

CHAPTER 2

Pasco Today and Tomorrow

PASCO IS A RAPIDLY GROWING COMMUNITY IN THE TRI-CITIES REGION. THE RAPID GROWTH IS MAKING IT MORE DIFFICULT FOR RESIDENTS TO GET AROUND PASCO AND REQUIRES NEW SOLUTIONS TO MANAGE THE FUTURE GROWTH.

Pasco attracts visitors from the entire Columbia Basin, Yakima Valley, Walla Walla and Northeastern Oregon region. It is home to the regional Tri-Cities Airport, Columbia Basin College, expanding regional sports facilities, and our rapidly changing Downtown.

One feature that makes Pasco unique compared to its neighboring cities is its dependence on the four bridges over the Columbia and Snake Rivers for inter-city and regional travel (see Figure 3).



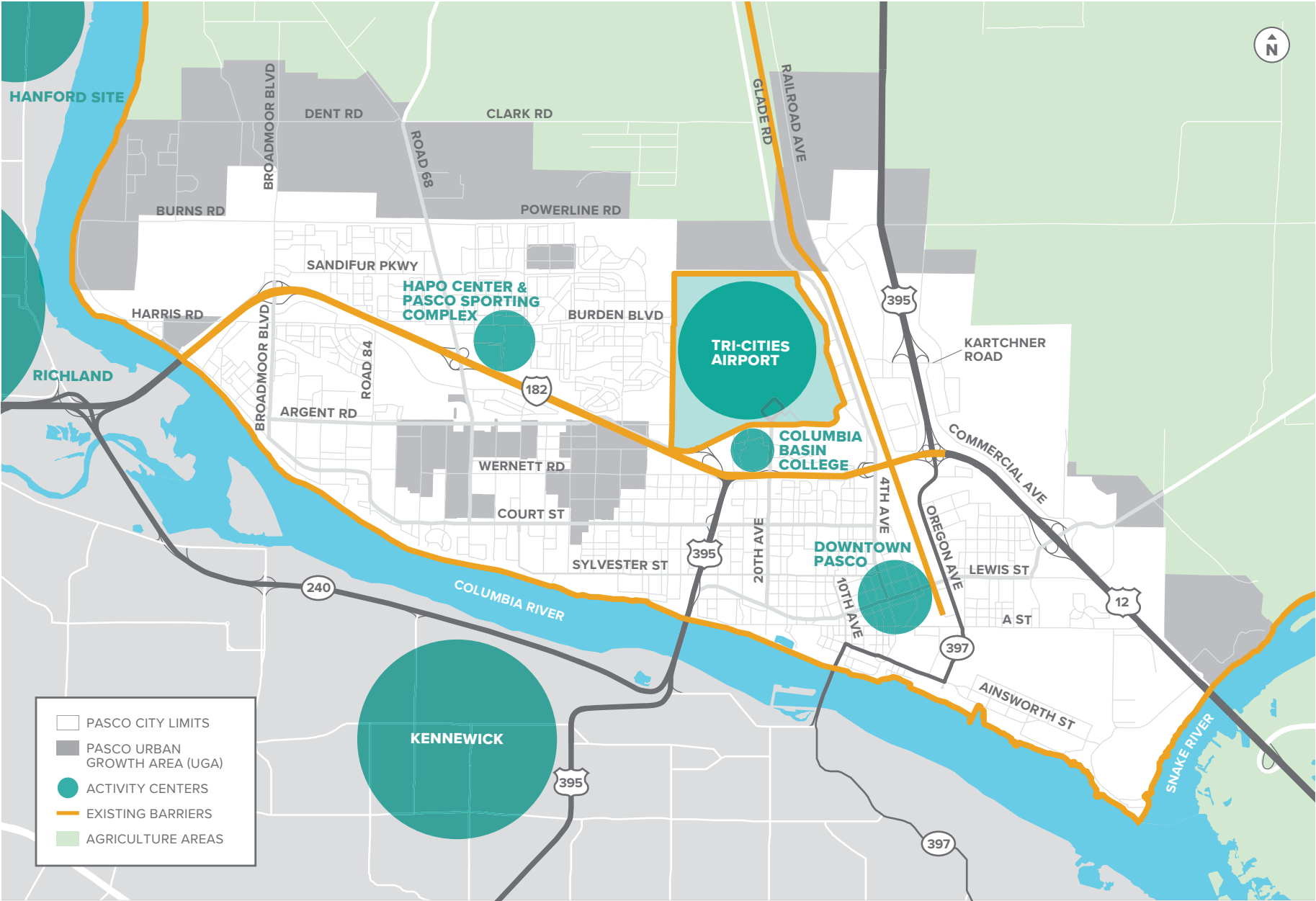


FIGURE 3. TRI-CITIES REGIONAL CONTEXT

About half of the city's residents use the three Columbia River bridges to commute to work, travel to shopping centers, and reach other regional destinations south or west of the river. This is a major constraint for vehicle traffic among the cities. Providing safe, convenient, and reliable travel across these bridges will be an important consideration in developing the Transportation System Master Plan for the City of Pasco.

Growth in Pasco has been rapid over the past 20 years, which has also increased the demand for travel across the river bridges, seen in Figure 5. The bridges with the highest traffic volumes are on Interstate 182 and US 395. They each carry about two to three times the number of cars and trucks as the other two river bridges entering Pasco, which are SR 397 and US 12. As the existing highway facilities become more congested during peak hours of the day, it extends travel times for commuters, freight traffic, and other trips made on these regional highway corridors.

Historic Growth

Pasco has experienced a population boom over the last 20 years during which time the population more than doubled, outpacing the rate of growth in neighboring Kennewick and Richland, and in Washington State overall. In recent years, development has been attracted to the lands north of Interstate 182 and west of Road 68, which offered significant vacant lands for development and convenient commuting access to regional work centers, such as the Hanford Site. Since 2010, Pasco's population has increased by 25 percent (3.1 percent annually), from 60,000 residents to 75,000 residents in 2018 while its Tri-Cities neighbors have grown by 15 percent, as illustrated in Figure 4. By way of comparison, Washington State's population grew by 12 percent during the same period.

