

2. NEEDS ASSESSMENT

Not unlike other fast-growing areas of the country, the Cache Valley's transportation network is falling behind in meeting the area's capacity needs and the region's travel demand model indicates that this problem only becomes more serious over time. The purpose of this Long Range Plan for transportation is not only to identify short and long-term needs and to plan for them, but also to create a countywide vision of future transportation facilities. This chapter identifies future areas of traffic congestion, transportation needs, and some of the larger-scale specific projects within the region.

A. Existing Level of Service

Existing level of service is shown in Figure 2-1. It is a good indicator of existing areas of congestion, highlighted in red and orange, throughout the Cache Valley region. Not surprisingly, downtown Logan shows significant traffic congestion. Main Street in Logan is US 91, the major north/south arterial through the county. Logan's central business district is one of the largest trip generators in the county, with its vibrant mix of retail, office, and recreational destinations. On US 91 from approximately the SR 165 intersection to 400 North, traffic volumes regularly exceed capacity. However, existing congestion issues on US 91 are not limited to downtown Logan. From Nibley to Smithfield there are problems that slow traffic in many areas. Peak hours of traffic in the morning and afternoon are especially congested.

SR 30 between Logan and Box Elder County also has some existing traffic issues. This is a high-speed road that lacks acceleration and deceleration lanes at access points, causing through-traffic to slow down for turning vehicles. The road is currently one lane in each direction with no passing lane and a center-turn lane only through a small stretch west of Logan. This road is commonly used by large commercial vehicles which cause the pavement to deteriorate more quickly.

100 East in downtown Logan south of Center Street is a collector street and experiences almost chronic congestion due to the light synchronization project on Main Street. 100 East not only serves as a collector street for the residential areas east of Main Street, but many drivers also use it as an alternate to Main Street. As a collector street, 100 East does not have the capacity to carry as much traffic as it does, and the result is poor level of service with high congestion and long delays.

B. Future No-Build Level of Service

Figure 2-2 shows traffic conditions in 2030 if no improvements are made to the region's transportation network. The projected population and employment growth discussed in Chapter 1 are assumed for future conditions. As can be seen in the map, significantly more congestion is expected in the future if no transportation projects are implemented. In fact, analysis of existing conditions suggests that there are currently about three miles of road with chronic congestion in the Cache Valley, and in a 2030 no-build scenario more than 17 miles of road should expect chronic congestion.

Also evident from Figure 2-2 is that nearly all of downtown Logan has considerable congestion, not only Main Street and 100 East. Traffic congestion will also spread to the southern end of the valley; SR 101 and SR 165 are likely to experience increased congestion and lower levels of service. And, there are several roads west of US 91 that show congestion under 2030 no-build conditions.

