
SECTION 3

Existing Conditions and Deficiencies

This section documents the existing roadway and land use conditions in the city of Dallas and identifies existing transportation deficiencies considered during the development of project alternatives. Included in this section is a description of the project area, a brief inventory of current land uses, a description of existing transportation facilities within the Dallas UGB, and a traffic operations and safety analysis.

Study Area and Land Use

The study area for the TSP, as depicted in Figure 3-1, follows the City's UGB. All transportation facilities¹ within the study area are considered in the TSP.

Dallas is located on the eastern edge of the Coast Range along the Rickreall Creek, approximately 15 miles west of Salem. The City was incorporated in 1874, and serves as the Polk County seat. The study area includes those portions of OR 223 Kings Valley Highway and Dallas-Rickreall Highway within the Dallas UGB.

The City is characterized by relatively flat topography, especially in the vicinity of downtown. Rickreall Creek, providing the City's water supply, flows through the northern edge of the Central Business District (CBD). Ash Creek flows along the southern edge of the CBD, near the Weyerhaeuser Lumber Mill. Together the 100-year floodplains for these two waterbodies comprise more than 500 acres, representing a limiting factor to development in the City.

Residential Characteristics

The population within the Dallas UGB in 2000 was 13,117, and is estimated to have increased to 14,593 by 2005. The Dallas Comprehensive Plan projects population growth in Dallas to increase to 19,043 persons by the year 2020². It is currently the largest urban area in Polk County.

Listed below are some general demographic characteristics of Dallas residents, as obtained from the 2000 Census. Where appropriate, these characteristics are compared to statewide and county-wide averages.

- Dallas consists of 4,672 households.
- The average household size in Dallas is 2.6 persons. Average household size was similar for the State of Oregon and Polk County.
- The median resident age in the City is 36 years. This is similar to state and county median resident ages.

¹ The roadway analysis for the TSP is limited to roadways classified as collectors or arterials.

² Population estimate by the Portland State University, Population Resource Center.

- Slightly more than 93 percent of the population of the City of Dallas identified themselves as Caucasian. This is higher than the state average of 87 percent Caucasian residents, and the county average of 89 percent Caucasian residents.
- Ten percent of Dallas residents were living below the poverty level in 1999. This is slightly lower than state (12 percent) and county (11 percent) poverty levels.
- Approximately 15 percent of the adult population holds a college degree or higher.
- Approximately 38 percent of households reported one or more school-age children present in the home. This is substantially higher than the state (31 percent) and county (32 percent) averages.
- There were 4,906 housing units in Dallas in 2000, of which 5 percent were vacant. This is three percentage points lower than the state vacancy level (8 percent) but close to the county level (6 percent).
- Approximately 66 percent of occupied housing units were owner-occupied, while the other 34 percent were renter-occupied. This is similar to the state levels of renter-occupancy (36 percent) but higher than the county (32 percent).
- Much of the current housing stock (28 percent) was built in the 1990's, though another period of growth (23 percent) occurred in the 1970's. More than 12 percent of the current housing stock was built before 1940.

Employment Characteristics

Approximately 5,300 Dallas residents were employed in 2000, slightly less than half the overall population. Table 3-1 provides an overview of the five largest employment sectors in the City – educational, health, and social services; manufacturing; health care and social assistance; retail trade; and public administration.

TABLE 3-1
Largest Employment Sectors (by number of employees) in City of Dallas

Employment Sector	Number Employed
Educational, health and social services	1,322
Manufacturing	858
Health care and social assistance	847
Retail trade	534
Public administration	520

Source: taken from Census 2000 Summary File 3 (SF 3), Table P49.

The major employers in Dallas include a technology manufacturing firm, Dallas Public Schools, Polk County, a Safeway grocery store, Wal-Mart, and a RV manufacturing firm.

Dallas is considered an Enterprise Zone, part of a State of Oregon program to provide incentives for businesses to locate in the city.

The median 1999 household income in Dallas was \$35,967. This is lower than the statewide average (\$40,916) and the Polk County average (\$42,311). This may be due to the types of employment in Dallas, including a large number of social service and retail jobs, which may have lower pay than other types of employment (e.g., professional services, medical care).

Similar to other economies in Oregon, recent years have seen an increase in service-related jobs and a decrease in resource-related jobs. Manufacturing jobs are important to the local economy. Future job projections developed for the City of Dallas Comprehensive Plan projects an increase in service and retail jobs, and a continued decline in resource-related jobs.

Commute Characteristics

For residents living inside the City of Dallas, almost half (43 percent) worked in the City as well. Another 40 percent worked outside the City, and outside of Polk County. The remainder worked outside the City but inside Polk County. Anecdotal evidence demonstrates that the majority of workers that commute outside the county travel to nearby Salem (located in Marion County), which houses state buildings and offices. Average travel time from Dallas to Salem in free-flowing traffic conditions is 25 minutes. This is expected to be higher during typical peak commute periods. Figure 3-2 displays travel time to work for residents of Dallas (aged 16 years and higher). The figure shows two peaks in the worker commute time. The first peak (2,084 workers, approximately 42 percent of total workers outside the home) shows a commute time less than 15 minutes in length. This peak illustrates those Dallas residents that also work in the City. The second peak (893 workers, approximately 18 percent of total workers outside the home) shows a commute time between 30 and 34 minutes in length, roughly the time to travel by automobile between Dallas and Salem during typical peak traffic conditions. The average travel time to work for residents of Dallas is 25 minutes.

The predominant mode of transportation to work for workers aged 16 years and older living in Dallas is the automobile. Of the 5,157 total workers, 4,633 (90 percent) drove to work either alone or as part of a carpool. Of workers driving to work, 3,912 (84 percent) drove alone. This is consistent with other cities the size of Dallas throughout the state. Dallas is also similar to other cities its size in the average number of vehicles per household, in Dallas the average is 1.75 vehicles/household. The “work at home” and “walk” modesplit options were used at roughly the same level, approximately 4 percent with 206 and 203 workers respectively. A total of 74 individuals reported that they commuted to work by bicycle, and only 2 reported the use of transit for the commute to work trip. Census data showing time workers left home to go to work showed a clear peak hour between 7:00 a.m. and 7:59 a.m. Census figures indicated that the departure time for nearly 34 percent of all work trips occurs between 7:00 and 8:00 a.m. This dominant peak indicates a heavy use of the existing roadway network between the hours of 7:00 a.m. and 8:00 a.m. Although the Census does not report departure time from work to home, it is common that a similar, commute peak occurs in the afternoon.

Land Use Characteristics

Figure 3-3 illustrates the current zoning designations for the Dallas UGB. Dallas has two primary commercial centers – one located in downtown and the other in North Dallas. The

North Dallas node is located near the intersection of the Dallas Rickreall Highway and the Kings Valley Highway, referred to as the North Dallas Intersection. The zoning designations for this area are General Commercial (CG) and Neighborhood Commercial (CN).

Development in this area is relatively high density commercial, and includes a Wal-Mart, a Safeway grocery store, a Goodwill Industries store, a gas station, an automotive repair facility, fast food chains, and several banks. To the north and west of the intersection are single-family residential developments, and some medium-density and high-density housing developments are located southeast of the intersection.

Dallas's Central Business District (CBD) is located around the one-way couplet system of Main and Jefferson through downtown Dallas. There is a special CBD zoning designation associated with this area. The western edge of the district includes the parcels facing Church Street from the west, while the eastern edge of the district includes the parcels facing Jefferson Street from the east. The northern boundary is the beginning of the couplet near Academy. The southern boundary is Clay Street. Development in the CBD includes a mixture of retail, banks, restaurants, private offices, and government offices. Chemeketa Community College has a facility at the north end of the CBD, offering classes weekdays (approximately 50 classes were offered during the Fall 2004 quarter). There are three churches located in the CBD.

South of the CBD is the Weyerhaeuser Lumber Mill. The mill is located at 1551 Lyle Street and employs 140 people. The mill serves as both an origin and a destination for commercial vehicles (lumber trucks). Lumber products accessing the mill use both the road network and the railroad tracks that traverse the mill site.

Much of the rest of Dallas consists of residential parcels, covering approximately 70 percent of the City's land area. Three mixed use nodes were designated in the Dallas Comprehensive Plan for future development. The first, LaCreole Drive (north of E Ellendale), mixes 30 acres of multi-family residential land with CG. The second, Barberry Node, combines 20 acres of multi-family residential land with CN. The third, Wyatt Node, includes 15 acres of developable multi-family residential land, adjacent to CN.

There are 13 parks in the City of Dallas, including four community parks varying from 20 to 80 acres in size; five neighborhood parks between 2 to 20 acres in size; and four "mini parks" between 0.6 and 1.5 acres in size. In its Comprehensive Plan, Dallas proposes the construction of two additional parks in the City, plus a Park Creek Trail.