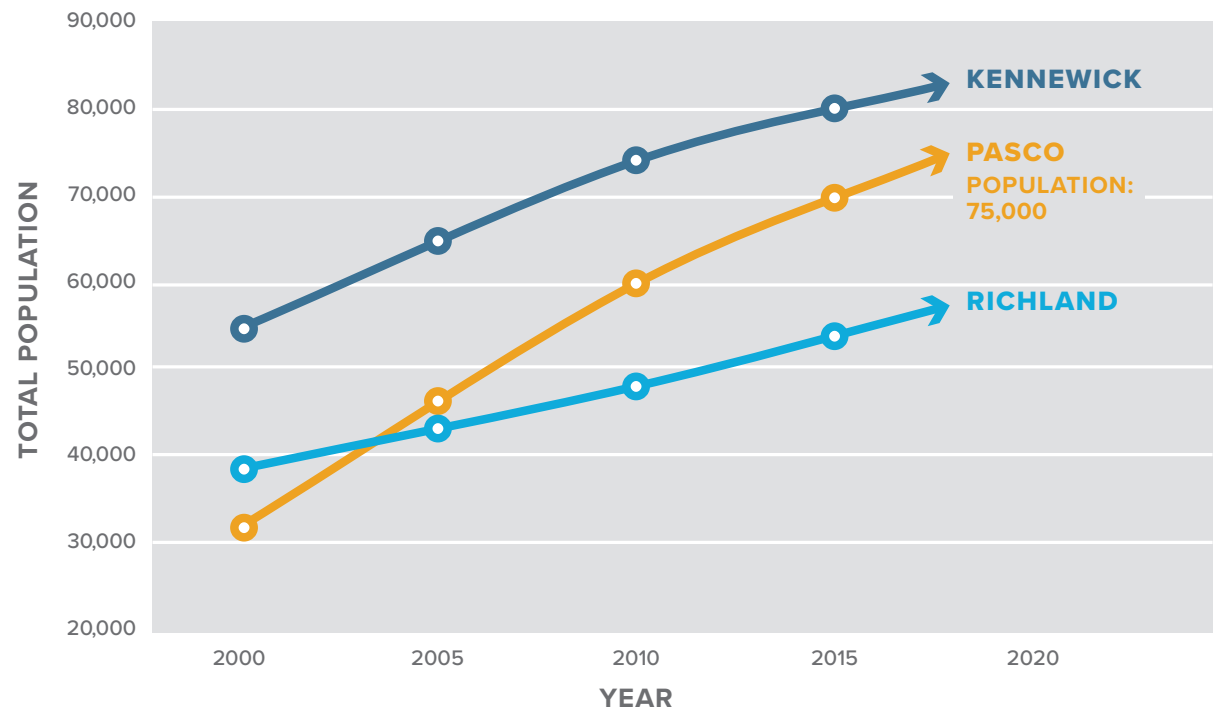


FIGURE 4. HISTORICAL POPULATION GROWTH TRENDS IN TRI-CITIES

The population growth in the Tri-Cities region and Pasco closely mirrors traffic trends on the I-182 and US 395 Columbia River bridges where volumes increased between 15 and 22 percent (2.5 to 3.7 percent annually) between 2012 and 2018 (see Figure 5).

