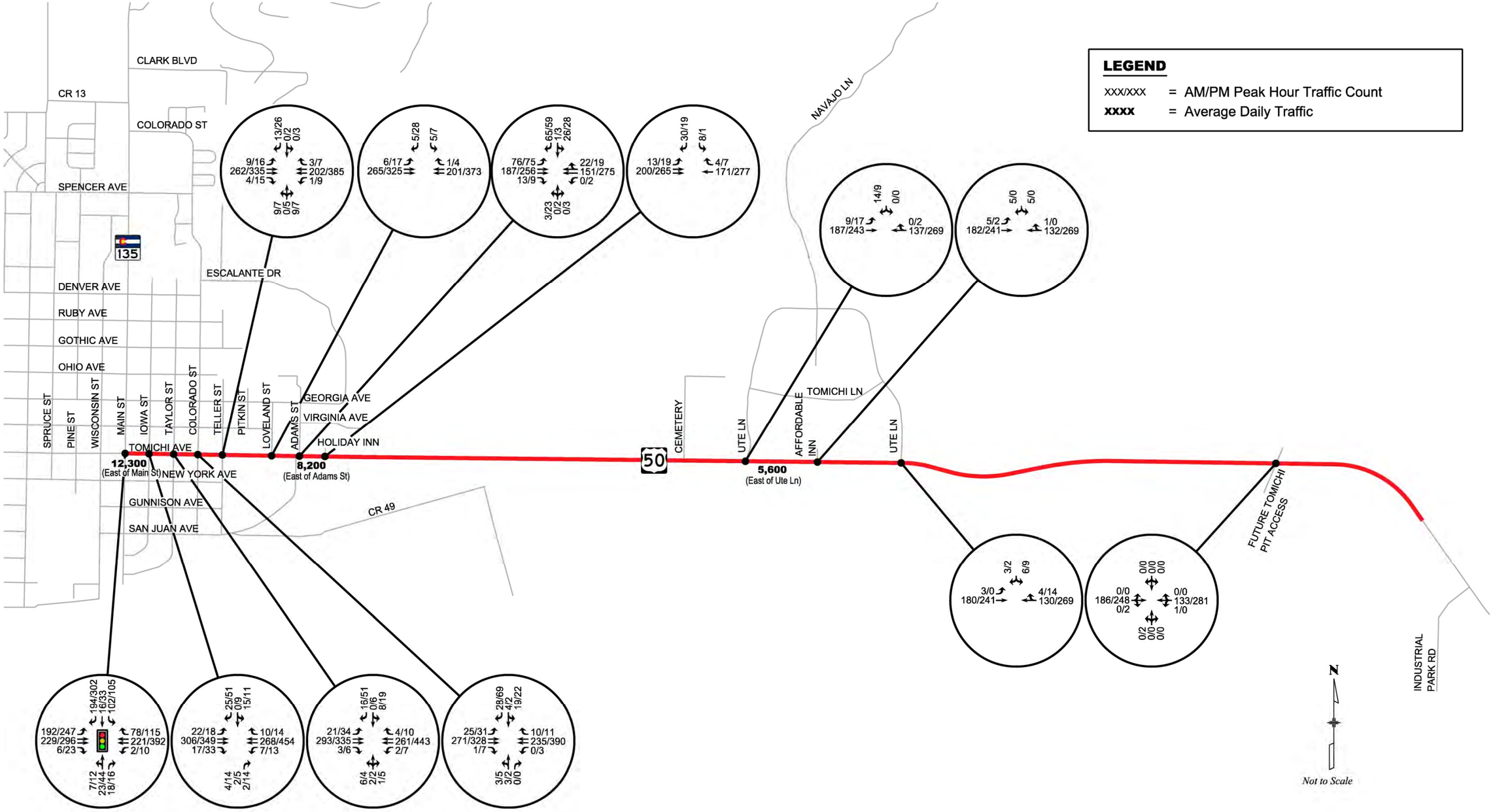


Figure 2. Existing Traffic Volumes and Intersection Configurations

For signalized intersections, LOS is reported for the intersection as a whole. At unsignalized intersections, the LOS for the worst performing movement are reported. Typically, left-turn or through traffic from the stop-controlled approach will be the worst performing movement. Existing intersection geometry and optimized traffic signal timing plans were used for the analyses. The results reported in Table 5 indicate that traffic conditions are good (LOS C or better) at all intersections along US 50 in the study area.

TABLE 5. EXISTING LEVELS-OF-SERVICE

US 50 Intersection	A.M. Peak Hour	P.M. Peak Hour
	LOS	LOS
SH 135 (Main St)	B	B
Iowa St	B	C
Taylor St	B	C
Colorado St	B	C
Teller St	B	B
Loveland St	B	B
Adams St	B	C
Holiday Inn d/w	B	B
Ute Ln West	A	A
Affordable Inn d/w	A	A
Ute Ln East	B	B
Future Tomichi Pit Access	A	B

5.0 FUTURE TRAFFIC CONDITIONS

5.1 Background Traffic Growth

For the purposes of this study, background traffic was defined as all traffic not otherwise generated by planned developments located within the study area. Typically, background traffic is estimated by applying a growth factor to existing traffic volumes. The growth factor is usually based on historical trends and is often expressed as an annually compounded growth rate. Given the past ten years of traffic data reported by the ATRs, the *Base Year Traffic Data and Historical Trend Analysis* memorandum included in the appendices concluded that no growth in background highway traffic is a justifiable assumption.

West Gunnison is a development planned west of the study area. A detailed traffic impact analysis has not been conducted and so growth from the project was accounted for in background traffic. Given current land use assumptions, West Gunnison was estimated to generate 10,000 new external trips per weekday. The destination of these trips was estimated using existing traffic demands in Gunnison. As a result, the impacts of West Gunnison were approximated by increasing existing traffic demands in the study area by 25%. With a horizon year of 2035, this equates to an annual compound growth rate of 1.0%.

5.2 Planned Development

Planned developments specifically accounted for in these analyses were limited to the Gunnison Rising project and the Tomichi gravel pit at the east end of the study area. Gunnison Rising is a multi-use development, planned east of the City on both sides of US 50, and is projected to generate nearly 30,000 weekday trips over six proposed US 50 access points as of June 2012. Land use changes from the *Gunnison Rising - "Authentically Colorado" Master Plan Level Updated Traffic Impact Analysis* were incorporated into a revised *Build-Out Site-Generated Traffic* figure provided by the City of Gunnison, which is included in the Appendices.

