

CHAPTER 4

Transportation System Standards

THIS CHAPTER PROVIDES AN OVERVIEW OF THE TRANSPORTATION SYSTEM STANDARDS ADOPTED CONCURRENT WITH THE PASCO TRANSPORTATION SYSTEM MASTER PLAN. TOGETHER, THESE STANDARDS WILL HELP ENSURE FUTURE FACILITIES ARE DESIGNED APPROPRIATELY AND THAT ALL FACILITIES ARE MANAGED TO SERVE THEIR INTENDED PURPOSE.

The roadway functional classification system, special route designations, access spacing and mobility standards are also included in this chapter.

For a complete listing of the system standards including typical design standards for roadways, walkways and bikeways within the city, refer to Appendix D for Transportation System Standards memo.



In Pasco, all roadways are required to be multimodal or “complete streets”, with each street serving the needs of the various travel modes. Streets in the city will not all be designed the same. Pasco classifies the street system into a hierarchy organized by functional classification and street type (representative of their places). These classifications ensure that the streets reflect the neighborhood through which they pass, consisting of a scale and design appropriate to the character of the abutting properties and land uses. The classifications also provide for and balance the needs of all travel modes including pedestrians, bicyclists, transit riders, motor vehicles and freight. Within these street classifications, context sensitive designs may result in alternative cross-sections.



Photo Credit: Tri-City Herald

Roadway Functional Classification

A city's street functional classification system is an important tool for managing the transportation system. It is based on a hierarchical system of roads in which streets of a higher classification, such as arterials, emphasize a higher level of mobility for through movements, while streets of a lower classification emphasize access to land uses.

Pasco currently has four functional classes:

1. **Principal Arterials** connect major activity centers as well as the interstate system. They will serve a variety of travel movements supporting longer/lengthier trips and are primarily intended to serve regional traffic movement.
2. **Minor Arterials** create direct connections through the city and can be found on the periphery of residential neighborhoods. They generally provide the primary connection to other Arterial or Collector Streets and access to larger developed areas and neighborhoods.
3. **Collectors** provide local traffic circulation throughout the city and serve to funnel traffic from the arterial street network to streets of the same or lower classification. They typically have minor access restrictions.
4. **Local Streets** provide local access and circulation for traffic, connect neighborhoods, and often function as through routes for pedestrians and bicyclists. Local Streets should maintain slow vehicle operating speeds while providing convenient access to multimodal travel.

The TSMP also introduced a new Neighborhood Collector functional classification to identify locations where local access needs should be balanced with enhanced pedestrian and bicycle amenities. These streets should maintain slow vehicle operating speeds to accommodate safe use by all modes and provide local neighborhood access.

Functional classification provides a helpful framework for managing the city's transportation system and supporting other standards summarized in the following sections, including connectivity, spacing, freight routes, cross-sections, and access management.

Table 9 lists the desired spacing of each facility type throughout Pasco to ensure a high level of connectivity. Figure 15 illustrates the desired spacing for the arterial and collector network. Deviations from these guidelines may be needed in locations where there are significant barriers, such as topography, rail lines, freeways, existing development, or the presence of natural areas.

TABLE 9. FACILITY SPACING GUIDELINES

FUNCTIONAL CLASSIFICATION	RECOMMENDED MAXIMUM SPACING ^A
PRINCIPAL ARTERIAL	1 to 2 miles
MINOR ARTERIAL	1 mile
COLLECTOR	½ mile
NEIGHBORHOOD COLLECTOR	¼ mile
LOCAL STREET	300–500 feet
BICYCLE AND PEDESTRIAN FACILITIES	300 feet

^A Recommended maximum spacing refers to distance between facilities with the same or higher functional classification. Deviations from the recommended maximum spacing are subject to approval by the City engineer.

People walking and biking benefit the most from closely spaced facilities because their travel is most affected by variation in distance. By providing walking and biking facilities or accessways that are spaced no more than 300 feet apart, Pasco will support active transportation within and between its neighborhoods. These connections also support high quality access to transit.

The adopted reclassifications aim to create a consistent functional classification scheme and match a roadway’s functional classification to their role in the transportation network. The existing road network was also reviewed to identify neighborhood collector routes. Neighborhood collectors were identified in locations where the functional classification map from the Pasco Comprehensive Plan previously identified two closely spaced, parallel collectors which serve similar land uses. Converting one of these routes to a neighborhood collector provides a classification that is more consistent with the actual use of the road and facilitates multimodal transportation. Neighborhood collectors were also designated on the local street system for routes which provide connections between several adjacent neighborhoods and the collector or arterial network.