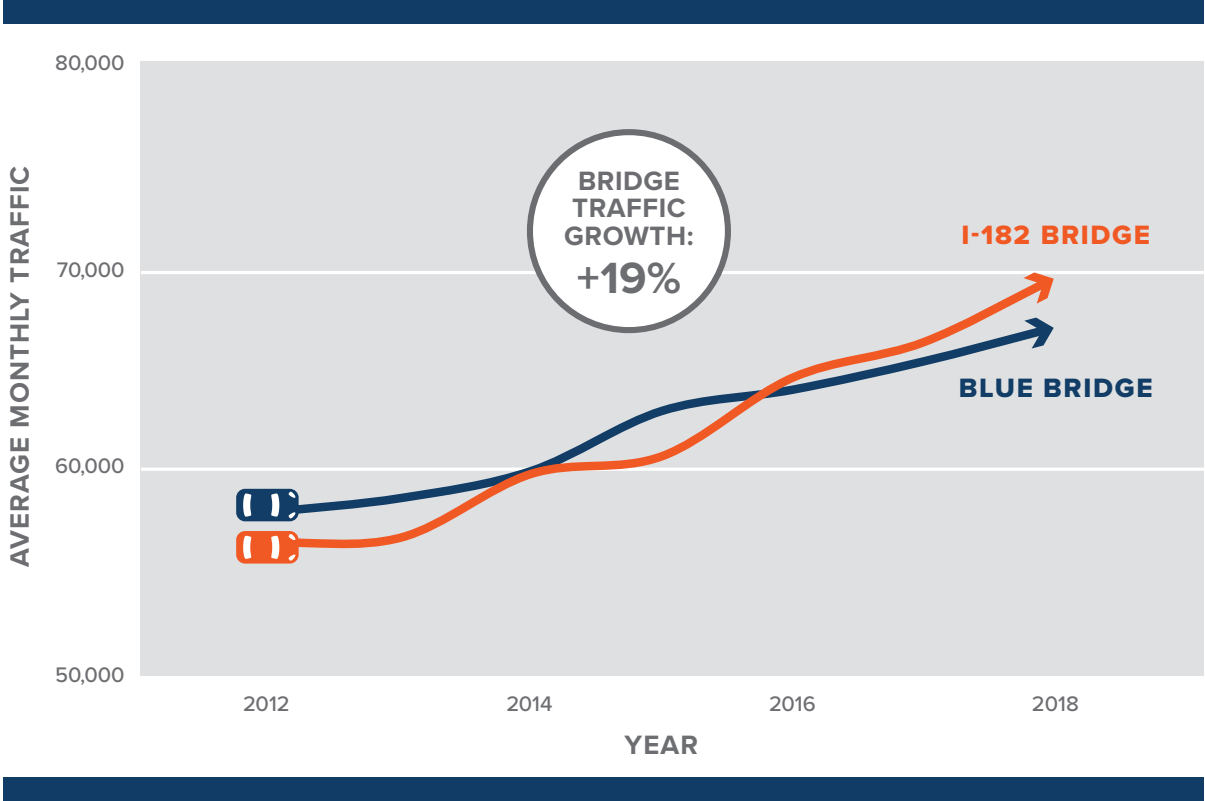


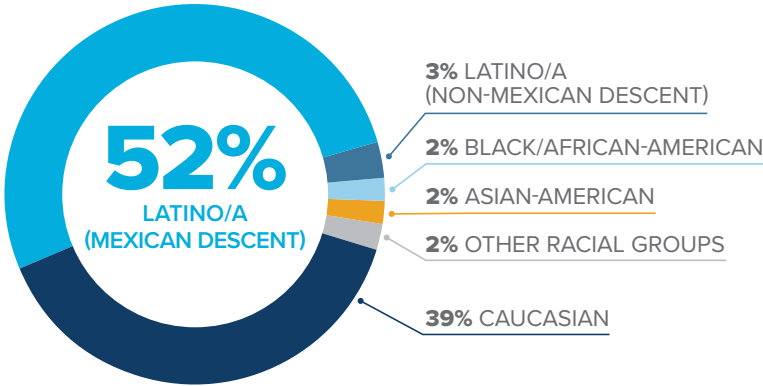
FIGURE 5. TRI-CITIES BRIDGE CROSSING TRAFFIC GROWTH TRENDS



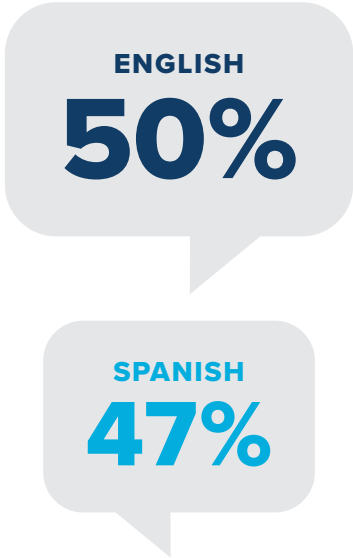
Demographics

Pasco is a majority-minority community with a large Hispanic and Spanish-speaking population. Relative to Washington State, Pasco has a higher proportion of children under age 18 and a lower median household income; 17 percent of residents live in poverty. Within Pasco, over 40 percent of senior citizens are also living with a disability (see Figure 6). Pasco’s population characteristics indicate a need for reliable alternative transportation modes to accommodate groups that cannot drive or those individuals who cannot afford to drive. This will be a significant consideration for transportation choices around community equity.

RACIAL DEMOGRAPHICS



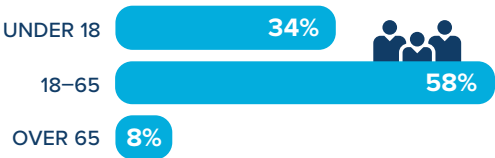
LANGUAGE SPOKEN AT HOME



SENIOR CITIZENS AND PEOPLE WITH DISABILITIES



AGE OF PASCO RESIDENTS



PASCO HAS A HIGHER PERCENTAGE OF CHILDREN UNDER 18 (34%) THAN THE STATEWIDE AVERAGE (22%)

MEDIAN HOUSEHOLD INCOME



17% OF PASCO RESIDENTS ARE BELOW THE POVERTY LINE

FIGURE 6. PASCO RESIDENTIAL DEMOGRAPHICS

Employment and School Travel Patterns

Based on mobility data¹ for the Tri-Cities region, we found that nearly half (48 percent) of Pasco's employed residents travel to job sites outside of Pasco. Residents that are commuting out of town use one of the four bridges to travel to jobs in Kennewick, Richland, or the Hanford Nuclear Site. As shown in Figure 7, bridge travel patterns mirror these destinations with the highest share (26 percent) on the Lee-Volpentest Bridge (I-182) to access jobs in Richland, Kennewick, or the Hanford site while 16 percent of commute trips use the Pioneer Memorial Bridge (US 395). The other two bridges carry a small share, three percent each.



The other half of the employed Pasco residents work in or near Central and Downtown Pasco, at commercial establishments along US 395, or in the industrial areas of eastern Pasco. Local job destinations are colored to show where the highest concentrations occur in Figure 7. Other major activity generators are the higher level schools including Chiawana High School, Pasco High School, and the Columbia Basin College.

Freight Transportation

The Port of Pasco maintains and operates several key industrial sites for the Tri-Cities region, including the Tri-Cities Airport, the Big Pasco Industrial Center, and a container barge terminal on the Columbia River. Burlington Northern-Santa Fe Railroad also maintains a major switchyard within Pasco. Freight activity is concentrated within eastern Pasco along the existing rail alignment, US 395, and SR 397/Oregon Avenue adjacent to these major industrial centers.

The composition of vehicle types using city streets was evaluated in the same StreetLight Data set to show which areas had the highest share of trucks. As shown in Figure 8, higher shares of heavy trucks were found to be concentrated east of US 395, with the highest share of truck traffic east of US 12. Bridge crossings were reviewed as well, and it was discovered that the percent of heavy freight over the Columbia and Snake Rivers ranges from six to 20 percent with the highest percent share being on the Snake River Bridge in eastern Pasco, with 20 percent of its 19,000 daily vehicles being freight trucks. By contrast, the western and northern sectors of the city had relatively light truck traffic. The truck volumes north of I-182 and west of US 395 were much lower, typically less than five percent of the total vehicle traffic, while the river bridge shares were between eight and nine percent.