Figure 2-1: Existing Level of Service Map

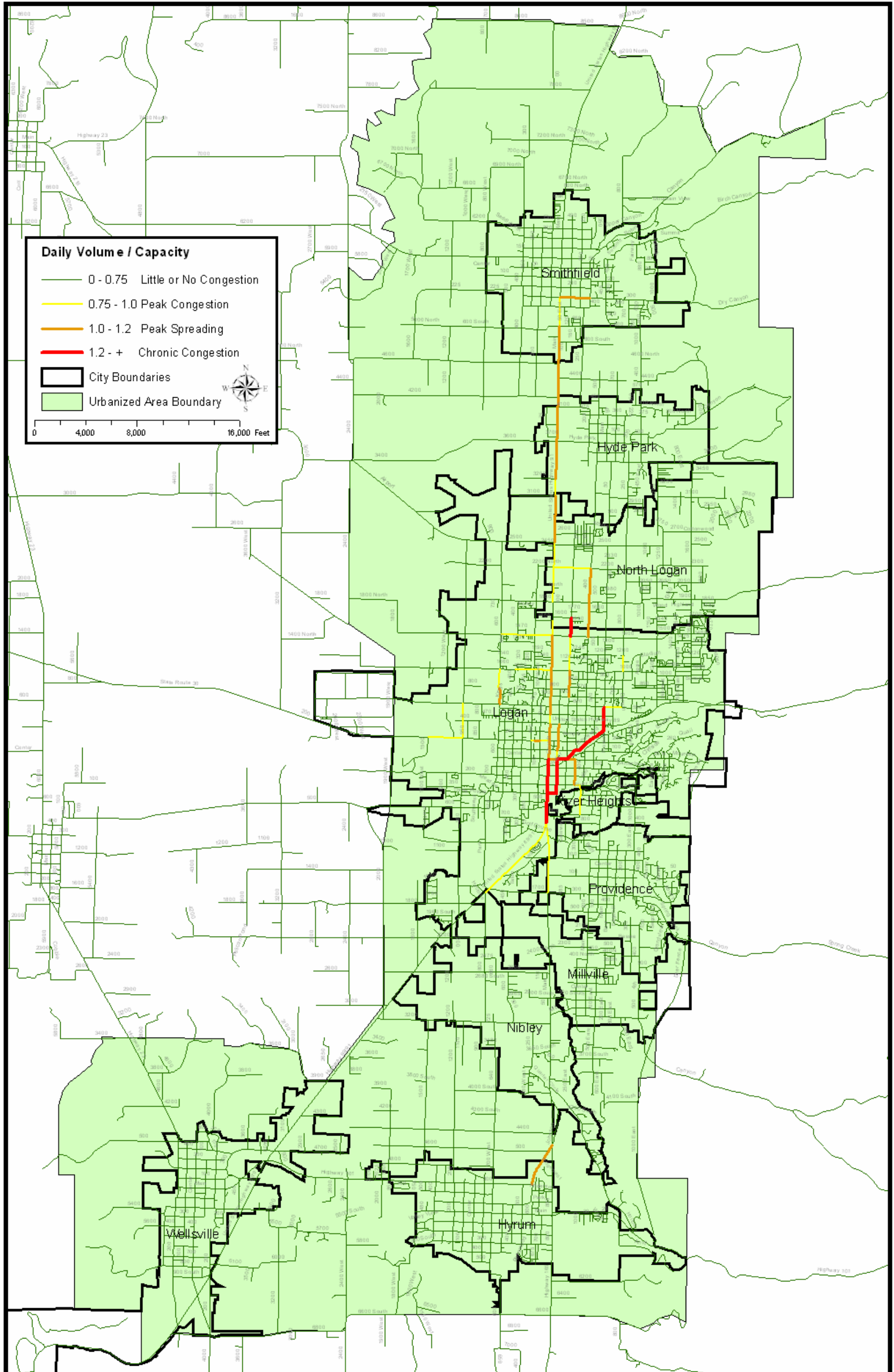
