



LONG RANGE TRANSPORTATION PLAN

Prepared for the City of Lander, Wyoming

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Contents

	Page No.
Executive Summary	iii
1. Introduction	1
2. Public Engagement	1
3. Transportation Inventory	4
3.1 Traffic Counts	4
3.2 Roadway Classifications	7
4. Land Use	15
4.1 Existing Land Use	15
4.2 Transportation Impacts of Potential Development	16
5. Transportation Network Analysis	18
5.1 Crash Analysis	18
5.2 Deficiencies and Potential Improvements	22
5.2.1 Additional River Crossings	22
5.2.2 2nd Street & Main Street Intersection	23
5.2.3 8th Street & Main Street	24
5.2.4 Designated Access Route to Sinks Canyon Road	26
5.2.5 Baldwin Creek Road and Smith Road Intersection	27
5.2.6 Evaluation of Main Street Bypass Routes	31
5.2.7 Pedestrian Signal Timing	32
6. Multi-modal Considerations	33
7. Parking Considerations	34
8. Wayfinding Signage	35
9. Future Roadway Connections	39

Appendices

Appendix A. Public Comments

Appendix B. Traffic Count and Forecast Data

Figures

	Page No.
Figure 1. Transportation Issues Map.....	3
Figure 2. Lander 2019 Traffic Volumes	5
Figure 3. Lander 2040 Forecast Traffic Volumes	6
Figure 4. Existing Lander Roadway Function Classifications.....	8
Figure 5. Roadway Mileage Proportion Guidelines	9
Figure 6. Roadway Mileage within Traffic Volume Guidelines (2019)	10
Figure 7. Roadway Mileage within Traffic Volume Guidelines (2040 Forecast).....	10
Figure 8. Minor Arterial Analysis: Traffic Volume Outliers	11
Figure 9. Collector Analysis: Traffic Volume Outliers	12
Figure 10. Local Analysis: Traffic Volume Outliers.....	13
Figure 11. Lander Land Use (2012 Master Plan)	17
Figure 12. Crash History by Severity (2009 to 2018)	18
Figure 13. Roadway Jurisdictions	19
Figure 14. Crash Locations by Severity (2009 to 2018)	20
Figure 15. Proportion of Injury Crashes by Crash Location (2009 to 2018)	21
Figure 16. Crashes by Crash Type (2009 to 2018)	21
Figure 17. Existing and Potential River Crossings	23
Figure 18. 2nd Street & Main Street Aerial.....	24
Figure 19. 8th Street & Main Street Aerial.....	25
Figure 20. Sinks Canyon Road Access Routes	27
Figure 21. Baldwin Creek Road/Smith Road Aerial Road Diet	28
Figure 22. MUTCD Thresholds for PHB	30
Figure 23. Potential Main Street Bypass Routes.....	31
Figure 24. Lander Key Destinations and Proposed Wayfinding Signage Locations	36
Figure 25. Example Community Wayfinding Sign Placement	37
Figure 26. Example Color-Coded Wayfinding Signs	38
Figure 27. Proposed Arterial and Collector Network	41

Tables

	Page No.
Table 1. FHWA Functional Classification Characteristics	7
Table 2. Functional Classification Recommendations	14
Table 3. List of Key Lander Destinations by Category	35

Photos

Photo 1. Public Meeting held on October 21, 2019	2
Photo 2. Curb Extension Example.....	29
Photo 3. Pedestrian Hybrid Beacon (PHB) Example.....	30
Photo 4. Example Pedestrian Detection System.....	33
Photo 5. Pedestrian Wayfinding Kiosk Examples.....	39

Executive Summary

The City of Lander, Wyoming has developed this Long Range Transportation Plan (LRTP) for the purpose of analyzing the existing transportation network, identifying key transportation issues, and making recommendations for potential system improvements. The LRTP will also identify and discuss the potential costs and benefits of future roadway connections not currently part of the transportation network. The LRTP includes an inventory of transportation infrastructure and land use, an analysis of the transportation network, parking capacity and needs, multi-modal transportation considerations, and an assessment of wayfinding signage to improve navigation to key Lander destinations.