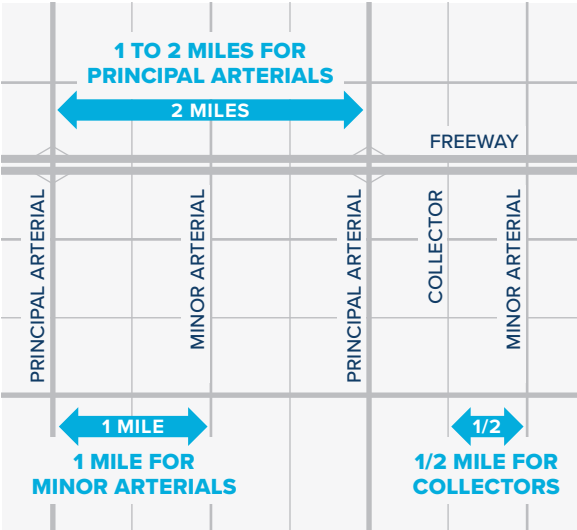


FIGURE 15. DESIRED FACILITY SPACING

The adopted reclassifications summarized in Figure 16 and Tables 10 and 11 will provide better system spacing and connectivity. It is important to note that many of the existing roadway cross-sections will not meet the standard cross-sections of their new functional classification. Cross-section improvements are not expected outside of redevelopment.

Note that Columbia River Road and Taylor Flats Road, north of Road 68, are classified as collectors, consistent with Franklin County’s functional classification, even though Road 68 is classified as a principal arterial. These designations will be consistent for both roadways as they continue further north in rural Franklin County. Also, the easterly end of Burns Road, also called Powerline Road, is indicated with a possible easterly extension that crosses over the rail yard and eventually connects to US 395 north of Foster Wells Road. This is an illustrative concept of how east-west principal arterial level connections could be made north of I-182 to provide an alternative regional route. However, this connection is not included in the project list of the TSMP, and has not been assumed in the 2040 horizon year system.

