LANDER MASTER TRANSPORTATION PLAN

Safe Routes to Schools and Walkable, Bike-able Routes Study (AKA: Non-Motorized Plan)
- Update 2009 SRTS Plan for current school configuration
- Review/Update Lander Area Pathway System

Being discussed at tonight's meeting

Lander Transportation Plan
- Analyze the existing transportation network
- Identify and discuss future connections
- Determine locations where there are Level of Service issues

Being discussed at Wednesday Night’s meeting (2/19 @ 6 PM)

The purpose of the meeting is to discuss the Study Report with area residents, review the study findings (proposed improvements/alternatives), and to gather feedback and public input about the Study Report.
MEETINGS WITH PUBLIC AND STAKEHOLDERS
GENERATION OF ISSUES MAP(S)

General Bicycle/Pedestrian Issues:
- A majority of students in Fremont County School District 1 are dropped off by parents, drive themselves, or ride the bus. The City and School District are encouraging students to walk or bike, but face the following obstacles:
  - The current pathway system lacks connectivity due to discontinuous path segmentation and limited dedicated bicycle lanes.
  - The current pathway system does not reach many neighborhoods.
  - Fewer on-demand connections to City Park, Holiday Inn, Pioneer Museum, Chamber Park.
  - Missing or inconsistent bicycle signage.
  - Missing or inconsistent bike parking.
  - Lack of traffic calming devices specifically for middle schools.
  - Inadequate traffic signal timing for shared facilities.
  - Education needed for drivers and bikers.
  - Insufficient lighting along many routes.
  - Consider creating or improving sidewalks for new developments, and pursuing grant funding for constructing sidewalks near school facilities.
  - Consider installing separated pathways along all new developments.
  - Uncoordinated sidewalk layouts that make pedestrian access difficult in winter months.
  - Library and public buildings used by children as well as sidewalks/pathways used to access these.
  - Facilities should be included in SRTS designation.

Bike/Legible signage needed.
- Kids (with OR without) may be better than wayfinding signage.
- Buses turn arcs are oriented in safe direction for bikers.

Bike issues on Main Street:
- Dangerous for bicycle travel due to high volumes and speed, parked vehicles, operating buses, bike lanes, and other vehicles.
- Consider potential for diagonal parking with bike lanes (as in Owatonna),
- Consider shared bicycle routes in parallel streets (Linden St),
- Consider converting to separate bicycle lanes.
- Consider potential for diagonal parking with bike lanes (as in Owatonna),
- Consider adding bike lanes on Main to make it more convenient to bike.

SAFE ROUTES TO SCHOOLS (SRTS) ISSUES MAP

Legend:
- School
- Local.
- Traffic
- Proposed
design.
- Proposed
- Roadway
- Public
- Stakeholder
- Wayfinding
- Other
- Open

Note: Only the issues maps for SRTS are included in this document. Other issues maps are available online or at the City of Lander.
2009 SAFE ROUTES TO SCHOOL
PROPOSED SAFE ROUTES
Table 1. Length of Sidewalks, Driveways and Ramps for the Lander Safe Routes

<table>
<thead>
<tr>
<th>Sidewalks</th>
<th>Length (in feet)</th>
<th>Percentage of Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Sidewalk</td>
<td>30,258</td>
<td>69%</td>
</tr>
<tr>
<td>Narrow/Damaged Sidewalk</td>
<td>2,825</td>
<td>6%</td>
</tr>
<tr>
<td>Missing Sidewalk</td>
<td>10,894</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43,977</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driveways</th>
<th>Length (in feet)</th>
<th>Percentage of Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessible Driveway</td>
<td>4,927</td>
<td>38%</td>
</tr>
<tr>
<td>Inaccessible Driveway</td>
<td>7,988</td>
<td>62%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12,915</strong></td>
<td>-</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Curb Ramps</th>
<th>Number of Ramps</th>
<th>Percentage of Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessible Ramp</td>
<td>19</td>
<td>8%</td>
</tr>
<tr>
<td>No Detectable Warning</td>
<td>101</td>
<td>42%</td>
</tr>
<tr>
<td>Inaccessible/Missing Ramp</td>
<td>120</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>240</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

- Over 1/2 Sidewalks were in good condition
- Around 1/3 of Driveways were ADA Accessible
- Only 8% of corner ramps meet ADA
Table 2. Cost Estimates for Sidewalks, Driveways and Ramps for the Lander Safe Routes

<table>
<thead>
<tr>
<th>Sidewalks</th>
<th>Length (in feet)</th>
<th>Cost (in USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Sidewalk</td>
<td>30,258</td>
<td>-</td>
</tr>
<tr>
<td>Narrow/Damaged Sidewalk</td>
<td>2,825</td>
<td>$240,793</td>
</tr>
<tr>
<td>Missing Sidewalk</td>
<td>10,894</td>
<td>$928,743</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>$1,169,536</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driveways</th>
<th>Length (in feet)</th>
<th>Cost (in USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessible Driveway</td>
<td>4,927</td>
<td>-</td>
</tr>
<tr>
<td>Inaccessible Driveway</td>
<td>7,988</td>
<td>$681,000</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>$681,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Curb Ramps</th>
<th>Number of Ramps</th>
<th>Cost (in USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessible Ramp</td>
<td>19</td>
<td>-</td>
</tr>
<tr>
<td>No Detectable Warning</td>
<td>101</td>
<td>$1,212,000</td>
</tr>
<tr>
<td>Inaccessible/Missing Ramp</td>
<td>120</td>
<td>$1,440,000</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>$2,652,000</td>
</tr>
<tr>
<td>Overall Total</td>
<td>-</td>
<td>$4,502,536</td>
</tr>
</tbody>
</table>