Public Engagement

Engagement with the public has been a critical component throughout the development of both the Lander LRTP and the Safe Routes to Schools and Walkable, Bike-able Routes Study. These outreach sessions have been used to gain feedback to identify issues and concerns and to gain buy-in on proposed recommendations and solutions. The first public meeting occurred on October 21, 2019 at Lander City Hall and an additional meeting was held on February 19, 2020 with several people in attendance at both meetings. Comments received by the public are compiled in Appendix A.

The main comments received during and after the meeting were with respect to the recommendations about 7th Street and 3rd Street and if either street should be upgraded from a Local Street to a Collector Street. The consensus was that 3rd Street makes a lot of sense to upgrade from a Local Street to a Collector Street because it provides access to City Park, Fremont Street, and Sinks Canyon. The consensus on 7th Street was that it made more sense to leave as a Local Street because it's perceived as being narrow, and because it is identified as a Safe Route corridor. Safe Routes for Non-drivers (of Safe Route corridors) provide access and accommodation for children, older adults, and individuals with disabilities on street sidewalks and pathways and provide safe connectivity for pedestrians in communities.

Transportation Inventory

The Lander roadway system consists of 46 miles of roadway within the city boundary. Some of the highest traffic volumes are located on the highways in Lander and include:

- Main Street (US 287) with average daily traffic volumes ranging from 5,000 to 18,000 vehicles per day
- US 789 (7,000 to 11,000 vehicles per day)
- Sinks Canyon Road (Highway 131) (1,500 vehicles per day).

Other roadway segments with relatively high traffic volumes include Buena Vista, Baldwin Creek, 2nd, 3rd, 5th, 7th, 9th, Fremont, Cascade, and Jefferson.

Roadways have historically been categorized under a variety of designated functional classifications. The primary purpose of the classification system has been to set the framework for the role and purpose of each roadway. The classifications also typically

carry expectations and/or requirements for roadway design characteristics such as roadway speed, frequency of access, number of lanes, and roadway width. The existing functional classification designations were reviewed using two aspects of the Federal Highway Administration (FHWA) guidance: overall roadway system mileage proportion and typical average daily traffic (ADT) ranges.

The Lander roadway network is largely within the FHWA guidance thresholds. Many of the Principal Arterial segments have traffic volumes above the typical range for rural states, but these volumes are still well within the typical range for urban states (7,000 - 27,000 vehicles per day). Likewise, many Local roadway segments have traffic volumes outside the typical range.

Additional analysis was conducted on the Minor Arterial, Collector, and Local functional classifications to identify any roadway portions that may warrant and upgrade or downgrade to a different classification. A summary of the recommended functional classification changes is provided in the table below.

Table ES-1. Functional Classification Recommendations

Functional Classification	Recommended Changes
Principal Arterial	No recommended changes.
Minor Arterial	No recommended changes.
Collector	Upgrade Buena Vista Drive south of Wyoming Street to Minor Arterial. Buena Vista Drive north of Wyoming Street is already classified as a Minor Arterial. Upgrading the southern portion would serve to extend this designation to reach key destinations including the SageWest Hospital and the Hunt Field airport.
Minor Collector	No recommended changes.
Local	Upgrade 3rd Street south of Main Street to a Collector. This corridor serves as a key connection between Main Street (US 287) and Fremont Street and provides connectivity to City Park and Sinks Canyon.

Land Use

The distribution of land use types throughout the city was evaluated. Land uses in the city are predominantly made up of commercial, residential, and public land. Very little Industrial land is located within the city with small areas located along US 287 southeast of the city boundary and along Mortimore Lane to the south of the city. The land surrounding Lander predominantly consists of Agricultural, Residential, and Public land.

Transportation Impacts of Potential Development

According to the 2012 Lander Master Plan, 92 percent of the land within the city has been developed. The remaining undeveloped acreage consists of 45 acres zoned for commercial development and 100 acres zoned for residential development. This translates to approximately 492,000 square feet of commercial space and 200 single

family residential dwellings that may be added to the city. Developments in these areas—as well as infill development and redevelopment of existing uses—would result in additional trips on the transportation network, potentially necessitating transportation improvements.

