Chapter 4: Section 4(f) Evaluation

Section 4(f) of the Department of Transportation Act of 1966 (as amended and codified in 49 USC 303) prohibits the use of public parks and recreation areas, wildlife and waterfowl refuges, and historic sites for transportation projects unless the FHWA determines there are no feasible and prudent avoidance alternatives to the use of the land or FHWA determines that the use of the property will have a de minimis impact (as defined in 23 CFR 774.17) on the property and that all possible planning to minimize harm to the land is considered.

Section 4(f) of the Department of Transportation Act of 1966 states:

> The Secretary [of Transportation] may approve a transportation program or project...requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of a historic site of national, state, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if (1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use” (49 USC 303(c)).

Section 4(f) requirements are stated in 23 CFR § 774. A Section 4(f) evaluation is an analysis that looks specifically at potential impacts to properties or resources that qualify for Section 4(f) protection. The analysis also describes the Proposed Action and evaluates alternatives that meet the project’s Purpose and Need. Avoidance alternatives for each and all Section 4(f) resources are discussed, and mitigation measures that minimize unavoidable harm to each Section 4(f) Resource are identified.

4.1 Proposed Action

Logan City, Utah, in cooperation with the Federal Highway Administration (FHWA) and the Utah Department of Transportation (UDOT), is proposing to make transportation improvements to the 200 East corridor between Center Street and 300 South. As described in Section 1.4, the purpose of this project is to enhance transportation connectivity for both vehicular and non-motorized transportation, to correct geometric deficiencies, and to improve operational deficiencies so that this portion of the 200 East corridor can function as a major collector. The Cache Metropolitan Planning Organization (CMPO) Long Range Transportation Plan (LRTP) classifies this section of 200 East as a major collector, as does Logan City’s Transportation Master Plan (TMP) (Figure 4.1-1, CMPO LRTP Map).

4.1.1 Study Area

The Study Area is the area evaluated for impacts in this EA, and includes the area bounded by 100 North, 400 South, Main Street (SR-89/91), and 400 East (Figure 4.1-2, Study and Project Area). The Study Area boundaries were defined to include a broad area of the community where potential impacts of the Proposed Action can be assessed.

The Study Area is predominantly comprised of single family residential land use with a few commercial and recreational land uses. Commercial land uses occur primarily along Main Street and between 100 East and 200 East on Center Street. Recreational land use within the Study Area includes three city owned parks: Garff Wayside Gardens, Pioneer Parkway, and Merlin Olsen Central Park.
Figure 4.1-1, CMPO LRTP Map

Legend

Functional Classification

- Future Principal Arterial
- Principal Arterial
- Future Minor Arterial
- Minor Arterial
- Future Collector
- Collector
- 200 East Corridor
- Project Area

Regional Location of Corridor

IDAHO

WYOMING

CACHÉ

RICH

WEBER

DAVIS

SALT LAKE

Regional Location of Corridor

IDAHO

WYOMING

SMITHFIELD

200 EAST

HYDE PARK

NORTH LOGAN

PROVIDENCE

SMITHFIELD

NIBLEY

MILLVILLE

HYDE PARK

NORTH LOGAN

RIVER HEIGHTS

PROVIDENCE

MILLVILLE

NIBLEY

Regional Location of Corridor

IDAHO

WYOMING

SMITHFIELD

200 EAST

HYDE PARK

NORTH LOGAN

RIVER HEIGHTS

PROVIDENCE

MILLVILLE

NIBLEY

Logan 200 East Environmental Assessment
Figure 4.1-2, Study and Project Area
4.1.2 Project Area
The Project Area lies within the Study Area and is the area where improvements are proposed. The Project Area is approximately 0.38 miles in length and extends along 200 East from Center Street to 300 South (Figure 4.1-2, Study and Project Area). The Project Area is also located in a predominantly low-density residential neighborhood and contains Merlin Olsen Central Park and Pioneer Parkway.

4.2 Purpose of the Project
The purpose of this project is to provide connectivity, correct geometric deficiencies, and improve operational deficiencies to allow the 200 East corridor to function as a major collector as designated by the CMPO LRTP and Logan City’s TMP, and to function as a regional transportation facility.

4.3 Need for the Project
The transportation needs for the Project were identified by Logan City, the CMPO, and the public. The needs include a lack of vehicular and non-motorized connectivity for all modes of travel, geometric deficiencies, and operational deficiencies.

Both the CMPO and Logan City identify 200 East as becoming a regional facility for Cache County between Millville and Smithfield. 200 East does not provide all of the transportation elements between 200 South and 300 South to meet Logan City’s roadway standards for a major collector.

Determination of Transportation Elements
The CMPO is responsible for transportation planning for the urbanized Cache Valley area. In conjunction with the local municipalities, the CMPO designates roadway functional classification for roads with regional significance. The CMPO’s definition for major collector is “primarily provides connection between minor arterial and other collector streets and streets of higher classifications and secondarily provides access to abutting property. It carries low-to-moderate vehicular movement, low-to-heavy bicycle movements, and moderate-to-heavy bicycle movement, and low-to-moderate transit movement. It has street trees, street lighting, and sidewalks. It may also include landscaping, pedestrian-scale lighting, and overhead or underground utilities.” The municipalities then determine standardized roadway elements for each of the roadway classification.

- Major collectors typically occur in residential areas, but can occur in commercial areas
- Major collectors typically have an associated need for on-street parking
- Major collectors accommodate vehicular travel with one through travel lane in each direction and a required continuous two-way left turn lane
- Major collectors serve pedestrians for both intra-neighborhood and inter-neighborhood trips (sidewalks are included on both sides of the street)
- Major collectors typically serve as bicycle corridors, therefore space is provided for bicyclists to safely ride in the street
- Major collectors within urban areas require curb and gutter to collect storm water runoff
- Park-strips or landscaped areas between the street and sidewalk are necessary to maintain the character of the neighborhoods and the entire community
Figure 4.3-1, Cross-section for a Major Collector (Logan City’s Standard)
The CMPO identifies 200 East through the project area as a major collector. Logan City has adopted the following standard cross-section roadway elements for a major collector: 11-foot center turn lane, two 11-foot travel lanes, two 11-foot parking/bike lanes, 2.5-foot curb and gutter, 8-foot park strips, 5-foot sidewalks, and a 1-foot buffer past sidewalks (Figure 4.3-1, Cross-section for a Major Collector).

To accommodate projected traffic volumes, 200 East would need to be consistent with its classification as a major collector. A lack of connectivity and the presence of both geometric deficiencies and operational deficiencies currently prevent 200 East (from Center Street to 300 South) from functioning as a regional facility. Current travel demands result in failing operations at specific locations. Future traffic projections result in failing operations by 2030 throughout the Project Area (Appendix B, Traffic Study). To accommodate the projected traffic volumes, and to function so that it is consistent with its current classification as a major collector, 200 East would need to possess the critical roadway elements described above.

4.3.1 Lack of Connectivity

**Vehicular Connectivity**

As described above, both the CMPO’s LRTP and the Logan City TMP identify 200 East as a facility to provide continuous regional connectivity for the Cache Valley. 200 East does not currently connect between Center Street and 100 South, nor does it extend beyond 350 South. For north-south travel along 200 East, vehicles wind around Pioneer Avenue and Center Street to continue north or south. This roadway configuration results in a lack of connectivity and continuity for travelers along the 200 East corridor, and presents future operational deficiencies that limit the corridor’s ability to meet travel demand. North of Center Street, 200 East is continuous to approximately 2300 North in North Logan and is planned to extend further north to the community of Smithfield. To the south, 200 East ends at 350 South. A connection beyond 350 South is identified as a separate future project, and ultimately 200 East is planned to extend to the community of Millville. The proposed connection of 200 East to Center Street described in this Proposed Action is an incremental improvement for developing 200 East as a regional transportation facility and as such serves a larger ultimate transportation need.

**Bicycle Connectivity**

The CMPO Pedestrian/Bicycle Master Plan identifies 200 East as a bicycle route and shows 200 East extending south through the intersection of Center Street and 200 East, as well as extending the entire length of the planned 200 East corridor. This Pedestrian/Bicycle Master Plan also identifies the need for other non-motorized facilities throughout the community. Adjacent city governments are constructing these facilities to develop a comprehensive non-motorized transportation system. Most recently, Logan City completed a pedestrian/bicycle trail northeast of the 200 East project on Boulevard Street, which would connect to this project and ultimately form a route along 200 East connecting to Utah State University. This plan also indicates that trailheads will be constructed at city parks including, Merlin Olsen Central Park and Pioneer Parkway, both within the Project Area.

Current conditions in the Project Area impede bicycle connections between non-motorized facilities and activity centers. These bicycle deficiencies include:

- The current configuration of the 200 East and Center Street intersection requires cyclists to travel along Pioneer Avenue and Center Street to continue along the 200 East corridor. This existing intersection configuration disrupts the direct connectivity of this designated bicycle route.
• The section of 200 East between 200 South and 300 South lacks sufficient width for bicyclists to safely travel through this block (to connect to 300 South and areas south of the project) without conflicts with vehicular traffic or parked vehicles (The AASHTO Guide for the Development of Bicycle Facilities states that 11-feet is needed for areas of combined parking and bicycle traffic).

• While bicyclists do have space for on-street travel to the north along 200 East, and there are trails that terminate at the limits of this Project Area, connections for bicycle travel through the Project Area do not currently exist.

Pedestrian Connectivity
Logan City’s vision is for a “walkable” community. The CMPO Pedestrian/Bicycle Master Plan and Logan City’s TMP states that Logan is to fully provide for pedestrian travel throughout the community. Comments received during public involvement and community outreach activities indicate that there is a need for comprehensive pedestrian facilities and connectivity along all of Logan’s streets. In addition, attendees indicated that there is a need to provide improved pedestrian connections between activity centers, namely Merlin Olsen Central Park and Pioneer Parkway.

Currently, there is no non-motorized connection through the parks and across Center Street. In the current configuration of the Center Street and 200 East intersection pedestrians must travel in traffic along Pioneer Avenue and cross at undesignated locations along Center Street to continue along the 200 East corridor. This existing intersection configuration disrupts the direct connectivity of pedestrian travel.