Gunnison Rising project trip projections along with Tomichi Pit traffic projections were added to background traffic at proposed access locations in order to develop 2032 traffic analysis scenarios. For the purposes of this study, site generated traffic was then reassigned based on the Gunnison Rising access configuration developed by the US 50 Access Study team. At existing intersections and driveways, access control measures were accounted for by redistributing traffic over the local street network to full-movement intersections. Except where redistribution via an alternative route was not possible, u-turns were not assumed.

The locations and configuration of four future access points were determined by the US 50 Access Study team. Projected traffic demands at those future intersections and at existing intersections without Access Control Plan (ACP) implementation are shown in Figure 3. Traffic demands and intersection configurations at US 50 with the implementation of the ACP are shown in Figure 4. In both scenarios, peak hour signal warrant evaluations described in the *Manual on Uniform Traffic Control Devices* (*MUTCD) were used as a planning tool to determine locations where a traffic signal would likely be needed in the future.*

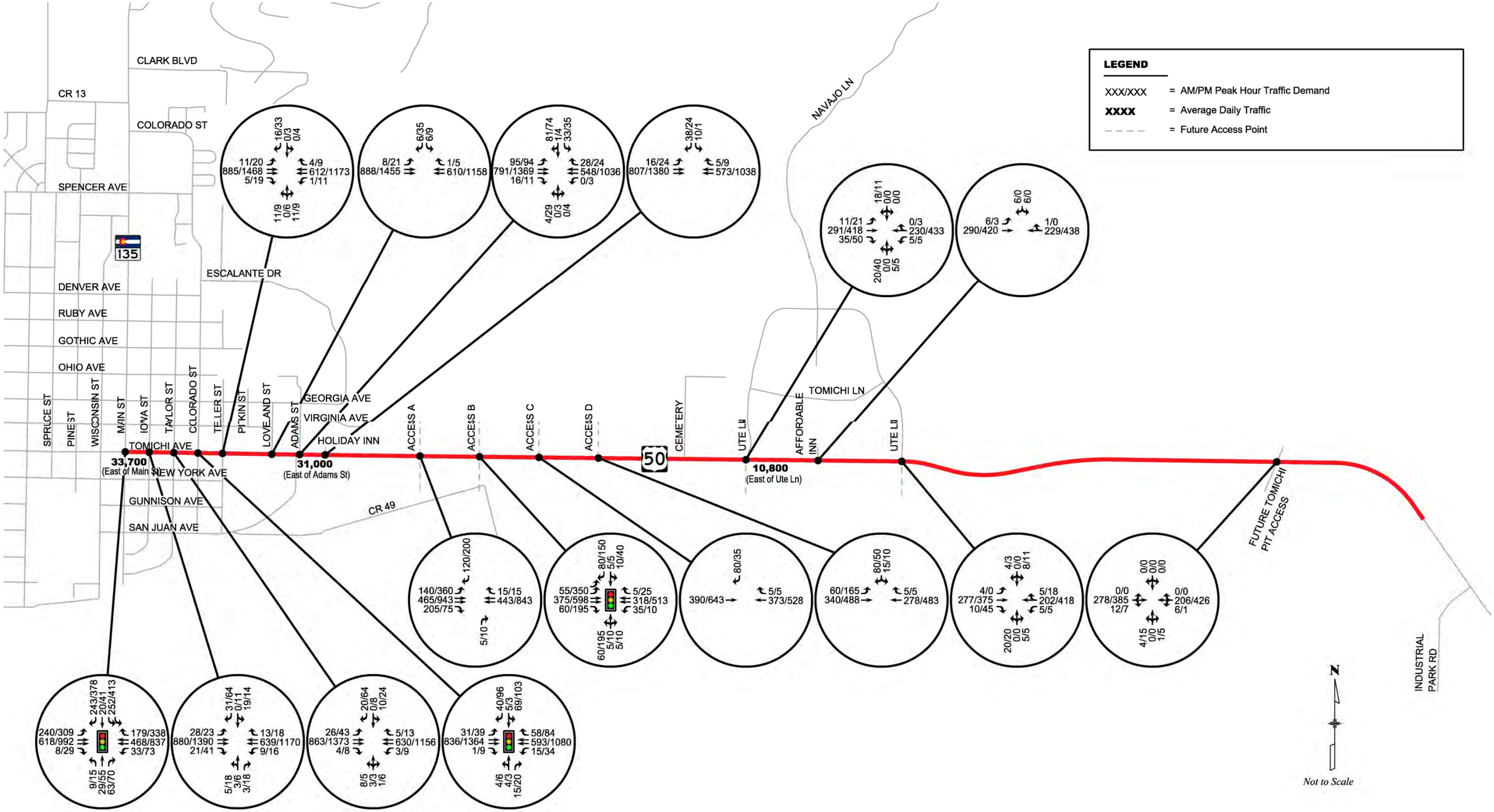


Figure 3. Future Traffic Demands and Intersection Configurations without ACP

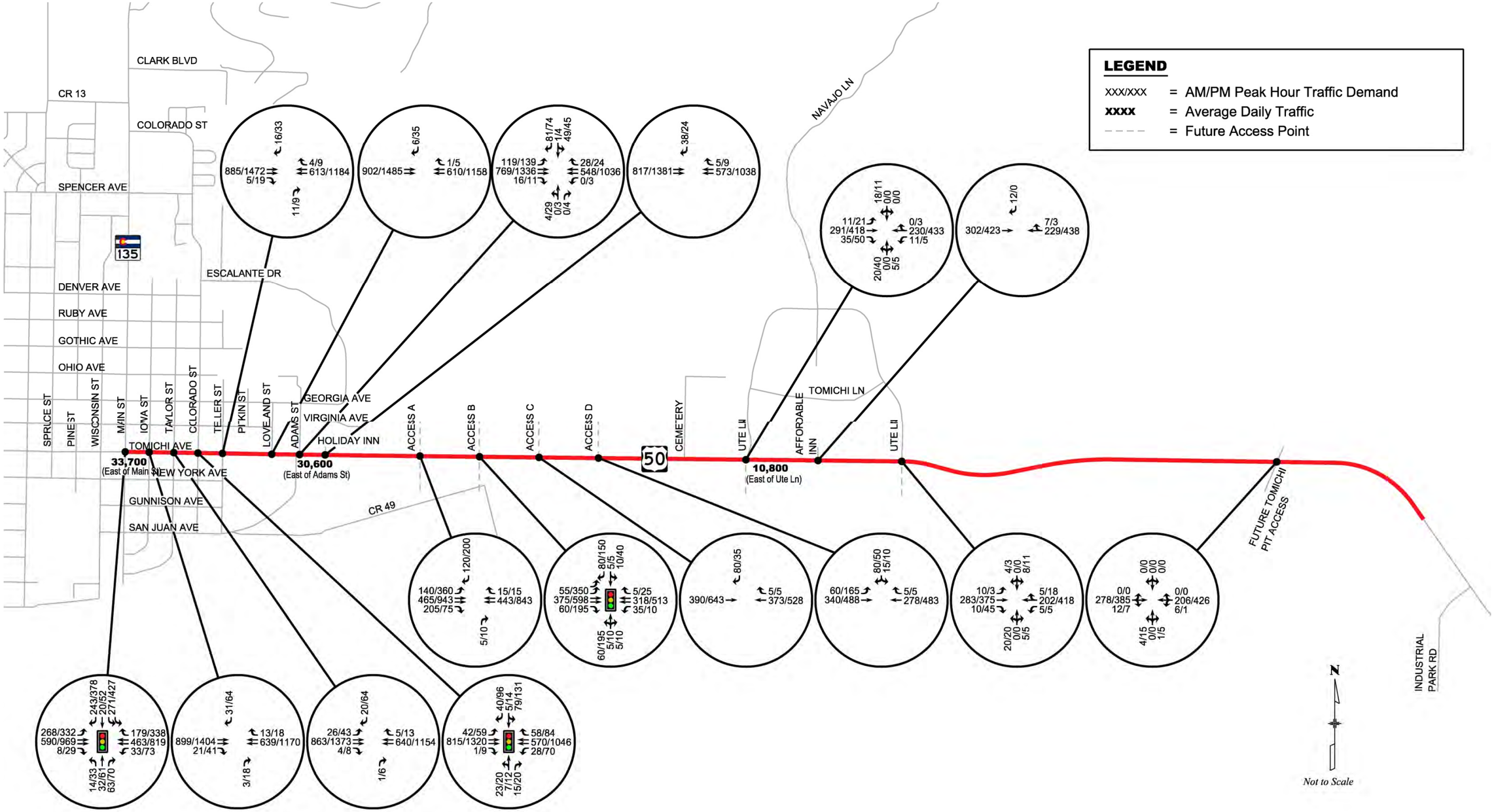


Figure 4. Future Traffic Demands and Intersection Configurations with ACP

5.3 Future Traffic Operations

Traffic operations for each intersection and major access along US 50 were evaluated using methods described in the *HCM2010*. Corridor traffic models were prepared for the no action (without ACP) and the build (with ACP) scenarios under typical weekday morning and afternoon peak hour conditions. The models reflect proposed traffic, geometric and access conditions as appropriate. It was assumed that future traffic signal cycle lengths would be consistent across all intersections and would be the shortest cycle capable of providing LOS D. The models were used to evaluate the effects of the proposed access control measures on traffic operations throughout the study area. Table 6 shows a comparison of level-of-service results for future scenarios with and without the ACP.

TABLE 6. FUTURE INTERSECTION COMPARISON

	without ACP		**with ACP**	
	LOS		**LOS**	
US 50 Intersection	**A.M.**	**P.M.**	**A.M.**	**P.M.**
SH 135 (Main St)	C	D	C	D
Iowa St	E	F	B	C
Taylor St	E	F	B	C
Colorado St	B	C	B	D
Teller St	D	F	B	C
Loveland St	D	F	B	B
Adams St	F	F	F	F
Holiday Inn d/w	C	F	B	B
Access A	-	-	B	C
Access B	-	-	A	B
Access C	-	-	B	B
Access D	-	-	B	B
Ute Ln West	B	C	B	C
Affordable Inn d/w	B	A	A	A
Ute Ln East	B	C	B	C
Future Tomichi Pit Access	B	C	B	C

The table shows that at unsignalized intersections with the ACP, LOS improves as minor street left-turn and through traffic consolidate at full movement access points. Adams Street shows failing operations in both scenarios and was evaluated for future signal warrants. Minor street traffic was not high enough to warrant a signal at this location, but it can be assumed that drivers will find reasonable alternate access to the highway if excessive delays develop.