A full development of the currently vacant land uses would result in approximately 1,476¹ additional daily trips on the Lander transportation system. Since the vacant land areas are dispersed throughout the city and are generally located in areas adjacent to the Principal Arterial and Minor Arterial networks, these additional trips are not anticipated to have a significant impact on the current transportation network. Aside from this limited anticipated impact, developments in outlying area should also consider how to effectively allow users to access the site via alternative transportation means such as walking and bicycling.

Transportation Network Analysis

This section includes a detailed analysis of the Lander transportation network including a brief discussion of roadway jurisdiction, a crash analysis, a discussion of potential additional river crossing to improve overall connectivity, and the identification of potential improvements to address specific deficiencies of the network.

Crash Analysis

Crash history for the City of Lander was assessed for years 2009 through 2018. Over this 10-year period, 993 crashes were recorded. Of these, only one was a fatal crash, 177 were injury (or possible injury) crashes, and the remaining 815 were property damage only (PDO) crashes. Annual crashes have remained relatively stable with approximately 100 crashes per year over the analysis period. The single fatal crash occurred in 2012.

Crashes were predominantly located along or adjacent to Main Street with the highest concentration occurring on the east side of Main Street between 3rd Street and 1st Street. Other areas with high concentrations include the intersection of US 287 and US 789, and the intersection of Main Street with 9th Street.

Rear end crashes were recorded with the highest frequency during the analysis period followed by right angle crashes and crashes not involving a collision between vehicles (e.g., run off road). Combined, these three crash types comprise more than half (54 percent) of all crashes during this time period.

Deficiencies and Potential Improvements

Multiple locations of transportation network deficiencies were identified through discussions with City staff, public outreach, and qualitative and quantitative assessments of the system. A summary of the deficiencies and proposed solutions is included below:

¹ Assumes an average rate of 9.44 trips per dwelling unit for residential land use and 30 trips per 1,000 square feet for commercial land use. Source: Institute of Transportation Engineers Trip Generation Manual, 10th Edition, based on expected land uses.

- **Additional River Crossings:** The City of Lander is bisected by the Middle Fork of the Popo Agie River. This natural feature presents connectivity challenges between the eastern and western portions of the city. Existing bridge crossings are located on Main Street (US 287), 2nd Street South, and Mortimore Lane. Two potential additional bridge locations include Eugene Street for a pedestrian bridge and Industrial Park Road for a vehicular bridge.

The need for additional crossings was discussed at the second public meeting. The general consensus was that funding would be better served improving the existing bridge on Main Street instead of pursuing additional crossings. In the event that the Main Street Bridge is damaged, there is an alternate route with an existing bridge closer to Main Street located on 2nd Street.

- **2nd Street & Main Street:** This intersection was identified as the most significant crash hotspot in the Lander area. Improvements that may help improve safety at this intersection include adding an all-red clearance interval and providing a protected left-turn phase.
- **8th Street & Main Street:** The intersection of 8th Street with Main Street has been identified as a location that is difficult for pedestrians and bicyclists to navigate. Encouraging pedestrians to cross at adjacent intersections equipped with traffic signals may be the most effective solution. However, other potential improvements that would address pedestrian and bicycle difficulties including pedestrian signing and crosswalk, curb extensions, and a median pedestrian refuge.
- **Designated Access Route to Sinks Canyon Road:** Access to Sinks Canyon Road is primarily via Main Street to either 5th Street or 9th Street (and also 3rd Street). The City is considering the designation of one of these routes as the primary access route for through traffic to Sinks Canyon Road. This would help concentrate traffic—particularly heavier commercial vehicle traffic—to the roadway that is better suited to handle it. Based on this analysis, it is recommended that 5th Street be chosen as the designated access route to Sinks Canyon Road. This designation will help to reduce volumes of through-traffic on 9th Street and redirect it to 5th Street which is better suited to handling higher volumes of traffic.
- **Baldwin Creek Road & Smith Road:** The intersection of Baldwin Creek Road and Smith Road is a three-way stop-controlled intersection used as a key access to the Baldwin Creek Elementary School. The intersection is perceived as a safety concern with many vehicles on Baldwin Street not stopping for pedestrians even when crossing guards are present. The following strategies were considered as potential solutions to the safety issues at this crossing. The City should also implement a pedestrian ramp for the crosswalk on the north side of Baldwin Creek Road in order to comply with Americans with Disabilities Act (ADA) requirements for accessibility.
 - **Option 1: Road Diet** – Reducing Baldwin Creek Road from four lanes to three lanes (two through lanes with a center turn lane). This would have the effect of slowing traffic overall and would also reduce the number of lanes pedestrians would need to cross. It also adds safety benefits associated with separating turning traffic from through traffic.