4.3.2 Geometric Deficiencies
Geometric deficiencies exist within the Project Area and currently limit 200 East from functioning as a north-south regional transportation corridor. Additionally, these geometric deficiencies currently preclude 200 East from possessing all of the elements of a major collector. Logan City’s roadway elements for a major collector include adequate capacity to carry vehicular and pedestrian movements, sidewalks, parking/bike lanes, park strips, and street lighting. Logan City is steadfast in maintaining consistent elements for their roadway classifications throughout their city. Past deviations from community-wide consistency and continuity have resulted in community disapproval, continual complaints to city officials (Appendix A, Public Safety Memo), and potentially unsafe conditions. For example, the city has built narrower roadways in the past by eliminating on-street parking on Center Street. Since constructing this road section, the city has received continuing complaints about lack of parking. Additionally, people continue to park on the street illegally, creating unsafe conditions for bicycles and vehicles traveling adjacent to inappropriately parked cars.

Inadequate Width, 200 South to 300 South
Geometric deficiencies within the Project Area are created by the sub-standard cross-section width from 200 South to 300 South (Figure 4.3-2, Existing Cross-section 200 South to 300 South). The current road width is 35 feet and the overall right-of-way width is 55 feet. This width is not sufficient to provide the necessary corridor elements previously described. The existing roadway contains two 11-foot travel lanes, no center turn lane, plus 6.5 feet between the travel lanes and the curb. This section is so narrow that when vehicles are parked on the street, there is only enough width for one-lane, one-way travel. This one-block section of 200 East is inconsistent with the planned purpose of the corridor and is inconsistent with the existing corridor to the north of the Project Area. If these inconsistencies in width are not corrected, the corridor can not function as a
Figure 4.3-2, Existing Cross-section 200 South to 300 South
major collector. Further, the inconsistencies present potential safety problems when traffic must negotiate in and out of the narrower cross-section. The inconsistent width presents travelers with an unanticipated condition that contradicts driver expectations for a consistent cross-section.

**Offset Intersection at 200 East and 200 South**
The intersection at 200 East and 200 South is mis-aligned due to the inconsistent roadway width between 200 South and 300 South. This situation would result in unsafe traffic conditions if left uncorrected. The intersection alignment at 200 South and 200 East is currently a stop-controlled intersection, and the roadway width is inconsistent between the north and south legs of the intersection. The roadway width of 200 East between Pioneer Avenue and 200 South is 55 feet, whereas the roadway width of 200 East between 200 South and 300 South is 35 feet. This 20-foot change in roadway width results in an offset intersection alignment. North-south travel lanes through the intersection are directed towards on-coming traffic traveling along 200 East. The driver expectancy is for a consistent roadway, which causes safety issues once the roadway changes drastically. The narrow cross-section offsets the intersection of 200 East and 200 South, thereby creating motorist sighting deficiencies and intermittent slowing or unpredictable speeds within this area of 200 East.

**4.3.3 Operational Deficiencies**
Operational deficiencies within the Project Area prevent 200 East from providing an acceptable LOS of “D” or better and also prevent 200 East from functioning as a major collector. Currently, 200 East carries 8,160 Vehicles Per Day (VPD) north of Center Street and carries 500 VPD south of Center Street. The CMPO’s LRTP predicts that 200 East through the Project Area would carry 19,645 VPD in the year 2030. These predictions are based on the completion of planned improvements within the LRTP, including construction of 200 East south of the Project Area into Providence and Millville. Specific locations with operational deficiencies are described on the following pages.

**Poor Operating Conditions at Center Street and 200 East**
The intersection of 200 East and Center Street would not operate at an acceptable LOS for the current or future travel demand (Appendix B, Traffic Study). Currently, the southbound left-turn movement from 200 East to Center Street operates at a LOS “F” with an average delay of 201.6 seconds during the P.M. peak hour. If no changes are made to 200 East, traffic volumes would continue to increase at this location. As traffic increases, the operating conditions would degrade further an intersection traffic movements would operate at a LOS “F”. The CMPO LRTP predicts that under the No-Build Alternative traffic volumes would exceed the capacity of all of the roadways entering the intersection and chronic congestion would exist. If 200 East is connected south of 300 South into Providence and Millville all of the intersection traffic movements would operate at a LOS “F” by the year 2030, if no intersection improvements are made. Table 4.3-1, Current and Future LOS for Center Street and 200 East, identifies existing and future LOS for the intersection.

<table>
<thead>
<tr>
<th>Table 4.3-1, Current and Future LOS for Center Street and 200 East</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall Intersection</strong></td>
</tr>
<tr>
<td>2007 AM</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>6.1 sec. delay / LOS “A”</td>
</tr>
</tbody>
</table>

**Section 4(f) Evaluation**

Logan 200 East Environmental Assessment
Poor Operating Conditions at 300 South and 200 East

The intersection at 300 South and 200 East is operationally deficient because there are no separate turn lanes for any leg of the intersection. If no changes are made to 200 East, traffic volumes would continue to increase at this location. As traffic increases, the operating conditions would degrade and the intersection traffic movements would operate at a “LOS “C”. If 200 East is connected to the south into Providence and Millville, then 200 East traffic movements at the intersection would operate at a LOS “F” by the year 2030, if no improvements are made to the intersection. Table 4.3-2, Current and Future LOS for 300 South and 200 East, identifies existing and future LOS for the intersection.

<table>
<thead>
<tr>
<th></th>
<th>2007 AM</th>
<th></th>
<th>2007 PM</th>
<th></th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Intersection</td>
<td>Worst Movement</td>
<td>Overall Intersection</td>
<td>Worst Movement</td>
<td>Overall Intersection</td>
<td></td>
</tr>
<tr>
<td>1.8 sec. delay/LOS “A”</td>
<td>Northbound 10.8 sec. delay/LOS “B”</td>
<td>2.7 sec. delay/LOS “A”</td>
<td>Northbound and Southbound 12.4 sec. delay/LOS “B”</td>
<td>LOS “F”</td>
<td></td>
</tr>
</tbody>
</table>

4.4 Overview of Alternative Development Process

The initial alternatives were developed from existing land use and transportation plans and input from the public, Logan City, and resource agencies. Throughout the process, public input was solicited by a public involvement team. Stakeholder input was collected during three open house meetings, four meetings with a Community Advisory Committee (CAC), one-on-one visits with residents within the Study Area, and from comments that were submitted on the project’s public involvement website. A detailed description of this scoping process is included in Appendix C, Public Involvement Summary.

4.4.1 Description of Alternatives

The following Alternatives were considered for 200 East:

- No-Build Alternative
- Build Alternative 1: 100 East
- Build Alternative 2A: 200 East Signalized Intersection
- Build Alternative 2B: 200 East Roundabout Intersection
- Build Alternative 3: 300 East
- Build Alternative 4: 400 East
- Build Alternative 5: Transportation System Management (TSM)

No-Build Alternative

The No-Build Alternative assumes 2030 traffic conditions with none of the improvements of the Proposed Action. Only routine maintenance and spot improvements would take place in this area. It is assumed that all other transportation projects planned in the CMPO LRTP would occur. These projects include transportation improvements along 200 East north of Center Street, widening 100 East and connecting it to Providence, connecting 200 East south of 350 South into Providence, and improving 400 East as a minor arterial between 200 North and 400 South. The No-Build Alternative is used as a baseline comparison for the Proposed Action.
Build Alternative 1: 100 East
Build Alternative 1 includes resurfacing and striping of 100 East from Center Street to 300 South, consistent with Logan City’s standards for a major collector. No improvements would be made to the intersections and no additional right-of-way would be required.

Build Alternative 2A: 200 East Signalized Intersection
Build Alternative 2A includes transportation improvements along 200 East from Center Street to 300 South. These improvements include connecting 200 East south of Center Street, constructing a signalized intersection at 200 East and Center Street, improving the 200 East and 200 South intersection, improving the 200 East and 300 South intersection by adding turn-lanes, and widening 200 East from 200 South to 300 South to an 88-foot cross-section, consistent with Logan City’s standards for a major collector.

Build Alternative 2B: 200 East Roundabout Intersection
Build Alternative 2B includes transportation improvements along 200 East from Center Street to 300 South. These improvements include connecting 200 East south of Center Street, with a roundabout intersection. The proposed roundabout would be a 120-foot inscribed circle with a 20-foot wide roadway. This single-lane roundabout would have 16-foot entry and exit lanes. South of Center Street improvements would be the same as Alternative 2A, which includes improving the 200 East and 200 South intersection, improving the 200 East and 300 South intersection by adding turn lanes, and widening 200 East from 200 South to 300 South to an 88-foot cross-section, consistent with Logan City’s standards for a major collector.

Build Alternative 3: 300 East
Build Alternative 3 includes transportation improvements along 300 East from Center Street to 300 South. These improvements include the widening of 300 East to an 88-foot cross-section from Center Street to 300 South, consistent with Logan City’s standards for a major collector.

Build Alternative 4: 400 East
Build Alternative 4 includes transportation improvements along 400 East from Center Street to 300 South. These improvements include widening 400 East to 88-feet from Center Street to 300 South, consistent with Logan City’s standards for a major collector.

Build Alternative 5: Transportation System Management (TSM)
Build Alternative 5 includes transportation improvements at the intersection of Center Street and 200 East. These improvements include intersection signalization, striping, and designated turn lanes along the existing roadway alignments.

4.5 Initial Screening of Alternatives
The alternatives identified above were evaluated through a detailed screening process. The screening criteria applied were directly derived from the project’s Purpose and Need, as discussed in Chapter 1. These screening criteria are:

- Provide Connectivity – To satisfy this criterion, an alternative must provide both local and regional connectivity. To satisfy the local connectivity criterion, an alternative must create a continuous
roadway from Center Street to 300 South. To satisfy the criterion of regional connectivity, an alternative must implement at least a portion of a regional facility and be consistent with regional plans.