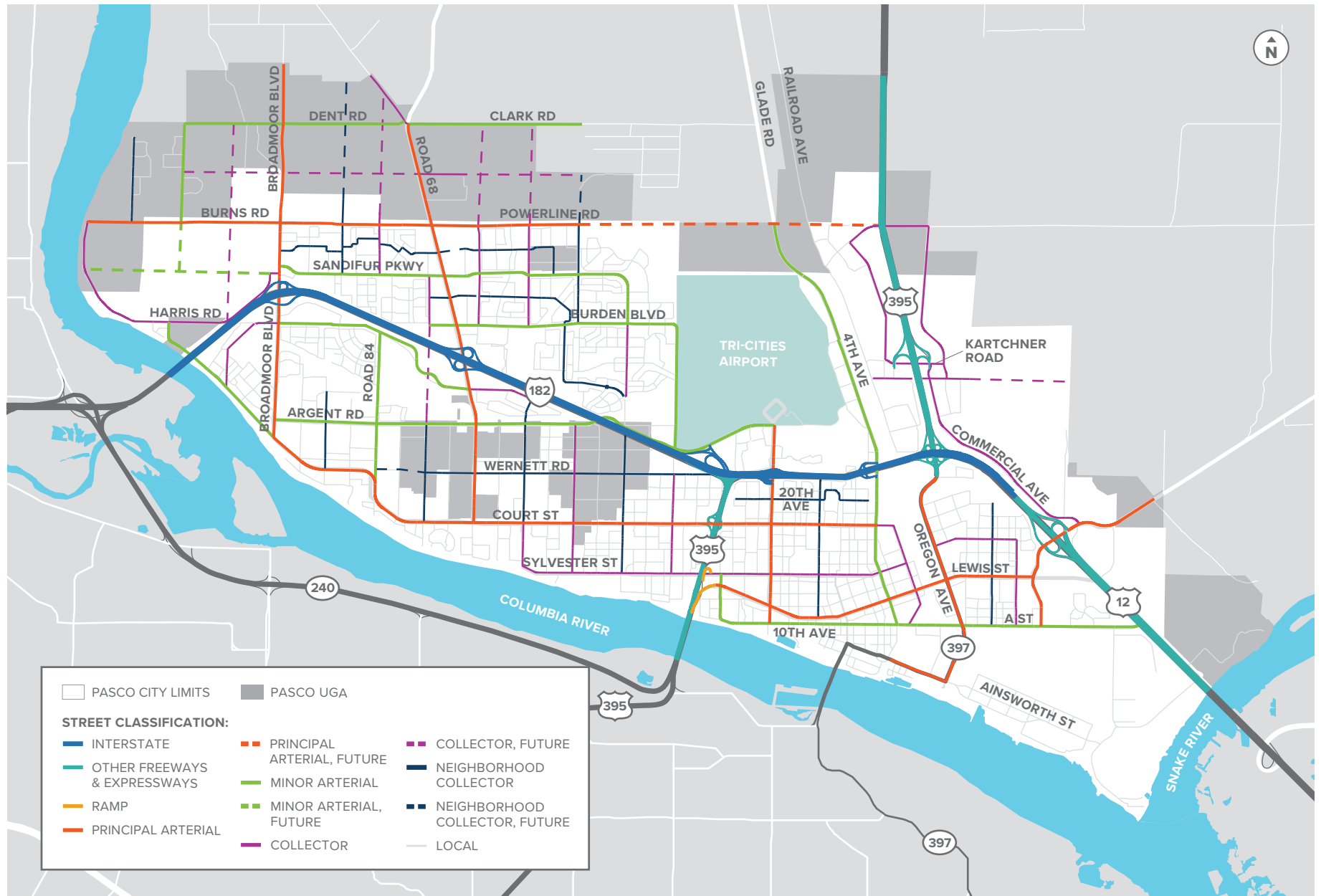


FIGURE 16. RECOMMENDED ROADWAY FUNCTIONAL CLASSIFICATION

TABLE 10. FUNCTIONAL CLASSIFICATION OF NEW ROADWAYS

ROADWAY	EXTENTS	RECOMMENDED FUNCTIONAL CLASSIFICATION
SANDIFUR PARKWAY EXTENSION	Broadmoor Boulevard to New North-South Collector	Principal Arterial
DENT ROAD EXTENSION	Burns Road to Harris Road	Minor Arterial
SANDIFUR PARKWAY EXTENSION	New North-South Collector to Shoreline Drive	Minor Arterial
SANDIFUR PARKWAY EXTENSION	New North-South Collector to Shoreline Drive	Collector
NEW NORTH-SOUTH COLLECTOR	Dent Road to Harris Road	Collector
ROAD 84 EXTENSION	Burns Road to Columbia River Road	Collector
CONVENTION DRIVE EXTENSION	Burns Road to Clark Road	Collector
ROAD 60 EXTENSION	Burns Road to Clark Road	Collector
DESERET DRIVE	Dent Road to Road 52	Collector
ROAD 76 EXTENSION	Burden Boulevard to Argent Road	Collector
ROAD 90 EXTENSION	Burns Road to UGA	Neighborhood Collector
THREE RIVERS DRIVE EXTENSION	Road 68 to Rio Grande Lane	Neighborhood Collector
WRIGLEY DRIVE EXTENSION	Clemente Lane to Road 68 Place	Neighborhood Collector
ROAD 52 EXTENSION	Burns Road Deseret Drive	Neighborhood Collector
WERNETT ROAD EXTENSION	Road 76 to Road 84	Neighborhood Collector

TABLE 11. ROADWAY FUNCTIONAL CLASSIFICATION CHANGES

EXISTING FUNCTIONAL CLASSIFICATION	ROADWAY	EXTENTS	RECOMMENDED FUNCTIONAL CLASSIFICATION
MINOR ARTERIAL	Broadmoor Boulevard	Dent Road to UGA	Principal Arterial
MINOR ARTERIAL	20th Avenue	Lewis Street to A Street	Principal Arterial
PRINCIPAL ARTERIAL	10th Avenue	Ainsworth Street to A street	Minor Arterial
PRINCIPAL ARTERIAL	4th Avenue	A Street to I-182 Westbound Ramp Terminal	Minor Arterial
COLLECTOR	Court Street	Broadmoor Boulevard to Harris Road	Minor Arterial
COLLECTOR	Harris Road	Court Street to Dent Road Extension	Minor Arterial
COLLECTOR	Dent Road	Burns Road to Road 68	Minor Arterial
COLLECTOR	Clark Road	Road 68 to Road 52	Minor Arterial
COLLECTOR	Chapel Hill Boulevard	Road 82 to Road 68	Minor Arterial
COLLECTOR	A Street	20th Avenue to 28th Avenue	Minor Arterial
COLLECTOR	28th Avenue	A Street to Sylvester street	Minor Arterial
MINOR ARTERIAL	Chapel Hill Boulevard	Crescent Road to Broadmoor Boulevard	Collector
MINOR ARTERIAL	Road 60	Court Street to Sylvester Street	Collector
MINOR ARTERIAL	Sylvester Street	Road 60 to 4th Avenue	Collector
MINOR ARTERIAL	Court Street	4th Avenue to 1st Avenue	Collector
MINOR ARTERIAL	1st Avenue	Court Street to A Street	Collector
LOCAL	Broadway Street	Wehe Avenue to Cedar Avenue	Collector
LOCAL	Cedar Avenue	Broadway Street to Lewis Street	Collector
LOCAL	Commercial Avenue	Kartchner Street to Hillsboro Road	Collector
MINOR ARTERIAL	Road 90	Sandifur Parkway to Burns Road	Neighborhood Collector
COLLECTOR	Wernett Road	Road 36 To Road 76	Neighborhood Collector
COLLECTOR	14th Avenue	Lewis Street to Court Street	Neighborhood Collector
COLLECTOR	Saratoga Lane	Chapel Hill boulevard to Argent Road	Neighborhood Collector
COLLECTOR	Road 44	Argent Road to Madison Avenue	Neighborhood Collector
COLLECTOR	Madison Avenue	Road 44 to Burden Boulevard	Neighborhood Collector

