CHAPTER 3—NEEDS ANALYSIS

With significant growth in population and employment, the current transportation system will not be sufficient to accommodate future growth. This chapter provides some information and analysis on components of Cache County’s future transportation needs.

ROADWAY NEEDS

Cache County is served by a network of arterial roads and highways primarily owned and maintained by the Utah Department of Transportation (UDOT). Four of these roads serve as the main entrances and exits out of Cache Valley. Managing these roads to maximize throughput capacity is of critical importance.

Over the past two decades the amount of daily vehicle miles traveled (VMT) by Cache County resident’s has increased at a higher rate than population growth.

Over the last two decades in Cache County, daily vehicle miles traveled (VMT) has increased on average by 4.2% per year while population grew only 3%.

This data includes a recent drop in VMT (2008 & 2009) attributed to the recent downturn in the economy (See Figure 5). The reason for VMT outpacing population growth might be attributed to a combination of a more scattered residential growth pattern, higher per family car ownership and perhaps a general trend toward a more mobile lifestyle (traffic engineers assume the average single family home today completes 10 departing and return trips per day).

LOGAN’S MAIN STREET CORRIDOR

Highway 89/91 is the main backbone roadway in Cache County. It, along with Highway 165 extending to Hyrum and other southern communities serves the majority of internal longer distance Cache County trips. Currently, for the most part, these roads function fairly well with minimal traffic congestion related delays. The exception is Logan City Main Street. Logan City not only has the largest residential population in the area(generating its own travel demand), but portions also serves as the main shopping, recreation and employment center of the region. Geographically located in the center of the more populated portion of Cache County, Logan’s Main Street is often the point of convergence for those with north or south valley destinations (or simply passing through).

The sheer number of vehicles (nearly 40,000 annual average daily trips) combined with a need to accommodate more east/west cross traffic (i.e. number of intersections) results in fairly routine peak hour traffic congestion in the downtown area mostly due to intersection capacity failure. During these times of peak hours, any benefits from signal timing and coordination is also significantly reduced.

The relatively congested condition of Logan Main Street has led to a “spill over” effect onto some of the more accommodating nearby parallel roads. In terms of north/south mobility, Logan City has a limited number of higher functioning alternatives to Main Street. This is especially true when you consider the alternative routes that can serve the travel demand directly associated with Main Street commercial/retail corridor.
A few parallel collector type roads that many years ago likely served to accommodate only inter-neighborhood traffic are increasingly being used to supply Logan Main Street spill-over travel demand capacity. Currently on the east side of Logan, 100 and 200 East (and to a lesser degree 600 east) serve this purpose. On the West side of Logan’s Main Street, 100 west (and more recently 200 west) provides some “spill over” travel demand capacity. Further to the west, 600 West and 1000 West provides some alternative Main Street capacity, however much of the traffic on these roads already have origins/designations directly on the corridor (or use the roads to serve as a bypass).

One of the challenges with this spill-over of Main Street travel demand is that many of these roads are often already largely built out with development. Much of this development is historic residential neighborhoods. This limits the type of capacity improvements that can be made to the road as residents raise concerns about the safety and other neighborhood impacts associated with accommodating increased traffic. In most cases, these roads are currently not anticipated for improvements beyond building them to a major collector road standard.

In much of Logan City, in the future impacts related to the spill-over of Main Street traffic is anticipated to continue. With Main Street becoming more congested and as the limited adjacent parallel capacity fills up (200 east in Logan already has about 11,000 cars a day) motorists will seek other alternatives. Motorists will increasingly use other parallel routes through residential neighborhoods provided by the historic Logan City roadway grid pattern.

As the main arterial backbone transportation facility in Cache County Hwy 89/91 it is anticipated that any future “premium” public transit (light rail or bus rapid transit) would need to be integrated on or near the corridor to be successful (this may include a dedicated lane).

**ROADWAY NETWORK: EXISTING SYSTEM PERFORMANCE**

A useful way to identify future roadway needs is to analyze how the existing system would perform in the planning horizon year of 2035. For purpose of this analysis, the “existing” system also includes those projects that are not yet built, but have committed funding (1000 West project).
Figure 6: Year 2035 Peak Hour Traffic Congestion (Modeled) with No Roadway Improvements
With projected growth in population and employment, significant traffic congestion will occur if no additional improvements to the transportation system are made (See Figure 6: areas of projected congestion are shown in red).