- Correct Geometric Deficiencies – To satisfy this criterion, an alternative must meet the roadway standards set forth by the American Association of State Highway and Transportation Officials (AASHTO) and Logan City’s cross-section standards for a Major Collector.

- Correct Operational Deficiencies – To satisfy this criterion, an alternative must improve traffic operations at the 200 East and Center Street intersection and the 200 East and 300 South intersection to provide a LOS of “D” or better.

To be carried forward for study in this EA, an alternative must meet all elements of each screening criteria. The following table summarizes the alternatives considered during the screening process (Table 4.5-1, Screening of Proposed Alternatives).

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Provides Connectivity</th>
<th>Corrects Geometric Deficiencies</th>
<th>Corrects Operational Deficiencies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Provides Local</td>
<td>Provides Regional</td>
<td>Corrects Intersection Alignment</td>
</tr>
<tr>
<td></td>
<td>Connectivity</td>
<td>Connectivity</td>
<td>200 East and 200 South</td>
</tr>
<tr>
<td>No-Build Alternative</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Build Alternative 1: 100 East</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Build Alternative 2A: 200 East</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Build Alternative 2B: 200 East</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Build Alternative 3: 300 East</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Build Alternative 4: 400 East</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Build Alternative 5: TSM</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
4.5.1 No-Build Alternative
The No-Build Alternative does not meet any of the screening criteria and therefore does not meet the project’s Purpose and Need. Although the No-Build Alternative does not meet the project’s Purpose and Need, NEPA requires that the No-Build Alternative be carried forward for evaluation. The No-Build Alternative will serve as a baseline for comparison to the Proposed Action.

4.5.2 Build Alternative 1: 100 East
Build Alternative 1 meets the following screening criteria:
- **Provides local connectivity.** 100 East provides continuous travel from Center Street to 300 South.

Build Alternative 1 does not meet the following screening criteria:
- **Provides regional connectivity.** 100 East is discontinuous at 800 North and is not identified as a regional facility in the CMPO’s LRTP or Logan City’s TMP.
- **Corrects geometric deficiencies at the intersection of 200 East and 200 South.** No improvements would be made at this location.
- **Corrects geometric deficiencies along 200 East between 200 South and 300 South.** No improvements would be made at this location.
- **Improves operational deficiencies at the intersection of 200 East and Center Street.** No improvements would be made at this location and this alternative would not improve the LOS at this intersection.
- **Improves operational deficiencies at the intersection of 200 East and 300 South.** No improvements would be made at this location and this alternative would not improve the LOS at this intersection.

Build Alternative 1 was eliminated from further evaluation because it does not meet all of the screening criteria based on the project’s Purpose and Need.

4.5.3 Build Alternative 2A: 200 East Signalized Intersection
Build Alternative 2A meets all of the screening criteria as follows:
- **Provides local connectivity.** 200 East would provide continuous travel from Center Street to 300 South.
- **Provides regional connectivity.** 200 East would provide continuous travel from 2300 North to 300 South and is identified as a regional facility in the CMPO LRTP and Logan City’s TMP.
- **Corrects geometric deficiencies at the intersection of 200 East and 200 South.**
- **Corrects geometric deficiencies along 200 East between 200 South and 300 South.**
- **Improves operational deficiencies at the intersection of 200 East, and 300 South.**
- **Improves operational deficiencies at the intersection of Center Street and 200 East.** Build Alternative 2A meets all of the screening criteria and was therefore carried forward for further evaluation in this EA.

4.5.4 Build Alternative 2B: 200 East Roundabout Intersection
Build Alternative 2B meets the following screening criteria:
- **Provides local connectivity.** 200 East would provide continuous travel from Center Street to 300 South.
- **Provides regional connectivity.** 200 East would provide continuous travel from 2300 North to 300 South and is identified as a regional facility in the CMPO LRTP and Logan City’s TMP.
• Corrects geometric deficiencies at the intersection of 200 East and 200 South.
• Corrects geometric deficiencies along 200 East between 200 South and 300 South.
• Improves operational deficiencies at the intersection of 200 East and 300 South.

Build Alternative 2B does not meet the following screening criteria:
• Corrects operational deficiencies at the intersection of 200 East and Center Street. The proposed roundabout fails to provide an acceptable LOS at the intersection of 200 East and Center Street. Under 2030 traffic volumes, all legs would experience major delays, with one leg performing at a LOS “F” (Appendix B, Traffic Study).

Build Alternative 2B was eliminated from further evaluation because it does not meet all of the screening criteria based on the project’s Purpose and Need.

4.5.5 Build Alternative 3: 300 East
Build Alternative 3 meets the following screening criteria:
• Provides local connectivity. 300 East provides continuous travel from Center Street to 300 South.

Build Alternative 3 does not meet the following screening criteria:
• Provides regional connectivity. 300 East is discontinuous at Center Street and is not identified as a regional facility in the CMPO LRTP or Logan City’s TMP.
• Corrects geometric deficiencies at the intersection of 200 East and 200 South. No improvements would be made at this location.
• Corrects geometric deficiencies along 200 East between 200 South and 300 South. No improvements would be made at this location.
• Improves operational deficiencies at the intersection of 200 East and Center Street. No improvements would be made at this location and this alternative would not improve the LOS at this intersection.
• Improves operational deficiencies at the intersection of 200 East and 300 South. No improvements would be made at this location and this alternative would not improve the LOS at this intersection.

Build Alternative 3 was eliminated from further evaluation because it does not meet all of the screening criteria based on the project’s Purpose and Need.

4.5.6 Build Alternative 4: 400 East
Build Alternative 4 meets the following screening criteria:
• Provides local connectivity. 400 East provides continuous travel from Center Street to 300 South.

Build Alternative 4 does not meet the following screening criteria:
• Provides regional connectivity. 400 East is discontinuous at 100 North.
• Corrects geometric deficiencies at the intersection of 200 East and 200 South. No improvements would be made at this location.
• Corrects geometric deficiencies along 200 East between 200 South and 300 South. No improvements would be made at this location.
• **Improves operational deficiencies at the intersection of 200 East and Center Street.** No improvements would be made at this location and this alternative would not improve the LOS at this intersection.
• **Improves operational deficiencies at the intersection of 200 East and 300 South.** No improvements would be made at this location and this alternative would not improve the LOS at this intersection.

Build Alternative 4 was eliminated from further evaluation because it does not meet all of the screening criteria based on the project’s Purpose and Need.

### 4.5.7 Build Alternative 5: Transportation System Management (TSM)

Build Alternative 5 does not meet the following screening criteria:

- Provides local connectivity.
- Provides regional connectivity.
- Corrects geometric deficiencies at the intersection of 200 East and 200 South. No improvements would be made at this location.
- Corrects geometric deficiencies along 200 East between 200 South and 300 South. No improvements would be made at this location.
- Improves operational deficiencies at the intersection of 200 East and Center Street. No improvements would be made at this location and this alternative would not improve the LOS at this intersection.
- Improves operational deficiencies at the intersection of 200 East and 300 South. No improvements would be made at this location and this alternative would not improve the LOS at this intersection.

Build Alternative 5 was eliminated from further evaluation because it does not meet all of the screening criteria based on the project’s Purpose and Need. Elements of TSM, however, would be incorporated into the Proposed Action.

### 4.5.8 Conclusions from Alternative Screening

The screening of the Build Alternatives demonstrates that Build Alternatives 1, 2B, 3, 4 and 5 do not meet the project’s Purpose and Need. Build Alternative 5 does not meet any of the screening criteria. Build Alternatives 1, 3, and 4 do not meet the criteria to provide regional connectivity, correct geometric deficiencies and improve operational deficiencies. Build Alternative 2B does not meet the criteria to improve operational deficiencies at the intersection of 200 East and Center Street. Only Build Alternative 2A meets the project’s Purpose and Need and therefore was carried forward for further evaluation as the Preferred Alternative.

### 4.6 Preferred Alternative

Build Alternative 2A was identified as the Preferred Alternative by FHWA and Logan City because it meets all elements of the project’s Purpose and Need. Build Alternative 2A was refined through the public scoping process to include two pedestrian under-crossings, which are described below. The Preferred Alternative, detailed in Figure 4.6-1, Preferred Alternative, includes the following elements:

- This alternative would include construction of a new intersection at Center Street and 200 East, including a connection of 200 East to the south of Center Street. A signalized intersection at 200 East
and Center Street would include one through travel-lane for all approach directions, center turn lanes, right turn lanes, and designated pedestrian crosswalks (Figure 4.6-2, Proposed Intersection Design).

• A pedestrian under-crossing would be constructed under 200 East between Merlin Olsen Central Park and Pioneer Parkway. A second pedestrian under-crossing would be constructed under Center Street between Boulevard Street and Merlin Olsen Central Park.

• This alternative would also include construction of a roadway on the 200 East alignment from Center Street to 100 South. The roadway would have be constructed at an approximate 3% slope to accommodate for the notable change in elevation between Center Street and 100 South. Retaining walls would also be required for the roadway design (Figure 4.6-3, Proposed Roadway Profile). A fence would be constructed on the outside of the sidewalks for pedestrian safety (Figure 4.6-4, Proposed Cross-section Center Street to 100 South).

• Pioneer Avenue would terminate in a cul-de-sac and access for all existing uses would be maintained.

• The 200 East roadway between 100 South and 200 South would be resurfaced and striped to establish a uniform roadway cross-section throughout the corridor. Curb and gutter would be reconstructed and storm drainage facilities would be included.

• The offset alignment at the intersection of 200 South and 200 East would be corrected by widening the southern leg to match the northern roadway width. The stop signs at the intersection would be relocated to the east and west legs of the intersection.

• 200 East would be widened from 200 South to 300 South to meet Logan City’s standard cross-section for a major collector and the CMPO Pedestrian and Bicycle Master Plan. The proposed roadway design includes an 11-foot center turn lane, two 11-foot travel lanes, two 11-foot parking/bike lanes, 2.5-foot curb and gutter, 8-foot park strips, 5-foot sidewalks, and 1-foot buffer beyond sidewalks (Figure 4.6-5, Proposed Cross-section 200 South to 300 South).

