

Chapter 6 – Travel Forecasting Methodology

Travel forecasts for the 20-year planning horizons were developed based on historical traffic data, existing land use information, population projections, and known commercial and industrial developments. Within each subarea, land use plans were analyzed to identify potential development activities and future land use patterns. Sketch level travel forecasting techniques were used to prepare 20-year travel demand forecasts for all major County roads and State Highways serving the County subareas. The resulting travel forecasts provide a starting point for defining needed improvement projects and strategies to address existing transportation issues and anticipated growth in unincorporated Chelan County.

The following section summarizes the travel forecasting methodology and assumptions. It identifies the approach and process used to develop the land use growth rates and traffic volume forecasts. The land use data includes countywide population data and then identifies specific subarea growth rates based on individual subarea plans and their relationship to the countywide planning policies. A total of ten subareas were considered in the land use and traffic forecasting process. Each subarea is further described in Chapter 8 of the Transportation Element.

Population Forecasts

The Washington State Office of Financial Management (OFM) updated its population forecasts in 2007. These projections provided three alternative growth scenarios for Chelan County and the incorporated Cities to consider: a high, medium, and a low projection.

As described in the Land Use Element of the Comprehensive Plan, Chelan County and the Cities chose to plan for the high projection as they felt it best matched the high rates of growth being experienced within the County and would provide sufficient room for growth in the 20-year planning period.

The latest High End projections indicate that the Chelan County population is expected to grow from 69,200 in 2005 to 100,700 by 2025. This represents an annual growth rate of 1.9 percent.

Chelan County and the Cities participated cooperatively in distributing the projected population throughout the different areas of the County. Three main assumptions were used to help guide this cooperative process of allocating population throughout the County:

- The OFM high series population projections most accurately reflect the current rate of population growth throughout Chelan County
- The distribution of population among the County Census Divisions (CCD) will remain consistent with the existing distribution, as has been the case since the 1970 Census
- The population distribution between urban and rural areas within each CCD was 60 percent urban, 40 percent rural.

The latest land use elements of the City comprehensive plans and subarea plans reflect these above assumptions. The population forecasts assumed in these various plans are summarized in Table 6-1.

The annual growth rates identified through 2025 were assumed to continue through the 20-year planning period for the Transportation Element, which is 2028.

Table 6-1. Population Forecasts by Subarea

| Subarea | Base Year | 2025 | Annual Growth Rate | Source |
|-----------------------------------|---|-------|--------------------|--|
| Sunnyslope | 3,100 ¹ | 9,100 | 6.2% | Sunnyslope Subarea Plan (2007) |
| Foothills | <i>*Analysis based on the Foothills Traffic Study</i> | | | |
| Malaga CCD ⁴ | 3,500 ² | 8,300 | 3.5% | Malaga Vision Plan (2006) |
| Entiat UGA ⁵ | 1,000 ² | 2,000 | 2.8% | Entiat's Comprehensive Plan (2007) |
| Chelan UGA ⁵ | 4,000 ² | 6,700 | 2.1% | Chelan's Comprehensive Plan (2006) |
| Manson UGA ^{5,6} | 3,600 ³ | 5,500 | 2.5% | Manson Subarea Plan (2008) |
| Cashmere/Monitor UGA ⁵ | 3,700 ² | 7,400 | 2.8% | Cashmere's Comprehensive Plan (2008) |
| Peshastin/Dryden Subarea | 1,100 ² | 1,600 | 1.5% | Peshastin Subarea Plan (2008) |
| Leavenworth UGA ⁵ | 2,400 ² | 5,100 | 3.1% | City Land Use Capacity Analysis (2008) |
| Plain/Lake Wenatchee | | | 0.5% | Discussions with County Staff |

1. Base year is 2007
2. Base year is 2000
3. Base year is 2006
4. CCD = County Census Division
5. UGA – Urban Growth Area
6. Assumed that the Manson UGA would be expanded since the Subarea Plan was not adopted at the time the forecasts were developed.

Commercial and Industrial Activity

Growth in commercial and industrial land uses for Chelan County was estimated through analysis of existing and available building square footage for unincorporated land within each subarea. Anticipated commercial and industrial development is based on zoning designations, vacant parcels, and an estimation of what is likely to be completed within the 20-year planning horizon.

Table 6-2 summarizes the existing and future commercial and industrial development by subarea. The square footage estimates only include unincorporated areas of the County.