EXISTING FUNCTIONAL CLASSIFICATION	ROADWAY	EXTENTS	RECOMMENDED FUNCTIONAL CLASSIFICATION
COLLECTOR	Road 52	Burden Boulevard to Burns Road	Neighborhood Collector
COLLECTOR	Wrigley Drive	Road 76 to Clemente Lane	Neighborhood Collector
LOCAL	Kohler Road	Dent Road to Hillcrest Drive	Neighborhood Collector
LOCAL	Road 92	Court Street to Maple Drive	Neighborhood Collector
LOCAL	Road 76	Argent Road to Court Street	Neighborhood Collector
LOCAL	Road 60	Argent Road to Court Street	Neighborhood Collector
LOCAL	Road 48	Argent Road to Sylvester Street	Neighborhood Collector
LOCAL	Wernett Road	Road 36 to Road 30	Neighborhood Collector
LOCAL	14th Avenue	Court Street to Lincoln Drive	Neighborhood Collector
LOCAL	Pearl Street	24th Avenue to 13th Avenue & 10th Avenue to 5th Avenue	Neighborhood Collector
LOCAL	13th Avenue	Pearl Street to Riverview Drive	Neighborhood Collector
LOCAL	Riverview Drive	13th Avenue to 12th Avenue	Neighborhood Collector
LOCAL	10th Avenue	12th Avenue to Pearl Street	Neighborhood Collector
LOCAL	Elm Avenue	A Street to Shepperd Street	Neighborhood Collector
LOCAL	Wrigley Drive	Road 68 Place to Roosevelt Drive	Neighborhood Collector
LOCAL	Roosevelt Drive	Wrigley Drive to Madison Avenue	Neighborhood Collector
LOCAL	Madison Avenue	Roosevelt Drive to Burden Boulevard	Neighborhood Collector
LOCAL	Vincenzo Drive	Broadmoor Boulevard to Majestia Lane	Neighborhood Collector
LOCAL	Majestia Lane	Vincenzo Drive to Road 90	Neighborhood Collector
LOCAL	Road 90	Sandifur Parkway to Burns Road	Neighborhood Collector
LOCAL	Wilshire Drive	Road 90 to Westmoreland Lane	Neighborhood Collector
LOCAL	Westmoreland Lane	Wilshire Drive to Overland Court	Neighborhood Collector
LOCAL	Overland Court	Westmoreland Lane to Westminster Lane	Neighborhood Collector
LOCAL	Westminster Lane	Overland Court to Stutz Drive	Neighborhood Collector
LOCAL	Stutz Drive	Westminster Lane to Road 84	Neighborhood Collector

EXISTING FUNCTIONAL CLASSIFICATION	ROADWAY	EXTENTS	RECOMMENDED FUNCTIONAL CLASSIFICATION
LOCAL	Hudson Drive	Road 84 to Okanogan Lane	Neighborhood Collector
LOCAL	Okanogan Lane	Hudson Drive to Chehalis Drive	Neighborhood Collector
LOCAL	Chehalis Drive	Okanogan Lane to Three Rivers Drive	Neighborhood Collector
LOCAL	Three Rivers Drive	Chehalis Drive to Road 68 & Rio Grande Lane to Road 56	Neighborhood Collector
LOCAL	Road 56	Three Rivers Drive to Overton Road	Neighborhood Collector
LOCAL	Overton Road	Road 56 to Road 52	Neighborhood Collector



Freight Network

Freight routes play a vital role in the economical movement of raw materials and finished products, while maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. The Washington State Freight and Goods Transportation System (FGTS) tonnage classification system identifies different categories of freight corridors based on annual freight tonnage moved (refer to Figure 17). The freight corridors in Pasco are as follows:

- I-182
- US 12
- US 395
- WA 397
- Broadmoor Boulevard (I-182 to Harris Road)
- Road 68 (I-182 to Clark Road)
- 4th Avenue (I-182 to Glade Road)
- Ainsworth Avenue/Dock Street (WA 397 to Sacajawea Park Road)
- Harris Road (Broadmoor Blvd to Shoreline Road)
- Shoreline Road (Harris Road to Burns Road)
- Burns Road (Shoreline Road to Dent Road)
- Dent Road (Burns Road to Road 68)
- Clark Road (Road 68 to Glad Road)
- Taylor Flats Road (North of Road 68)
- Columbia River Road (North of Road 68)
- Glade Road (North of 4th Avenue)
- Railroad Avenue (North of Hillsboro Street)
- Foster Wells Road (East of US 395)
- Kartchner Street (Railroad Avenue to Commercial Avenue)

- Hillsboro Street (Railroad Avenue to Travel Plaza Way)
- Lewis Street (US 395 to 20th Avenue)
- 20th Avenue (Lewis Street to A Street)
- A Street (20th Avenue to US 12)
- Pasco Kahlotus Road (East of US 12)
- Lewis Street (WA 397 to US 12)
- 4th Avenue (Ainsworth Street to A Street)

As part of the revitalization of the downtown as envisioned in the current Master Planning, the existing Lewis Street freight corridor should be modified to divert freight traffic onto parallel routes along Ainsworth Street and A Street. Other critical freight corridors that are not currently included in the Washington FGTS, as shown in Figure 17, include Sacajawea Park Road from Ainsworth Avenue to US 12 and Commercial Avenue from Lewis Street to Kartchner Street. Including these routes in a future update to the Washington FGTS will recognize their significance to Pasco's freight system and connect key industrial areas to existing FGTS corridors.

The city's freight transportation system also includes a rail yard, port, and the Tri-Cities Airport. Intermodal connections between these freight hubs, Pasco's industrial areas, and the Tri-Cities region are necessary to support the movement of goods. Primary routes serving these existing freight transportation needs are identified through the Washington FGTS although additional development in these areas could generate new freight traffic demands.