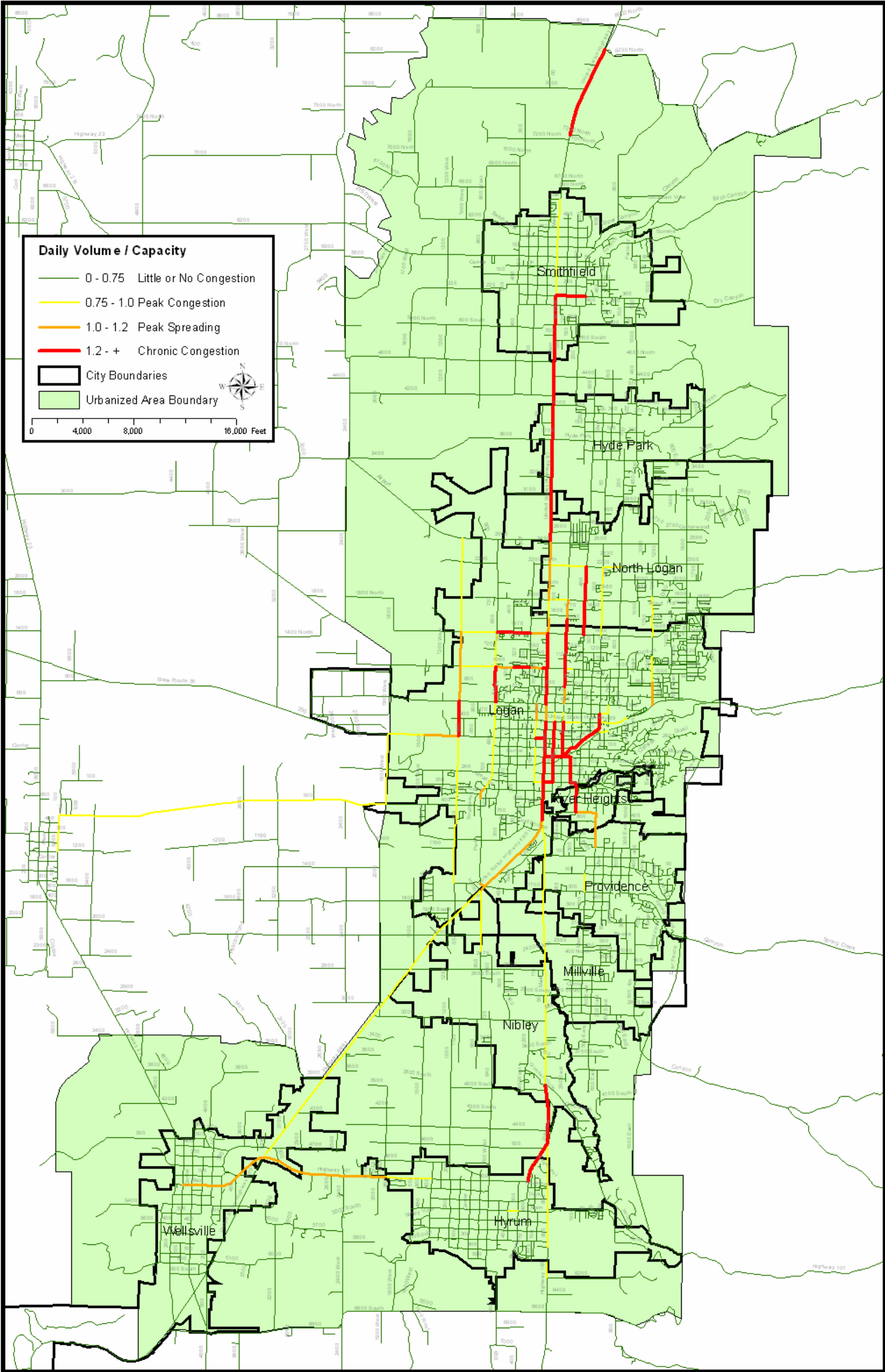
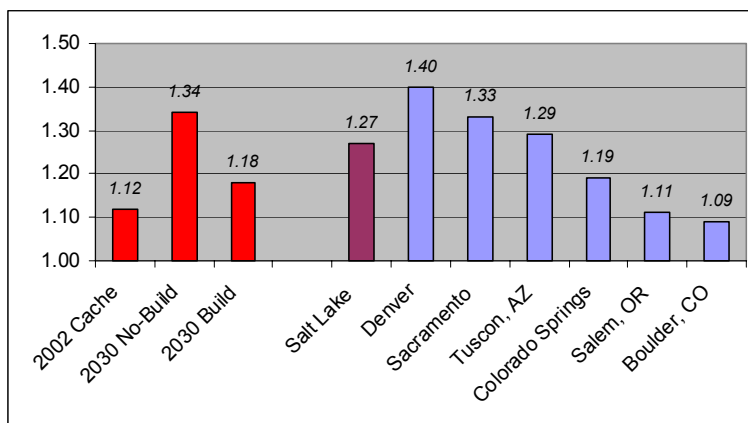