In addition to intersection operations, traffic operations along the highway were evaluated using the urban streets analysis methodology described in the *HCM2010*. This methodology takes into account posted speed limits, intersection traffic demands, lane configurations, and the number of driveways between signalized intersections. Predicted travel speed and LOS are reported in Table 7 for each travel direction between traffic signals along the study corridor. At signalized intersections in both analysis scenarios, signal timing optimized without the ACP was used.

TABLE 7. FUTURE HIGHWAY COMPARISON

US 50 Highway Segment	Direction	without ACP LOS		with ACP LOS	
		A.M.	P.M.	A.M.	P.M.
SH 135 to Colorado St	EB	C	C	B	B
	WB	D	E	D	E
Colorado St to Access B	EB	A	B	A	A
	WB	A	A	A	A

The ACP is shown to improve or maintain LOS along all highway segments considered. Although signal timing is the same for both scenarios, the ACP consolidates more minor street traffic at the signalized intersections. Depending on future timing plans, this could lead to longer side-street green times, thus delaying highway traffic in some segments. However, given the improvements in LOS, the ACP provides an overall benefit to highway traffic operations.

6.0 ACCESS PLAN DEVELOPMENT AND EVALUATION

Using traffic volume forecasts developed for the study; input from the City, County, and CDOT; input from the public outreach program; and guidance from the State Highway Access Code, an Access Plan was developed for the project. This Plan considers access points in logical groupings, as well as circulation opportunities via the existing and potential future local street system.

6.1 Process

The Access Plan was developed using a 4-step process:

6.1.1 Step One – Methodology & Compatibility Index

A traffic methodology and access plan methodology were established at the beginning of the project to define the purpose, approach, and assumptions used to develop the Plan. In addition, a compatibility index was developed to provide a logical means for determining whether the Access Plan meets the established project goals. The index identified a set of evaluation criteria that correspond with each project objective, as listed in Section 1.1. A simple rating system that identifies the plan as favorable, neutral or unfavorable with respect to each criterion was defined. Each of the three ratings under each criterion was then defined to assist in the evaluation. The traffic methodology memo can be found in Technical Appendix D and the access plan methodology memo and compatibility index can be found in Technical Appendix E.

6.1.2 Step Two – Development of the Access Plan

The existing inventory of access points was reviewed with existing parcel and ownership information. This review determined which parcels adjacent to US 50 lacked access to the highway, which parcels had multiple accesses to consider for consolidation, and which parcels had access or potential access to an existing or proposed local road. In addition, the Gunnison Rising PUD and associated traffic study were reviewed and compared to existing conditions. This review identified potential local street networks, major traffic generators, and projected traffic patterns for future development in the area.