- Driveways and Sidewalk Based on $85.25/ft
- Ramps at $12,000/ramp (w/Const., Design, ROW)
OTHER RELATED RECOMMENDATIONS

City Wide ADA Transition Plan
- Safe Route are only a small portion and on one side of the street
- Identify improvements and create map similar to Safe Routes
- Proactive approach
- State and Federal Funding
- Make improvement when roads are rehabilitated
- Neighborhood Improvement Districts

School Zone Signage
- Currently Inconsistent/Conflicting
- Recommend Signage Inventory
  - Especially at Gannet and Pathfinder
- Determine where gaps in signage occur, identify locations where there is conflicting or inadequate signage
SCHOOL SPECIFIC IMPROVEMENTS
GANNETT PEAK ELEMENTARY
GANNETT PEAK ELEMENTARY
5TH STREET ACCESS
Parent Parking

- Pull-in Angle Parking
- 38 to 84 spaces
- Total of 95 spaces
- No parking on opposite side
SCHOOL SPECIFIC IMPROVEMENTS
BALDWIN CREEK ELEMENTARY

Legend
Sidewalk Quality
- Good Sidewalk
- Narrow/Damaged Sidewalk
- Missing Sidewalk

Driveway Quality
- Accessible Driveway
- Inaccessible Driveway

Ramp Quality
- Accessible Ramp
- No Detectable Warning
- Inaccessible/Missing Ramp

Need to review school zone signage
Needed redesign of intersection to combat vehicle/pedestrian conflicts
Need to review school zone signage
Need to reconfigure signal timing for pedestrians
Potential mid-block crossing
SCHOOL SPECIFIC IMPROVEMENTS
BALDWIN CREEK ROAD - LANE DIET

- 4 Lanes to 3 Lanes
- 11 foot wide lanes
- Protected or Buffered Dedicated Bike Lane
  - Removable Delineators
  - Rumble Strips
  - Buffer Striping
SCHOOL SPECIFIC IMPROVEMENTS
LANDER MIDDLE SCHOOL

Legend
Sidewalk Quality
- Good Sidewalk
- Narrow/Damaged Sidewalk
- Missing Sidewalk

Driveway Quality
- Accessible Driveway
- Inaccessible Driveway

Ramp Quality
- Accessible Ramp
- No Detectable Warning
- Inaccessible/Missing Ramp

- Proposed crosswalk
- Potential to develop into visitor parking
- Need improved crosswalk
- Need improved crosswalk
- Potential mid-block crossing
- Existing parent drop-off area
- Existing bus drop-off area
- Need reconfiguration of parking lot entrance - pinch point, difficult left turns
- One-way Traffic
- Existing privacy fence creates blind corner

200 Feet
SCHOOL SPECIFIC IMPROVEMENTS
LANDER HIGH SCHOOL

Legend
Sidewalk Quality
- Good Sidewalk
- Narrow/Damaged Sidewalk
- Missing Sidewalk

Driveway Quality
- Accessible Driveway
- Inaccessible Driveway

Ramp Quality
- Accessible Ramp
- No Detectable Warning
- Inaccessible/Missing Ramp

Need to review crossing signage
9TH STREET IMPROVEMENTS
PROPOSED BIKE LANE

9th Street versus 5th Street Traffic Volumes
9th Street - Safe Route and Shared use
Proposed Traffic Calming Interventions
9TH STREET IMPROVEMENTS
5-WAY INTERSECTION

Stop Controlled on all legs
Shutoff 5th Leg access
9th Street and Cascade 4-way Stop
ADDITIONAL TRAFFIC CALMING MEASURES
9TH STREET AND CASCADE INTERSECTION

9th Street and Cascade 4-way Stop – First Step
Possible Traffic Circle for additional Traffic Calming
Should be evaluated and added in staged approach
ADDITIONAL TRAFFIC CALMING MEASURES
9TH STREET AND FREMONT STREET INTERSECTION

Chokers or Bump-outs as Gateway Treatment
Could also be added at Main Street and 9th
Should be evaluated and added in staged approach
ADDITIONAL TRAFFIC CALMING MEASURES
9TH STREET MEDIANS

9th and Dabich Ave

Between Cascade and Fremont

Should be evaluated and added in stages if needed
The proposed Lander Area Pathways Map (shown on next slide) expands the types of facilities available throughout the city, including identifying which bike facilities are proposed to be striped, advisory, buffered, or protected. The addition of bicycle boulevards (on-street routes) have also been identified. These facilities were determined through ADT, speed limits, and existing street characteristics. Additionally, FHWA’s Small Town and Rural Multimodal Networks was used to detail the proposed facilities as follows:

**Bike Lanes** are striped lanes with clear markings to define the facility from motor vehicle traffic. Preferred widths of facilities are 6 feet.