Dallas has a total of seven public schools, as listed below:

1. Morrison Alternative Middle School
2. LaCreole Middle School
3. Whitworth Elementary School
4. Lyle Elementary School
5. Oakdale Heights Elementary School
6. Dallas High School
7. Bridgeport Elementary School

In addition, one private school – the Faith Christian School – is located in Dallas, at 2290 E Ellendale.

The City of Dallas has one police station, located at 187 Court Street in downtown Dallas, and one fire station, at the same location. The Dallas City Library is located at 850 Main Street in downtown Dallas.

Pedestrian Facilities

Pedestrian facilities that are accessible and comfortable to use are an essential component of the transportation system. As the *1995 Oregon Bicycle and Pedestrian Plan* (OBPP) explains, virtually everyone is a pedestrian at some point during the day and therefore benefit from accessible facilities. Pedestrians include children walking to and from school, people using wheelchairs or other forms of mobility assistance, people walking to lunch, and people walking to and from their vehicles. In addition, walking meets the commuting, recreational, and social transportation needs for a portion of the population that do not or choose not to drive. The community's pedestrian system also offers recreational opportunities for both local and out-of-town users, potentially stimulating economic growth and tourism.

According to the OBPP, pedestrian facilities are defined as any facilities utilized by a pedestrian. These types of facilities include walkways, traffic signals, crosswalks, curb ramps, and other amenities such as illumination or benches. The City of Dallas has several different types of walkways, which are defined in the OBPP as “transportation facilities built for use by pedestrians and persons in wheelchairs,” including the following:

- ***Sidewalks:*** Sidewalks are located along roadways, are separated from the roadway with a curb and/or planting strip, and have a hard, smooth surface, such as concrete. ODOT standard sidewalk width is 6'; standard sidewalk width in Dallas is 5'. Examples of sidewalks in Dallas are present throughout the downtown and along most major roadways.
- ***Shared Use Paths:*** Shared use paths are used by a variety of non-motorized users, including pedestrians, cyclists, skaters, and runners. Shared use paths may be paved or unpaved, and are often wider than the average sidewalk (i.e. 10' - 12'). An example of a shared use path in Dallas is the path that connects LaCreole Middle School to the Dallas Aquatic Center. This path connects two major destinations, as well as the adjacent sports complex and skate park.
- ***Roadway shoulders:*** Roadway shoulders often serve as pedestrian routes in many rural Oregon communities. On roadways with low traffic volumes (i.e., less than 3,000 vehicles per day), roadway shoulders are often adequate for pedestrian travel. These roadways should have shoulders wide enough so that both pedestrians and bicyclists can use them, usually 6' or greater. Many of the roads leading into Dallas rely on roadway shoulders to accommodate pedestrian travel.

Existing Sidewalks

Figure 3-4 shows the city's sidewalk system on roadways with collector status and higher. The Dallas pedestrian system can generally be characterized as comprehensive in certain

areas of the city, such as downtown and along most major roadways, and lacking in other areas, such as on the outskirts of town and in developments built before code required sidewalks to be constructed with new development. Sidewalk obstructions, typically mail boxes, overgrown vegetation and utility poles, also impede safe pedestrian travel. Table 3-2 lists arterial and collector streets that currently have sidewalks on both sides of the street:

TABLE 3-2
Pedestrian Facilities along Arterials and Collectors within City of Dallas

Road	From	To
Main Street	SW Cherry Avenue	Dallas-Rickreall Highway
Jefferson Street	SE Maple Street	Dallas-Rickreall Highway
SE Washington Street	SE Uglow Avenue	SW Fairview Avenue
Dallas-Rickreall Highway	SE LaCreole Drive	SW Levens Street
Kings Valley Highway	Dallas-Rickreall Highway	Orchard Drive
SE Uglow Avenue	SW Washington Street	SE Maple Street
SE Miller Avenue	SE Uglow Avenue	SE LaCreole Drive
SE LaCreole	SE Miller Avenue	Dallas-Rickreall Highway
SE Hankel Street	Highway 223	City limits
SE Levens Street	W Ellendale	SE Washington Street
W Ellendale	Dallas-Rickreall	SW Levens
SW Fairview	SW Oakdale	SE Washington Street
SE Barberry Avenue	SE LaCreole Drive	End of road
SE Academy Street	SE LaCreole Drive	End of road
SE Maple Street	Main Street	SE Uglow
SW Academy Street	SW Hayter Street	Main Street
SW Hayter Street	SE Mill Street	End of road
SE Mill Street	SE Lyle Street	End of road

Many local streets in Dallas have sidewalks and all new development is required to construct sidewalks.

Existing Sidewalk Conditions

Existing sidewalk width along arterials and collectors is 5 feet, with no separation from the roadway. Sidewalks in residential areas are 5 feet and, particularly surrounding the downtown core, are often accompanied by 8- to 10-foot planter strips. Development code requires standard 5' sidewalks for all new development; 4-foot parkrows or planting strips are required on arterial and collector roadways.

The downtown core of Dallas is very pedestrian friendly. Main and Jefferson Streets have 6- to 8-foot sidewalks in excellent condition with a variety of complimentary pedestrian facilities, including textured crosswalks, bulb outs, ADA accessible curb ramps, pedestrian-scale lighting, and sidewalk amenities like benches and trash receptacles.

Many sidewalks along arterials and collectors have old curb ramps that are not in compliance with new ADA standards and guidelines. Other curbs lack ramps entirely. When present, common deficiencies include ramps of insufficient width (less than 36 inches), ramps that are not aligned with the pedestrian flow, excessive slope (maximum of 1:12), excessive cross-slope (maximum of 1:50), no detectable warnings on walking surfaces, inadequate landings, and obstacles in the pedestrian path.

Pedestrian-actuated signal controls in Dallas are mounted inconsistently (some are oriented in the direction of travel, while others the opposite), most lacked tactile markings, and the visual instructions on a few were illegible due to wear. Visually impaired pedestrians would find many major intersections very challenging because of the traffic patterns, inaudible signals, and unprotected pedestrian phases, particularly at the junction of OR 223 – Dallas-Rickreall Highways and Kings Valley Highway with W Ellendale Avenue and Main Street.

Pedestrian Destinations

Major pedestrian destinations are located in the following areas of the city:

- **Downtown** – primarily the area bounded by SW Academy, SE Washington, SE Uglow, and SW Levens, Dallas’s downtown is the most accessible area to pedestrians. The compact size, extensive sidewalks and crosswalks, historic buildings, and appealing mixed uses make walking the preferred travel mode. Walking is further enhanced by curb extensions that reduce crossing distance, benches, pedestrian-scale lighting, trash receptacles, and interesting shops.
- **Schools** – Lyle Elementary, Whitworth Elementary, Oakdale Heights Elementary School, LaCreole Middle School, Faith Christian School, Polk Adolescent Day Treatment Center, and Dallas High School. The arterial and collector streets around these schools typically have sidewalks on at least one side of the street, with the exception of Faith Christian School and Polk Adolescent Day Treatment Center, on Dallas-Rickreall Highway. These schools are not located within Dallas city limits, but are within the Urban Growth Boundary.
- **Parks** – Dallas City Park, East Dallas Community Park, Gala Park, Birch Park, Kingsborough Park, Rotary Park, Lyle Sports Complex, LaCreole Sports Complex, Whitworth Sports Complex, and Walnut Park. All of the parks on arterial and collector roadways have 5’ or wider sidewalks.
- **Shopping centers** – primarily along OR 223, particularly Dallas-Rickreall Highway. Commercial shopping areas include Wal-Mart (321 NE Kings Valley Highway), Safeway, Goodwill, and a variety of fast food restaurants and local shopping strips. The stores on OR 223 are accessible by sidewalks on these arterials; however, the high traffic volumes and curb tight sidewalks can make the walking experience uncomfortable.

Employment centers – county and city offices in the downtown core, retail services along OR 223 and Main and Jefferson Streets, and industry along SE Uglow, SW Church and Clow Corner Road. The sidewalks are deficient leading to the industrial areas on SE Uglow and Clow Corner Road. All other employment centers have adequate sidewalks and good connectivity.

Bicycle Facilities

Transportation planning has changed significantly in the last 10 years as cities, counties, and states have adopted policies to encourage planning and design for all transportation modes. Bicycle travel has emerged as an important part of a multimodal transportation system as it offers people alternative ways of traveling. Bicycling also provides a transportation alternative for people who do not or chose not to own vehicles and increases the catchment area for local transit systems.