Areas of particular concern for future traffic congestion include:
- Logan City Downtown area (East and West)
- Roads around Utah State University (including Hwy 89)

PUBLIC TRANSIT NEEDS

An increasingly large segment of Cache County’s population do not have access or are not able to drive. These individuals are either not of driving age, lack physical capacity to drive or do not own a vehicle. For many of these individuals, as well as many students attending Utah State University, the fixed route bus service provided by the Cache Valley Transit District (CVTD) is essential for their daily mobility needs. Cache County is also expected to have an increasing percentage of elderly that will need to rely on transit.

U.S. Census data from 2005-2009 shows 1.9% of those employed in Cache County commuted to work via bus (2.8% for Logan City). Additional public transit service (service area expansion or increased frequency of service) would be necessary to attract more “non-ride dependent” drivers to leave their vehicles at home and ride the CVTD bus system. Certainly this dynamic will change over time as more roads are congested with traffic and transit gains attractiveness in terms of travel time and convenience. The cost of gasoline also influences transit ridership.

Currently the CVTD provides “fixed-route” bus service for much of Cache County (See Figure 2). Service is more extensive and frequent in the populated and more urban core of Logan and surrounding communities. Less frequent express type commuter routes also serve outlying communities including Preston Idaho.

CVTD completes an update of their Short Range Transit Plan every five years (see Appendix 6). This effort evaluates the efficiency of the system, analyses any needed changes or expansion options and provides implementation recommendations. This RTP will be updated to be reflective of future updates.

SERVICE EXPANSION

As Cache County grows new locations of employment and residential housing will need to be served by transit service. Routinely, the CVTD undergoes a process to decide how best to allocate bus service changes with the resources they have available. This is designed to ensure optimization in allocating service to fully capitalize on ridership potential. This important effort will need to continue with periodic adjustments to bus routes and frequency of service as well as passenger amenities.

Longer term needs include:
- Commuter service between Logan and Ogden (Brigham City when served by commuter rail service)
- Circulator Shuttles to serve growing internal needs of communities
- A new larger maintenance facility to support the growing requirements of the CVTD system
- Additional express bus routes that may eventually transition to Bus Rapid Transit (BRT)

SPECIAL NEEDS PUBLIC TRANSIT

For those individuals not able to ride the fixed route buses due to a documented physical or mental limitation, CVTD also provides “para-transit” bus service. This need is anticipated to grow with Cache County’s anticipated elderly demographic anticipated changes. In addition to CVTD, a large number of private
and non-profit entities provide limited transportation services for individuals with special needs. Often, the extent of these services are limited by the mission of the organization and/or the source and availability of funding.

As currently organized, it is often a real challenge for individuals with specialized transportation needs to get the services they require. Very often the transportation component is an ancillary service provided to allow access to other services provided by the organization. For example, curb-side bus pickup is provided for seniors to get to the senior center for services such as congregate meals. The service contract with the senior center may be for providing the meals. The transportation component, while eligible, is nonetheless limited in amount and purpose. Many of the non-profits that provide transportation services would much rather focus on the services related to their core mission and not have to concern themselves with the mobility needs of their clients. They do it because there is no other option.

The end result of the fractured and often overlapping provision of public transportation services for special needs populations does result in many inefficiencies and serious gaps in service. For example, on any given day in Cache County, one or more public or non-profit agencies might dispatch a bus to pick up a client in one of the outlying communities. Even though the bus may be nearly empty with plenty of remaining seating capacity, it may well drive right past the home of another special needs client of some other organization (that may have very similar ending destinations). However, for a host of reasons (e.g. liability, funding source restrictions, lack of a coordinating mechanism) the trips are not consolidated and two separate trips are made to nearly identical locations.

The CMPO’s Coordinated Human Service Transit Plan (see Appendix 2) and Bear River Association of Government’s Regional Mobility Management Plan recognize this coordination concern and suggest some interim steps that eventually lead to substantial consolidated centralized special need transportation service provision.