¹ Employment and school travel patterns analysis conducted using StreetLight data for 2019.

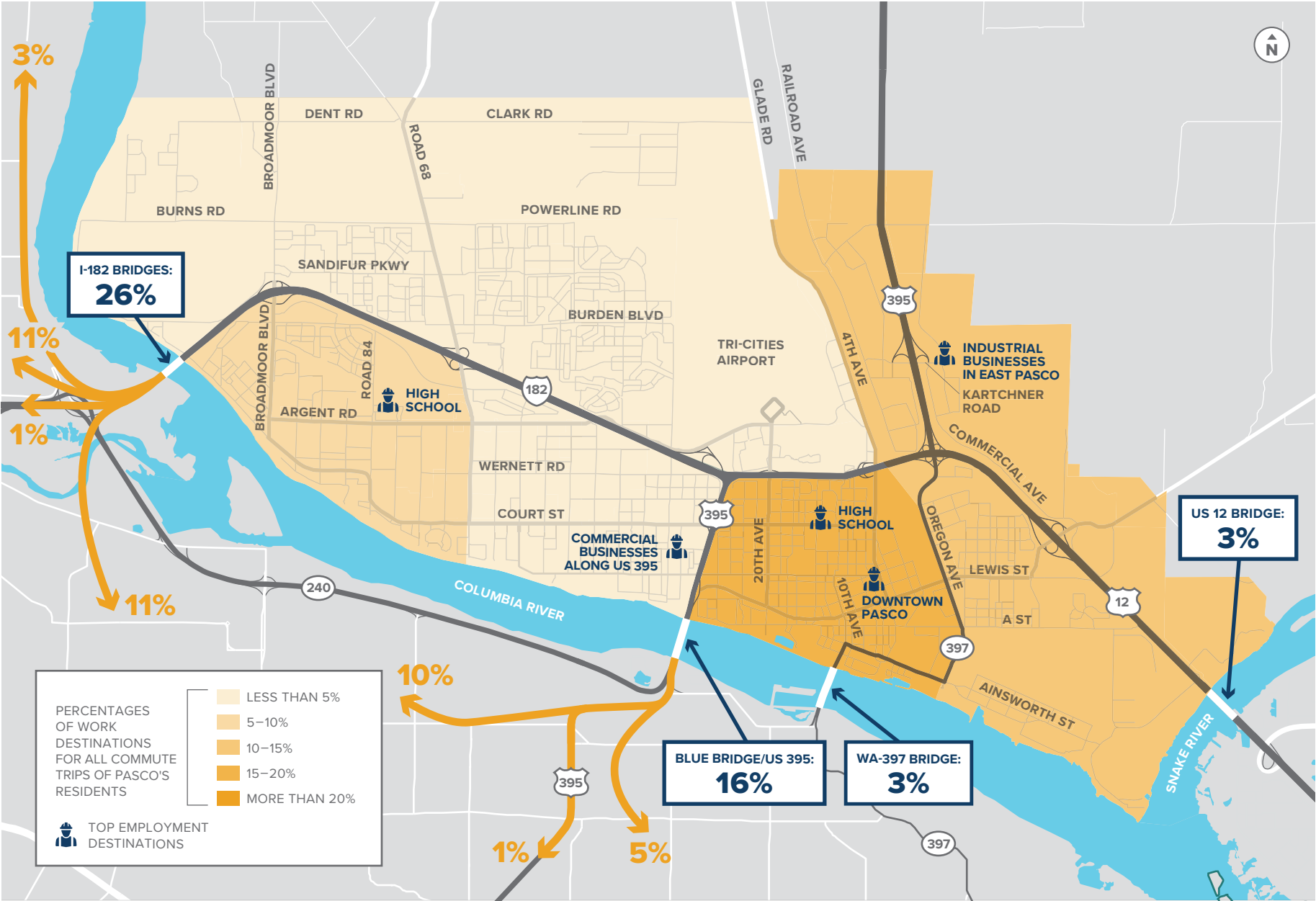


FIGURE 7. EMPLOYMENT TRAVEL PATTERNS TO/FROM PASCO (STREETLIGHT DATA, 2019)