Pasco will benefit from ensuring that its freight routes are designed to accommodate the needs of its industrial and commercial areas, while protecting its residential neighborhoods from freight traffic. Having designated freight routes will help the city better coordinate and improve its efforts regarding both freight and non-freight transportation system users, including the following:

- **Roadway and Intersection Improvements** can be designed for freight vehicles with adjustments for turn radii, sight distance, lane width and turn pocket lengths.
- **Bicycle and Pedestrian Improvements**—such as protected or separated bike facilities, enhanced pedestrian crossings, and other safety improvements—can be identified to reduce freight impacts to other users, particularly along bikeways and walkways.
- **Roadway Durability** can be increased by using concrete instead of asphalt for the pavement surface.
- **Railroad Connections** can be coordinated to support businesses that ship goods by rail, particularly in areas where railroad sidings can be provided.
- **Coordination with Businesses and Adjacent Jurisdictions** can ensure that local and regional freight traffic uses Pasco's freight routes to travel within the city.

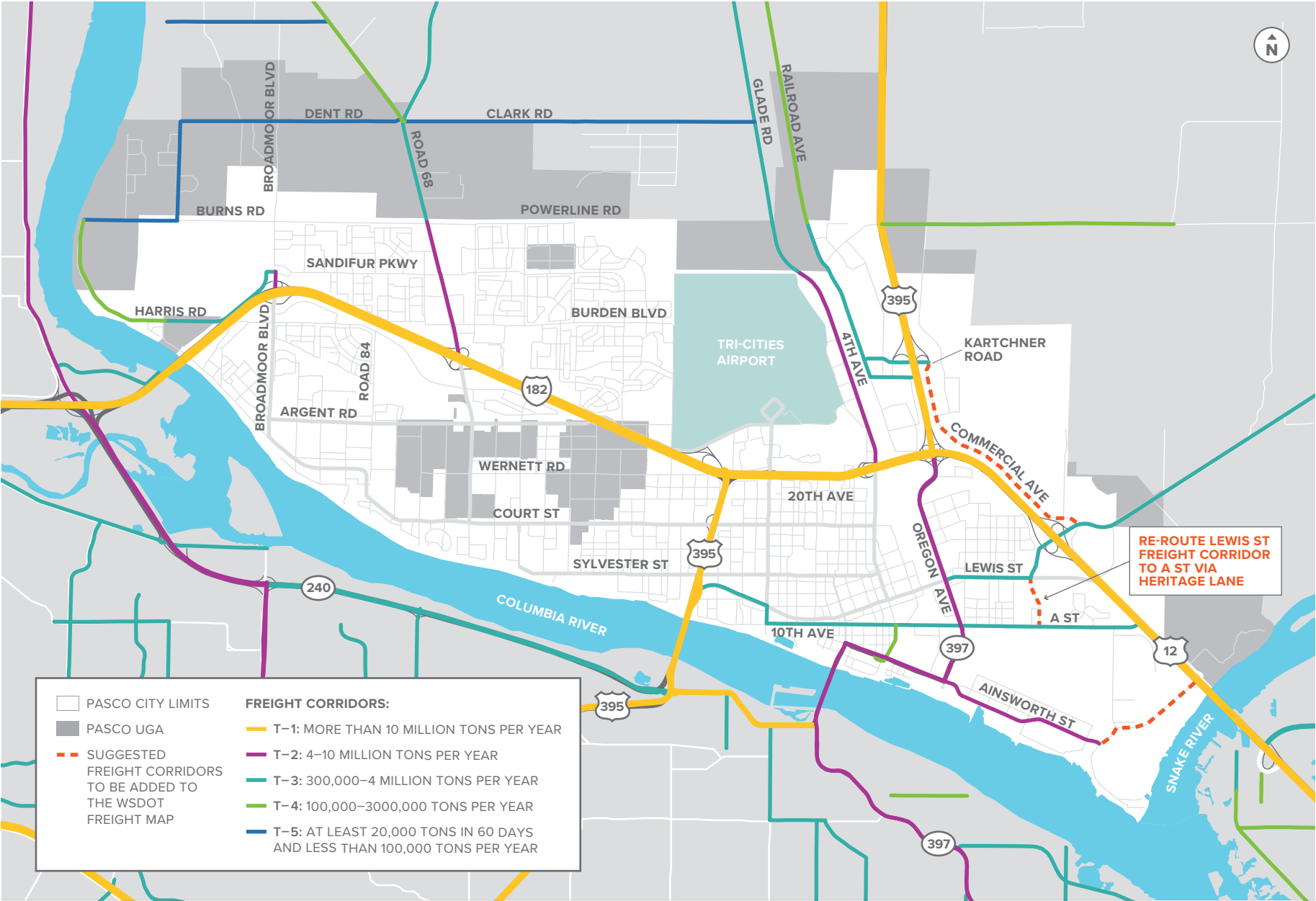


FIGURE 17. FREIGHT SYSTEM

Neighborhood Traffic Management Tools

Neighborhood Traffic Management (NTM) involves strategies to slow traffic, and potentially reduce volumes, creating a more inviting environment for pedestrians and bicyclists. NTM strategies focus on neighborhood livability on local streets, though a few can apply to collectors and arterials, such as raised median islands. Mitigation measures balance the need to manage vehicle speeds and volumes with the need to maintain mobility, circulation, and function for service providers, such as emergency responders. Examples of tools are shown in Figure 18.