According to AASHTO's *Guide for the Development of Bicycle Facilities* (1999) and the *Oregon Bicycle and Pedestrian Plan* (1995), there are several different types of bicycle facilities. Bicycles are allowed on all of the roadways in Dallas and the surrounding areas. Bikeways are distinguished as preferential roadways that have facilities to accommodate bicycles. Accommodation can be a bicycle route designation or bicycle lane striping. Shared use paths are facilities separated from a roadway for use by cyclists, pedestrians, skaters, runners, or others. Shared use paths are discussed in the review of existing conditions for the Dallas pedestrian system. The following types of bikeways, recognized by AASHTO and *Oregon Bicycle and Pedestrian Plan*, are found in Dallas:

- **Shared Roadway:** Shared roadways include roadways on which bicyclists and motorists share the same travel lane. This is the most common type of bikeway. The most suitable roadways for shared bicycle use are those with low speeds (25 mph or less) or low traffic volumes (3,000 ADT or less).
- **Signed Shared Roadway:** Signed shared roadways are shared roadways that are designated and signed as bicycle routes and serve to provide continuity to other bicycle facilities (i.e., bicycle lanes) or designate a preferred route through the community. Common practice is to sign the route with standard Manual on Uniform Traffic Control Devices (MUTCD) green bicycle route signs with directional arrows. The OBPP recommends against the use of bike route signs if they do not have directional arrows and/or information accompanying them. Signed shared roadways can also be signed with innovative signing that highlights a special touring route (i.e., Oregon Coast Bicycle Route) or provides directional information in bicycling minutes or distance (e.g., "Library, 3 minutes, 1/2 mile"). An example of a signed shared roadway in Dallas is SW Levens Street, between W Ellendale Avenue and SW Academy Street.
- **Shoulder Bikeway:** These are paved roadways that have striped shoulders wide enough for bicycle travel. ODOT recommends a 6' paved shoulder to adequately provide for bicyclists; 4' minimum in constrained areas. Roadways with shoulders less than 4' are considered shared roadways. Sometimes shoulder bikeways are signed to alert motorists to expect bicycle travel along the roadway. OR 223 from SW Oakdale Avenue south has a shoulder bikeway for approximately 200'.

- **Bike Lane:** Bike lanes are portions of the roadway designated specifically for bicycle travel via a striped lane and pavement stencils. ODOT and Dallas standard width for a bicycle lane is 6'. The minimum width of a bicycle lane against a curb or adjacent to a parking lane is 5'. A bicycle lane may be as narrow as 4', but only in very constrained situations. Bike lanes are most appropriate on arterials and major collectors, where high traffic volumes and speeds warrant greater separation. Bicycle lanes are present on OR 223 (Kings Valley Highway) from approximately Orchard Drive to NE Polk Station Road.

Existing Bikeway Locations

Though Dallas has an established signed shared bicycle route system on local roadways, this Transportation System Plan is limited to studying facilities on roadways with collector status or higher. Figure 3-5 shows the various bikeways on all roads in Dallas. The existing bikeways on the arterial and collector system in the figure are highlighted by a thicker line behind them. The majority of arterial and collector roads do not have designated bicycle facilities. Bicyclists must share the roadway with vehicle traffic and, in locations without sidewalks or paths, with pedestrians.

The bikeway facilities on the arterial/collector system consist of bicycle lanes, shoulder bikeways, and signed shared roadways. Table 3-3 provides an overview of existing bicycle facilities in Dallas. Bicycle lanes are located on OR 223 – Kings Valley Highway from just east of Orchard Drive to NE Polk Station Road and Miller Avenue from west of SE Godsey Road to SE Fir Villa. OR 223 south and W Ellendale Avenue have shoulder bikeways, but only for brief periods and typically only on one side of the roadway. OR 223 - Kings Valley Highway and OR 223 – Dallas-Rickreall Highway have shoulder bikeways. Kings Valley Highway extends from NE Polk Station Road to the city limits and into unincorporated Polk County. Dallas-Rickreall Highway was recently repaved and restriped and has a 5' - 7' shoulder from the UGB to LaCreole Avenue. There are pinch points at Fir Villa Road where the shoulder narrows to under 1'. Parts of OR 223 – Dallas-Rickreall Highway, SW Levens Street, SW Hayter, and SE LaCreole Drive are signed shared roadways.

TABLE 3-3
Existing Dallas Bikeways

Location	Type
Dallas-Rickreall Highway	Shoulder bikeway
SE Miller Avenue	Bike lane
SE LaCreole Drive	Signed shared roadway
Kings Valley Highway	Bike lane/shoulder bikeway
W Ellendale Avenue	Signed shared roadway/shoulder bikeway
SW Levens Street	Signed shared roadway
OR 223/SW Fairview Avenue	Shoulder bikeway

Existing Bikeway Conditions

Most of the existing marked bikeway facilities have substandard facilities on one side of the roadway. SE Miller Avenue, OR 223 – King’s Valley Highway, and W Ellendale Avenue have a wide shoulder or bicycle lane on one side of the roadway (typically 6’ – 10’) and a either a sub-standard or nonexistent shoulder or bicycle lane on the other side.

The signed shared roadways on SW Levens Street, SW Hayter, and SE LaCreole Drive provide ample room for bicyclists and motor vehicles to share the roadway. High traffic volumes and limited space on OR 223 – Dallas-Rickreall Highway make bicycling a hazardous challenge from SE Uglow to OR 223 – Kings Valley Highway.

Destinations for Bicyclists

Major destinations for bicyclists are primarily the same as those for pedestrians: downtown, schools, employment centers, shopping centers, neighborhood commercial areas, and parks. In addition, OR 223 provides regional connections to other highways and county roads to nearby cities such as Salem, Independence, and Monmouth. Because Dallas is in the heart of the fertile Willamette Valley and borders the foothills of the Coast Range, there are many opportunities for excellent recreational bicycling on low-volume local roadways.

Popular destinations in the City of Dallas include:

- Dallas Aquatic Center, Sports Complex and skate park
- Dallas Public Library
- Downtown
- East Dallas Community Park
- LaCreole Sports Complex
- Kingsborough Park
- Gala Park
- Services along the Dallas-Rickreall Highway

Public Transportation

Cherriots

The Salem Area Mass Transit District (Cherriots) does not currently provide service to the City of Dallas. The closest transit stop to Dallas is bus route #23, which stops at 35th and Belvedere in West Salem. This stop location is roughly 12 miles east of Dallas city limits. A park-and-ride lot is located in Rickreall but is served only when a customer calls to schedule a pickup. An informal park-and-ride location exists in West Salem. Future service to Dallas is mentioned as a possibility in the short-range element of the Strategic Business Plan. In this plan, Cherriots identifies funding to be made available in fiscal year 2008 or later that could be available to explore expanding commuter services to communities near Salem.

Chemeketa Area Regional Transportation System (CARTS)

The CARTS program is a partnership between Marion, Polk, and Yamhill counties. CARTS runs two routes in Polk County, connecting Dallas and Salem. Figure 3-6 provides an overview of transit service and stops in the City. Route 1 starts in Dallas and runs in an easterly direction, serving Rickreall, Salem, Independence, and Monmouth. This service operates six trips each weekday, during the AM and PM peak hours. Route 2 starts in Dallas and runs in a southerly direction (counter-clockwise), serving the same communities. Route 2 operates four trips each weekday, during the AM and PM peak hours. Service is not provided on weekends or holidays. The CARTS service is point-deviated, fixed-route operation, where individuals with disabilities can arrange beforehand for the bus to deviate up to ¾ mile from the fixed route for special pickup.

Adult one-way regional fares on CARTS are \$1.50; day passes are \$3.00. CARTS provides a connection with Cherriots service in Salem but transfers are not accepted between the two operations. Service is contracted to Oregon Housing Associated Services (OHAS). CARTS operates two passenger buses that accommodate 28 passengers plus two wheelchairs (or 33 passengers when wheelchair locations are not in service). The agency recently received funding to procure a third vehicle of the same size.

CARTS administered a ridership survey in spring 2004, and received 72 completed surveys from riders of the Polk County routes 1 and 2. Almost half of respondents used the CARTS service on a daily basis, and more than three out of four respondents used the service two to three times per week. More than half the riders boarding a CARTS bus in Dallas disembarked in Salem. According to CARTS staff, the service between Dallas and Salem is popular, with ridership reaching bus capacity during peak hour service. The trip purpose for riding CARTS varied equally between work, school, medical, social, and shopping trips. When asked for suggestions for improvements, many riders requested more frequent and weekend service, and additional outreach to the community so that more residents are made aware of the service.

The agency is exploring future service between Salem and Grand Ronde via Dallas, and service between Falls City and Dallas.

Polk County Dial-A-Ride

Polk County Dial-A-Ride service is part of CARTS, serving individuals with mental or physical disabilities. Service is provided for four hours every weekday, corresponding with the AM and PM commute peak. Service is not provided on weekends or holidays. The service is primarily used by customers traveling to and from work.

The Dial-A-Ride operation connects to the CARTS system but will not duplicate its route. This necessitates a transfer for some passengers from Dial-A-Ride to CARTS. As CARTS service operates on approximately 90 minute headways during the AM and PM peak hours, timing transfers between dial-a-ride and CARTS service is of potential concern. The fare payment for the Dial-A-Ride service is \$2.00 one-way. Service is operated by OHAS, operating with one 11 passenger van.