**TRANSIT AND LAND USE**

The efficiency and cost effectiveness of transit service is very much dependent on the pattern and type of development in the service area. Based on national research applied locally, decision makers in Cache County can maximize the ridership effectiveness of current and future CVTD investments as it relates to influencing land use by (Johnson 2003):

1. increasing residential and commercial density in the areas near transit corridors
2. concentrating mixed-use development within an eighth mile of transit corridors, and
3. channeling a greater proportion of retail development within a quarter mile of transit lines.

These recommendations are consistent with recommendations found in the Envision Cache Valley Report.

Public transit often faces a “chicken-and-egg” problem: it’s hard to fully justify transit systems unless there’s sufficient population density and/or adequate employment and shopping concentration, yet it’s more difficult to persuade people to live in denser neighborhoods or to build more concentrated commercial development unless they come with the advantage of transit access.

**BICYCLE AND PEDESTRIAN NEEDS**

Walking or bicycling is a healthy and viable alternative to the automobile for many trips. In fact, for many that are not of driving age it may be the only alternative. Also, most transit trips will begin or end with some amount of biking or walking.
As Cache County grows and develops so does the need for facilities that accommodate the needs of pedestrians and cyclists. These amenities will include sidewalks, shared use paths, street pavement markings and additional bike route signage.

PEDESTRIAN NEEDS

One of the primary considerations in meeting the needs of pedestrians is safety. Pedestrians need adequate sidewalks and safe street crossing opportunities.

In 2009, Logan City was designated as the “most walkable” community in Utah by the Bonneville Research Corporation. Data for Logan City shows a high percentage of commuters for who walking is their main mode of transportation to work.

Most communities in Cache County do a good job of requiring sidewalks (where appropriate) for new development. However development of a continuous efficient pedestrian system is dependent on many factors. Some of the problems in the more urban portions of the county include:

- Missing or deteriorated sidewalks
- Lack of connectivity to major activity centers
- Difficulty with enforcing wintertime sidewalk snow removal
- Accessibility issues for those with a physical limitation
- Less than friendly pedestrian street crossings
- Additional bicycle storage near transit stops.

In rural areas the issues are more unique and site specific. One of the problems is lack of sidewalks or shared use paths as a pedestrian alternative on busier county or state roads that link activities centers or even adjacent communities. For example track team students at Mountain Crest High School often run on the narrow shoulder of State Highway 165 between Hyrum and Paradise Town. Often problems surface when a new school is located and the deficiencies of an inadequate supporting pedestrian system become apparent. Such was the case with the opening of the Mountain Side Elementary School in Mendon.

In the more rural areas, the cost of installing adequate and safe pedestrian supporting infrastructure can be too expensive for many city budgets mostly due to the distances involved.

BICYCLE NEEDS

For many, the bicycle is a viable alternative to the automobile. Increased bicycle use as a mode of transportation can play an important role in helping the region improve air quality, reduce congestion and contribute to the overall health of Cache County residents. Working to accommodate and encourage this trend helps to develop a more balance transportation system.

Census data from 2005 to 2009 indicates 10% of workers in Logan walk to work. For reference, this is higher than Davis California and Boulder Colorado (two communities typically thought of as pedestrian friendly).
BICYCLING OPTIONS

It is increasingly being recognized that there are various types of commuting and recreation cycling populations. A recent study done for Portland City classified types of cyclist as follows:

“Strong and Fearless” (<1%)—will generally ride regardless of the roadway or weather conditions and prefer direct, unimpeded, quick routes that tend to be along more major roads (collector and arterials).

“Enthused and Confident” (7%)—are generally comfortable sharing the roadway with automotive traffic, but would prefer to do so operating on their own facility.

“Interested but Concerned” (60%)—are those individuals that have some safety concern about riding amongst traffic. This group is less interested in speed and tend to seek greater comfort and an enhanced sense of safety found on more minor roads or separate paths.

“No Way, No How” (33%)—those not interested in bicycling at all.

The percentages listed are the percent of population estimates for Portland. Certainly the separation between these four broad groups is not always clear-cut and riders can change in categorization. Nonetheless, understanding the different types of cyclist suggests the need to provide a multi-level cycling system that caters to different types of cyclists.

This categorization can also be helpful in deciding how to allocate resources for improvements designed to encourage more cycling and less auto dependent travel. Different levels of cyclist feel comfortable on different types of facilities. These include separated shared paths, designated bicycle lanes, or bike routes that share vehicle lanes.