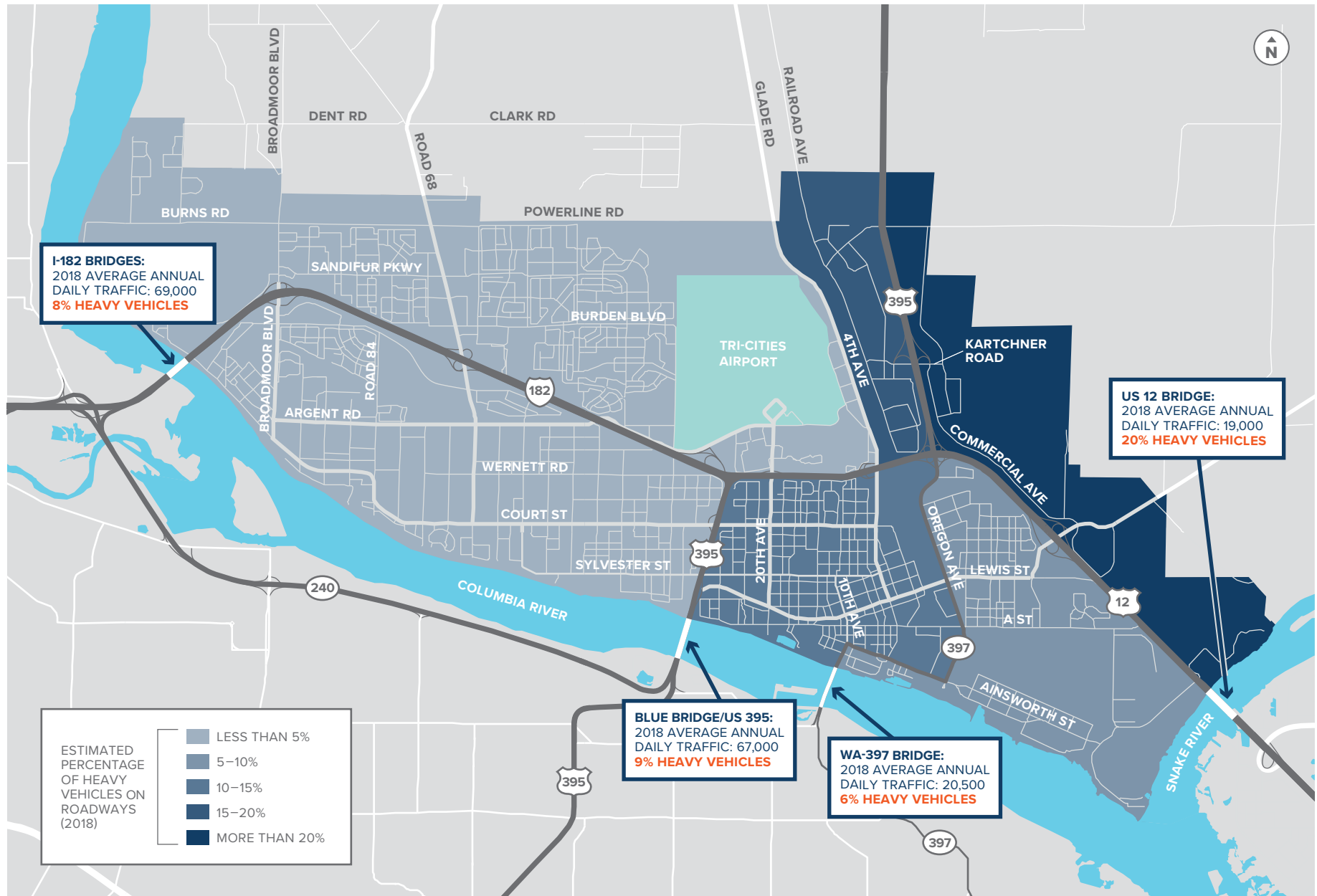


FIGURE 8. FREIGHT ACTIVITY CENTERS WITHIN PASCO (STREETLIGHT DATA, 2019)

Transit Services

The City of Pasco is served by Ben Franklin Transit (BFT) which operates fixed-route bus service, dial-a-ride, vanpool, and other demand responsive services within the Tri-Cities area. These transit options provide service within Pasco along with connections to Kennewick, Richland, and other regional destinations.

FIXED ROUTE SERVICE

BFT operates eight fixed route bus services within Pasco, including the following:

- Route 1: Pasco / Kennewick / Richland
- Route 3: Pasco / Kennewick
- Route 64: Pasco A Street
- Route 65: Pasco Lewis
- Route 66 & Route 67: Pasco Sylvester & Pasco Sandifur
- Route 225: Pasco / Richland
- Route 268: Pasco / Richland

See Figure 9 for these route locations and their existing transit stops.

Weekday service is provided between 6:00 a.m. and 10:00 p.m. although Route 64 and 268 both end service at 8:00 p.m. Service is similar for most routes for Saturday although service does not start until 7:00 a.m.; Route 268 does not provide Saturday service. Most routes operate on

30-minute headways for weekday and Saturday service, but Routes 1 and 3 operate on 15-minute headways, providing more frequent service to Kennewick and Richland from Downtown Pasco. Conversely, Routes 66 and 67 operate on hour headways, providing less frequent service to largely residential areas in western Pasco. Sunday service for Routes 1, 3, 64, and 225 began in August 2021.

BFT operates service for Pasco to and from the 22nd Avenue Transit Center which facilitates transfers between routes. Riders can park at both the 22nd Avenue Transit Center and the HAPO Center. BFT has received two multimodal transit center grants from WSDOT to further develop multimodal hubs in Downtown and West Pasco.

The bus stops within Pasco are indicated on Figure 9. Class 1 is a basic stop, which includes a sign that specifies the route number serving that location. Class 2 also has a bench for waiting riders, and Class 3 is a covered shelter with a bench.

The Class 2 and 3 bus stops often require more right-of-way space to construct these facilities consistent with ADA requirements than is provided in the current street standards. To address this, this plan update identified a wider sidewalk be built on collector and arterial roadways. In addition, the city has an exemption process to provide needed easements to BFT to accommodate these higher quality facilities.

According to the BFT Transit Development Plan, additional bus service is planned to extend coverage along Road 84 south of Argent Road, with continued service along the end of Court Street west of Road 68. The BFT plan also identified locations on the current service routes where stop upgrades are anticipated. Notable proposed changes are upgrades to Class 3 (sheltered) stops along Sandifur Parkway, and along Road 68 in the commercial area. Refer to Figure 10 for more information.

DIAL-A-RIDE SERVICE

Ben Franklin Transit operates Dial-A-Ride service for individuals with a disability between 6:00 a.m. and 10:00 p.m. Monday to Friday and between 7:00 a.m. and 10:00 p.m. on Saturday. There is no Sunday service.

VANPOOL

Vanpool services are also available for commuters traveling to Walla Walla, the Hanford Nuclear Site, and other major employment destinations.

OTHER TRANSIT SERVICES

BFT also offers CONNECT and general demand service which allows residents of Pasco to schedule rides to and from transit stops or other destinations within specific areas. These services make transit more accessible for all residents, especially those who lack convenient access to transit.