Access solutions were developed by applying access management principles and techniques discussed in Section 2. Major full movement intersections were located based on traffic projections, City and County planning documents, anticipated growth patterns, and analysis of functional intersection areas. Functional intersection area was analyzed using American Association of State Highway and Transportation Officials (AASHTO) guidance on deceleration and taper lengths and existing speed limits to ensure that proposed improvements will meet current design standards on opening day upon construction. Access for parcels in between major intersections was either limited (right-in/right-out or ¾ movement) or provided via a local road. In cases where multiple access points serve a single ownership, access was reduced to one per ownership. For parcels with a significant length of frontage on US 50, evaluation of out-of-direction travel and traffic projections were used to identify the need for additional access points. Shared access between parcels was developed, wherever feasible.

6.1.3 Step Three – Refine the Access Plan

A draft access plan was presented to an internal review team consisting of City, County, and CDOT representatives. Based on comments received from the team, the draft plan was refined and presented at the first Public Open House. Public comment was reviewed and the Plan was modified, as appropriate. Improvements considered cost prohibitive, with unmanageable physical constraints, with significant traffic operational deficiencies, inconsistent with overall community expectations, or not appearing to provide a reasonable level of access, were revised. In some cases, access conditions were defined to allow phased implementation of long-term solutions.

6.1.4 Step Four – Evaluation

Following the public outreach process, the refined Access Plan was evaluated using the compatibility index described in Step One to determine whether project objectives were met.

6.2 Evaluation Results

The results of the evaluation, by objective, are listed in Table 8. Overall, the Access Plan rates favorably. Plan adoption by the three entities is recommended. Details of the Plan evaluation can be found in Technical Appendix E. A graphical representation of the Access Plan is located in Section 7.

TABLE 8 COMPATIBILITY EVALUATION SUMMARY

Project Goal	Evaluation Criteria	Rating
Identify locations and level of access for existing and future highway intersections that balance state and local transportation planning objectives	Function of the Highway (Access Control Plan Code Requirements)	Neutral
	Function of Local Transportation System	Favorable
	Availability of Off-Highway Circulation Routes	Favorable
	Connectivity of Off-Highway Circulation Routes	Favorable
Provide a plan that is adoptable by all entities through a respectful and collaborative partnership	Project Team/Staff Support	Favorable
	Value-added Over Access Permit Process	Favorable
	Physical Constraints	Favorable
	Funding Opportunities	Neutral
Provide safe and efficient access to and from US 50 for businesses and residents	Intersection Sight Distance	Favorable
	Intersection Level of Service (LOS)	Favorable
	Conformance with State Highway Access Code Auxiliary Lane Requirements	Favorable
	Out of Direction Travel Distance	Unfavorable
	Intersection Crash Risk	Favorable
Provide safe, effective and efficient travel for traffic on US 50	Highway Segment LOS	Favorable
	Functional Intersection Area	Neutral
	Number of Access Points	Favorable
Support economic viability of the project area	Business Market Area	Favorable
	Serviceability to Developments and Properties within the Study Area	Favorable
Maintain compatibility with the intent of previous local planning efforts	Adopted Local Planning Documents	Favorable
	Local Character	Neutral
Allow for phased implementation of improvements	Public Support	Favorable
	Phasing Opportunities	Neutral
Support the accommodation of alternative modes, including City and County trail systems	Pedestrian/Bicycle Access	Favorable
	Compatibility with Local Trail Plans	Neutral
	Transit Opportunities	Neutral

7.0 PLAN RECOMMENDATIONS

This section presents details of the recommended Access Plan for US 50. The Plan has been developed with considerable participation from the City of Gunnison, CDOT, Gunnison County, and the public. After evaluating both existing and future conditions, the Plan defines how each access will function in the future. In general, the Access Plan limits full movement access to major intersections. Access for parcels between major intersections is either limited or relocated to an alternate route/cross street. In addition, highway access is reduced to one location per ownership unless additional access points are needed to address out-of-direction travel or improve operations. Where feasible, access is shared between adjacent properties. ¾ movement intersections are identified at key minor public road intersections where providing the left-turn movement to the major road improves operations and/or circulation.

With consideration for pedestrian and business access in the established commercial area, out-of-direction travel created by restricting movements at right-in/right-out access points is limited to a maximum distance of four blocks (2 blocks each way) between SH 135 (Main Street) and Adams Street. East of Adams Street, out of direction travel was generally limited to a maximum distance of one mile (½ mile each way). Out-of-direction travel was limited by providing full movement intersections at necessary intervals. West of Adams Street, restricted left-turn movements can be easily re-routed using the existing local street system. Similarly, if a local street network is provided within the Gunnison Rising PUD annexation area similar to the proposed street network illustrated in Figures 5A-5C, restricted left-turn movements can circulate using the proposed street network.

Traffic control measures that may be used to achieve proposed conditions include raised medians, driveway channelizing islands at limited access points, directional median openings at ¾ movement access points, and signage and striping. To avoid turn movement violations and potential enforcement issues, eventual installation of a raised median or other positive traffic control measure is recommended. Based on the existing cross-section on US 50 west of Adams Street, a raised median could be installed within the existing roadway width. Depending on the desired median width, minor reallocation of roadway width may be required. As development occurs between Adams Street and Ute Lane, widening to accommodate auxiliary lanes and raised medians will be required. A conceptual layout of US 50 for this segment based on Access Plan recommendations and auxiliary lane needs is included in Appendix G. Based on conceptual exhibits from Gunnison Rising, we've assumed that 4 through lanes will be extended just east of Access B. We've also assumed curb and gutter and a detached sidewalk on the north side. The conceptual layout suggests that the roadway footprint will fit within existing US 50 ROW.

The narratives in this section are intended to serve as a summary of the key features of the Access Plan. The figures are intended to provide a graphical representation of the Access Plan. A detailed explanation of each access in the study area, by reference point, is presented in the Access Control Plan Table, Exhibit A of the Intergovernmental Agreement (IGA). Reference these exhibits in Technical Appendix F for specific access configurations and conditions.

Recognizing that this plan is a long-term planning document and not a detailed engineering design, reference point designations are intended to be approximate. As more detailed information is available, these designations may be modified (generally within 0.05 miles of the specified reference point designation) without formal amendment of the Plan.