• This alternative would also include construction of intersection improvements at 300 South and 200 East, including left turn-lanes for both eastbound travel on 300 South and southbound travel on 200 East, and a right turn-lane on westbound 300 South (Figure 4.6-6, Proposed Roadway Alignment 200 South to 300 South).
Figure 4.6-1, Preferred Alternative
Figure 4.6-2, Proposed Intersection Design

Legend

- Turn Arrow
- Retaining Wall
- Required ROW
- ROW
- Undercrossing and Retaining Wall
- Curbs
- Sidewalks
- Crosswalks
- One Way Lines
- Two Way Lines

Logan 200 East Environmental Assessment
Figure 4.6-3, Proposed Roadway Profile
Figure 4.6-4, Proposed Cross-section Center Street to 100 South
Figure 4.6-5, Proposed Cross-section 200 South to 300 South
Figure 4.6-6, Proposed Roadway Alignment 200 South to 300 South
4.7 Identification of Section 4(f) Resources

This section discusses Section 4(f) resources identified within the Project Area. Section 4(f) protection applies to the publicly-owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance.

No archeological resources or wildlife and waterfowl refuges were identified in the Project Area. The Project Area contains two city-owned parks and 41 eligible architectural resources. These are discussed in greater detail in the following sections.

4.7.1 Public Parks and Recreation Areas

To qualify for Section 4(f) protection, a park, recreation area, wildlife refuge, or waterfowl refuge must be significant, publicly owned and open to the public with its major purpose and function being that of a park, recreation area, or wildlife or waterfowl refuge (see 23 CFR § 774.11).

Two parks, Merlin Olsen Central Park and Pioneer Parkway, are located within the Project Area and are owned and maintained by Logan City. Both parks are between Center Street and 100 South and are directly accessible from 200 East (Figure 4.7-1, Parks in the Project Area). There are no existing trails or trailheads in the Study Area. Logan City has proposed a trail that will run through both Pioneer Parkway and Merlin Olsen Central Park. The proposed undercrossing between these two parks would be coordinated with the proposed trail to provide pedestrian connectivity and enhance the future trail system.

Merlin Olsen Central Park

Merlin Olsen Central Park is located between 200 East and 300 East and between Center Street and 100 South. Access to the park is obtained from any of these streets. There are no designated parking areas for the park. All vehicular parking occurs along the street. Merlin Olsen Central Park’s nine acres contain the following facilities and amenities (Figure 4.7-2, Merlin Olsen Central Park):

- a tennis court
- picnic areas
- playground equipment
- restrooms
- barbecue facilities
- a covered pavilion

Merlin Olsen Central Park is designated as a neighborhood facility and is intended to serve the daily recreational needs of local residents by providing for a variety of informal, spontaneous recreational use. Currently, no trails or designated trailheads exist within the park. However, the Logan City trails plan has identified Merlin Olsen Central Park as a designated trailhead facility which would connect to the future Logan City trail system.
Pioneer Parkway

Pioneer Parkway is located between two other parks, the Merlin Olsen Central Park to the east and Garff Wayside Gardens to the west. Pioneer Parkway is a neighborhood park intended to provide a variety of informal, spontaneous recreation activities (Figure 4.7-3, Pioneer Parkway Sign and Figure 4.7-4, Rock Fireplace). Pioneer Parkway is 3.4 acres in size and contains the following facilities and amenities:

- picnic area
- rock fireplace
- open play area
- walking path

4.7.2 Historic Sites

Section 4(f) protection applies to architectural and archeological resources that are eligible for the National Register of Historic Places (NRHP). A cultural resource inventory conducted by SWCA, 2008, concluded that no archeological resources were present within the Project Area. The inventory conducted by SWCA identified 52 properties in the area, 41 were identified as potentially eligible architectural resources within the Project Area for listing on the NRHP. The determination of eligibility for historic resources is made by FHWA in consultation with the Utah State Historic Preservation Officer (USHPO) during the National Historic Preservation Act Section 106 process.

Eligibility Determination

The Section 106 review process requires cultural resources to be evaluated for eligibility for listing on the NRHP. To be eligible, a resource (district, site, building, structure, or object) must possess integrity of location, design, setting, materials, workmanship, feeling and association, be at least 50 years old, and meet one or more of the criteria in Table 4.7-1, NRHP Eligibility Criteria.

Table 4.7-1, NRHP Eligibility Criteria

<table>
<thead>
<tr>
<th>NRHP Criterion</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Associated with events that have made a significant contribution to the broad patterns of our history</td>
</tr>
<tr>
<td>B</td>
<td>Associated with the lives of persons significant in our past</td>
</tr>
<tr>
<td>C</td>
<td>Embody distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction</td>
</tr>
<tr>
<td>D</td>
<td>That have yielded, or may be likely to yield, information important in prehistory or history</td>
</tr>
</tbody>
</table>
The USHPO has developed a rating system for buildings that allows for a distinction to be made between those buildings individually eligible under the NRHP Criteria, and those which have been altered but which still may be eligible as part of a historic district or for their historic significance. Table 4.7-2 identifies USHPO Ratings.

**Table 4.7-2, USHPO Rating Definition for Architectural Properties**

| USHPO Criterion | Characteristics                                                                 |
|-----------------|==================================================================================|
| A               | Eligible/Significant: Built within the historic period and retains integrity; excellent example of a style or type; unaltered or only minor alteration or additions; individually eligible for NRHP under Criterion C; also buildings of known historical significance |
| B               | Eligible: Built within a historic period and retains integrity; good example of a style or type, but not as well-preserved or well-executed as “A” buildings; more substantial alterations or additions than “A” buildings, though overall integrity is retained; eligible for NRHP as part of a potential historic district or primarily for historical rather than architectural reasons (which cannot be determined at this point) |
| C               | Ineligible: Built during the historic period but has had major alterations or additions; no longer retains integrity |
| D               | Ineligible: Out-of-period, built during the modern era |

Table 4.7-3 identifies the 41 eligible architectural properties located within the Project Area and Figure 4.7-4, Properties Eligible for the NRHP, illustrates the properties locations. All of the documented properties are residential structures. The basic characteristics of the building on each property and any notable alterations are summarized in the Table 4.7-3.
### Table 4.7-3, Historic Sites within the Project Area

<table>
<thead>
<tr>
<th>Photo of Structure</th>
<th>Date (ca.)</th>
<th>Type, Style</th>
<th>SHPO Rating</th>
<th>Eligibility for NRHP</th>
<th>Reference # on Figure 4.7-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>210 East 100 North</td>
<td>1935</td>
<td>Period Cottage, Period Revival</td>
<td>B</td>
<td>Eligible</td>
<td>1</td>
</tr>
<tr>
<td>192 East 100 North</td>
<td>1915</td>
<td>Bungalow, Prairie School</td>
<td>A</td>
<td>Listed</td>
<td>2</td>
</tr>
<tr>
<td>82 North 200 East</td>
<td>1920</td>
<td>Bungalow, Bungalow and Period Revival</td>
<td>B</td>
<td>Eligible</td>
<td>3</td>
</tr>
<tr>
<td>74 North 200 East</td>
<td>1920</td>
<td>Bungalow, Bungalow</td>
<td>B</td>
<td>Eligible</td>
<td>4</td>
</tr>
<tr>
<td>52 North 200 East</td>
<td>1915</td>
<td>Bungalow, Bungalow and Prairie School</td>
<td>A</td>
<td>Eligible</td>
<td>5</td>
</tr>
<tr>
<td>47 North 200 East</td>
<td>1915</td>
<td>Bungalow, Arts &amp; Crafts and Period Revival</td>
<td>A</td>
<td>Eligible</td>
<td>6</td>
</tr>
<tr>
<td>44 North 200 East</td>
<td>1925</td>
<td>Period Cottage, English Cottage</td>
<td>B</td>
<td>Eligible</td>
<td>7</td>
</tr>
<tr>
<td>37 North 200 East</td>
<td>1920</td>
<td>Bungalow, Bungalow and Prairie School</td>
<td>B</td>
<td>Eligible</td>
<td>8</td>
</tr>
<tr>
<td>203 East Boulevard</td>
<td>1950</td>
<td>Early Ranch, Early Ranch</td>
<td>B</td>
<td>Eligible</td>
<td>9</td>
</tr>
<tr>
<td>21 North 200 East</td>
<td>1915</td>
<td>Bungalow, Bungalow and Arts &amp; Crafts</td>
<td>B</td>
<td>Eligible</td>
<td>10</td>
</tr>
<tr>
<td>197 East Center</td>
<td>1935</td>
<td>Period Cottage, English Cottage</td>
<td>B</td>
<td>Eligible</td>
<td>11</td>
</tr>
</tbody>
</table>
Table 4.7-3, Historic Sites within the Project Area (Continued)

<table>
<thead>
<tr>
<th>Photo of Structure</th>
<th>Date (ca.)</th>
<th>Type, Style</th>
<th>SHPO Rating</th>
<th>Eligibility for NRHP</th>
<th>Reference # on Figure 4.7-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>107 South 200 East</td>
<td>1896</td>
<td>Side Passage, Victorian Eclectic</td>
<td>B</td>
<td>Eligible</td>
<td>12</td>
</tr>
<tr>
<td>125 South 200 East</td>
<td>1896</td>
<td>Side Passage, Victorian Eclectic</td>
<td>B</td>
<td>Eligible</td>
<td>13</td>
</tr>
<tr>
<td>143 South 200 East</td>
<td>1900</td>
<td>Cross-wing, Victorian Eclectic</td>
<td>B</td>
<td>Eligible</td>
<td>14</td>
</tr>
<tr>
<td>144 South 200 East</td>
<td>1935</td>
<td>Period Cottage, Period and Tudor Revival</td>
<td>A</td>
<td>Eligible</td>
<td>15</td>
</tr>
<tr>
<td>150 South 200 East</td>
<td>1920</td>
<td>Bungalow, Bungalow</td>
<td>B</td>
<td>Eligible</td>
<td>16</td>
</tr>
<tr>
<td>153 South 200 East</td>
<td>1910</td>
<td>Bungalow, Bungalow and Prairie School Style</td>
<td>B</td>
<td>Eligible</td>
<td>17</td>
</tr>
<tr>
<td>167 South 200 East</td>
<td>1925</td>
<td>Period Cottage, Period Revival</td>
<td>B</td>
<td>Eligible</td>
<td>18</td>
</tr>
<tr>
<td>168 South 200 East</td>
<td>1930</td>
<td>Period Cottage, Period Revival</td>
<td>B</td>
<td>Eligible</td>
<td>19</td>
</tr>
<tr>
<td>176 South 200 East</td>
<td>1955</td>
<td>Duplex, Early Ranch</td>
<td>B</td>
<td>Eligible</td>
<td>20</td>
</tr>
<tr>
<td>209 East 200 South</td>
<td>1955</td>
<td>Duplex, Early Ranch</td>
<td>B</td>
<td>Eligible</td>
<td>21</td>
</tr>
</tbody>
</table>
Table 4.7-3, Historic Sites within the Project Area (Continued)