BICYCLE PARKING

Providing convenient parking accommodations for bikes will help encourage more cycling use. Safe and secure bicycle parking should be provided as necessary in parks, schools, libraries, recreational centers and other activity centers. Bike racks should be required of all new major commercial or retail development.

Covered bike racks are needed in locations with a high concentration of cycling use and near transit stops.

CONNECTING DESTINATIONS

Cyclist and pedestrians require safe and convenient connections between their residence and destination such as school, employment, entertainment or shopping destinations. Figure 7 shows many of the major activity centers throughout Cache County that should be a priority for ensuring safe and accommodating bicycle and pedestrian access.

Some areas of particular concern include:

- Logan Boulevard Trail endpoint connections (street crossing).
- Highway 89 (400 North) areas below Utah State University (street crossings)
- Downtown Logan (Main Street crossings)
- South Logan “Y” Intersection Area (Main Street and Highway 165 Street crossings)
- Mendon Road from Logan to Mendon (shoulder widening)
- Highway 23 from Wellsville to Mendon (shoulder widening and shared path)
- Highway 165 from Hyrum to Paradise (shoulder widening and shared path)
- State Route 30, Logan between 1st and 6th West (street crossings)
- Highway 101 from Hyrum to Wellsville (shoulder widening)
- 600 West, Logan (shoulder widening)
- 400 East, North Logan (shoulder widening)

ACTIVE TRANSPORTATION EDUCATION

The CMPO’s Bicycle and Pedestrian Advisory Committee (BPAC) has identified bicycle and pedestrian safety education as a high priority. This is an ongoing need for public education targeted to pedestrians, cyclists and drivers of motor vehicles to increase awareness and knowledge of appropriate roles, laws and responsibilities.
FREIGHT TRANSPORTATION NEEDS

As the “crossroads of the west”, Utah plays a major role in the movement of freight across the United States. The smooth flow of freight in and out of Cache County is of critical importance to continued economic vitality of the region.

TRUCK FREIGHT

Truck transportation represents the largest mode for freight to and from Cache County. According to the Transearch commodity movement database from Global Insight Inc., Cache County in 2007 imported over 2.4 million tons of freight valued at $2.2 billion. For that same time period, Cache County exported just under 1 million tons of freight valued at $1.6 billion.

Accommodating the needs of truck freight movement in Cache County today and in the future are of critical importance. A large portion of the employment in Cache County is dependent on industries that require reasonable freight mobility in, out and through Cache County. Also, the availability and price of consumer goods and services in Cache County is directly linked to the level of mobility for freight.

For the most part, roadways that are built to accommodate higher volumes of cars and light trucks generally also work well for trucks. Recent local input received from truck drivers and freight industry representative (see appendix ?) highlight the need for roads with adequate shoulders that do not have a great deal of residential use. Inadequate intersections are often identified as major problems for truck drivers. With the increase trailer lengths of many trucks, inadequate intersection turning radiuses presents a significant problem for trucks. Most of the local input from freight industry representatives centered on the need to improve specific intersection turn radiuses.

Many of those intersections are on 1000 West which is scheduled for major reconstruction in 2011-2012.

TRUCK FREIGHT ORIGINS AND DESTINATIONS

In 2007, 70% of the truck freight by tonnage and 82% of the truck freight by value from within the state of Utah that was brought to Cache County originated from counties located on the Wasatch Front. These same Wasatch Front counties received 60% of the in state truck freight by tonnage and 73% of the truck freight by value exported from Cache County.

When considering freight outside the state of Utah in 2007, Casper Wyoming (26.3%) and Franklin County Idaho (7.6%) are the top contributors to freight imported into Cache County by weight. Likewise, Los Angeles California receives the most freight exported by weight from Cache County (13.4%).

In terms of the dollar value of freight imported into Cache County from outside the state of Utah in 2007, a number of counties mostly in the western United States contributed. These included Maricopa County Arizona (5%), Spokane Washington (4.9%), Billings Montana (4.5%) and Los Angeles County California (4.4%) with the remainder scattered across the United States. In terms of where Cache County exports truck freight out of the State, over 30% of the freight (by value) had destinations somewhere on the west coast.
CACHE RAIL FREIGHT

Cache County is served by the Union Pacific (UP) Railroad on the Cache Valley Branch. Indirectly, Cache County is also served by rail service via Union Pacific’s Salt Lake City Intermodel Terminal. At this facility, rail containers can be transferred on or off trucks for transport to destinations to or from Cache County.