Table 12 lists common NTM applications. Any NTM project should include coordination with emergency response staff to ensure that public safety is not compromised. NTM strategies implemented on a state facility would require coordination with WSDOT regarding freight mobility considerations.



FIGURE 18. SUMMARY OF NEIGHBORHOOD TRAFFIC MANAGEMENT STRATEGIES

Photo Sources: Chicanes, Chokers, Median Islands, and Speed Hump > [www.pedbikeimages.org/Dan Burden](http://www.pedbikeimages.org/Dan_Burden); Curb Extensions and Traffic Circles > [www.pedbikeimages.org/Carl Sundstrom](http://www.pedbikeimages.org/Carl_Sundstrom); Diverters > [www.pedbikeimages.org/Adam Fukushima](http://www.pedbikeimages.org/Adam_Fukushima); Raised Crosswalks > [www.pedbikeimages.org/Tom Harned](http://www.pedbikeimages.org/Tom_Harned); Speed Cushions > NACTO Urban Street Design Guide.

TABLE 12. APPLICATION OF NEIGHBORHOOD TRAFFIC MANAGEMENT STRATEGIES

NEIGHBORHOOD TRAFFIC MANAGEMENT APPLICATION	USE BY FUNCTIONAL CLASSIFICATION			IMPACT	
	ARTERIALS	COLLECTORS	LOCAL STREETS	SPEED REDUCTION	TRAFFIC DIVERSION
CHICANES			•	•	•
CHOKERS			•	•	•
CURB EXTENSIONS	•	•	•	•	
DIVERTERS (WITH EMERGENCY VEHICLE PASS-THROUGH)		•	•		•
MEDIAN ISLANDS	•	•	•	•	
RAISED CROSSWALKS			•	•	•
SPEED CUSHIONS (WITH EMERGENCY VEHICLE PASS-THROUGH)			•	•	•
SPEED HUMP			•	•	•
TRAFFIC CIRCLES			•	•	•

The City of Pasco does not currently have a formal neighborhood traffic management program. Suggested elements of a new program to be developed and implemented can include:

- Provide a formalized process for citizens who are concerned about the traffic or safety on their neighborhood street. The process could include filing a citizen request with petition signatures and a preliminary evaluation. If the evaluation finds cause for concern, a neighborhood meeting would be held and formal data would be collected and evaluated. If a problem were found to exist, solutions would be identified and the process continued with neighborhood meetings, feedback from service and maintenance providers, cost evaluation, and traffic calming device implementation. Six months after implementation the device would be evaluated for effectiveness.
- For new development proposals, in addition to assessing impacts to the entire transportation network, traffic studies for new developments must also assess impacts to residential streets. A recommended threshold to determine if this additional analysis is needed is if the proposed project increases through traffic on residential streets by 40 or more vehicles during the evening peak hour or 200 vehicles per day. Once the analysis is performed, the threshold used to determine if residential streets are impacted would be if their daily traffic volume exceeds 1,800 vehicles.

NEIGHBORHOOD TRAFFIC MANAGEMENT STRATEGIES IMPROVE NEIGHBORHOOD LIVABILITY ON LOCAL STREETS, CREATING A MORE INVITING ENVIRONMENT FOR PEDESTRIANS AND BICYCLISTS.



Access Management & Street Connectivity Standards

Access management provides safe and efficient access to the transportation system for all users. Historically, the City of Pasco only managed access through restrictions on the placement of driveways. New residential driveways must be located 25 feet from an existing intersection, while new commercial driveways must be placed in coordination with the Public Works Director.⁴ Expanded access management spacing standards which account for the different roadway functional classifications are adopted for the City of Pasco as part of the TSMP to better manage driveway construction. These standards are summarized in Table 13.

In addition to these access spacing standards, it is recommended that the city consider guidelines to enhance the system connectivity within the new neighborhoods to better balance access for all system users. As noted in previous sections of the TSMP, the public feedback during the open house events highlighted the challenges of navigating the city outside of a motor vehicle. Walking and biking and access to transit are significantly benefited by constructing neighborhoods with greater connectivity through better street and walkway spacing, and more direct routes to key destinations, such as schools, parks and transit stops. Today, the city does not provide this type of guidance, and new neighborhood circulation plans are left to the development applicants to decide.