Transit funding for this service is provided by state and federal grants.

Rail Facilities

There are no passenger rail facilities within the City of Dallas. Freight rail facilities owned by Portland and Western exist at the south end of the City. This spur line connects the Weyerhaeuser Mill with connections to the Western Pacific mainline approximately 3.5 miles east of the City. The Portland and Western mainline provides rail freight service to Salem, Portland, and Eugene, and other destinations.

There are seven at-grade railroad crossings in the City. None of these facilities are gated.

- Main Street / Birch Street
- Main Street / (between Cherry and Church Streets)
- Uglow Avenue / Birch Street
- Uglow Avenue / (south of Monmouth Cutoff Road)
- Howe Street / Birch Street
- Holman Street / Birch Street
- Godsey Road / Birch Street

The mill transports approximately 50 percent of its product by rail, operating one 6-8 car train daily. Typically this daily train operates during the early morning hours.

Air Transport Facilities

There are no commercial airports within the City of Dallas. The Independence State Airport is located approximately seven miles southeast of Dallas in the City of Independence, and the Salem Municipal Airport is located 15 miles west of Dallas in Salem. The Portland International Airport is located approximately 60 miles away.

A privately-owned airfield north of OR 223 on Orchard Drive closed in 1990.

Pipeline Transport Facilities

There are no pipeline facilities within the Dallas UGB.

Water Transportation Facilities

There are no significant navigable waterways within the Dallas UGB.

Roadway Facilities

The analysis of existing conditions (2004) focuses on roadway geometries, safety, and operational performance. The analysis also considers transit, bicycle, and pedestrian facilities. This section concludes with a summary of deficiencies identified by the project management team.

Ownership

Public roads in the city of Dallas are owned and maintained by two different jurisdictions: ODOT and the city of Dallas. As owners of a roadway, the jurisdiction is responsible for the following:

- Establishing the functional classification
- Maintenance
- Approving construction and access permits

ODOT owns the following facilities within the Dallas UGB:

- Oregon 223 Dallas-Rickreall Highway (State Highway 189) is an ODOT-owned facility. Oregon 223 connects with Salem to the East and to the south connects with Oregon Highway 20 west of Corvallis. The highway joins with State Highway 191 at the North Dallas Intersection and travels through downtown Dallas as one merged route. ODOT classifies the Dallas-Rickreall Highway as a District Highway. The posted speed varies 25 and 45 MPH within the City limits.
- Oregon 223 Kings Valley Highway (State Highway 191) connects with Oregon 22 north of Dallas, providing access to Yamhill County and surrounding communities. Kings Valley Highway is classified as a District Highway by ODOT. The posted speed varies between 25 and 50 mph within the City limits.

The remaining public facilities are owned by the city of Dallas.

Functional Classification

The functional classification defines a street's role and context in the overall transportation system. In addition, it defines the desirable roadway width, right-of-way needs, access spacing, pedestrian and bicycle facilities. The city of Dallas has established a functional classification system for the roadways within the City limits. Figure 3-1 (study area) illustrates the existing classifications.

Arterials

Arterials are the highest class of street and serve larger volumes of regional traffic at greater speeds. Arterials serve as the major truck routes and emphasize regional mobility over access.

The City arterial system provides service to traffic entering and leaving the area and traffic to major activity centers in Dallas including the CBD and commercial services in the vicinity of the North Dallas Intersection. Those streets classified as arterials within the Dallas UGB are the two state-owned facilities (Dallas-Rickreall Highway and Kings Valley Highway). In addition, four City-owned streets are classified as minor arterials:

- SW Levens Street, from the Dallas Rickreall Highway to SE Washington Street
- SE Washington Street, from Jefferson Street to SE Uglow Avenue
- SE Uglow Road, from SE Washington Street to Monmouth Cutoff

- SE Monmouth Cutoff from SE Uglow Avenue to Urban Growth Boundary

The Dallas Development Code (DDC) identifies right-of-way of between 80-100 feet of required right-of-way, 52 feet or more paved for arterial streets. Arterial standards also include 5' sidewalks and 6' bicycle lanes on each side of the roadway. Most of the arterial streets in Dallas are not fully built to City standards. The paved width of these two streets ranges from 32' - 48.' Sections of the arterials contain sidewalk and wide shoulders for bike lanes.

Collectors

Collector Streets are an intermediate class of street that typically serve as the most direct link between local roadways and the arterial system. Mobility functions as well as access are important for Collector Streets. The following Collector Streets are located in the City of Dallas:

- SE Academy Street, east of SE LaCreole Drive
- SE Barberry Avenue, east of SE LaCreole Drive
- SW Clay Street, west of SW Fairview Avenue
- Dallas Drive, north of Kings Valley Highway
- NW Denton Avenue, west of Orchard Drive
- NW Douglas Street, north of W Ellendale Avenue
- Fairhaven Lane, west of Orchard Drive
- Fern Avenue, between Orchard Drive and Polk Station Road
- SE Fir Villa Road, from the Dallas-Rickreall Highway to SE Miller Avenue
- SE Godsey Road, between SE Miller Avenue and Monmouth Cut-Off Road
- SE Hankel Street, east of Main Street
- SE Hawthorne Avenue, south of Dallas-Rickreall Highway
- SW Hayter Street, south of SW Washington Street
- SW James Howe Road, north of W Ellendale Avenue
- NW Jasper Street, west of Orchard Road
- SE LaCreole Drive, between Dallas-Rickreall Highway and SE Miller Avenue
- Main Street, from SE Washington Street to SW Church Street
- SE Maple Street, from Main Street to SE Uglow Road
- SE Mill Street, west of SE Uglow Road
- SE Miller Avenue, from SE Uglow Road to SE Fir Villa Road

- Oak Villa Road, north of Dallas-Rickreall Highway
- Oakdale Road, from SW Fairview Avenue to UGB
- Orchard Drive, from UGB to the Kings Valley Highway
- Orchard View, south of Dallas-Rickreall Highway
- Orrs Corner Road, east of SE Fir Villa Road
- NE Polk Station Road, from Fern Avenue to the Dallas Rickreall Highway
- SW River Drive, south of W Ellendale Avenue
- Uglow Street, between SE Hankel Street and SE Walnut Avenue
- SW Wyatt Street, between W Ellendale Avenue and SW Marietta Lane

The DDC specifies standards for the City's Collector Street system, including 70' right-of-way, 36'-40' paved roadway, 5' sidewalks on both sides of the roadway with 4' parkrows, and 6' bicycle lanes on both sides for areas identified in an adopted City plan. Most Collector Streets in the Dallas UGB are of the desired pavement width, with the exception of West Ellendale Avenue between Wyatt Street and River Drive and Monmouth Cutoff Road between Uglow Street and Godsey Road. Many Collectors have sidewalks on both sides of the street though there are several exceptions. Most Collectors do not have facilities for bicyclists.

Local Streets

Local Streets carry a lower volume of traffic than Collectors and Arterials, and provide direct access to neighborhoods and homes. Local Streets generally feed into Collector Streets. Access is the most important role of local streets.

The DDC specifies standards for the City's Local Street system. This includes a 60' right-of-way for non-alley Local Streets and 50' right-of-way for alley Local Streets (with pavement width of 36' and 32' respectively); 5' sidewalks on both sides; 4' parkrows for Local Streets in Mixed-Use Nodes, and 6' bicycle lanes on both sides if the facility is part of an adopted plan. See Technical Memorandum 1 Plan and Policy Review for more information.

Local Streets were not analyzed in this TSP.

Roadway Geometry and Access

Roadway characteristics within the Dallas UGB were provided by the City and ODOT, and verified through a field visit. The roadways analyzed are predominantly two-lane roads with left-turn pockets at intersections. There are no medians within the UGB. The speed limits range between 20 miles per hour (MPH) and 50 miles per hour within the Dallas UGB, though most study roadways are posted at 25 MPH speed limits. Throughout the City, travel lanes are generally 12 feet wide, though some variation exists, especially in the downtown area where lane widths are as wide as 20 feet. Throughout the UGB paved shoulders are intermittent (where sidewalk does not exist) and vary in width.

Highway Access

Division 51 (OAR 734-051-0010 through 734-051-0560) specifies access management spacing standards for ODOT facilities. Spacing standards vary depending on the type and location of the highway facility and the speed of the facility. The relevant spacing standards for the Dallas Rickreall and Kings Valley Highways range from 175 feet to 700 feet.

The DDC does not address access points or spacing standards, though the Dallas Comprehensive Plan includes a general discussion of access management policies. The DDC may be amended to include access management standards based on the results of this TSP.

Much of the existing spacing on Oregon 223 is closer than Division 51 spacing standards. The built-out commercial nature of the area occurred prior to Division 51 legislation. There is an existing plan for improvement at the North Dallas Intersection that includes access control at and near the intersection.