The Salt Lake City terminal serves much of the intermountain west. For the foreseeable future, Cache County has nowhere near the volume of rail freight to justify the expense of developing its own intermodal terminal.

One of the most important assets for Cache County and its ability to attract future businesses is the retention of railroad service. Further, the future of possible rail passenger transit service would be eliminated without the preservation of the Cache Valley Branch Line.

One of the most important assets for Cache County and its ability to attract future businesses is the preservation of railroad service.

Retention of Cache County’s railroad service in the future largely hinges on the ability for Union Pacific to keep the service profitable. This can be helped locally by encouraging and facilitating the location of new business and industry on the rail line to generate new business for Union Pacific.

CACHE AIR FREIGHT

Air freight is the smallest component of the freight transportation system serving Cache County. However, often the goods shipped by air are of higher value and more time sensitive items that can be important to the regional economy. The United Parcel Service (UPS) provides one afternoon flight from the Logan Municipal Airport to the Salt Lake International Airport each weekday. However, air freight for Cache County is primarily a service provided by the Salt Lake International Airport.

TRANSPORTATION SAFETY NEEDS

As a member of the Utah Safety Leadership Team, the CMPO participated with other stakeholder groups and agencies in the development of the Utah Comprehensive Safety Plan. While statewide in focus, this plan provided the analysis framework for investigating local transportation safety issues. The stated goal of this plan is to improve transportation safety for all modes.

CRASH DATA

Statistics that document types, severity and contributing factors can be very helpful in identifying problem areas or safety issues. However, one needs to exercise caution when drawing conclusions from crash data. A higher number of crashes at a particular location does not necessarily indicate a problem or a roadway deficiency. Locations with a concentration of higher volume transportation activity will likely have more crashes. It is often more useful to analyze the crash data in terms of crash rates or comparisons with other locations.

In terms of crashes per mile, Highway 91 and 1400 north in Logan has a higher than expected frequency of crashes.

Additionally, Cache County has a number of intersections with safety issues scattered throughout the county. However, due to relatively low volumes of traffic they may not have the frequency of crashes as in the more populated urban areas. Inadequate shoulder...
width is also a significant contributor to roadway departure crashes in rural portions of the county.

**Table 1: Motorists 2006 thru 2008 Intersections Hot Spots Serious Injury and Fatal Vehicle Crashes Only**

<table>
<thead>
<tr>
<th>Location Description</th>
<th>Crash Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main St &amp; Center St, Logan</td>
<td>3</td>
</tr>
<tr>
<td>Main St &amp; 2500 No., No Logan</td>
<td>3</td>
</tr>
<tr>
<td>Hwy 91 &amp; Hyde Park Ln</td>
<td>3</td>
</tr>
<tr>
<td>1000 W. &amp; 1800 S., Logan</td>
<td>3</td>
</tr>
<tr>
<td>400 North &amp; Champ Dr, Logan</td>
<td>2</td>
</tr>
<tr>
<td>Main St &amp; 1700 South, Logan</td>
<td>2</td>
</tr>
<tr>
<td>Main St &amp; 200 North, Logan</td>
<td>2</td>
</tr>
<tr>
<td>Main St &amp; 400 North, Logan</td>
<td>2</td>
</tr>
<tr>
<td>Data provided by UDOT Traffic &amp; Safety. This data is protected under 23 USC 409</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2: Non-Motorists 2006 thru 2008 Hot Spot List Injury and Fatal Crashes**