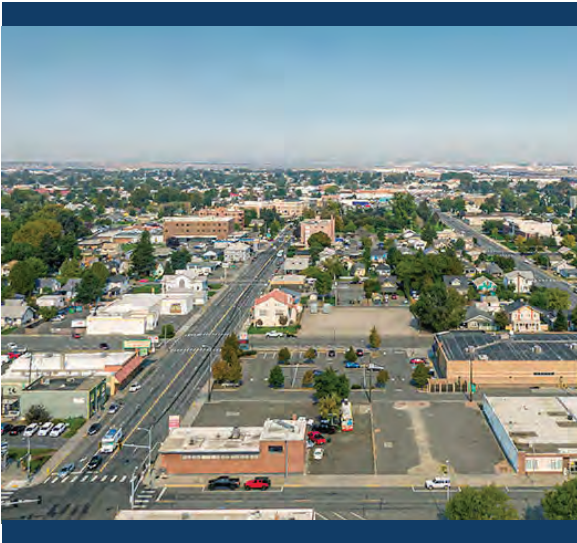


Photo Credit: Group Health Foundation

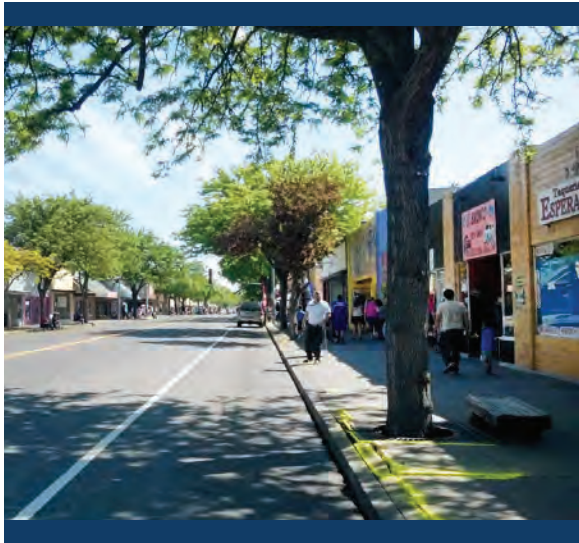


Photo Credit: Jacob Gonzalez

TABLE 13. ACCESS MANAGEMENT SPACING STANDARDS

SPACING GUIDELINES ^{A, B}	PRINCIPAL ARTERIALS	MINOR ARTERIALS	COLLECTORS	NEIGHBORHOOD COLLECTORS	LOCAL STREETS
MINIMUM DRIVEWAY SPACING (DRIVEWAY TO DRIVEWAY) ^B	300 feet	250 feet	150 feet	75 feet	N/A
MINIMUM FULL-ACCESS DRIVEWAY SPACING (SETBACK FROM INTERSECTION)	300 feet ^C	250 feet	150 feet	75 feet	25 feet
MINIMUM RIGHT-IN/ RIGHT-OUT DRIVEWAY SPACING (SETBACK FROM INTERSECTION)	150 feet ^C	125 feet	75 feet	50 feet	25 feet

^A All distances measured from the edge of adjacent approaches.

^B A property must construct access to a lower classified roadway, where possible.

^C WSDOT requires 1,320 between an interchange and the closest driveway. (Source: State of Washington. Washington Administrative Code Section 468-52-040 Access Control Classification System and Standards. <https://app.leg.wa.gov/wac/default.aspx?cite=468-52-040>)

⁴ City of Pasco. Pasco Municipal Code Section 12.04.100 Driveway Standards. <https://pasco.municipal.codes/PMC/12.04.090>

The public engagement process of the TSMP revealed a strong concern about the lack of connectivity in new neighborhoods north of I-182. To address this, guidelines were developed to clarify the community’s expectation for better circulation options in growth areas. It was recognized that it is important to balance the economic objectives of a land developer with the community values of its future residents. City standards help to assure that the shape of the resulting walking, biking and travel systems will provide a framework for new neighborhoods to thrive in the long-term, since it plays a fundamental role in defining the character of that community for generations to come.

Specifically, it is recommended to apply new guidelines for the maximum block length, block size, block perimeter and access spacing as summarized in Table 14. Under this new guidance for most zoning designations, block lengths shall not exceed 660 feet and the block perimeter shall not exceed 1,760 feet. Previously blocks could not exceed 1,320 feet for residential uses or 600 feet for commercial uses.⁵ The recommended complete street connectivity standards plus guidelines are summarized below in Table 14. To enact these recommended street spacing and connectivity changes, the city must conduct a public hearing and the city council must adopt them to become a part of the municipal code.

5 City of Pasco. Street Connectivity – Supplemental Memorandum for CA2019-013. September 17, 2020.

TABLE 14. RECOMMENDED STREET CONNECTIVITY STANDARDS

SPACING GUIDELINES	PRINCIPAL ARTERIALS	MINOR ARTERIALS	COLLECTORS	NEIGHBORHOOD COLLECTORS	LOCAL STREETS
MAXIMUM BLOCK SIZE (PUBLIC STREET TO PUBLIC STREET)	660 feet	660 feet	660 feet	660 feet	660 feet
MINIMUM BLOCK SIZE (PUBLIC STREET TO PUBLIC STREET)	300 feet	250 feet	200 feet	150 feet	125 feet
MAXIMUM BLOCK PERIMETER	1,760 feet	1,760 feet	1,760 feet	1,760 feet	1,760 feet
MAXIMUM DISTANCE BETWEEN PEDESTRIAN/ BICYCLE ACCESSWAYS ^A	330 feet	330 feet	330 feet	330 feet	330 feet

^A Spacing is the maximum of public street to public street, public street to accessway, or accessway to accessway distance.



Vehicle Mobility Targets

For the motor vehicle system, the city applies a list of performance targets to track how well the system works. These mobility targets are used in long-range planning and development review to identify deficiencies on the transportation network and can be used to identify needed improvements as growth occurs.

TWO COMMON METHODS USED TO GAUGE TRAFFIC OPERATIONS FOR MOTOR VEHICLES ARE:

VOLUME-TO-CAPACITY (V/C) RATIO

A v/c ratio is a decimal representation (between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection. The ratio is the peak hour traffic volume divided by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. A ratio approaching 1.00 indicates increased congestion and reduced performance.