**Buffered Bike Lanes** provide extra distance between moving traffic or adjacent uses (i.e., parked cars). Buffers are marked with two solid white lines. If buffers exceed 3 feet in width, interior diagonal cross hatching or chevron markings are required.

**Protected Bike Lanes** provide a physical barrier between the bicycle facility and adjacent uses such as vehicular traffic. This separated facility provides the most comfort and safety of on-street bicycle facilities.

**Bicycle Boulevards** are low-stress, shared bicycle facilities with vehicle traffic, designed to provide access to local destinations and through neighborhoods. They are prioritize bicyclists over vehicles through the use of shared lane markings (SLMs), wayfinding, and the lack of center line markings to promote safe passing of bicycles by motorists. Access management, traffic calming, and crossing treatments also can be used help to promote bicycle priority and safety through these routes. Bicycle Boulevards are similar to the existing shared use streets with sharrows in Lander, but improve upon wayfinding and traffic calming from the existing facilities.

**Advisory Bike Lanes** (also known as advisory shoulders or dashed bicycle lanes) create space for bicyclists on roadways that are too narrow for traditional striped bike lanes. Pavement markings (broken lane line) delineate space for bicycles and pedestrians. However, vehicles are allowed to enter the advisory lane to clear passage of oncoming vehicles. Preferred width of advisory bike lanes are 6 feet, with a minimum of 4 feet if no curb and gutter are present. Generally no center line should be marked on the roadway, with exceptions at specific locations because of topography, at-grade crossings, and bridges.

**Shared Use Paths** provide a separated facility for both people walking, bicycling, or rolling, either for transportation or recreation purposes. Minimum width of facilities should be 8 feet, with marked crosswalks at intersections, and etiquette signage if necessary.

*Small Town and Rural Multimodal Networks:*

LANDER AREA PATHWAY SYSTEM
DEDICATED BIKE LANES
STREETS WITH A WIDTH OF 49 FEET (OR MORE) CURB TO CURB

Bike Lanes
- Lincoln Street
- 1st Street
- 2nd Street
- 3rd Street
- 4th Street
- 5th Street
- 7th Street
- 9th Street
- 2nd Street (North of Garfield to Jefferson)
- Dillon Drive
- Enterprise Drive

Buffered Bike Lanes
- Fremont Street (no parking)
- Buena Vista Dr. (44’ no parking)
- Sink Canyon (south)

Protected Bike Lanes
- Baldwin Creek Rd
- Main Street (east of 1st St)
LANDER AREA PATHWAY SYSTEM
DEDICATED BIKE LANES
STREETS WITH A WIDTH OF 44 FEET CURB TO CURB
ON-STREET PARKING ON ONE SIDE OF ROAD ONLY

Bike Lanes
• Garfield Street
• 2nd Street (between Garfield and Wyoming)
• 8th Street (north of Wood)
LANDER AREA PATHWAY SYSTEM
SHARED USE BICYCLE BOULEVARDS
STREETS WITH A WIDTH OF 44 FEET CURB TO CURB
ON-STREET PARKING WITH SHARED USE LANES

Bike Boulevards
• Garfield Street (mixed alt)
• Jefferson Street
• 8th Street (south)
• Amoretti Street (west)
• Eugene Street (east)
• 2nd Street (South)
• Wyoming Street
• Bridger Street
Advisory Bike Lane
- 2nd Street (north)
- Baldwin Creek Rd
- Squaw Creek Rd
- Mortimore Lane
- Hillcrest Drive
- Chittim Road
LANDER AREA PATHWAY SYSTEM
SHARED USE SHOULDERS
POSSIBLE IMPROVEMENT TO EXISTING USE

Shared Used Shoulder
• Sinks Canyon Road
• Mortimore Lane
Recommendations

- Gap Study
- HAWK pedestrian signal
- Pedestrian Median
- Shared use sidewalk (lower speed bikes)
- Proposed Lane Diet on Main
- Screened out Alternatives
LANDER AREA PATHWAY SYSTEM
MAIN STREET
1ST STREET TO BUENA VISTA
LANDER AREA PATHWAY SYSTEM
MAIN STREET
WEST OF 9TH STREET
LANDER AREA PATHWAY SYSTEM
MAIN STREET
STUDY NEEDED FOR NORTH-SOUTH STREET INTER SECTIONS
LANDER AREA PATHWAY SYSTEM
SITE SPECIFIC RECOMMENDATIONS

BICYCLE SAFE STORMWATER GRATES

Pathways onto Streets
LANDER AREA PATHWAY SYSTEM
SITE SPECIFIC RECOMMENDATIONS

Pedestrian Bridge
- Reviewed locations that might work
- Cost - Benefit currently doesn’t warrant a bridge
- Recommend focusing on improving Main Street
LANDER AREA PATHWAY SYSTEM
WAYFINDING

Existing Signage and Kiosks
Kiosks with QR Codes
Striping to assist with wayfinding