<table>
<thead>
<tr>
<th>Photo of Structure</th>
<th>Date (ca.)</th>
<th>Type, Style</th>
<th>SHPO Rating</th>
<th>Eligibility for NRHP</th>
<th>Reference # on Figure 4.7-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>194 East 200 South</td>
<td>1925</td>
<td>Clipped Gable Cottage, Clipped Gable Cottage</td>
<td>A</td>
<td>Eligible</td>
<td>22</td>
</tr>
<tr>
<td>193 East 200 South</td>
<td>1940</td>
<td>WWII Era Cottage, Minimal Traditional</td>
<td>B</td>
<td>Eligible</td>
<td>23</td>
</tr>
<tr>
<td>207 South 200 East</td>
<td>1925</td>
<td>Clipped Gable Cottage, Clipped Gable Cottage</td>
<td>B</td>
<td>Eligible</td>
<td>24</td>
</tr>
<tr>
<td>215 South 200 East</td>
<td>1920</td>
<td>Bungalow, Bungalow and Arts &amp; Crafts</td>
<td>B</td>
<td>Eligible</td>
<td>25</td>
</tr>
<tr>
<td>225 South 200 East</td>
<td>1910</td>
<td>Foursquare, Bungalow and Craftsman</td>
<td>B</td>
<td>Eligible</td>
<td>26</td>
</tr>
<tr>
<td>228 South 200 East</td>
<td>1910</td>
<td>Central Block with Projecting Bays, Victorian Eclectic</td>
<td>B</td>
<td>Eligible</td>
<td>27</td>
</tr>
<tr>
<td>234 South 200 East</td>
<td>1940</td>
<td>WWII Era Cottage, Minimal Traditional</td>
<td>B</td>
<td>Eligible</td>
<td>28</td>
</tr>
<tr>
<td>240 South 200 East</td>
<td>1920</td>
<td>Bungalow, Bungalow and Arts &amp; Crafts</td>
<td>A</td>
<td>Eligible</td>
<td>29</td>
</tr>
<tr>
<td>254 South 200 East</td>
<td>1920</td>
<td>Bungalow, Bungalow and Arts &amp; Crafts</td>
<td>B</td>
<td>Eligible</td>
<td>30</td>
</tr>
<tr>
<td>255 South 200 East</td>
<td>1910</td>
<td>Cross-wing, Victorian Eclectic</td>
<td>B</td>
<td>Eligible</td>
<td>31</td>
</tr>
</tbody>
</table>
Table 4.7-3, Historic Sites within the Project Area (Continued)

<table>
<thead>
<tr>
<th>Photo of Structure</th>
<th>Date (ca.)</th>
<th>Type, Style</th>
<th>SHPO Rating</th>
<th>Eligibility for NRHP</th>
<th>Reference # on Figure 4.7-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>263 South 200 East</td>
<td>1915</td>
<td>Foursquare, Period Revival and Gothic Revival</td>
<td>B</td>
<td>Eligible</td>
<td>32</td>
</tr>
<tr>
<td>264 South 200 East</td>
<td>1960</td>
<td>Ranch and Rambler, Ranch and Rambler</td>
<td>B</td>
<td>Eligible</td>
<td>33</td>
</tr>
<tr>
<td>279 South 200 East</td>
<td>1900</td>
<td>Cross-wing, Victorian Eclectic</td>
<td>B</td>
<td>Eligible</td>
<td>34</td>
</tr>
<tr>
<td>280 South 200 East</td>
<td>1915</td>
<td>Bungalow, Prairie School and Bungalow</td>
<td>B</td>
<td>Eligible</td>
<td>35</td>
</tr>
<tr>
<td>291 South 200 East</td>
<td>1900</td>
<td>Hall-Parlor, Classical and Period Revival</td>
<td>B</td>
<td>Eligible</td>
<td>36</td>
</tr>
<tr>
<td>298 South 200 East</td>
<td>1950</td>
<td>WWII Era Cottage, Minimal Traditional</td>
<td>B</td>
<td>Eligible</td>
<td>37</td>
</tr>
<tr>
<td>213 East 300 South</td>
<td>1915</td>
<td>Bungalow, Bungalow and Arts &amp; Crafts</td>
<td>A</td>
<td>Eligible</td>
<td>38</td>
</tr>
<tr>
<td>215 East 300 South</td>
<td>1915</td>
<td>Bungalow, Bungalow and Arts &amp; Crafts</td>
<td>B</td>
<td>Eligible</td>
<td>39</td>
</tr>
<tr>
<td>237 East 300 South</td>
<td>1915</td>
<td>Bungalow, Bungalow and Craftsman</td>
<td>A</td>
<td>Eligible</td>
<td>40</td>
</tr>
<tr>
<td>243 East 300 South</td>
<td>1920</td>
<td>Bungalow, Bungalow and Prairie School</td>
<td>B</td>
<td>Eligible</td>
<td>41</td>
</tr>
</tbody>
</table>

The 41 properties identified in Table 4.7-3 were determined to meet USHPO criterion A or B and were determined eligible for listing on the NRHP. Figure 4.7-5 identifies the 41 properties eligible for listing on the NRHP.

Section 4(f) Evaluation
Figure 4.7-5, Properties Eligible for the NRHP
4.8 Use of Section 4(f) Resources

The following is an evaluation of whether a Section 4(f) use would occur.

Defined in 23 CFR § 774, “use” occurs under the following conditions:
1. “When land is permanently incorporated into a transportation facility through partial or full acquisition;
2. When there is a temporary occupancy of land that is adverse in terms of the statute’s preservation purposes as determined by the criteria in § 774.13(d); or
3. When there is a constructive use of a Section 4(f) property as determined by the criteria in §774.15.”

Land will be considered permanently incorporated into a transportation project when it has been purchased as right-of-way or sufficient property interests have been otherwise acquired for the purpose of project implementation.

Temporary occupancies of land that are so minimal as to not constitute a use within the meaning of Section 4(f) must satisfy the following conditions:
1. “Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land;
2. Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
3. There are not anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
4. The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project; and
5. There must be a documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions (23 CFR § 774.13(d)).”

Constructive use occurs when the transportation project does not incorporate land from a Section 4(f) resource, but the project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. Substantial impairment occurs only when the protected activities, features or attributes of the resource are substantially diminished.

In August of 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was enacted as Public Law 109-59. Section 6009(a) of SAFETEA-LU amended the existing Section 4(f) legislation to simplify the processing and approval of a project with only minor (de minimis) impacts on resources protected by Section 4(f). According to Section 6009 of SAFETEA-LU, the requirements of Section 4(f) will be considered satisfied with respect to a Section 4(f) resource if it is determined that a transportation project will have only a de minimis impact on the Section 4(f) resource.

A de minimis impact can occur in either a permanent or a temporary “use.” De minimis impact is defined as follows:
1. “For historic sites, de minimis impact means that the Administration has determined, in accordance with 36 CFR Part 800, that no historic property is affected by the project or that the project will have “no adverse effect” on the historic property in question.

2. For parks, recreation areas, and wildlife and waterfowl refuges, a de minimis impact is one that will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f) (see 23 CFR § 774.17)."

### 4.8.1 Use of Public Parks and Recreational Areas

The Build Alternative would affect approximately 500 square feet of right-of-way from Merlin Olsen Central Park and Pioneer Parkway (Figure 4.8-1, Proposed Use of Parks within the Project Area). This 500 square feet would be required for the undercrossings approach and sidewalks (labeled as “park enhancements” on Figure 4.8-1, Proposed Use of Parks with the Project Area). The conversion of the Section 4(f) property is not for a transportation use but is solely for the purpose of enhancing the trail connectivity by providing an undercrossing between Merlin Olsen Central Park and Pioneer Parkway and an undercrossing between Merlin Olsen Central Park and 200 East (under Center Street). These undercrossings are for trail enhancements and would permanently convert 150 square feet of right-of-way from Pioneer Parkway and 350 square feet of right-of-way from Merlin Olson Central Park. This right-of-way would be required to construct the entryways to the pedestrian undercrossings. The right-of-way required would not change or alter the use, character, amenities, or function of the parks. The proposed enhancement would not affect the parks’ amenities, including the tennis court, picnic areas, playground equipment, restrooms, barbecue facilities and covered pavilion, and would not impact the ability of park users to participate in continued recreational activities in this or other areas of the park.

The conversion of the 500 square feet of Section 4(f) property for trail enhancements meets the definition of 23 CFR § 774.13(g). The Administration has identified exceptions to the requirement for Section 4(f) approval under 23 CFR § 774.13(g). Transportation enhancement projects and mitigation activities are considered exceptions when:

1. “The use of the Section 4(f) property is solely for the purpose of preserving or enhancing an activity, feature, or attribute that qualifies the property for Section 4(f) protection; and

2. The official(s) with jurisdiction over the Section 4(f) resource agrees in writing to paragraph (g)(1) of this section.”