LEVEL OF SERVICE (LOS)

LOS is a “report card” rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay is excessive, and demand exceeds capacity, typically resulting in long queues and delays.

Mobility targets are adopted by the City of Pasco in their comprehensive plan. The City of Pasco uses a Level of Service (LOS) standard which evaluates the average delay at signalized and unsignalized intersections. This calculation is made by using a national methodology for assessing intersection performance, as published in the Highway Capacity Manual (HCM). The current mobility targets, which apply to the weekday peak hour, are summarized below in Table 15. The City requires a lower level of service for arterial and collector roadways where higher traffic leads to higher delays. The arterial and collector standards are consistent with the mobility targets applied by BFCG and WSDOT.

TABLE 15. EXISTING MOBILITY TARGETS FOR WEEKDAY PEAK HOUR PERIODS

FUNCTIONAL CLASSIFICATION	MOBILITY TARGET
LOCAL STREETS	Level of Service C
ARTERIALS AND COLLECTORS	Level of Service D
WSDOT FACILITIES	Level of Service D

Typically, these LOS targets are applied at individual intersections. It is recommended that these targets be modified to account for the type of traffic controls being applied at each intersection, since the impact of delay differs between signals, roundabouts and stop sign controlled locations. In addition, it is recommended that another metric be added, the Volume-to-Capacity (v/c) Ratio, which measures how close to capacity a location operates at a given time of day. Using both a LOS (delay-based) and v/c (congestion-based) standard which can be helpful in situations where one metric may not be enough, such as an all-way stop where one approach is over capacity, but overall intersection delay meets standards. Each of these metrics is readily calculated by applying the appropriate HCM methods. Table 16 summarizes recommended changes to Pasco’s mobility targets. Also noted is the current target used for WSDOT intersections, which will remain at Level of Service D for all cases.

TABLE 16. RECOMMENDED MOBILITY TARGETS

TRAFFIC CONTROL TYPE	MOBILITY TARGETS	APPLICABLE ELEMENT
SIGNALIZED	Level of Service D and Volume-to-Capacity Ratio ≤ 0.90	Average for all vehicles using the intersection
ALL-WAY STOP OR ROUNDAOBOUTS	Level of Service D and Volume-to-Capacity Ratio ≤ 0.90	Worst Approach
TWO-WAY STOP ^A	Level of Service E and Volume-to-Capacity Ratio ≤ 0.95	Worst Major Approach/ Worst Minor Approach
WSDOT INTERSECTIONS	Level of Service D	Intersection or Worst Approach depending on control type

^A Applies to approaches that serve more than 20 vehicles; there is no standard for approaches serving lower volumes.



Demand Management Policies

Pasco experiences peak congestion due to single-occupant trips during peak demand times. Transportation Demand Management (TDM) aims to remove single occupant motor vehicle trips from the roadway network during peak travel demand periods which could provide one avenue for reducing pressure on key facilities. Changing users' travel behavior and providing alternative choices will help accommodate the expected growth in travel demand identified for Pasco.

Generally, TDM focuses on reducing vehicle miles traveled for large employers by promoting active and shared modes of travel. Research has shown that a comprehensive set of complementary policies implemented over a large geographic area can affect the number of vehicle miles traveled to/from that area. For TDM measures to be effective, strategies should go beyond the low-cost, uncontroversial measures commonly used such as carpooling, transportation coordinators/associations, and priority parking spaces.

Effective TDM measures include parking strategies (limiting or increasing supply in strategic locations), improved services for alternative modes of travel, and market-based incentives to encourage travel behavior changes. TDM can also include a variety of actions that are tailored to the specific needs of an area.

EFFECTIVE TDM STRATEGIES INCLUDE:

- Develop standards and policies that support alternative vehicle types and travel methods, including a network of electric vehicle charging stations, or other facilities that support Pasco's Green House Gas Emissions Reductions Policy Resolution 3853.
- Encouraging/supporting rideshare/vanpool to major employers in Benton or Franklin County and Kennewick or Richland (e.g. Hanford Nuclear Site) for employees living in Pasco.
- Establishing site development standards that require pedestrian and bicycle access through sites and connections to adjacent sites and transportation facilities, to the extent the development impacts existing access.
- Improving amenities and access for transit stops. Actions could include instituting site design requirements allowing redevelopment of parking areas for transit amenities; requiring safe and direct pedestrian connections to transit; and permitting transit-supportive uses outright in commercial and institutional zones.
- Improving street connectivity to support direct connections between residential areas and activity centers.
- Investing in pedestrian/bicycle facilities.

Opportunities to expand TDM and other measures in Pasco include developing requirements for long-term bicycle parking for places of employment above a certain size, park-and-ride facilities, major transit stops, and multi-family residential developments. Other land uses, especially activity generators, should be required to provide short-term bike parking and are encouraged to implement the long-term options.

Long-term bicycle parking options include:

- Individual lockers for one or two bicycles
- Racks in an enclosed, lockable room
- Racks in an area that is monitored by security cameras or guards (within 100 feet)
- Racks or lockers in an area always visible to employees