<table>
<thead>
<tr>
<th>Location Description</th>
<th>Crash Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main, 100 N - 300 N, Logan</td>
<td>6</td>
</tr>
<tr>
<td>Main, 300 N - 500 N, Logan</td>
<td>4</td>
</tr>
<tr>
<td>Center, 200 E - Main, Logan</td>
<td>3</td>
</tr>
<tr>
<td>1400 North, 200 E - 400 E, Logan</td>
<td>3</td>
</tr>
<tr>
<td>200 North, 200 E - 400 E, Logan</td>
<td>3</td>
</tr>
<tr>
<td>200 East, 1250 N - 1400 N, Logan</td>
<td>3</td>
</tr>
<tr>
<td>700 East/700 North, 700 N - 800 E, Logan</td>
<td>3</td>
</tr>
<tr>
<td>Data provided by UDOT Traffic &amp; Safety. This data is protected under 23 USC 409</td>
<td></td>
</tr>
</tbody>
</table>

**CACHE VALLEY TRANSPORTATION SAFETY LEADERSHIP SUMMIT**

In the fall of 2009 leaders representing law enforcement/emergency response, education, transportation and many of the local jurisdictions met together in a one day safety summit to identify safety needs and possible solutions (See appendix 4). The effort was jointly sponsored by the Cache County Attorney’s Office and the CMPO.

Based on crash history data, drowsy/distracted driving, bicycle and pedestrian safety, impaired driving and younger (teen) driving were selected as areas of focus. Summit participants identified needs and possible solutions categorized by engineering (physical improvements), education, and enforcement. Many of the identified needs are beyond the control of the CMPO and require partnerships with other agencies and groups. Nonetheless, the CMPO’s long range planning process can identify those areas where progress can be made on implementation.

**BICYCLE AND PEDESTRIAN SAFETY**

**Engineering**
- Increase the shoulder width on new and reconstructed roads.
- Complete a fully accessible sidewalk network in more urban areas (also require of new development).

**Education**
- Provide public education on who to call to report maintenance issues (street sweeping, system repairs etc.).
- Provide safe cycling training to middle school aged children and adults.
- Provide public education to improve the safety of motorized scooters and bicycles.
- Expand drivers education curriculum to include information on bicycling safety.

**Enforcement**
- Select a focus day to conduct some high profile targeted bicycle law enforcement in the region.
- Implement a “did you know” public service announcement education campaign for bicycle and pedestrian safety.
- Provide coordination for law enforcement to ensure a complete and consistent understanding of laws related to bicycles and pedestrians.

**DROWSY & DISTRACTED DRIVING**

**Engineering**
- Install more rumble strips in road sides and middle safe stopping areas (rest areas). Enhance commercial rest stop partnerships.

**Education**
- Provide more education outreach to schools and general public. Use real stories that convey the impact to families and individuals. Partner with perpetrators and victims (public service requirement).
- Require or voluntarily offer 2 hour drivers’ education session targeted to parents.
- Encourage people to not use mobile devises of any kind while driving.
Enforcement
- Work toward getting more unmarked police cars out on the road. Utilize more police motorcycles.
- Penalties should be enhanced when an infraction results in a fatality. This would require a change in laws (Similar to New Jersey’s “Maggie’s Law”).

IMPAIRED DRIVING

Engineering
Where possible, provide for wider travel lanes as a safety buffer.

Education
- Provide more public service announcements on specific holidays that are known to have problems.
- More education targeting college age students.
- Provide public education related to the dangers of using legal prescription drugs while driving.
- Provide some more graphic result based education to increase the shock value of the message.
- Provide some public recognition or praise for people that report an impaired driver when it results in an arrest.

Enforcement
- Expand the amount of DUI enforcement blitzes and saturation patrols on holidays which are known to have problems.
  Determine a way to increase law enforcement capacity for large public events or private parties that occur in Forest Service Areas.

YOUNGER (TEEN) DRIVING

Engineering
- Monitor emerging “vehicle monitoring and accountability technology” and encourage parents to use when available and affordable.

Education
- Consider requiring younger drivers to attend periodic follow-up drivers education training.
- Encourage and facilitate more peer based training.
- Capitalize on perpetrator and victim based training.
- Consider obtaining driver simulator technology and facilities.

Enforcement
- Work toward increasing the penalties (cost and driving points) for serious moving violation that involve younger drivers and passengers.
- Develop a reporting program that is centered around a “How’s my Teen Driving” bumper sticker that provides a number to call.
- Provide a mechanism where someone can report road violations or unsafe behavior by teen drivers where an information letter and safety information will be sent. It could be patterned after the “blue card” program for reporting violation of child restraint laws.