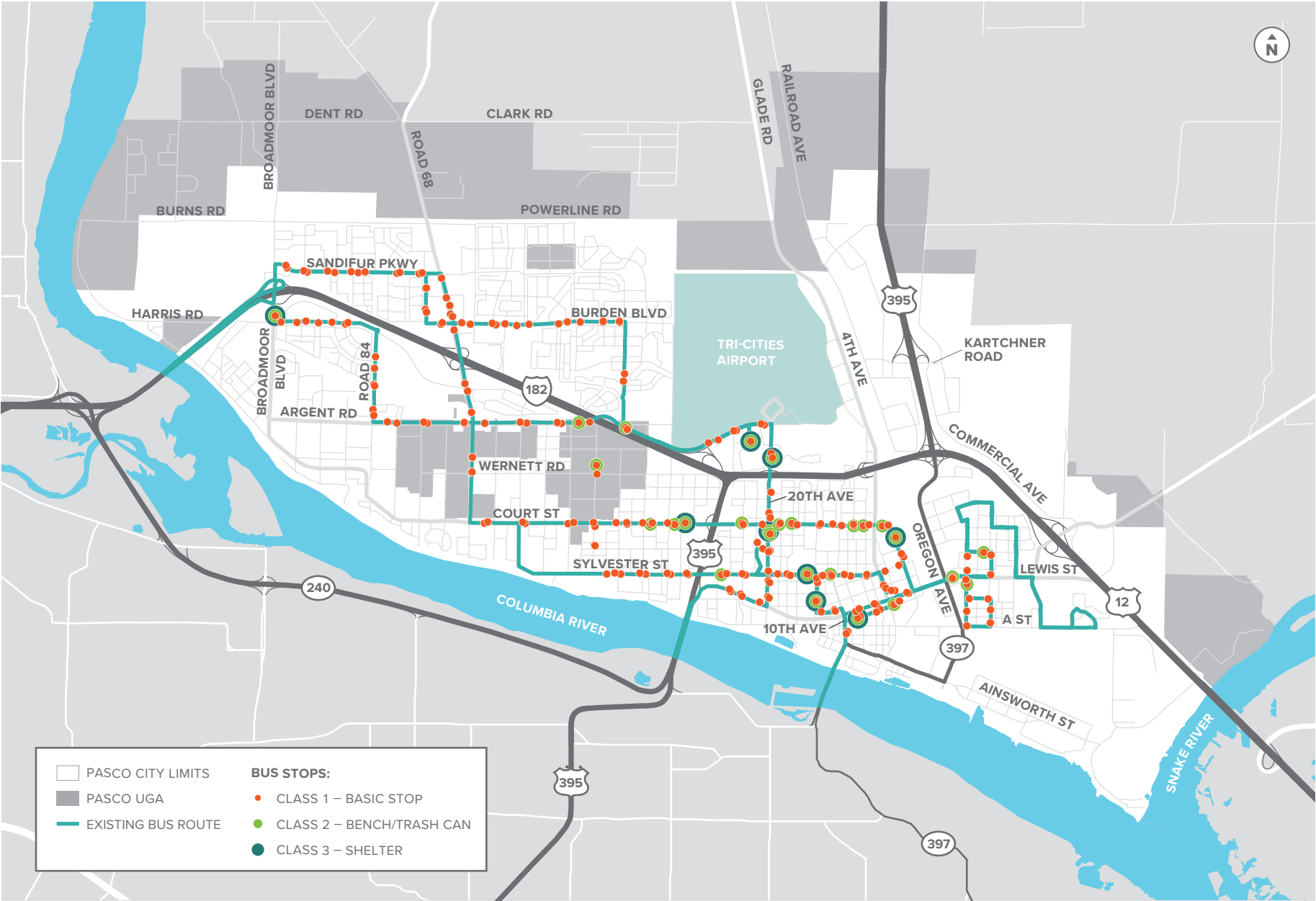


FIGURE 9. EXISTING BEN FRANKLIN TRANSIT SERVICES

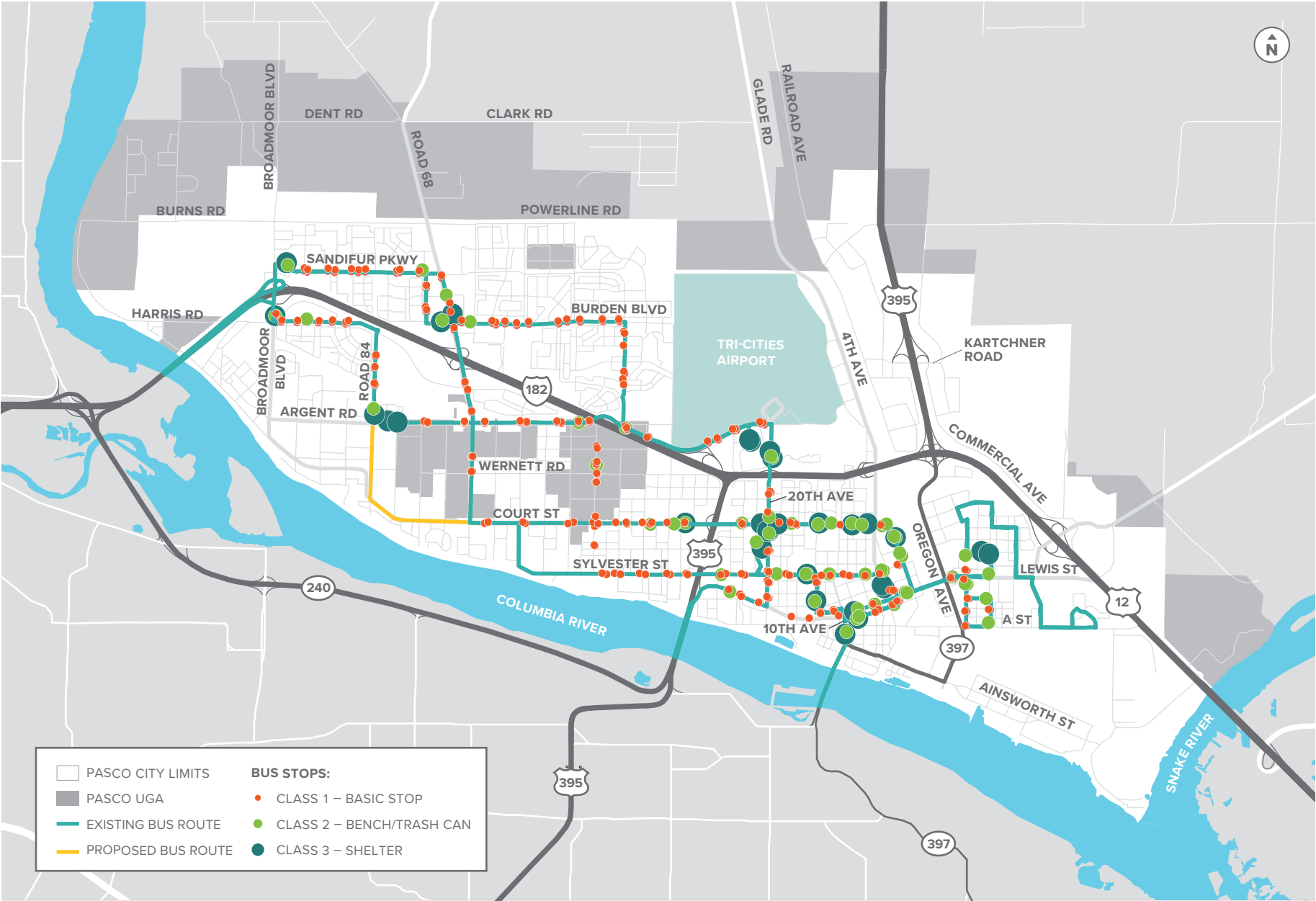


FIGURE 10. PLANNED BEN FRANKLIN STOP UPGRADES AND ROUTE EXTENSIONS

Transportation System Challenges

The transportation system performance was reviewed to understand where the system experiences high levels of congestion during weekday peak travel hours, where higher than expected crash rates occur, and where there are barriers to safe and convenient travel for all users. These issues were observed even with the short-term transportation improvements that are expected for Pasco. Figure 11 shows a compilation of our system performance findings for Pasco. The following sections highlight a few key findings that will be considered during the plan development.

For more details on how the performance assessment was completed and full listing of the findings, please refer to the Technical Memorandum #3 in Appendix B.

CONGESTION

Traffic congestion for motor vehicles is significant today at the two western interchanges (Broadmoor Boulevard and Road 68) on I-182 during typical weekday commute hours. The Road 68 interchange was observed to regularly have excessive vehicle queues blocking access to adjoining intersections and driveways. Whenever traffic has significant delays during peak travel hours, it can impact the safe and convenient traffic operations in those areas.

Fourteen intersections also had significant congestion. A total of 52 locations were monitored around the city, however, the rest of the locations all operated with low to moderate delays during the busiest hours of the day. The list of 14 intersections with concerns are noted in Figure 10. The Road 68 corridor from Sandifur Parkway, across I-182 and ending at Court Street has the highest group of congested locations. Several key locations along Argent Road, Sylvester Street, and Court Street are also noted as being congested on a regular basis.