- **Option 2: Improved Stop Signs and Flashing Advance Warning Signs** – Motorist awareness of the stop signs may be improved through either an increase in the size of the stop sign, or the installation of advance flashing beacons at advanced crosswalk signs.
 - **Option 3: Pedestrian Hybrid Beacon** – This is a traffic control device that is activated by pedestrians only when need either through the use of a pedestrian button or a detection system. The system includes overhead flashing lights and signage to increase the visibility of the crossing.
- **Evaluation of Main Street Bypass Routes:** Main Street (US 287) is by far the highest volume roadway in Lander. For traffic travelling through Lander without a destination along Main Street, alternate bypass routes may be desirable to reduce travel time and increase travel time reliability. Potential parallel roadways which could serve this purpose include Lincoln Street to the north and Garfield Street to the south. The impacts of using these roads as alternate routes is summarized below:
 - **Passenger Vehicle Bypass Traffic:** There would be little incentive for drivers to utilize the bypass routes under normal circumstances. However, during times of high congestion—or in the event of a collision or other event obstructing Main Street—these bypass routes may be more feasible.
 - **Freight Vehicle Bypass Traffic:** Many freight and heavy commercial vehicles have difficulty navigating sharp turns in urban areas. For this reason, it is unlikely that freight vehicles would utilize the bypass routes, even if Main Street is experiencing high congestion.
 - **Bicycle Traffic:** Based on the expected results noted above for passenger and freight vehicle traffic, it is unlikely that the bypass routes would divert sufficient volumes of traffic to make Main Street more appealing to bicyclists.
 - **Increased Local Road Maintenance:** Diverting traffic from the Main Street will increase the wear and tear on Lincoln and Garfield, leading to increased maintenance costs over time.
- **Pedestrian Signal Timing:** The City and WYDOT are aware of pedestrian signal timing issues at the intersections of Main Street with Baldwin Street and 9th Street. The signals are actuated, meaning if the pedestrian buttons are not pushed, there is not enough walk time provided for pedestrians to safely cross the street. The following strategies were evaluated and considered:
 - **Adjust Existing Signal Timing:** Retiming of the existing signal timing to provide a longer signal for the cross street traffic. Due to the substantial imbalance in traffic volumes between Main Street and the cross streets, taking this approach could have severe impacts to traffic delay on Main Street.
 - **Adjust Signal Timing for Peak Pedestrian Hours Only:** The altered signal timing would only go into effect during peak pedestrian hours, likely correlated with school start and end times. This approach would have a smaller impact on traffic delay than changing the signal timing throughout the

day, but the impact could still be substantial since peak pedestrian and peak vehicle times are likely to overlap.

- **Pedestrian Detection System:** Pedestrian detection systems are typically based on either microwave or infrared technology and are set up to detect pedestrians at a targeted location. These systems provide extended walk times only when needed, minimizing the impact to vehicular delay, but can be expensive at a cost ranging from approximately \$10,000 to \$70,000.