Therefore, the conversion of the 500 square feet is not considered a Section 4(f) impact. Logan City, the officials with jurisdiction over the parks, has concurred with the finding that the use of the property enhances an activity that qualifies Merlin Olsen Central Park and Pioneer Parkway for Section 4(f) protection (Appendix J, 4(f) Concurrence Letter).

To accommodate the change in elevation between Center Street and 100 South, the roadway would have to be constructed at an approximate 3% slope. Retaining walls would also be required for the roadway design in this area, however, the retaining walls would be constructed within the existing right-of-way and no additional right-of-way would be required. Therefore, the retaining walls do not impact Section 4(f) resources.
Figure 4.8-1, Proposed Use of Parks within the Project Area

Legend
- ROW
- Construction Easement
- Park Enhancements
- Under-Crossing
- Curb
- Sidewalks
- Retaining Wall
4.8.2 Summary of Use – Public Parks and Recreational Areas

The conversion of 350 square feet of Section 4(f) property from Merlin Olsen Central Park and 150 square feet of Section 4(f) property from Pioneer Parkway for trail enhancements is determined exempt from Section 4(f) approval as stated in Section 4.8.1.

4.8.3 Use of Historic Sites

The improvements at the intersection of Center Street and 200 East would not affect any historic sites. The improvements for the pedestrian undercrossing would also have no effect on architectural properties in the area.

Improvements identified for 200 East between 200 and 300 South are to correct geometric deficiencies and improve operational deficiencies. The proposed cross-section for this block would consist of two travel lanes, a center turn lane, parking/bike lanes, curb and gutter, park strips, and sidewalks. These improvements would impact 11 architectural resources in the area (described on the following pages).

A Determination of Eligibility and Finding of Effect (DOEFOE), outlining the NRHP eligibility determinations and the type of effect for each historic property that would result from the Build Alternative, has been prepared by UDOT, on behalf of FHWA, and agreed to by USHPO (Appendix I, Determination of Eligibility and Finding of Effect). At the time the cultural survey was conducted, the project’s limits were from 1400 North to 300 South. The project limits for this EA and Section 4(f) evaluation were subsequently modified to include only the area between 100 North and 300 South. The original DOEFOE, dated February 12, 2008, reflects the cultural survey conducted for the larger project. This DOEFOE has been amended twice—once to change eligibility determinations on five properties and once to add four properties that had inadvertently been omitted. All DOEFOEs are included in Appendix I.

The Build Alternative would require the acquisition of seven homes on the east side of the block between 200 South and 300 South. These property acquisitions represent a finding of Adverse Effect under Section 106 and a use (not de minimis impact) under Section 4(f) (23 CFR § 774). Additionally, the Build Alternative would require strip takes (de minimis use) from four homes located on 300 South. These strip-takes represent a finding of No Adverse Effect under Section 106 and a de minimis impact under Section 4(f) (23 CFR § 774). Consultation and written concurrence of these findings are included in the DOEFOEs (Appendix I). A narrative of each use of the 11 architectural resources that would be impacted under the Build Alternative is provided on the following pages.

228 South 200 East

The Build Alternative would require the acquisition of 1,170 square feet of right-of-way from the property at 228 South 200 East. The resulting cross-section would be within 10 feet of the structure and would, therefore, require the full acquisition of the property. This action results in an Adverse Effect under Section 106 and is determined to be a use, not de minimis impact, under Section 4(f) 23 CFR § 774.17.

Section 4(f) Evaluation
234 South 200 East
The Build Alternative would require the acquisition of 1,070 square feet of right-of-way from the property at 234 South 200 East. The resulting cross-section would be within approximately 7 feet of the structure and would, therefore, require the full acquisition of the property. This action results in an Adverse Effect (non de minimis use) under Section 106 and is determined to be a use, not de minimis impact, under Section 4(f) 23 CFR § 774.17.

240 South 200 East
The Build Alternative would require the acquisition of 1,010 square feet of right-of-way from the property at 240 South 200 East. The resulting cross-section would be within approximately 5 feet of the structure and, therefore, would require the full acquisition of the property. This action results in an Adverse Effect under Section 106 and is determined to be a use, not de minimis impact, under Section 4(f) 23 CFR § 774.17.

254 South 200 East
The Build Alternative would require the acquisition of 1,090 square feet of right-of-way from the property at 254 South 200 East. The resulting cross-section would be within approximately 5 feet of the structure and, therefore, would require the full acquisition of the property. This action results in an Adverse Effect under Section 106 and is determined to be a use, not de minimis impact, under Section 4(f) 23 CFR § 774.17.

264 South 200 East
The Build Alternative would require the acquisition of 1,430 square feet of right-of-way from the property at 264 South 200 East. The resulting cross-section would be within approximately 6 feet of the structure and would therefore require the full acquisition of the property. This action results in an Adverse Effect under Section 106 and is determined to be a use, not de minimis impact, under Section 4(f) 23 CFR § 774.17.

280 South 200 East
The Build Alternative would require the acquisition of 950 square feet of right-of-way from the property at 280 South 200 East. The resulting cross-section would be within approximately 1 foot of the structure and would therefore require the full acquisition of the property. This action results in an Adverse Effect under Section 106 and is determined to be a use, not de minimis impact, under Section 4(f) 23 CFR § 774.17.

298 South 200 East
The Build Alternative would require the acquisition of 2,510 square feet of right-of-way from the property at 298 South 200 East. The resulting cross-section would be within approximately 1 foot of the structure and would therefore require the full acquisition of the property. This action results in an Adverse Effect under Section 106 and is determined to be a use, not de minimis impact, under Section 4(f) 23 CFR § 774.17.

213 East 300 South
The Build Alternative would require the acquisition of 400 square feet of right-of-way from the property at 213 East 300 South. No direct impact to the structure would take place, resulting in a No Adverse Effect-determination under Section 106. This action results in a de minimis impact under Section 4(f) 23 CFR § 774.17.
215 East 300 South
The Build Alternative would require the acquisition of 400 square feet of right-of-way from the property at 215 East 300 South. No direct impact to the structure would take place, resulting in a No Adverse Effect determination under Section 106. This action results in a *de minimis* impact under Section 4(f) 23 CFR § 774.17.

237 East 300 South
The Build Alternative would require the acquisition of 450 square feet of right-of-way from the property. No direct impact to the structure would take place, resulting in a No Adverse Effect determination under Section 106. This action results in a *de minimis* impact under Section 4(f) 23 CFR § 774.17.

243 East 300 South
The Build Alternative would require the acquisition of 150 square feet of right-of-way from the property. No direct impact to the structure would take place, resulting in a No Adverse Effect determination under Section 106. This action results in a *de minimis* impact under Section 4(f) 23 CFR § 774.17.

4.8.4 Summary of Use – Historic Sites
The Build Alternative would require the acquisition of seven homes on 200 East and strip-takes from four homes along 300 South. The acquisitions of the seven homes represent a finding of Adverse Effect under Section 106 and a use, not *de minimis* impact, under Section 4(f). The strip-takes from the four homes represent a finding of No Adverse Effect under Section 106 and a use, *de minimis* impact under Section 4(f). A summary of each property impact is described in Table 4.8-1, Summary of Use.
### Table 4.8-1, Summary of Use

<table>
<thead>
<tr>
<th>Property Address</th>
<th>Type of Impact</th>
<th>Relocation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>228 South 200 East</td>
<td>Use, not de minimis impact</td>
<td>Residence - Yes</td>
<td>Total parcel acreage 0.22. The Build Alternative would place the back of sidewalk within 10 feet of the front of the structure.</td>
</tr>
<tr>
<td>234 South 200 East</td>
<td>Use, not de minimis impact</td>
<td>Residence - Yes</td>
<td>Total parcel acreage 0.25. The Build Alternative would place the back of sidewalk within 7 feet of the front of the structure.</td>
</tr>
<tr>
<td>240 South 200 East</td>
<td>Use, not de minimis impact</td>
<td>Residence - Yes</td>
<td>Total parcel acreage 0.17. The Build Alternative would place the back of sidewalk within 5 feet of the front of the structure.</td>
</tr>
<tr>
<td>254 South 200 East</td>
<td>Use, not de minimis impact</td>
<td>Residence - Yes</td>
<td>Total parcel acreage 0.20. The Build Alternative would place the back of sidewalk within 5 feet of the front of the structure.</td>
</tr>
<tr>
<td>264 South 200 East</td>
<td>Use, not de minimis impact</td>
<td>Residence - Yes</td>
<td>Total parcel acreage 0.26. The Build Alternative would place the back of sidewalk within 6 feet of the front of the structure.</td>
</tr>
<tr>
<td>280 South 200 East</td>
<td>Use, not de minimis impact</td>
<td>Residence - Yes</td>
<td>Total parcel acreage 0.17. The Build Alternative would place the back of sidewalk within 1 foot of the front of the structure.</td>
</tr>
<tr>
<td>298 South 200 East</td>
<td>Use, not de minimis impact</td>
<td>Residence - Yes</td>
<td>Total parcel acreage 0.16. The Build Alternative would place the back of sidewalk within 1 foot of the front of the structure.</td>
</tr>
<tr>
<td>213 East 300 South</td>
<td>de minimis impact</td>
<td>Residence - No</td>
<td>Total parcel acreage 0.13. The Build Alternative requires 400 square feet from the front yard of the residence.</td>
</tr>
<tr>
<td>215 East 300 South</td>
<td>de minimis impact</td>
<td>Residence - No</td>
<td>Total parcel acreage 0.12. The Build Alternative requires 400 square feet from the front yard of the residence.</td>
</tr>
<tr>
<td>237 East 300 South</td>
<td>de minimis impact</td>
<td>Residence - No</td>
<td>Total parcel acreage 0.16. The Build Alternative requires 450 square feet from the front yard of the residence.</td>
</tr>
<tr>
<td>243 East 300 South</td>
<td>de minimis impact</td>
<td>Residence - No</td>
<td>Total parcel acreage 0.15. The Build Alternative requires 150 square feet from the front yard of the residence.</td>
</tr>
</tbody>
</table>

### 4.9 Avoidance Alternatives Analysis

The following discussion evaluates whether a feasible or prudent avoidance alternative exists that avoids the Section 4(f) properties. According to 23 CFR § 774.17, the definition of a feasible and prudent avoidance alternative is one that “avoids using Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property.” Under 23 CFR § 774.17, an alternative is not “feasible” if it can not be built as a matter of sound engineering. An alternative is not “prudent” if it results in unacceptable safety or operational problems; reasonable mitigation
does not effectively address impacts; it results in additional construction, maintenance, or operational costs of an extraordinary magnitude; it causes other unique or unusual factors; it compromises the project to a degree that is unreasonable to proceed with the project in light of its stated Purpose and Need; or it involves multiple factors listed above that, while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude. If there is a de minimis impact on a 4(f) resource, Section 4(f) is satisfied and an analysis of whether there is a feasible or prudent avoidance alternative is not necessary.