7.1 Access Plan

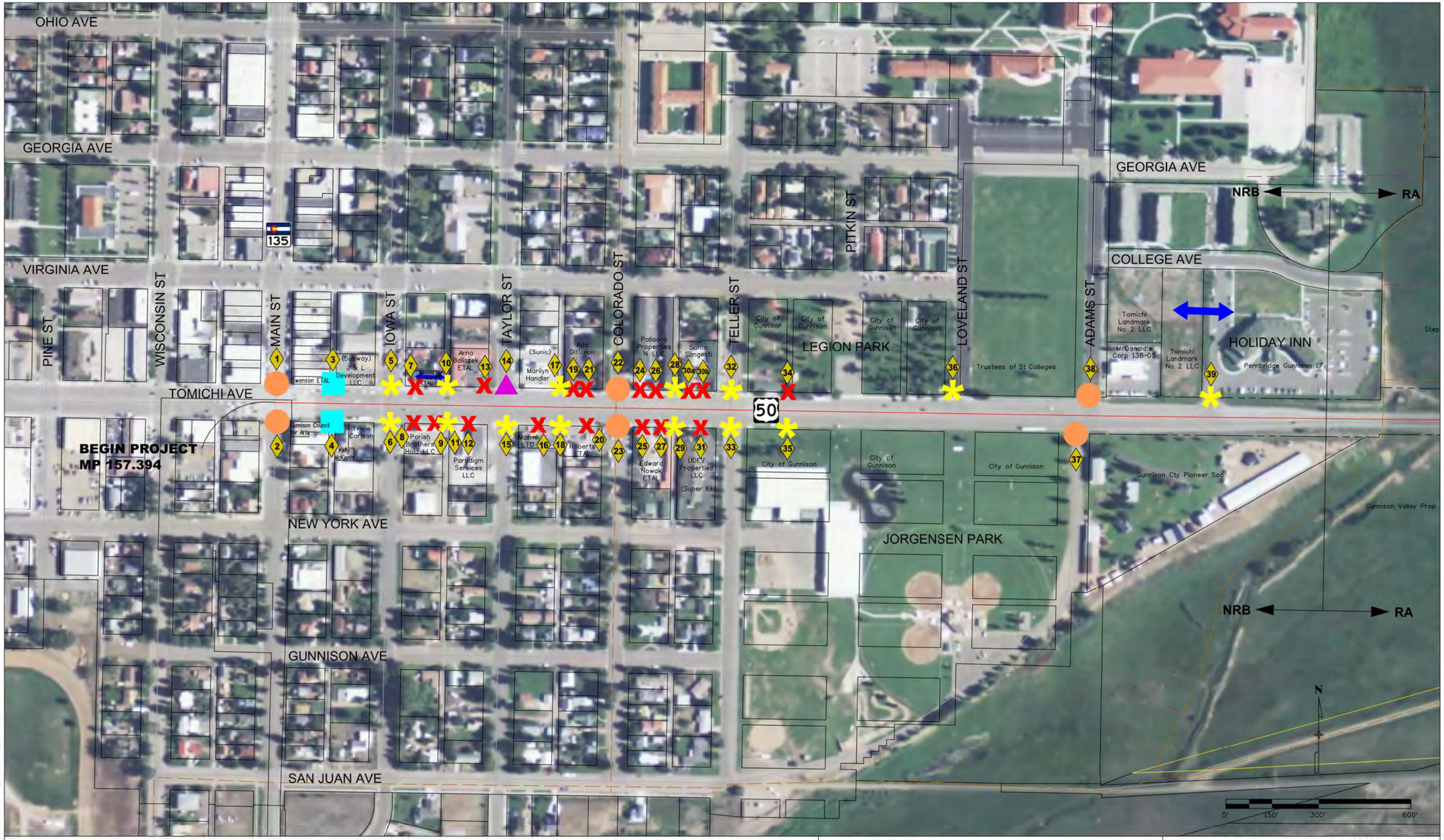
Key features of the Access Plan are summarized by major intersection below and illustrated in Figures 5A-5E. Auxiliary lanes shall be provided at access points as prescribed by the State Highway Access Code. Full movement intersections with potential for future signalization or other traffic control have been identified as part of the Access Plan; however, the type of traffic control is not specified. Traffic control will be evaluated on a case-by-case basis as future conditions warrant. Potential traffic control may include stop signs, traffic signals, roundabouts, interchanges, or other traffic control recognized by the MUTCD. Traffic signals may be implemented at intersections if and when warranted per current MUTCD standards and when funding is available. Once a signal is warranted and until such time as it is constructed, movements may be restricted if operational or safety issues develop.

SH 135 (Main Street) to Colorado Street
A full movement signalized intersection will remain at SH 135 (Main Street). Due to long-term operational and safety concerns resulting from the close spacing between Iowa Street and Main Street, Iowa Street will be limited to right-in/right-out when safety or operational issues develop or when a public project is funded. Similarly, the south leg of Taylor Street and all public alleys will be limited to right-in/right-out when safety or operational issues develop or when a public project is funded. The alleys at Access #3 and #4 are designated as right-in only based on the existing one-way configuration. Based on traffic patterns, left-turn volumes, and emergency services access, a ¾ movement left-in will be provided at the north leg of Taylor Street. Direct access to individual parcels in this segment shall be closed and relocated to the local street system upon redevelopment. Access to individual parcels may be restricted to right-in/right-out prior to redevelopment if safety or operational issues develop or a public project is funded.

Pedestrian Access
The existing pedestrian crossing located at Iowa Street may remain regardless of the level of vehicular access provided at Iowa Street. If safety issues related to the pedestrian crossing develop, potential safety improvements should be considered. Refer to Section 7.2 for further discussion.

Colorado Street to Adams Street
A full movement intersection with potential for signalization or other traffic control will remain at Colorado Street. Due to operational and safety concerns resulting from the close spacing between Teller Street and Colorado Street and between Loveland Street and Adams Street, Teller Street and Loveland Street will be limited to right-in/right-out when safety or operational issues develop or when a public project is funded. Similarly, all public alleys will be limited to right-in/right-out. Direct access to individual parcels in this segment shall be closed and relocated to the local street system upon redevelopment except for Access #35. For the purposes of park maintenance, Access #35 will remain open with vehicular movements limited to right-in/right-out. Prior to redevelopment, access to individual parcels may be restricted to right-in/right-out if safety or operational issues develop or a public project is funded.

Pedestrian Access
The existing pedestrian crossing located at Teller Street may remain regardless of the level of vehicular access provided at Teller Street. If safety issues related to the pedestrian crossing develop, potential safety improvements should be considered. Refer to Section 7.2 for further discussion.