Section 7 describes access spacing along the study area highways in greater detail.

Freight

Within Dallas, freight moves predominantly by truck or rail. There are no navigable waterways, scheduled airfreight service, or pipelines in Dallas. Specific freight generators in the City are predominantly manufacturing or timber companies. Most of these are located southeast of downtown. These include the Weyerhaeuser Lumber Mill on SE Lyle; the Tyco facility on the Monmouth Cutoff Road; the RV manufacturing facility, located near the intersection of SE Uglow and the Monmouth Cutoff Road; and the Dallas Planing Mill on SE Holman Road, south of the Monmouth Cutoff Road. Trucks from these facilities access the freeway system either via OR 223 through downtown Dallas, connecting with OR 22 eastbound toward Salem (and I-5), or via Clow Corner Road, accessing 99W to Eugene or Tigard (and I-5).

The operational analysis, described in detail over the following pages, shows a range of freight traffic as a percentage of overall traffic, from no freight traffic on Collector streets leading to the local street network, to 13 percent at the entrance to the Weyerhaeuser Lumber Mill. Figures 3-7a through 7d display freight volumes as a percentage of overall traffic volumes at each of the study intersections. Generally, nearby Automatic Traffic Recorder (ATR) sites can be referenced for overall volume of freight movement in the project vicinity, however neither ATR sites used for this project (Oak Knoll nor Monmouth) recorded vehicle classification data.

The City of Dallas has designated a freight route to channel truck freight movement through downtown. The following segments make up the city freight route (southerly direction):

- Levens Street, from W Ellendale Avenue to Washington Street
- Washington Street, from Levens Street
- Main Street, from Washington Street
- Uglow Road, from Washington Street to Monmouth Cutoff Road

Specific freight destinations within the City include the Wal-Mart and Safeway stores, and the automobile lots at or near the North Dallas Intersection. These locations showed a low volume of freight as an overall percentage of vehicle traffic (ranging between one and six

percent), probably because these types of facilities receive shipments during the non-peak hours.

Traffic Operations

Manual turning movement counts were collected for 25 intersections of arterials and collectors within the Dallas UGB on typical weekdays in August and October 2004. All counts were collected during the P.M. peak period (4:00-6:00 P.M.), which is when traffic volumes are highest on area roadways. These counts were collected to evaluate the existing roadways and intersection operations within the City of Dallas.

Average Daily Traffic Volumes

The average daily traffic (ADT) for facilities within Dallas varies between 3,500 and 10,000 vehicles per day. The ADT on Kings Valley Highway at the northern and southern edges of the UGB is approximately 4,500 vehicles per day. In downtown Dallas, the ADT increases to approximately 10,000 vehicles per day. ADT for the east end of Dallas is close to 10,000 vehicles per day as well. At the western end of the UGB, (Ellendale Avenue) ADT is only about 3,500 vehicles per day. And finally, on Monmouth Cutoff Road, the southeast edge of the UGB, the ADT is approximately 5,500 vehicles per day.

Study Intersections and Raw Traffic Counts

Traffic data were collected for the following signalized and unsignalized intersections.

Signalized

- Washington Street and Levens Street
- Dallas-Rickreall Highway and Kings Valley Highway (North Dallas Intersection)
- Dallas-Rickreall Highway and LaCreole Drive
- Washington Street and Main Street
- Miller Avenue and Uglow Street

Unsignalized

- Kings Valley Highway and Bridlewood Drive
- Kings Valley Highway and Oakdale Avenue
- Kings Valley Highway and Walnut Avenue
- Kings Valley Highway and Orchard Drive
- Kings Valley Highway and Polk Station Road
- Dallas-Rickreall Highway and Fir Villa Road
- Dallas-Rickreall Highway and Oak Villa Road
- Dallas-Rickreall Highway and Polk Station Road
- Monmouth Cutoff Road and Uglow Street
- Monmouth Cutoff Road and Godsey Road
- W Ellendale Avenue and James Howe Road
- W Ellendale Avenue and River Drive
- W Ellendale Avenue and Levens Drive
- Washington Street and Jefferson Street
- Mill Street and Main Street
- Mill Street and Jefferson Street

- Main Street and Maple Street
- Miller Avenue and LaCreole Drive
- Miller Avenue and Godsey Road
- Miller Avenue and Fir Villa Road

These intersections were included in the analysis because they are considered primary intersections within the City of Dallas. Figures 3-7a through 7d display the results of the operational analysis.

Analysis of the Automated Traffic Recorder Sites

ODOT traffic analysis procedures require the 30th highest hour traffic volumes be used to calculate volume to capacity (V/C^3) ratios for intersections and street segments. The 30th highest hour represents the highest volume of traffic that would be expected to occur on the roadway, ignoring extraordinary circumstances – literally the 30th highest recorded traffic volumes recorded. Data from two nearby Automated Traffic Recorder (ATR) sites⁴ were used to determine seasonal factors and to calculate 30th highest hour traffic volumes from traffic counts collected in August, September and October, respectively.

Analysis Method

Operational analysis of existing conditions for the twenty-five study intersections, using 30th highest hour traffic volumes, was performed using Synchro analysis software. This software package is based on the Highway Capacity Manual, TRB Special Report 209.

State Highway Mobility Standards

State Highway Mobility Standards were developed for the 1999 OHP as a method to gauge reasonable and consistent standards for traffic flow along state highways. These mobility standards consider the classification (e.g., freeway, district) and location (rural, urban) of each state highway. Mobility standards are based on V/C ratios.

More than half of the intersections analyzed in the operational analysis are along OR 223 and thus governed by OHP standards. The 1999 OHP designates OR 223 as a District Highway. District Highways are typically highways of county-wide significance and provide a connection between small urbanized areas. The study area is inside the City's UGB and outside the boundaries of a Metropolitan Planning Organization (MPO). The segment of OR 223 through downtown Dallas (from Academy Street to Washington Street) is within a STA. A vast majority of the study intersections operate at a speed limit of less than 45 mph. Because of the varied operational characteristics of the different study intersections, three different OHP mobility standards apply to state facilities in Dallas. These are outlined in Table 3-4.

³ V/C ratios are defined as the number of vehicles passing through a roadway segment during the peak hour, divided by the capacity of that roadway segment

⁴ http://www.odot.state.or.us/tdb/traffic_monitoring/01tv/atr-01.htm

TABLE 3-4
OHP Mobility Standards Applicable to Operational Analysis

Number	Land Use	Speed Limit	Applicable V/C Ratio
1.	Within STA	N/A	0.95
2.	Outside STA, outside MPO	< 45mph	0.85
3.	Outside STA, outside MPO	≥ 45mph	0.80

State mobility standards only apply to state highways, however the City does not have adopted standards for intersection performance. For this evaluation, the state standard of a “District/Local Interest Road” with a speed < 45 mph is used – the applicable V/C ratio for this type of facility is 0.85.

Operational Analysis of Existing Conditions (30th Highest Hour)

Table 3-5 presents the OHP mobility standards and observed intersection V/C ratios for each of the study intersections under existing (2004) 30th highest hour traffic volumes. For signalized intersections, the overall intersection results are reported. For unsignalized intersections, the movement with the worst operating performance on both the major and minor approaches is reported. V/C ratios that are higher than the mobility standard are in bold type.

TABLE 3-5
Operational Analysis of Study Intersections – 30th Highest Hour (Year 2004)

Intersection	OHP Mobility Standard (Major/minor)		Observed Maximum V/C Ratio	
	Major	Minor	Major	Minor
Signalized				
Kings Valley Hwy and Levens Street		0.85		0.64
Dallas-Rickreall Hwy and Kings Valley Hwy (North Dallas Intersection)		0.85		0.98
Dallas-Rickreall Hwy and LaCreole Drive		0.80		0.77
Washington Street and Main Street		0.95		0.66
Miller Avenue and Uglow Street		0.85		0.52
Unsignalized				
Kings Valley Hwy and Bridlewood Drive	0.80	0.85	0.25	0.16
Kings Valley Highway and Oakdale Avenue	0.85	0.85	0.01	0.18
Kings Valley Highway and Walnut Avenue	0.85	0.85	0.46	0.50
Kings Valley Highway and Orchard Drive	0.85	0.85	0.17	0.38

TABLE 3-5
Operational Analysis of Study Intersections – 30th Highest Hour (Year 2004)

Intersection	OHP Mobility Standard (Major/minor)		Observed Maximum V/C Ratio	
	Major	Minor	Major	Minor
Kings Valley Hwy and Polk Station Road	0.85	0.85	0.02	0.15
Dallas-Rickreall Highway and Fir Villa Road	0.80	0.85	0.34	0.62
Dallas-Rickreall Hwy and Oak Villa Road	0.80	0.85	0.39	0.07
Dallas-Rickreall Hwy and Polk Station Rd	0.85	0.85	0.46	0.74
Monmouth Cutoff Road and Uglow Street	0.85	0.85	0.21	0.30
Monmouth Cutoff Road and Godsey Road	0.80	0.85	0.02	0.25
W Ellendale Ave and James Howe Road	0.85	0.85	0.03	0.12
W Ellendale Avenue and River Drive	0.85	0.85	0.22	0.15
W Ellendale Avenue and Levens Street	0.85	0.85	0.14	>2.0
Washington Street and Jefferson Street	0.95	0.95	0.35	1.30
Mill Street and Main Street	0.95	0.95	0.28	0.41
Mill Street and Jefferson Street	0.95	0.95	0.13	0.36
Main Street and Maple Street	0.85	0.85	0.05	0.17
Miller Avenue and LaCreole Drive	0.85	0.85	0.19	0.40
Miller Avenue and Godsey Road	0.85	0.85	0.16	0.21
Miller Avenue and Fir Villa Road	0.80	0.85	0.11	0.26

SOURCE: Synchro Highway Capacity Manual (HCM) Unsignalized Report and Synchro HCM Signals Report.