Figure 2-2: 2030 No-Build Level of Service Map



The Travel Time Index (TTI) is a generally-accepted measure of an area’s congestion. It is the time it takes to travel a given road segment at the peak hour divided by the free-flow travel time for that segment. A TTI of 1.0 indicates that there is little or no difference between peak period and free-flow traffic and larger numbers point to increased congestion during the peak period. Figure 2-3 shows the TTI for the Cache area transportation system under existing and future conditions and for similarly-sized cities. As shown in the figure, the TTI for the future no-build scenario is 1.34. For comparison purposes, a TTI of 1.35 means that a trip that would normally take 20 minutes in free-flow traffic will take 27 minutes during the peak hour. While figures given here are comparing system-wide delay, it can be compared at the corridor level as well.

Figure 2-3: Travel Time Index by City



C. Future Build Level of Service

Figure 2-4 shows level of service for a 2030 build scenario, assuming the projects included in Chapter 4’s project list. While there are still areas of congestion, especially in the downtown Logan area, overall traffic issues throughout the region have been reduced considerably. Figure 2-3 shows the TTI for the build scenario at 1.18, somewhat increased from today’s conditions but significantly less than the future no-build scenario.

D. Road Projects

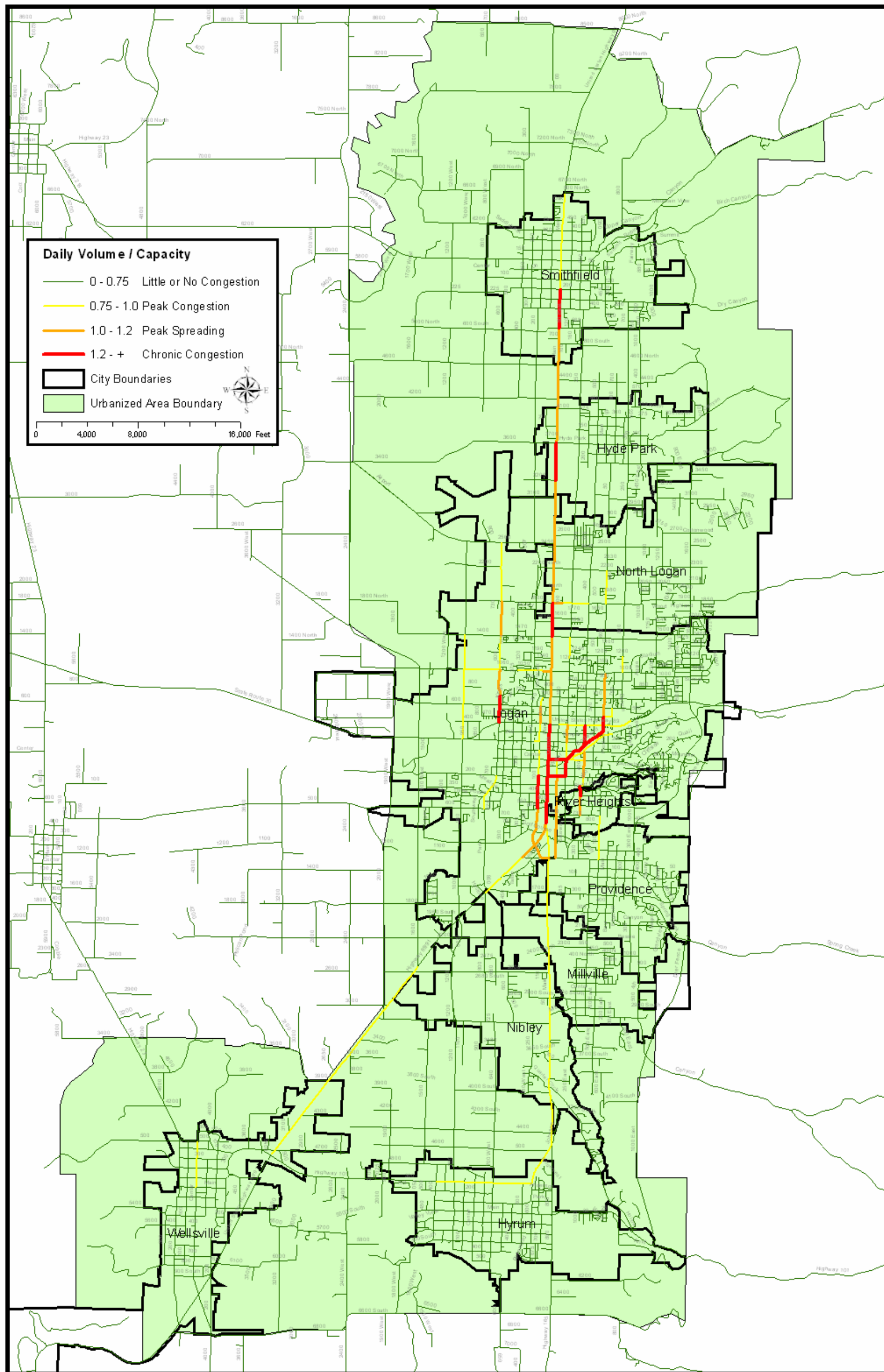
In addition to considering region-wide schemes to accommodate future traffic, several specific projects were discussed during the process. The region’s travel demand model was used to forecast future traffic volumes on these proposed facilities.