4.9.1 Location Avoidance Alternatives
The Build Alternatives identified in Chapter 2 were analyzed to determine if they avoided Section 4(f) resources and if so, whether or not they were feasible and prudent.

No-Build Alternative
The No-Build Alternative would not change the existing intersection or roadway along 200 East. The No-Build Alternative assumes 2030 traffic conditions with none of the improvements of the Proposed Action. Only routine maintenance and spot improvements would take place in this area. It is assumed that all other transportation projects planned in the CMPO LRTP would occur. The No-Build Alternative is not prudent because it does not provide a regional transportation facility, it maintains an inconsistent roadway along 200 East from 300 South to 200 South, it does not correct geometric deficiencies along the 200 East corridor, and it does not improve operational deficiencies along the 200 East corridor.

100 East Avoidance Alternative
The 100 East Avoidance Alternative would provide a major collector along 100 East from 300 South to Center Street. Logan City has completed roadway improvements on 100 East between 300 South and 400 North. Currently 100 East is continuous between 300 South and 800 North and provides a three-lane roadway facility meeting Logan City’s standard for a major collector. If 100 East is not widened further than it was with the recently completed project, the 100 East Avoidance Alternative would avoid the use of Section 4(f) resources, however, it is not a prudent avoidance alternative because it does not fully meet the project’s Purpose and Need. The 100 East Avoidance Alternative does not meet the project’s purpose of providing a regional transportation facility and addressing the needs of lack of connectivity. The 100 East Avoidance Alternative does not provide regional connectivity because 100 East is discontinuous at 800 North. Furthermore, 100 East is not part of the planned 200 East regional facility. Additionally, the 100 East Avoidance Alternative would shift traffic from the 200 East corridor and carry the projected travel demand on 100 East. The CMPO Travel Demand Model (referenced in Appendix B, Traffic Study) predicts travel for the future. To address the Purpose and Need 100 East would need to meet the projected 2030 travel demand for 100 East and 200 East combined (26,000 vehicles per day). This would far exceed the capacity of 100 East. Under the 100 East Avoidance Alternative, the 100 East roadway and the connecting intersections that would be used by traffic shifting back and forth from 200 East are not planned to accommodate the expected traffic from 200 East. The increased traffic volumes from the 100 East Avoidance Alternative would create operational deficiencies at intersections along routes between 200 East and 100 East. This alternative would not meet the projected 2030 travel demand, it would not address the lack of connectivity, and it would not provide a regional transportation facility, therefore, this alternative is not a prudent avoidance alternative.

300 East Avoidance Alternative
The 300 East Avoidance Alternative would create a major collector along 300 East from 300 South to Center Street. The CMPO’s LRTP does not identify 300 East as a regional transportation facility. 300 East is classified as a local road in the Logan City TMP. 300 East is not continuous north of Center Street or south of 300 South due to topographic constraints of the bluff and the Logan River. These topographic features limit 300 East from
being classified as a facility to address regional connectivity. For 300 East to be classified as a collector roadway, it would have to be widened between 300 South and Center Street to provide the critical roadway elements to achieve the 88-foot cross-section needed to meet Logan City’s standards for a major collector. This widening would require the acquisition of 27 potentially eligible Section 4(f) resources along 300 East (Figure 4.9-1, 300 East and 400 East Avoidance Alternatives Section 4(f) Impacts). Additional improvements to 300 East north of Center Street and south of 300 South would need to be made to avoid inconsistent roadway widths and discontinuity. The 300 East Avoidance Alternative would shift traffic from the 200 East corridor and carry that projected travel demand on 300 East. The CMPO Travel Demand Model (referenced in Appendix B, Traffic Study) shows the traffic that is anticipated to use 200 East in the future. Under the 300 East Avoidance Alternative, the 300 East roadway and the connecting intersections that would be used by traffic shifting back and forth from 200 East are not planned to accommodate the expected traffic from 200 East. The increased traffic volumes from the 300 East Avoidance Alternative would create operational deficiencies at intersections along routes between 200 East and 300 East. The 300 East Alternative is not considered an avoidance alternative because it has Section 4(f) resource impacts (23 CFR § 774.17).

**400 East Avoidance Alternative**

The 400 East Avoidance Alternative would create a major collector along 400 East from 300 South to Center Street to carry 200 East and 400 East traffic. The CMPO’s LRTP and Logan City’s TMP have identified 400 East as a minor arterial. Similar to 300 East, 400 East is not continuous north of Center Street or south of 300 South due to topographic constraints of the bluff and the Logan River. North of Center Street, 400 East connects to Canyon Road. Canyon Road continues north and intersects with Boulevard Street and eventually connects to 600 East. This route results in out-of-direction travel. Although 400 East is identified as a future minor arterial, it is currently deficient in providing the connectivity and critical roadway elements needed to meet this classification. To meet these needs, 400 East would have to be widened between 300 South and Center Street. This widening would require the acquisition of 22 potentially eligible Section 4(f) resources along 400 East (Figure 4.9-1, 300 East and 400 East Avoidance Alternatives Section 4(f) Impacts). Similarly, Canyon Road would need to be improved to avoid operational deficiencies such as a lack of turn lanes and sight/ stopping distances. The 400 East Avoidance Alternative would shift traffic from the 200 East corridor and carry that projected travel demand on 400 East. The CMPO Travel Demand Model (referenced in Appendix B, Traffic Study) shows the traffic that is anticipated to use 200 East in the future. Under the 400 East Avoidance Alternative, the 400 East roadway and the connecting intersections that would be used by traffic shifting back and forth from 200 East are not planned to accommodate the expected traffic from 200 East. The increased traffic volumes from the 400 East Avoidance Alternative would create operational deficiencies at intersections along routes between 200 East and 400 East. The 400 East Alternative is not considered an avoidance alternative because it has Section 4(f) resource impacts (23 CFR § 774.17).

**300 South Bypass Avoidance Alternative**

The 300 South Bypass Avoidance Alternative would create a major collector utilizing 100 East to 200 East via 100 South (Option A) or 200 South (Option B) to avoid impacting Section 4(f) resources between 300 South and 200 South along 200 East. 100 South and 200 South are both classified as local streets and would require intersection improvements and roadway widening to provide the critical roadway elements. Currently, both 100 South and 200 South provide a 36-foot roadway width. Option A would require the relocation of eleven potentially eligible Section 4(f) resources along 100 South. Option B would require the relocation of eighteen potential Section 4(f) resources along 200 South. Widening on either of these roadways would result in substantial impacts to Section 4(f) resources (Figure 4.9-2, 300 South Bypass Avoidance Alternative Section 4(f) Impacts). This alternative is therefore not considered an avoidance alternative.
Figure 4.9-1, 300 East and 400 East Avoidance Alternatives Section 4(f) Impacts
Figure 4.9-2, 300 South Bypass Avoidance Alternative Section 4(f) Impacts
4.9.2 Design Shifts
Design modifications to avoid or minimize the impacts to Section 4(f) resources for the Build Alternative were also considered. The design modifications evaluated suggested shifting the alignment east or west of the roadway centerline, eliminating on-street parking on one or both sides of the road, and reducing or eliminating the park strip on one or both sides of the roadway. In all, seven design modifications were evaluated and are described below.

Design Shift Alternative 2B - One Roadway Shoulder
This alternative modifies the alignment to minimize the impacts to properties on the east side of 200 East. The roadway elements consist of two 11-foot travel lanes and an 11-foot center turn lane. The west side of the road would have an 11-foot parking/bike lane and a 5-foot park strip, while the east side would have a 3-foot bike lane, no parking and no park strip. Sidewalks on both sides would meet AASHTO standard of 5-foot width. This alternative would create a 69-foot cross-section (Figure 4.9-3, Design Shift Alternative 2B).

Design Shift Alternative 2B would result in strip takes (de minimis use) of property from six Section 4(f) properties on the east side of 200 East and three Section 4(f) properties on the north side of 300 South (Figure 4.9-4, Design Shift Alternative 2B Section 4(f) Impacts). In addition, this alternative would require the complete use (non-de minimis use) of one property, a Section 4(f) resource, located at 298 South 200 East. The proposed improvements are within 15 feet of this structure on both the east and north side of the right-of-way, thereby resulting in a complete use of one Section 4(f) resource. This alternative does not avoid section 4(f) resources. Design Shift Alternative 2B is therefore determined not to be an avoidance alternative under the criteria set forth in 23 CFR § 774.17.
Furthermore, this design shift alternative does not include on-street parking and park strips on the east side of 200 East and would thereby result in an inconsistent roadway with the remaining 200 East corridor. This design alternative does not correct geometric deficiencies. Therefore, this design shift alternative does not meet the project Purpose and Need.

**Design Shift Alternative 2C - No Roadway Shoulders**

This alternative provides two 12-foot travel lanes, a 12-foot center turn lane, and eliminates parking/bike lanes on both sides. The existing 5-foot park strips and 5-foot sidewalks remain unaffected. This alternative would create a 64-foot cross-section (Figure 4.9-5, Design Shift Alternative 2C).