NOTE: Numbers in **BOLD** indicate higher than acceptable mobility levels

Intersection V/C ratios higher than OHP mobility standards indicate areas of congestion and longer-than-acceptable vehicle delay. Intersection V/C ratios lower than OHP mobility standards indicate intersections operating at acceptable levels of mobility. As shown in Table 3-5, all but three of the study intersections currently operate lower than the OHP V/C thresholds. The three intersections with higher than acceptable V/C ratios are Dallas-Rickreall Highway and Kings Valley Highway (the North Dallas Intersection), West Ellendale Avenue and Levens Street, and Washington Street and Jefferson Street.

The highest V/C ratio experienced in the study area is the stop-controlled approach on Levens Street at West Ellendale Avenue. The approach from Levens Street has a V/C ratio of 3.46, as the Ellendale Avenue approach is stop-controlled with a high volume of turning traffic. The North Dallas Intersection operates poorly due to the split phase signal operations. The northbound approach of Washington Street and Jefferson Street operates poorly because it is stop-controlled, but this does not affect many cars as the vehicular volume at this approach is low.

It should be mentioned at Miller Avenue and Uglow Street intersection, the V/C ratio is currently equal to the V/C standard. This potential could lead to a future problem as traffic growth will further degrade operations.

Turn-Lane Queuing Analysis of Existing Conditions (30th Highest Hour)

The V/C ratio provides only one measure-of-effectiveness of the intersection operation. Vehicle queuing in the turn-lanes shows where there is deficient vehicle storage at intersections. Four intersections (a total of eight approaches) are identified where 95th percentile queue length exceeds available storage capacity. These are listed in Table 3-6. Four of the eight approaches where the vehicle queue exceeds the provided storage are at the North Dallas Intersection. Most of the approaches in Table 3-6 involve exclusive or shared left-turn movements, only one is an exclusive right turn lane approach.

TABLE 3-6
2004 30th Highest Hour Queue Analysis

Intersection	Approach	Lane Group	Existing Storage (feet)	Queue Length (feet)
Signalized				
Dallas-Rickreall Hwy & Kings Valley Hwy (North Dallas Intersection)	Eastbound	Left	90	120
	Westbound	Left/Hard Left	200	260
	Westbound	Left/Thru/Right	1940	2350
	Southbound	Left/Hard Left	90	120
Dallas-Rickreall Hwy & LaCreole Drive	Northbound	Left/Through	130	180
Unsignalized				
W Ellendale Avenue & Levens Street	Eastbound	Right	170	260
	Westbound	Left	110	180

Queue lengths were rounded up to the nearest ten.

Queue lengths can impact overall intersection corridor operations by delaying and restricting upstream vehicle movements. This is true for both signalized and unsignalized intersections. The turning lane groups for the signalized intersections listed in Table 3-6 have a separate signal phase. Long queues can result in spillback into the main roadway section, thereby blocking side-street private driveways and hindering through traffic from proceeding even if that movement has a green signal. Traffic turning left onto a roadway at an unsignalized intersection can also delay right-turning vehicles while they wait for a safe gap in traffic to turn into.

Two of the three intersections identified as having queue length deficiencies also reported V/C ratios at or higher than ODOT mobility standards. These intersections are Dallas-Rickreall Highway and Kings Valley Highway (the North Dallas Intersection), and West Ellendale Avenue and Levens Street.

Safety Analysis

Crash history statistics were provided by the ODOT Crash Analysis Unit for the years 1998-2002, which are the most recent five years available. These data were analyzed to identify

crash patterns that could be a result of existing geometric or operational deficiencies along the two state highways (Kings Valley Highway and Dallas-Rickreall Highway) in Dallas.

Study Area-Level Analysis

Overview

For the 5-year period, a total of 175 crashes were reported along the two state highways within the study area, including 74 injury crashes and 101 property damage crashes. There were no traffic-related fatalities during the five-year period. Table 3-7 provides an overview of all traffic crashes reported over the 5-year period.

TABLE 3-7
Historical Crash Data 1998-2002 for OR 223 in City of Dallas

Year	Severity of Crash		Total Crashes	Type of Crash				
	Injury	Property Damage		Angle	Head-On	Rear-End	Turning	Other
1998	18	18	36	4	0	12	11	9
1999	13	11	24	1	1	5	15	2
2000	9	21	30	5	0	11	12	2
2001	12	26	38	3	0	13	19	3
2002	22	25	47	8	0	17	19	3
Total	74	101	175	21	1	58	76	19

The rate of traffic incidents along the two corridors ranged between 24 and 47 crashes per year. The most common type of crash was turning, which comprised 43 percent (76 crashes) of all crashes during the 5-year period. This was followed by rear-end crashes, which made up 33 percent (58 crashes) of crashes.

Road conditions and time of day are two elements often analyzed with crash statistics. The majority (77 percent, 135 crashes) of crashes occurred on dry surface. Most of the crashes (144 crashes, 83 percent) also occurred during the day. Commercial vehicles with four or more axles were involved in eight (roughly 5 percent) of the crashes and a schoolbus was involved in one crash.

Segment Crash Rates—Existing Conditions

Table II of the 2002 Oregon State Highway Crash Rate Report designates crash rates for highways by type. The Kings Valley Highway and Dallas-Rickreall Highway are considered secondary urban non-freeways within the City of Dallas.

Table 3-8 summarizes the year 2002 crash rate and the 5-year average crash rate (1998 to 2002) for those sections of OR 223 Kings Valley Highway and Dallas-Rickreall Highway within the study limits of Dallas, as described in the 2002 State Highway Crash Rate Tables published by the ODOT Crash Analysis and Reporting Unit.

TABLE 3-8
Crash Rates along State Highway Segments in Dallas

Roadway	Year 2002 Crash Rate ¹	Year 2002 Statewide Average Crash Rate ¹	5-year Average Crash Rate ¹	5-year Statewide Average Crash Rate ¹
Kings Valley Highway MP 2.13 – 4.56	3.71	2.12	2.73	2.47
Dallas-Rickreall Highway MP 0.00 – 0.60	4.69	2.12	3.32	2.47

Source: 2002 State Highway Crash Rate Table, Crash Analysis and Reporting Unit, ODOT.

¹ Crash Rate in units of million vehicles miles.

On urban sections of secondary nonfreeway segments throughout the state, the 5-year statewide average crash rate was 2.47 crashes per million vehicle miles (MVM) and the 2002 statewide average rate was 2.12 crashes per MVM. As shown in Table 3-8, both the year 2002 and the 5-year average crash rates for the Kings Valley Highway and the Dallas-Rickreall Highway are considerably higher than the state averages. There are a number of factors that could explain this high rate. OR 223 serves as Dallas's main street through two, one-way couplets along its downtown core. A large number of direct access points connect the highways with businesses and residents through downtown and along the corridor. The highway veers directly to the west at the south end of the downtown couplet, which could cause confusion to drivers unfamiliar with the area. The highway is referred to as Ellendale Avenue, Main Street, Jefferson Street, Washington Street, and Fairview Avenue while within the City. This could also increase confusion for drivers.

Dallas-Rickreall Highway Analysis

Overview

For the 5-year period, a total of 54 crashes were reported along the Dallas-Rickreall Highway within the study area, including 26 injury crashes and 28 property damage crashes. There were no traffic-related fatalities along these study corridors during the 5-year period. Table 3-9 provides an overview of all traffic crashes over the 5-year period.

TABLE 3-9
Historical Crash Data 1998-2002 for Dallas-Rickreall Highway within City of Dallas

Year	Severity of Crash		Total Crashes	Type of Crash				
	Injury	Property Damage		Angle	Head-On	Rear-End	Turning	Other
1998	9	3	12	0	0	6	5	1
1999	4	3	7	0	0	1	6	0
2000	3	5	8	0	0	4	4	0
2001	6	7	13	0	0	3	9	1
2002	4	10	14	0	0	4	9	1
Total	26	28	54	0	0	18	33	3

The rate of traffic incidents along the corridor ranged between 7 and 14 crashes per year. The most common type of crash was turning, which comprised roughly 61 percent (33 crashes) of all crashes over the 5-year period. This was followed by rear-end crashes, which comprised roughly 33 percent (18 crashes) of all crashes over the five-year period.