INTERSECTIONS WITH BOTH HIGH CONGESTION AND HIGH CRASH RATES:

- ROAD 68 AT BURDEN BOULEVARD
- ROAD 68 AT COURT STREET
- 20TH AVENUE AT COURT STREET

SAFETY

Traffic safety was reviewed by considering how often crashes occurred at intersections and along roadways around the city along with the type and severity of crashes. Locations with the highest crash rates were flagged and mapped on Figure 11 (a total of five intersections). A crash rate calculation considers both the number and severity of crashes along with the traffic count at a given location. In this way, intersections with different traffic counts can be reasonably compared to each other. We found several intersections had both high congestion and high crash rates, which occurred at Road 68 at Burden Boulevard, Road 68 at Court Street, and 20th Avenue at Court Street. In addition, four corridors were flagged that had a significantly higher rate of crashes, especially between intersections. Those included Burden Boulevard, Court Street, Sylvester Street, and Lewis Street. These corridors had a total of 33 crashes involving pedestrians and bicycle riders. Each of these streets are arterial roadways that carry higher traffic volumes at increased speeds. Field observations showed that portions of these high crash corridors had frequent driveways and side streets which adds opportunities for conflicts.

In addition, the city prepared a Local Road Safety Plan in February, 2020, that confirmed these findings, and recommended safety projects at North Road 28 and West Sylvester Street; South 10th Avenue and West Lewis Street; and a road diet project on West Sylvester Street. All of these projects are included in this TSMP.