Multi-modal Considerations

It is important to ensure that the Lander's transportation system is designed to meet the needs of all users, not just passenger vehicles. In addition to this Long Range Transportation Plan, the City of Lander is also conducting a Safe Routes to Schools and Walkable, Bike-able Routes Study. In that study, Safe Route corridors with ADA accessible continuous sidewalk are being proposed to improve pedestrian mobility throughout Lander and provide safe corridors for connectivity between Employment, Education Centers, Parks and Recreation, Library and other Community use spaces, health and legal services, and groceries and shopping.

Additionally, improvements are also being proposed to the Lander Area Pathway System, which includes streets and roads where bicycles and vehicles share the road as well as off road pathways. Generally streets with a width of 49 feet (curb-to-curb) were determined to be wide enough to accommodate on-street parking and the addition of a dedicated bike lane where traffic volumes were higher. Unfortunately, for streets with a width of only 44 feet (curb-to-curb), there was not enough room to accommodate a dedicated bike lane and keep on-street parking on both sides of the road on roadways with higher traffic volumes. Generally for these types of streets, we are recommending that they become Bicycle Boulevards (with sufficiently low traffic volumes).

Parking

There were no public comments related to parking received regarding residential or commercial parking on public streets in Lander. Generally, residents of cities similar to Lander sometimes perceive that finding parking can sometimes be difficult to find on Main Street, especially right in front of the business that is trying to be accessed. However, typically when reviewed with respect to a one or two block radius of Main Street, there is sufficient on-street parking capacity. The other perception is that sometimes parking can be an issue during large events. Again this may be something that is just a perception, for those that want to park as close to the event as possible.

The Lander City Park provides good amenities for local residents and visitors in Lander. RV's and campers are allowed to overnight camp for free, and there are public restrooms available. Most of the other parks in Lander also have parking placed available and appear to have capacity for typical use at these locations.

Wayfinding Signage

The City of Lander has multiple sites and facilities that serve as key destinations for locals and visitors alike. Navigating to these destinations should be simple and

straightforward. This section proposes a list of key Lander destinations and identifies locations for wayfinding signage that would allow users to successfully locate and navigate to them. The types and placements of these signs are also discussed with the goals of developing a wayfinding signage system that works for all users including drivers, pedestrians, and bicyclists.

A series of key destinations were identified and grouped into five primary categories of Educational, Museum, Park/Natural, Public/Recreational, and Medical. To improve ease of navigation, these categories may be used to color-code the wayfinding signage.

The proposed locations of the wayfinding signs will assist visitors by first displaying the signs on the approaches to the city including US 287 northbound and southbound and US 789 southbound. These signs will indicate the color-coded nature of the signs and will alert users to be on the lookout for additional wayfinding signs. Wayfinding signs will also be placed at key crossroads locations on Main Street including 2nd Street, 5th Street, 8th Street, and 9th Street. These will direct users towards the destinations along common, high-capacity routes. Where additional turns are required in order to arrive at the destination, additional wayfinding signs will be placed at key turn locations.

Future Roadway Connections

As the City of Lander has continued to grow and develop over the past few decades, tentative plans have been made to accommodate this growth through the proposed implementation of arterial roadways outside or adjacent to the current city boundary. The proposed network consists of six new arterial roadways and a handful of Collector roadways designed to connect the proposed network to the existing transportation system. The primary goals in implementing this proposed network are to alleviate congestion and promote and support development.

The proposed network was created in preparation for continued growth of the city in a scenario where additional housing and commercial developments would be required to accommodate this growth. However, since peaking with a population of 7,870 in 1980, the population of the city has remained relatively stable. Additionally, the expanded arterial network runs counter to the stated Master Plan goals of encouraging infill development and creating a street system that knits together communities without forming barriers.

It is recommended that the proposed future arterial network be implemented where developments are proposed that cannot be accommodated through infill development and which are addressing city growth. Additionally, the proposed 5-lane cross sections identified in the 2012 Master Plan should be evaluated based on capacity and safety need. Roadways with less than 10,000 ADT function very well as 2-lane roads and streets with 17,000 ADT or more function very well as 3-lane roadways. Center Turn Lanes, auxiliary deceleration right turn lane, and additional travel lanes should be justified through data with proper traffic analysis and only used if actual Level of Service issues are identified.