Intersection Analysis along Dallas-Rickreall Highway

Approximately one out of three crashes along the Dallas-Rickreall Highway inside the Dallas UGB between 1998 and 2002 occurred at intersections. Table 3-10 provides a summary of the crashes recorded by intersection location.

TABLE 3-10
Intersection Crash Data (1998-2002) for Dallas-Rickreall Highway within Dallas

Intersection	Severity of Crash		Type of Crash						
	Injury	Property Damage Only	Total Crashes	Crash Rate	Angle	Head-On	Rear-End	Turning	Other
Fir Villa Road	0	0	0	0	0	0	0	0	0
Oak Villa Road	0	0	0	0	0	0	0	0	0
La Creole Drive	3	5	8	0.55	0	0	2	4	2
Polk Station Road	1	2	3	0.25	0	0	0	3	0
Kings Valley Highway	3	3	6	0.27	1	0	4	1	0
Total	6	9	17	N/A	1	0	6	8	2

More than half of the 17 crashes reported over the 5-year period involved property damage only with no injury, and no angle or head-on collisions were recorded. The most common types of incidents were rear-end and turning crashes.

The intersection-specific crashes along the Dallas-Rickreall Highway are fairly homogenous. All four crashes at the intersection with Kings Valley Highway were rear-end crashes. The listed cause for three of the four crashes was that the second car was following too closely to the first car to stop on time. This intersection is the largest in Dallas and has five legs. It is likely that the rear-end crashes are caused by one or more vehicles being confused about how to proceed through the intersection. The City of Dallas is reconstructing this intersection to reduce congestion and improve safety. Part of this project is expected to include access management to include consolidation of individual access points to further improve traffic flow and safety.

All crashes at the highway's intersection with Polk Station Road were a result of turning movements, where the vehicle at fault did not yield proper right-of-way. This could be an indication of poor sight distance at this intersection.

Crashes at La Creole Drive were a mix of rear end, turning, or "other" collisions (in this case, both "other" collisions involved hitting a fixed object). This could be an indication of a geometric deficiency or lack of proper signage.

Of the 17 total crashes at these study intersections, most (15 crashes) took place during daylight hours. Five of the crashes occurred on wet pavement.

All intersection crash rates are reported in crashes per million entering vehicles (MEV). A crash rate higher than 1.0 would indicate a safety concern. All intersection crash rates along Dallas-Rickreall Highway were below 1.0, with the LaCreole Drive having the highest crash rate at 0.55. The crash rates do not indicate a safety concern for study intersections along the Dallas-Rickreall Highway.

Kings Valley Highway Analysis

Overview

For the 5-year period, a total of 121 crashes were reported along the two state highways within the study area, including 48 injury crashes and 73 property damage crashes. There were no traffic-related fatalities along these study corridors during the 5-year period. Table 3-11 provides an overview of all traffic crashes over the 5-year period.

TABLE 3-11
Historical Crash Data 1998-2002 for Kings Valley Highway within City of Dallas

Year	Severity of Crash		Total Crashes	Type of Crash				
	Injury	Property Damage		Angle	Head-On	Rear-End	Turning	Other
1998	9	15	24	4	0	6	6	8
1999	9	8	17	1	1	4	9	2
2000	6	16	22	5	0	7	8	2
2001	6	19	25	3	0	10	10	2
2002	18	15	33	8	0	13	10	2
Total	48	73	121	21	1	40	43	16

The rate of traffic incidents along the corridor ranged between 17 and 33 crashes per year. The most common type of crash was turning, which comprised roughly 36 percent (43 crashes) of all crashes over the 5-year period. This was followed by rear-end crashes, which comprised roughly 33 percent (40 crashes) of all crashes over the 5-year period.

Intersection Analysis along Kings Valley Highway

More than two out of every three crashes along the Kings Valley Highway inside the Dallas UGB between 1998 and 2002 occurred at intersections. Table 3-12 provides a summary of the crashes recorded by intersection location.

TABLE 3-12
Intersection Crash Data (1998-2002) for Kings Valley Highway* within Dallas

Intersection	Severity of Crash		Total Crashes	Crash rate	Type of Crash				
	Injury	Property Damage Only			Angle	Head-On	Rear-End	Turning	Other
Polk Station Road	1	0	1	0.20	1	0	0	0	0
Orchard Road	1	0	1	0.11	0	0	0	1	0
Dallas-Rickreall Highway	3	3	6	0.27	1	0	4	1	0
Walnut Avenue	4	3	7	0.50	0	0	4	3	0
Mill Street (at Main Street)	4	1	5	0.55	1	0	2	1	1
Mill Street (at Jefferson Street)	1	3	4	0.55	2	0	0	2	0
Main Street (at Washington Street)	4	5	9	0.63	0	0	4	4	1
Jefferson Street (at Washington Street)	0	5	5	0.38	4	0	0	1	0
Levens Street	4	6	10	0.79	2	0	4	4	0
Oakdale Avenue	2	1	3	0.42	1	0	0	2	0
Bridlewood Drive	0	0	0	0	0	0	0	0	0
Total	25	27	52	N/A	13	0	18	19	2

* Kings Valley Highway OR 223 is also referred to as Main Street, Jefferson Street, Washington Street, and Fairview Avenue in Dallas

Of the total 52 crashes that occurred over the 5-year period at intersections in the study area, 25 resulted in injury whereas 27 involved property damage alone. Turning crashes and rear-end crashes were the most common types of collision, comprising roughly 35 percent of crashes each. There were no head-on collisions reported during the study period.

The highest number of crashes were seen at the approaches to the Main/Jefferson couplet through downtown Dallas. Seven crashes occurred at the intersection of Kings Valley Highway and Walnut Avenue – three turning and four rear-end collisions. This intersection is directly north of Rickreall Creek and marks a transition point from the north end of Dallas and downtown Dallas. Nine crashes occurred at the southern point of the couplet, at the intersection of Main and Washington, as the highway moves west as Washington Street before heading south again as Fairview Avenue. In the other direction, five crashes occurred at the intersection of Washington and Jefferson, four of which were angle collisions and one was a turning collision. This intersection requires vehicles traveling north along OR 223 to turn left in front of oncoming traffic to proceed from Washington to Jefferson. Of the four angle collisions, two were marked as no fault incidents, and the other two involved not providing proper right-of-way.

Finally, the highest number of crashes at any one intersection in the study area occurred at Levens. Over the 5-year period, 10 crashes occurred at this intersection, including four rear-end, four turning, and one angle collision. Levens is the only through street in Dallas west of OR 223 that crosses Rickreall Creek.

Of the 52 total crashes at these study intersections, most (more than 80 percent) took place during daylight hours. Less than 15 crashes occurred on wet pavement.

All intersection crash rates along the Kings Valley Highway were below 1.0, though the Levens intersection was the highest reported at 0.79. Crash rates below 1.0 do not indicate a safety concern.

Safety Priority Index System

ODOT has developed a Safety Priority Index System (SPIS), generated annually and based on the most recently available three years of crash data, to identify hazardous locations along state highways. The highway locations within the highest 10 percent SPIS score are evaluated for potential safety improvements. The 2004 SPIS Report (for crash years 2001-2003) identified two locations within the City of Dallas in the highest 10 percent SPIS score. These were:

1. Jefferson Street, MP 3.07-3.16 – including the Jefferson/Academy and Jefferson/Oak intersections.
2. E. Ellendale, MP 0.16-0.28 – including the E. Ellendale/Uglow intersection.

None of these SPIS intersections are included as study intersections; therefore, crash rates from the crash histories are unavailable.

Summary of Identified Deficiencies

Pedestrian Facility Deficiencies

Though many of the arterials and collectors in Dallas have adequate existing pedestrian facilities, there are still several barriers pedestrians must overcome:

- Limited street connectivity and land use clustering force many pedestrians to walk along arterial and collector roadways to access destinations. Many of these roadways have sidewalks near the center of town, but are only 5' wide and curb tight. The lack of buffers (planter strip, bicycle lanes or on-street parking) can make walking uncomfortable and potentially dangerous next to high speed traffic.
- Crossing OR 223 – Dallas Rickreall Highway is challenging due to long distances between signalized intersections and marked crossings. This discourages pedestrians from walking to services along the roadway and may endanger those who chose to dart across the roadway to reach their desired destinations.



Example of walkway overhang



Children walking in the roadway to the bicycle lane/shoulder on Miller Avenue.