i. Western By-pass

A western by-pass in Cache County has been considered for some time and has been the subject of previous studies. The need for the by-pass will be largely determined by future growth on the west side of the valley. For this plan, model results indicated significant use of a western by-pass route south of SR 30. However, north of SR 30, future traffic volumes dropped considerably. The alignment of this western by-pass is much debated in the Cache Valley. It is recommended that a new alignment be created for this road as it would likely be designed as a high-speed facility and should have a larger right-of-way and fewer access points for safety reasons.

Given projected growth in Cache Valley and on the west side of the valley, it makes sense for the region to plan for this facility. While a western by-pass will not necessarily solve all of the traffic issues in the downtown area, it will likely keep congestion there from getting significantly worse.

Figure 2-4: 2030 Build Level of Service Map



ii. 100 East & 200 East

Extending 100 East and 200 East farther south through the cities of River Heights and Providence were suggested as a relief to the congestion on Main Street in Logan. Several different alignments for this extension were discussed and various scenarios of 100 East and 200 East were modeled: the best scenario in terms of congestion relief is with both 100 East and 200 East extended south into Providence. Travel model results indicated that while these roads move some cars off of Main Street, with so much projected growth, the traffic problems on Main Street remain. If nothing is done, all three streets will be at high levels of congestion.

iii. 100 West

100 West currently exists from 600 South to 700 North. Extending this road south to US 89/91 and north to 2500 North by connecting 100 West to 200 West was discussed. This project is planned by the City of Logan, and would offer rear access to many of the businesses along Main Street. In addition, it would offer better connectivity through Logan and would serve as a collector to other residential streets in the area. While it would relieve some of the traffic from Main Street, it is not intended to be an alternate or by-pass route.

iv. Eastern By-pass

Also referred to as the Bear River Rangeway, this facility has been discussed as an eastern by-pass running north and south, crossing the Logan River and the mouth of Logan Canyon. No specific alignment for this road has been determined, and environmental and engineering obstacles are significant. Travel demand modeling indicated that the facility carried some vehicles although not as many as might have been expected. Given projected growth in the area, the road did not serve a sufficient number of vehicles, and costs are expected to be high. While it might prove to be a viable alternative in future years and LRP updates, now it is not likely to pass economic feasibility tests and was not included in the 2030 Long Range Plan.