LEGEND:

- Access Point
- Full Movement
- Right-In
- Right-In, Right-Out
- 3/4 Movement Left-In
- Close Existing Access Point
- Cross Access for Shared Access Point
- City Boundary
- Parcel Line
- Proposed Street Network
- Trail Network

US 50 ACCESS EXHIBIT
1 OF 5

FIGURE 5A **PAGE 28**

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Stephen Trippe

Gunnison Valley Prop LLC

Gunnison Cemetery Dist

Gunnison Valley Prop LLC

ACCESS A

ACCESS B

ACCESS C

ACCESS D

40 66 68 70 44 71

41 67 42 43 69 72

50

N

0' 150' 300' 600'

LEGEND:

- Access Point
- Full Movement
- Right-In
- Right-In, Right-Out
- 3/4 Movement Left-In
- Close Existing Access Point
- Cross Access for Shared Access Point
- City Boundary
- Parcel Line
- Proposed Street Network
- Trail Network

US 50 ACCESS EXHIBIT
2 OF 5

FIGURE 5B **PAGE 29**

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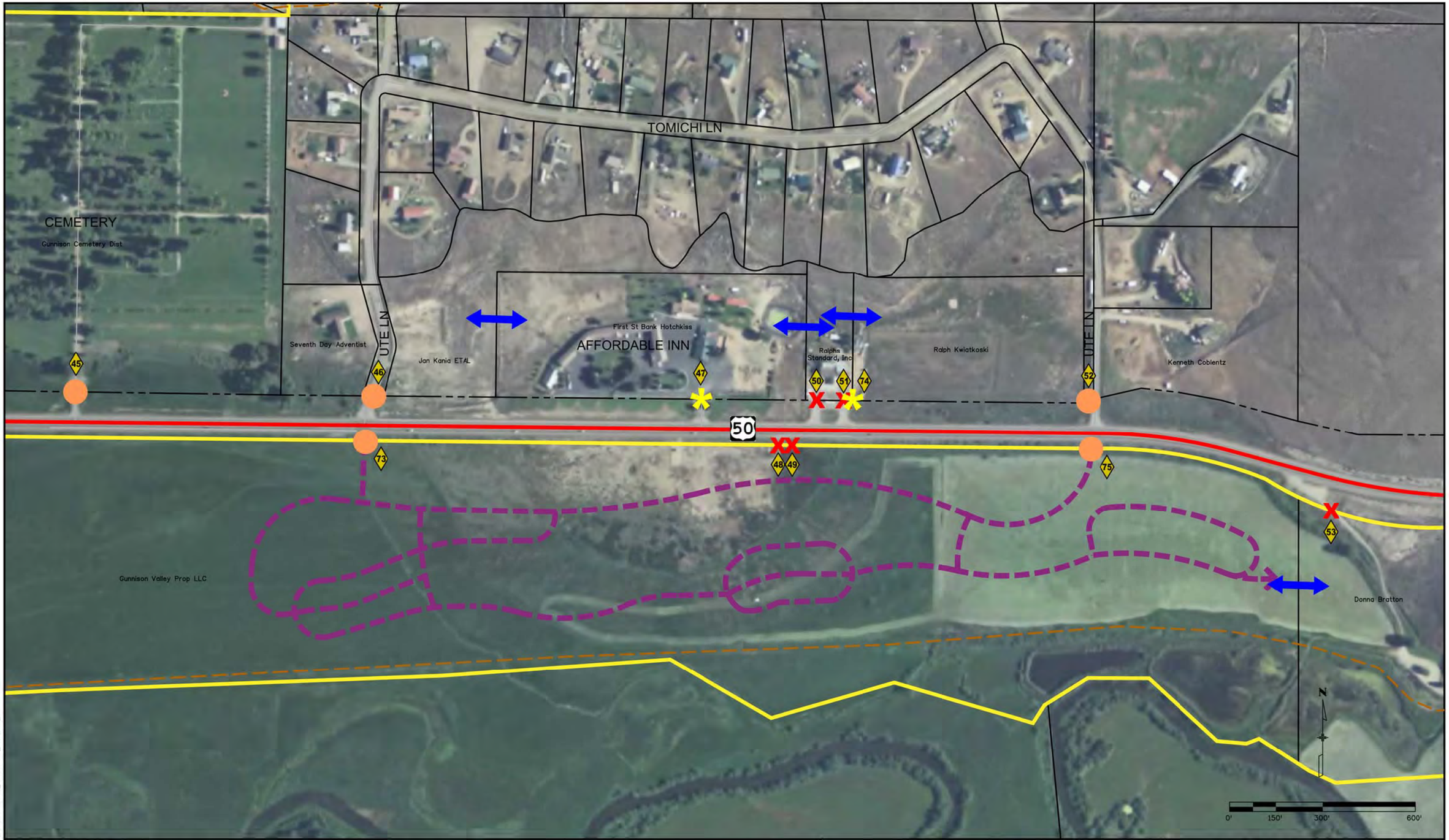

LEGEND:

- Access Point
- Full Movement
- Right-In
- Right-In, Right-Out
- 3/4 Movement Left-In
- Close Existing Access Point
- Cross Access for Shared Access Point
- City Boundary
- Parcel Line
- Proposed Street Network
- Trail Network

US 50 ACCESS EXHIBIT
3 OF 5

FIGURE 5C **PAGE 30**

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LEGEND:

- Access Point
- Full Movement
- Right-In
- Right-In, Right-Out
- 3/4 Movement Left-In
- Close Existing Access Point
- Cross Access for Shared Access Point
- City Boundary
- Parcel Line
- Proposed Street Network
- Trail Network

Gunnison County COLORADO

Colorado Department of Transportation

Stolfus & associates LLC

US 50 ACCESS EXHIBIT
4 OF 5

FIGURE 5D

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LEGEND:

- Access Point
- Full Movement
- Right-In
- Right-In, Right-Out
- 3/4 Movement Left-In
- Close Existing Access Point
- Cross Access for Shared Access Point
- City Boundary
- Parcel Line
- Proposed Street Network
- Trail Network

US 50 ACCESS EXHIBIT
5 OF 5

FIGURE 5E **PAGE 32**

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Adams Street to Access B (Access # 68/69)
A full movement intersection with potential for signalization or other traffic control will remain at Adams Street. Adams Street is slightly offset at US 50. Traffic demand on the south leg is low, reducing the risk of conflicts created by the offset configuration. However, the City should look for opportunities to improve or eliminate the offset configuration. If redevelopment should occur on the northwest or southeast corners of the intersection, improving the offset should be pursued by the City through the land development process.

A conditional unsignalized full movement intersection will be provided at Access A upon redevelopment. When any of the conditions listed in the Access Control Plan Table (Exhibit A in the IGA) are met, the north leg of Access A will be restricted to ¾ movement left-in and the south leg of Access A will be restricted to right-in/right-out. Figure 5C reflects the long-term access condition.

The location of Access A was selected based on ultimate access configurations at Access A and Access B, required auxiliary lane lengths at Access A and Access B, and existing parcel information. Access A is located at the property line between the Trippe and Gunnison Valley Prop LLC properties on the north side of US 50.

Given projected traffic volumes, and in an effort to minimize the space between Access A and Access B, a double-left turn lane was assumed at Access B. In planning for future development of this area, the City should consider ROW implications for the local street system to accommodate a second receiving lane at Access B. In addition, a local street connection between Access A and Access B on both sides of the highway is beneficial for providing circulation options to address restricted left turn movements on US 50.