- Portions of the arterial and collector street systems lack ADA-compliant curb ramps and driveway cuts. This can make traveling by wheelchair or motorized mobility device challenging, if not impossible.
- Sidewalks in many parts of Dallas are in substandard condition due to deferred maintenance, particularly on SW Church and SW Fairview/OR 223 as they approach the city limits. Cracking and heaving are two of the most common maintenance problems. Additionally, overgrown vegetation obstructs the sidewalk in some places, ostensibly blocking the walkway and forcing pedestrians to walk in the road.
- Though sidewalks are generally excellent in the downtown core, sidewalks adjacent to diagonal and perpendicular parking spaces are often narrowed by vehicles that overhang the extruded parking curb.
- Streets and roads in perimeter areas lack basic pedestrian facilities such as shoulders.
- Connectivity through the community is hindered by Rickreall Creek, forcing pedestrians to walk along Main Street, SW Levens or SE LaCreole. Additionally, pedestrians are discouraged from walking to services as distances are often double or triple the length to go around the creek.
- The intersection of SW Levens Street and W Ellendale does not provide any pedestrian accommodation,

despite its proximity to the elementary school, sports complex, and access to downtown. Sidewalks in this area are also in poor repair, lack curb ramps, and are blocked by overgrown vegetation. The intersection is also the junction of the truck route. These barriers make it difficult and intimidating for children and others to access the area.

Bicycle Facility Deficiencies

- OR 223, particularly the Dallas-Rickreall Highway, are high-volume, multi-lane facilities which have few, if any, bicycle facilities. Most of the bicycle facilities are located on the periphery of the city and do not provide adequate facilities to major pedestrian and bicycle destinations. Strip development, multiple driveways, wide roadways, and high speeds discourage bicycling on these roadways through town.
- The intersection of OR 223 – King’s Valley Highway and Dallas-Rickreall Highway – W Ellendale Avenue, and Main Street is a heavily traveled, skewed intersection with difficult transitions for bicyclists. The intersection provides access to downtown and key commercial nodes, as well as access to residential areas west of SW Levens Street.
- Rickreall Creek is a natural barrier that splits the city in half. Main and Jefferson Streets, SE LaCreole Avenue, SE Fir Villa Road, and SW Levens Street are the only north/south roadways that connect across the waterway. Traffic is channeled on these roadways and, subsequently, they have the highest volume of car and heavy truck traffic. These roadways also serve bicyclists wishing to cross town and present difficult riding conditions, particularly on Main and Jefferson Streets where there are no designated bicycle facilities.
- Existing facilities need to be upgraded to provide adequate bikeway facilities in both directions of travel. For example, SE Miller Avenue has a generous marked bicycle lane on the south side of the roadway from just west of SE Godsey Road to SE Fir Villa Road, but no shoulder or bicycle lane on the north side. W Ellendale Avenue is similar. A 7-foot shoulder exists on the south side of the roadway from the city limits to SE Levens Street, but there is no shoulder on the north side of the road.



A 7' shoulder on the south side of W Ellendale Avenue west of SW Levens Street..



The wide shoulder on W Ellendale vanishes west of SW Levens Street.

- Dallas’s local roadway system provides excellent east/west connectivity south of Rickreall Creek. However, the existing bicycle facilities do not adequately connect to one another, leaving brief but difficult gaps in the system. North of Rickreall Creek, many residential areas have an interrupted street grid that requires out-of-direction travel and use of major streets to reach nearby destinations.
- A number of local bicyclists were observed riding on the sidewalk and against traffic. This may be due to the lack of facilities on both sides of the roadway or lack of education about safe bicycling techniques.

Transit Deficiencies

- The number of Dallas residents working in Salem is significant. Over the next 20 years, fixed-route Cherrriots bus service linking the two cities is expected to be warranted.
- Existing CARTS service has proven to be popular. A recent survey indicated that riders want more frequent weekday service (currently each route has only one trip during the AM and PM peak periods) and the creation of weekend service.
- The City of Dallas could work with OHAS, Cherrriots, and Polk County to increase advertisement of transit service within the City, and inform residents of transit options.

Roadway Deficiencies

- The arterial streets in Dallas are not fully built to City standards. The paved width of these streets ranges from 32' - 48' as compared to a 52' standard for paved width. Sections of the arterials contain sidewalks and wide shoulders for bike lanes, but this is not comprehensive. See pedestrian and bicycle deficiencies section above.
- West Ellendale Avenue between Wyatt Street and River Drive and Monmouth Cutoff Road between Uglow Street and Godsey Road are not built to City standards of 36' -40' paved roadway width. Many Collectors have sidewalks on both sides of the street though there are several exceptions. Most Collectors do not have facilities for bicyclists. See pedestrian and bicycle deficiencies section above.

Traffic Operations Deficiencies

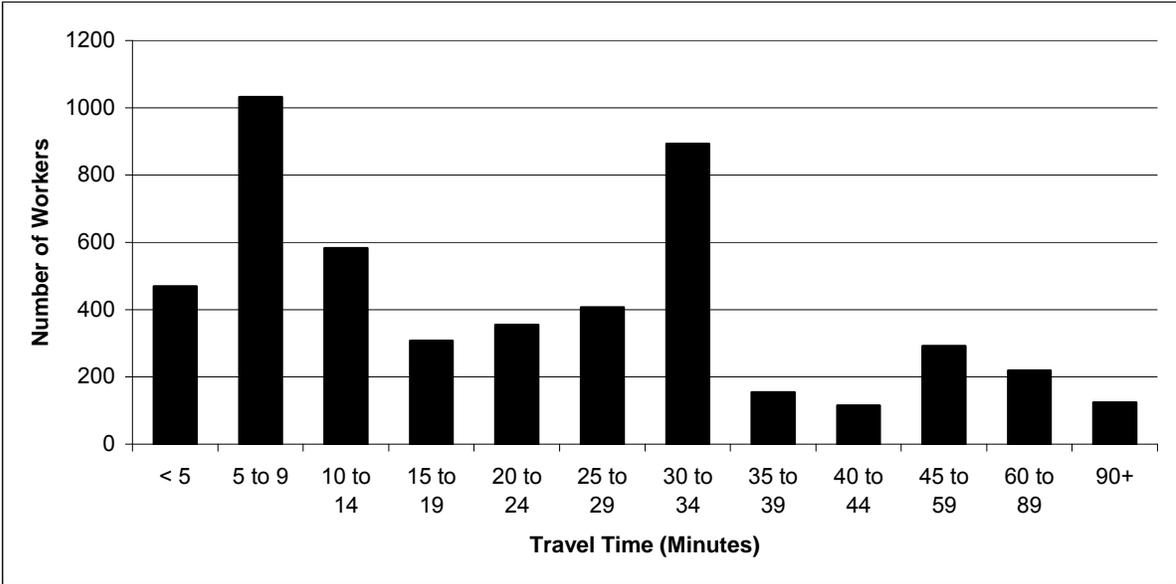
- Three of the study intersections currently operate at a higher than acceptable mobility standard. These are:
 - Dallas-Rickreall Highway and Kings Valley Highway (The North Dallas Intersection). This signalized Intersection operates poorly (V/C ratio of 0.98) due to the intersection signal operating with split phasing. ODOT is working with the City to widen and realign this intersection.
 - The stop-controlled intersection of West Levens Street at West Ellendale Avenue (Levens approach). This movement from Levens Street to West Ellendale had the highest V/C ratio experienced in the study area (3.46). This is due to a high volume of turning traffic on Levens Street.
 - The stop-controlled intersection of Washington Street and Jefferson Street. The northbound movement of this intersection experiences the highest V/C ratio of 1.30. This leg operates poorly because it is stop controlled and due to the high east and westbound approach volumes providing only a few gaps for the northbound traffic to turn into.
- Six intersections (a total of eight approaches) were identified where 95th percentile queue length exceeds available storage capacity. All the deficient approaches involved exclusive or shared left-turn movements. Queue lengths can impact overall intersection operations by spilling back into the main roadway section.

Safety Deficiencies

- Access management efforts along OR 223 would be expected to improve safety along the highway.
- Sight distance and stop control may be an issue for several intersections, including Dallas Rickreall Highway and La Creole Road, Ellendale and Levens, and Dallas Rickreall and Fir Villa Road. Results from the operational analysis indicate that traffic congestion is a likely contributor to safety problems at the W Ellendale / Levens intersection and the North Dallas Intersection.
- Improved signage/orientation may reduce confusion and improve safety at both ends of the Main/Jefferson couplet. This is especially recommended for the southern end of the couplet, at Washington.
- Jefferson Street, MP 3.07-3.16 - including the Jefferson/ Academy and Jefferson/Oak intersections.
- E. Ellendale, MP 0.16-0.28 - including the E. Ellendale/Uglow intersection.

Figures 3-1 and 3-3 through 3-7

Figure 3-2: Travel Time to Work for Workers Aged 16 Years or Higher, City of Dallas, OR



Source: Census 2000 Summary File 3 (SF 3), Table P31 Travel Time to Work for Workers 16+ Years.