![Figure 4.9-5, Design Shift Alternative 2C](image)

Design Shift Alternative 2C would result in strip takes (*de minimis* use) from three Section 4(f) resources on the north side of 300 South and one Section 4(f) resource on the west side of 200 East. This alternative would also require the complete use (*non-de minimis* use) of one Section 4(f) resource located at 298 South 200 East (Figure 4.9-6, Design Shift Alternative 2C Section 4(f) Impacts). The proposed improvements are within 15 feet of this structure on both the east and north side of the right-of-way, thereby resulting in a complete use of this Section 4(f) resource. This alternative does not avoid Section 4(f) resources and is therefore determined not to be an avoidance alternative under the criteria set forth in 23 CFR § 774.17.

Furthermore, this design shift alternative would result in an inconsistent roadway with the remaining 200 East corridor. This design alternative does not correct geometric deficiencies. Therefore, this design shift alternative does not meet the project Purpose and Need.

![Figure 4.9-6, Design Shift Alternative 2C Section 4(f) Impacts](image)
Design Shift Alternative 2D - Narrow Roadway with One Shoulder

This alternative consists of two 11-foot travel lanes, an 11-foot center turn lane, an 11-foot parking/bike lane on the west side, a 3-foot bike lane on the east side, and a 6-foot sidewalk on both sides and no park strip on either side. This alternative would result in a 66-foot cross-section (Figure 4.9-7, Design Shift Alternative 2D).

![Figure 4.9-7, Design Shift Alternative 2D](image)

Design Shift Alternative 2D would result in strip takes (de minimis use) from three Section 4(f) properties on the north side of 300 South and two Section 4(f) properties on the west side of 200 East. The proposed improvements are within 15 feet of the Section 4(f) property located at 298 South 200 East, thereby resulting in a complete use (non-de minimis use) of this Section 4(f) resource (Figure 4.9-8, Design Shift Alternative 2D Section 4(f) Impacts). This alternative does not avoid Section 4(f) resources and is therefore determined not to be an avoidance alternative under the criteria set forth in 23 CFR § 774.17.

Furthermore, this design shift alternative would result in an inconsistent roadway with the remaining 200 East corridor. This design alternative does not correct geometric deficiencies. Therefore, this design shift alternative does not meet the project Purpose and Need.

![Figure 4.9-8, Design Shift Alternative 2D Section 4(f) Impacts](image)
Design Shift Alternative 2E - Narrow Roadway without Park Strip

This alternative considers two 11-foot travel lanes, an 11-foot center turn lane, two 11-foot parking/bike lanes, and 6-foot sidewalks. The park strips on both sides are eliminated and this alternative would create a 74-foot cross-section (Figure 4.9-9, Design Shift Alternative 2E).

Design Shift Alternative 2E would result in strip takes (de minimis use) of property from two Section 4(f) properties on the east side of 200 East, two Section 4(f) properties on the west side of 200 East, three Section 4(f) properties on the north side of 300 South. In addition, this alternative would require the complete use (non-de minimis use) of five Section 4(f) properties located on 200 East at 234 South, 240 South, 254 South, 280 South, and 298 South, (Figure 4.9-10, Design Shift Alternative 2E Section 4(f) Impacts). The proposed improvements are within 15 feet of these structures on the east side of the right-of-way, thereby resulting in a complete use of five Section 4(f) resources. This alternative does not avoid Section 4(f) resource impacts and is therefore determined not to be an avoidance alternative under the criteria set forth in 23 CFR § 774.17.

Furthermore, this design shift alternative would result in an inconsistent roadway with the remaining 200 East corridor. This design alternative does not correct geometric deficiencies. Therefore, this design shift alternative does not meet the project Purpose and Need.
Design Shift Alternative 2F - Narrow Roadway with Minimized Shoulder and No Center Turn Lane

This alternative considers two 12-foot travel lanes, two 6-foot shoulders, and no center turn lane. Both sides maintain 5.5-foot park strips and 5-foot sidewalks. This alternative results in a 64-foot cross-section (Figure 4.9-11, Design Shift Alternative 2F).

Design Shift Alternative 2F would result in complete use (non-de minimis use) of one Section 4(f) property located at 298 South 200 East and strip takes (de minimis use) from three Section 4(f) properties on the north side of 300 South. (Figure 4.9-12, Design Shift Alternative 2F Section 4(f) Impacts). This alternative does not avoid Section 4(f) resource impacts and is therefore determined not to be an avoidance alternative under the criteria set forth in 23 CFR § 774.17.

Furthermore, this design shift alternative would result in an inconsistent roadway with the remaining 200 East corridor. This design alternative does not correct geometric deficiencies. Therefore, this design shift alternative does not meet the project Purpose and Need.
Design Shift Alternative 2G - No Center Turn Lane and No Park Strips

This alternative provides two 12-foot travel lanes, two 11-foot parking/bike lanes, 6-foot sidewalks and eliminates park strips on both sides. This alternative would create a 65-foot cross-section (Figure 4.9-13, Design Shift Alternative 2G).

Design Shift Alternative 2G would result in complete use (non-de minimis use) of one Section 4(f) property located at 298 South 200 East, and strip takes (de minimis use) from three Section 4(f) properties on the north side of 300 South as well as one Section 4(f) property on the west side of 200 East. The proposed improvements are within 15 feet of one property on the north side of the right-of-way, thereby resulting in a complete use of one Section 4(f) resource (298 South 200 East) (Figure 4.9-14, Design Shift Alternative 2G Section 4(f) Impacts). This alternative does not avoid Section 4(f) resource impacts and is therefore determined not to be an avoidance alternative under the criteria set forth in 23 CFR § 774.17.

Furthermore, this design shift alternative would result in an inconsistent roadway with the remaining 200 East corridor. This design alternative does not correct geometric deficiencies. Therefore, this design shift alternative does not meet the project Purpose and Need.
Design Shift Alternative 2H - No Park Strips and Shift to the West
This alternative would modify the alignment with two 11-foot travel lanes, two 11-foot shoulders, an 11-foot center turn lane, and 6-foot sidewalks. Park strips are eliminated on both sides. This alternative is shifted to the west to avoid all properties on the east side and would create a 74-foot cross-section (Figure 4.9-15, Design Shift Alternative 2H).

Design Shift Alternative 2H would result in relocation of nine Section 4(f) properties on the west side of 200 East and the complete use (non-de minimis use) of one Section 4(f) property on the east side of 200 East. In addition, property strip takes (de minimis use) are also required from nine Section 4(f) properties (Figure 4.9-15, Design Shift Alternative 2H Section 4(f) Impacts). This alternative does not avoid Section 4(f) resource impacts and therefore is determined not to be an avoidance alternative under the criteria set forth in 23 CFR § 774.17.

Furthermore, this design shift alternative would result in an inconsistent roadway with the remaining 200 East corridor. This design alternative does not correct geometric deficiencies. Therefore, this design shift alternative does not meet the project Purpose and Need.
4.9.2 Summary of Avoidance Alternatives
The No-Build Alternative, four Location Avoidance Alternatives, and seven Design Shift Alternatives were evaluated to determine whether or not they avoided Section 4(f) resources and if so, whether they were feasible and prudent. The No-Build Alternative and 100 East Avoidance Alternative avoided impacting Section 4(f) resources, but these alternatives are not prudent. It was determined that while the remaining Avoidance Alternatives are feasible to construct, none avoid Section 4(f) resource impacts. Additionally, none of the Avoidance Alternatives met Purpose and Need. Therefore, there is no feasible and prudent Avoidance Alternative to the use of Section 4(f) resources.

4.10 Measures to Minimize Harm
Before approving an action requiring use of any Section 4(f) property, FHWA is required to “include all possible planning to minimize harm” in that action. According to 23 CFR 774.17, “all possible planning means that all reasonable measures identified in the Section 4(f) evaluation to minimize harm or mitigate for adverse impacts and effects must be included in the project.” For historic sites, mitigation measures are generally identified through the Section 106 consultation process (36 CFR 800).

To determine if impacts could be avoided, minimized, or reduced while still maintaining a design that meets the project’s Purpose and Need, design elements of the Build Alternative that resulted in impacts to historic properties were considered carefully. The design elements were evaluated for modification to minimize the impacts to historic properties without compromising the Purpose and Need for the project. Minimization measures include the addition of the retaining wall next to Merlin Olsen Central Park and Pioneer Parkway, the trail enhancements for pedestrian under-crossings, landscaping features, and shifting the 200 East roadway cross-section to the east to avoid impacts to historic properties on both sides of 200 East. Further measures to avoid, minimize or reduce impacts to the historic properties will be taken into account during final design and construction.

Mitigation measures, such as documentation of the impacted properties to meet SHPO requirements and updating the Logan Historic Survey, will be identified in a Memorandum of Agreement (MOA) among FHWA, UDOT, Utah SHPO, and Logan City. This MOA is pending and will be prepared in accordance with the Section 106 consultation process (Appendix K, Memorandum of Agreement).

4.11 Coordination
This section outlines the coordination efforts which have occurred throughout the development of this EA. Coordination between UDOT, FHWA, and SHPO is ongoing and has included avoidance alternatives, effects or impacts on Section 4(f) properties, the preparation of a DOEFOE (Appendix I, Determination of Eligibility and Finding of Effect), and measures to minimize harm as discussed in this Section 4(f) Evaluation. A Memorandum of Agreement (MOA) will be prepared, agreed upon and executed by UDOT, FHWA, SHPO, and Logan City prior to any agency action.
As required by Section 106 regulations, coordination has included correspondence between FHWA and Native American Tribes that may have cultural and historical interest within the Project Area. Letters dated August 16, 2007 were sent to the Northwestern Band of the Shoshone Nation, Skull Valley Band of Goshutes, Uintah & Ouray Tribe, and Eastern Shoshone Tribe (Appendix L, Native American Letters). No verbal or written responses to the letters were received.

Coordination has also taken place with the Certified Local Government (CLG) organization for Logan City and the Logan City Historic Preservation Society. A meeting was held on June 29, 2009 to ascertain mitigation measures for the adverse effect to the seven residential structures eligible for the NHRP. Mitigation measures will be identified in the completed MOA.

Coordination has also occurred with the Logan City Parks and Recreation Department for concurrence on a de minimis impact and on a trail enhancement with the proposed pedestrian undercrossing (Appendix J, 4(f) Concurrence Letter).