The Holiday Inn access (Access # 39) will be restricted to right-in/right-out. If the Tomichi Landmark No 2 LLC property, located west of the Holiday Inn, redevelops, access shall either be provided via the local street system or shall be shared at Access #39. If shared, cross-access agreements between the properties are required. Field access points in this segment shall be closed upon redevelopment.

Pedestrian Access
An existing box culvert is located east of the Holiday Inn parcel at approximate RP 158.10. Based on the City's Non-Motorized Transportation Plan, the box culvert will serve as a future grade separated pedestrian crossing. A grade-separated pedestrian access at this location is compatible with the proposed access configuration in this segment.

Access B (Access # 68/69) to Access D (Access #71/72)
A full movement intersection with potential for signalization or other traffic control will be provided at Access B upon redevelopment. Based on the spacing and required auxiliary lane lengths between intersections, a right-in/right-out access will be provided to serve development to the north at Access C. A local street connection between Access C and Access B and/or Access D is beneficial for addressing restricted left turn movements at Access C. The field access at Access #44 will be closed when Access D is constructed.

Access D (Access #71/72) to Ute Lane (West)
A full movement intersection with potential for signalization or other traffic control will be provided at Access D upon redevelopment. Based on the land use, traffic demands and associated traffic control, and unlikelihood of redevelopment occurring, an unsignalized full movement intersection is retained at the cemetery (Access #45).

Ute Lane (West) to Ute Lane (East)
A full movement intersection with potential for signalization or other traffic control will remain at Ute Lane (West). A fourth leg to the south will be provided upon redevelopment. Field access points to the south will be closed upon redevelopment. Access for other parcels in this segment shall be reduced to one location per ownership, shared where feasible and shall be limited to right-in/right-out or relocated to alternative routes/cross streets. Cross-access for properties with shared access is required as properties redevelop.

Ute Lane (East) to End of Project
A full movement intersection with potential for signalization or other traffic control will remain at Ute Lane (East). A fourth leg to the south will be provided upon redevelopment.

A full movement intersection with potential for signalization or other traffic control will be provided at Access #60 and #61 upon redevelopment. This access point will serve a potential future gravel pit currently in the County's planning process (or other future development) on the south and will continue to serve multiple residential properties to the north. If redevelopment occurs on the north, cross-access is required between properties. As properties redevelop and access points are reconstructed, opportunities to provide perpendicular access points directly across US 50 should be considered in determining the final location and alignment of proposed access points.

To address out-of-direction travel and long-term access for the Manning parcel, a full movement intersection with potential for signalization or other traffic control will be provided at Access #55 and #56 upon redevelopment. This location was selected based on intersection spacing, intersection sight distance, and existing access to public lands on the south.

Access #53 will be closed upon redevelopment and/or when alternate access to Ute Lane is provided. Access # 64 will be retained as a full movement unsignalized access. Field access points in this segment shall be closed upon redevelopment.

7.2 Other Recommended Improvements

In support of the recommended access modifications, development of a local street network that serves the proposed Gunnison Rising development is also recommended. The local street system should provide logical, continuous connections to existing City Streets and should create circulation opportunities to provide alternatives that support restricted turning movements on US 50. The proposed street network illustrated in Figures 5A-5C accomplishes both of these goals. The local connections and internal circulation routes proposed will benefit operations on US 50 by reducing local dependence on the highway. In addition, increased options for access to local amenities will benefit the community. The City has already recognized the importance of a local street system through the Gunnison Rising annexation process.

In support of alternate modes, the Plan also considered pedestrian/ bicycle access, including compatibility with the City of Gunnison's Non-Motorized Transportation Plan adopted in April, 2013. Full movement intersections with potential for signalization identified in the Access Plan are compatible with existing and future extensions of pedestrian, bicycle, and trail facilities as proposed in the Non-Motorized Transportation Plan. Major pedestrian/bicycle nodes on US 50 include SH 135 (Main Street), Colorado Street, and Access B. The Access Plan is also compatible with the proposed grade-separated crossing located at the existing box culvert east of the Holiday Inn parcel.

In addition, pedestrian crossings are incorporated at all major intersections. At-grade pedestrian crossings should be included with intersection improvements constructed within the City Limits. There are two existing pedestrian crossings in the corridor located at Iowa Street and Teller Street. As traffic volumes increase and opportunities to cross the highway decrease, the City should consider potential safety improvements at these crossings based on the level of use, type of users, and available infrastructure in the area. Improvements may include signage, striping, median refuge, corner bulb-outs, warning beacons, rectangular rapid flash beacons (RRFB), pedestrian hybrid beacons, or re-routing to another crossing location.

Transit operations and opportunities were also considered during the development of the Plan. The Gunnison Valley Rural Transportation Authority (RTA) provides free bus service between Gunnison and Mt. Crested Butte. The bus route follows US 50 from Spruce Street (located west of the study are) to Colorado Street with stops at both intersections. Full movement intersections in the Access Plan are consistent with the existing route and stops. Additionally, the Access Plan does not preclude further development of local transit service.

8.0 IMPLEMENTATION

The improvements recommended in the Access Study represent a long-range plan to implement over time as growth occurs, as traffic and safety needs arise, and as funding becomes available. Construction of the improvements recommended may be completed using public and/or private funding. The following cases will trigger construction.

1. A property develops, redevelops or changes use, resulting in an increase in traffic to and from the site of 20% or more. In this case, limited improvements at the specific access point may be required by CDOT. As part of the City's development review process, additional transportation improvements may also be necessary to address specific traffic-related impacts created by the development. These improvements will be compatible with the Access Plan. If a property does not redevelop, the property owner will not be required to construct access modifications. (Private Funding).

2. The City and/or County obtain funding to complete improvements to a segment of the US 50 corridor or a local route. (Public Funding)

3. State and/or Federal Funding are obtained to complete improvements to a segment of the US 50 corridor. Typically, a project will be identified in the Statewide Transportation Improvement Program (STIP) to obtain funding. (Public Funding)

4. A safety or operational issue develops that can be mitigated through the implementation of access management techniques consistent with the Access Plan. Depending on the extent and type of safety or operational issue, improvements may address a segment of the US 50 corridor or a local route, or may be limited to an isolated location or access point. Public funding from any combination of agencies may be obtained to construct improvements. (Public Funding)

5. Any combination of 1, 2, 3, or 4.

Under case 1, a property owner must follow the access permit process as defined by Section 2 of the *State of Colorado State Highway Access Code, latest edition*. CDOT will remain the issuing authority for US 50. In short, the process requires property owners to submit an application for an access permit. Once the access permit is issued, construction plans for permitted improvements must be developed and submitted to CDOT for review. A Notice to Proceed will be issued following acceptance of the Construction Documents by CDOT, thereby allowing the applicant to proceed with construction. As determined by the CDOT Permit Unit, access permits may allow for construction of interim conditions and define requirements for future conditions that match the Access Control Plan depending upon individual circumstances specific to each permit.