Table 6-2. Commercial and Industrial Activity Forecasts by Subarea

| Subarea | Base Year (1,000 sqf) | 2025 (1,000 sqf) | Annual Growth Rate |
|----------------------|---|---------------------|--------------------|
| Sunnyslope | 4,712 | 7,068 | 2.3% |
| Malaga | 2,100 | 3,150 | 2.3% |
| Entiat | No significant amount of unincorporated commercially zoned land | | |
| Chelan | 1,300 | 2,210 | 3.0% |
| Manson | 170 | 272 | 2.6% |
| Cashmere/Monitor | 490 | 880 | 3.3% |
| Peshastin/Dryden | 792 | 1,980 | 5.2% |
| Leavenworth | No significant amount of unincorporated commercially zoned land | | |
| Plain/Lake Wenatchee | 8 | 12 | 2.3% |

SOURCE: Transpo analysis based on County data

These commercial and industrial developments located within unincorporated zoned land will generate additional traffic on the County roadway system. However, since there are only a few areas in the unincorporated areas where commercial growth can occur, this land use is not the primary emphasis in regards to travel forecasts in the unincorporated areas.

State Highway Traffic Data

WSDOT provided data on expected traffic volume growth rates on State Highways throughout Chelan County. The information relied primarily on WSDOT's Highway Segment Data (HSD) last revised in 2006. The HSD growth rates are based on historical traffic counts over the last 10 to 20 years. For the Leavenworth area, traffic growth rates are based on a specific trend line analysis of

historical traffic volumes. Table 6-3 summarizes annual growth rates on State Highways for each subarea.

Table 6-3. State Highway Traffic Growth by Subarea

| Subarea | Annual Growth Rate | Source |
|----------------------|--------------------|--|
| Sunnyslope | 1.5% | HSD ¹ growth rate for US 97/2 |
| Malaga | No state highways | |
| Entiat | 2.2% | HSD growth rate for SR 97A |
| Chelan | 2.2% | HSD growth rate for SR 150 and SR 97A |
| Manson | 2.2% | HSD growth rate for SR 150 |
| Cashmere/Monitor | 2.2% - 1.5% | HSD growth rate for US 2 is 2.2% in Cashmere and 1.5% in Monitor |
| Peshastin/Dryden | 2.2% | HSD growth rate for US 2 |
| Leavenworth | 1.5% | Trend line analysis for US 2 |
| Plain/Lake Wenatchee | 2.7% | HSD growth rate on SR 207 |

1. Highway Segment Data (WSDOT)

Estimated Annual Growth Rates

The final traffic volume growth rates used for each of the subareas are shown on Table 6-4. The growth rates are a combination of the population growth rates and the commercial/industrial growth rates. The final growth rates reflect that traffic growth rates are primarily driven by population growth rates; however, in areas where a strong commercial and industrial development is anticipated, final growth rates used for the Transportation Element are higher than expected population growth rates.

The final annual growth rates were used to estimate Year 2028 traffic volumes along major County arterials. State highway growth rates were used directly to derive future traffic volumes on state highways.

Table 6-4. Final Annual Growth Rates by Subarea

| Subarea | Population Growth Rate | Commercial & Industrial Growth Rate | Estimated Growth Rate |
|----------------------|------------------------|-------------------------------------|-----------------------|
| Sunnyslope | 6.2% | 2.3% | 6.2% |
| Malaga | 3.5% | 2.3% | 3.5% |
| Entiat | 2.8% | N/A | 2.8% |
| Chelan | 2.1% | 3.0% | 2.5% |
| Manson | 2.5% | 2.6% | 2.5% |
| Cashmere/Monitor | 2.8% | 3.3% | 3.0% |
| Peshastin/Dryden | 1.5% | 5.2% | 5.2%* |
| Leavenworth | 3.1% | N/A | 3.1% |
| Plain/Lake Wenatchee | 0.5% | 2.3% | 0.8% |

SOURCE: Transpo, 2008

* For Peshastin interchange area only; for the rest of the subarea, the final growth rate is 1.5%.

20-Year (2028) Traffic Forecasts

Annual growth rates were used to estimate Year 2028 daily traffic volumes. On State Highways, annual growth rates used are those shown in Table 6-3. For all County roads, the annual growth rates shown on Table 6-4 were used.

The existing traffic counts were increased using these annual growth rates to derive the 20-year daily traffic forecasts. The resulting future traffic volume forecasts are presented in materials included in Appendix I.

The forecast results indicate that the only County roads with 2028 annual average daily traffic exceeding 10,000 vehicles per day are located in the Sunnyslope area: Easy Street, Penny Road, and Euclid Avenue. The section of Easy Street north of Penny Road is the only location in the County road system with an average annual daily traffic forecast over 20,000 vehicles.

The vast majority of the County roadways have forecast volumes in the range of 1,000 to 6,000 vehicles. These results indicate that most of the County roads will continue to operate well below capacity within the 20-year planning horizon. Therefore, capacity and congestion are not likely to be the main issues to address.

However, traffic volume forecasts also suggest that some areas will likely face traffic operation issues due to increased levels of traffic demand. Those locations include intersections with State Highways which will carry higher traffic volumes, and areas anticipated to accommodate a significant amount of residential and employment growth such as Sunnyslope and Leavenworth.