Under case 2, the City and/or County may obtain funds either through local government budgeting, application for grant monies, or other potential funding sources. Once funding is available the City and/or County will work through the CDOT planning process to develop a highway improvement project. The project will follow the process and procedures for design, construction, and management detailed in CDOT's Local Agency Manual. If a City/County project is developed off of the State Highway System, for instance, completion of an alternate local route that does not intersect with US 50, CDOT will not be involved in the project. The City and/or County will administer the project according to City and/or County standards and procedures.

Under case 3, a project receiving State and/or Federal funds must be identified in the STIP. In Colorado, six years of transportation projects and their funding sources must be identified in the STIP. The STIP is updated every four years through a continuing, comprehensive and cooperative process involving the CDOT, Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Metropolitan Planning Organizations (MPOs), Transportation Planning Regions (TPRs), and City and County Governments. Projects within the study area in Gunnison and Gunnison County are established in the STIP by the request of the Gunnison Valley TPR. The STIP was most recently updated and adopted in May, 2011, but may be amended as needed in accordance with the STIP Amendment Guidelines. Currently, the STIP includes a resurfacing project within the study area scheduled for Fiscal Year 2014. The Gunnison Valley TPR 2035 Regional Transportation Plan, adopted in January 2008, identifies US 50 Montrose to Sargents as a high priority corridor, indicating potential for future projects on US 50 to be added to the STIP; however, State funding is extremely limited at this time and no other future projects have been identified. Similar to case 2, once funding is available, a project will follow CDOT's relevant process and procedures.

Under case 4, any agency may identify a safety or operational issue along the corridor through a crash pattern, complaints, observation or other manner. A single agency or partnership of agencies may obtain funding to implement access management techniques that are consistent with the Plan and specifically address the issue. Depending on who the lead agency is for the project, the project may be administered through the local agency process as described in case 2 or through CDOT's process as described in case 3.

Detailed engineering drawings of exact roadway alignments and access improvements will be required as project funding is identified. Details related to storm drainage, utilities, landscaping, environmental issues, pedestrian/bicycle facilities, roadway sections, and other topographic features will be considered during this design process. Environmental evaluations appropriate to the size, type, and funding of the project will be completed as part of the design phase.

To provide for continued commitment to the access modifications recommended by this study, we recommend that the City, County, and CDOT adopt an Access Control Plan. The Access Control Plan identifies access locations and levels of access by reference point for US 50, within the project limits. In addition, the Access Control Plan should be included in future transportation and land use planning efforts that may involve US 50.

In order to formalize an Access Control Plan, an Intergovernmental Agreement (IGA) must be developed and adopted by CDOT, the City of Gunnison and Gunnison County. An Access Control Plan Table that specifically defines proposed conditions for individual access points will serve as Exhibit A to the IGA. In recognition of the plan's long-range nature and the potential for conditions to change over time, a critical element of the IGA is the definition of a process for plan modifications. Exhibit B to the IGA defines this process, which basically requires mutual agreement of the IGA parties on modifications to the plan. For the US 50 corridor, the process for administration of the plan shall be as described in the *State of Colorado State Highway Access Code, latest edition.* Copies of the proposed IGA, Exhibit A, and Exhibit B are presented in Technical Appendix F.

9.0 LIST OF ACRONYMS

AASHTO = American Association of State Highway and Transportation Officials

ACP = Access Control Plan

ADT = Average Daily Traffic Volume (vehicles/day)

BA = Business Access

BOCC = Gunnison County Board of County Commissioners

CDOT = Colorado Department of Transportation

FHWA = Federal Highway Administration

FTA = Federal Transit Administration

HCM2010 = Highway Capacity Manual, 2010

IGA = Intergovernmental Agreement

LOS = Level of Service

MP = Milepost

MPO = Metropolitan Planning Organization

MPH = Miles Per Hour

MUTCD = Manual on Uniform Traffic Control Devices

NR-B = Non-Rural Arterial

PRS = Public Road Signalized

PRU = Public Road Unsignalized

PVRU = Private Road Unsignalized

R-A = Regional Highway

RA = Residential Access

RP = Reference Point

ROW = Right-of-Way

RRFB = Rectangular Rapid Flashing Beacon

RTA = Rural Transportation Authority

RTP = Regional Transportation Plan

STIP = Statewide Transportation Improvement Program

TPR = Transportation Planning Region

10.0 GLOSSARY

¾ Movement Access - An access that is configured to accommodate partial movements (i.e. left-turn in or out, right-turn in, and right-turn out)

Access – Any driveway or other point of entry and/or exit such as a street, road or highway that connects to the general street system

Access Category – means one of eight categories described in Section Three of the State Highway Access Code, and determines the degree to which access to a state highway is controlled

Access Plan, Access Control Plan – A plan which designates access locations and levels of access for the purpose of bringing those portions of roadway included in the planning area into conformance with the highway functional classification to the extent feasible

Access Management – Systematic control of the location, spacing, design, and operation of driveways, median openings, and street connections to a roadway

Access Permit – Means by which access improvements are reviewed, approved and constructed in accordance with the State Highway Access Code

Average Daily Traffic Volume (ADT) – The total 24-hour volume of vehicular traffic at a particular location measured in vehicles per day

Driveway – An access that is not a public street, road, or highway

Full Movement Access – An access without turn restrictions

Functional Intersection Area – The area beyond the physical intersection of two controlled access facilities that comprises decision and maneuver distance, plus any required vehicle storage length, and is protected through corner clearance standards and connection spacing standards

Intergovernmental Agreement (IGA) – A legally-binding agreement between two or more governmental agencies

Issuing Authority – The entity responsible for issuing access permits for a segment of state highway. The board of county commissioners, the governing body of a municipality, or the department of transportation may be the Issuing Authority.

Level-of-Service (LOS) – An indication of the quality of traffic flow as measured by vehicle delays or travel speeds. Level-of-service grades range from LOS A (ideal traffic flow) to LOS F (heavily congested conditions). LOS D is typically considered an acceptable traffic condition during peak demand periods in urbanized locations.

Median – That portion of a highway separating opposing traffic flows

Right-in, Right-out – An access that is configured to accommodate only right-turns in and right-turns out

Right-of-way (ROW) – The entire width between the boundary lines of every way publicly maintained when any part thereof is open to the use of the public for purposes of vehicular travel

State Highway Access Code – A manual containing the access regulations that apply to state highways within Colorado

Turning Movement Count – A tally of the number of vehicles turning left, right, or traveling through an intersection