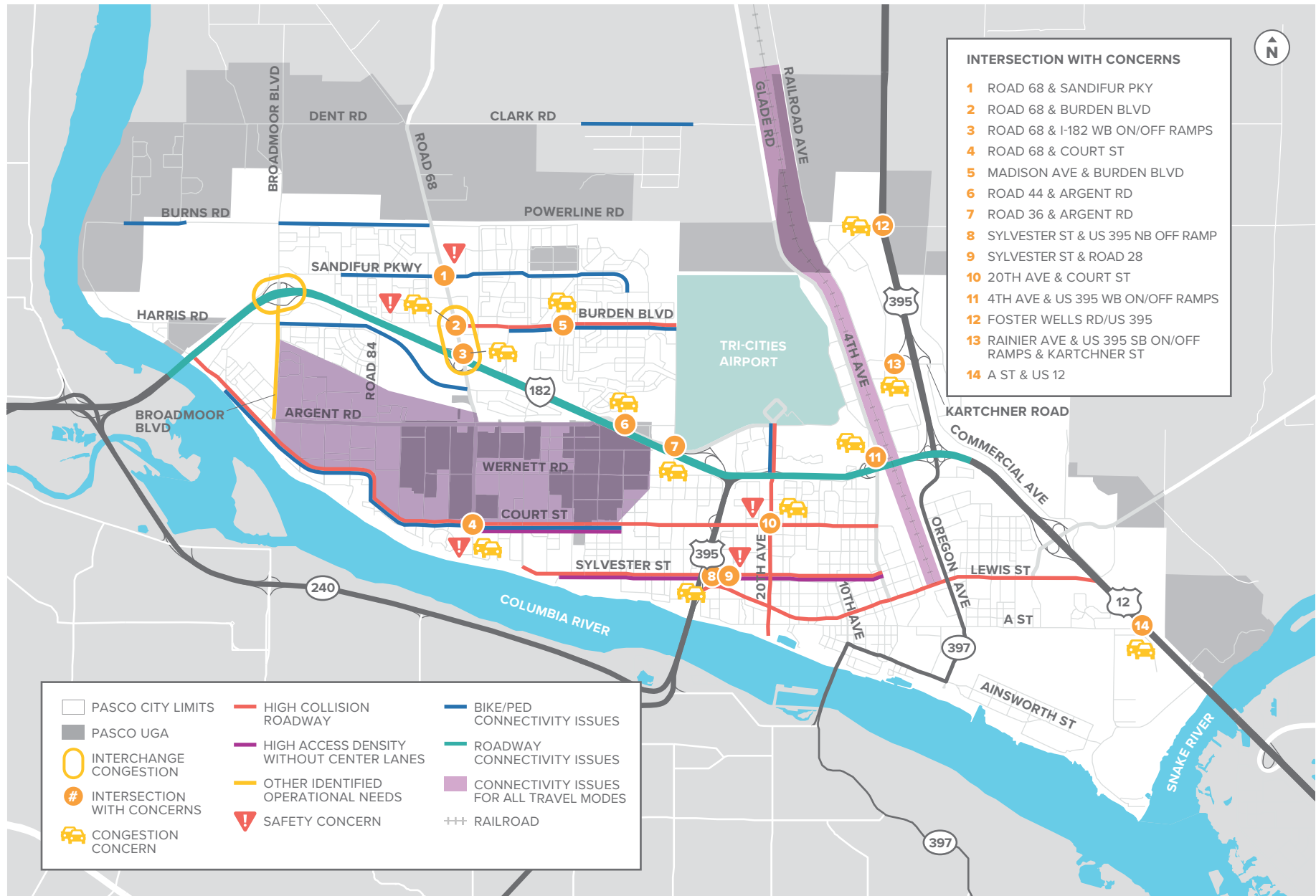


FIGURE 11. PASCO TRANSPORTATION SYSTEM CHALLENGES – TODAY

CONNECTIVITY

Connectivity describes how efficiently, directly, and conveniently a system is designed to serve its intended users. A well-connected multimodal system promotes resiliency, reduces congestion, and enhances equity for local travelers, whether they are driving, accessing transit, bicycling, or walking. For example, a well-connected roadway network provides more routes for drivers to travel between a trip's start and end points which can reduce congestion. Improving system connectivity for drivers can spread traffic more evenly across the existing roadway network, mitigate congestion due to system disruptions, and reduce the overall distance traveled by drivers. Pedestrians, bicyclists, and transit riders also benefit from a well-connected transportation system. Providing local circulation options for short trips also helps freight traffic that otherwise must compete with autos that are forced onto the arterial roadways, such as Road 68 and Broadmoor Boulevard. Long block lengths and out-of-direction travel can dissuade potential multimodal system users and incur significant costs in both time and safety for existing users who depend on these systems.

A technical review of Pasco's existing transportation system highlighted many arterial or collector corridors and areas without access for pedestrians, vehicles, transit riders, and bicyclists. In addition, public feedback identified dozens of locations where residents felt unsafe or unable to conveniently reach their intended destination. A few specific examples where connectivity challenges were flagged include the following:

- The I-182 freeway corridor divides Pasco in half and provides very limited opportunities to cross over the freeway. Local freeway interchanges have inadequate facilities for walking and biking, which compound the barriers for non-motorized travel. Further, the long spacing between these interchanges exacerbates the barrier for walking and bicycling travel between either sides of the highway.
- The Pasco Airport, and the Pasco rail yards represent major barriers to intra-city travel.

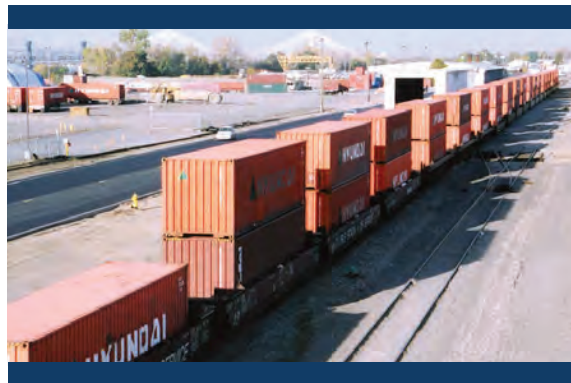


Photo Credit: City of Pasco

- In portions of unincorporated Franklin County within Pasco (for example, south of I-182), historical rural development has created a roadway network with limited east-west street connections and limited north-south street connections across the Franklin County Irrigation Canal.
- Newer residential developments adjacent to Burden Boulevard and Sandifur Parkway have limited connections to adjoining services and neighborhoods.

It is acknowledged that the city does have two extensive east-west trail corridors to serve walking and bicycling. These include the trail immediately north of I-182 between Broadmoor Boulevard and Argent Road. This provides connections to adjoining neighborhoods and to Road 58. Another regional trail borders the Columbia River between Sacajewea State Park and Road 100 with intermittent connections to city streets.

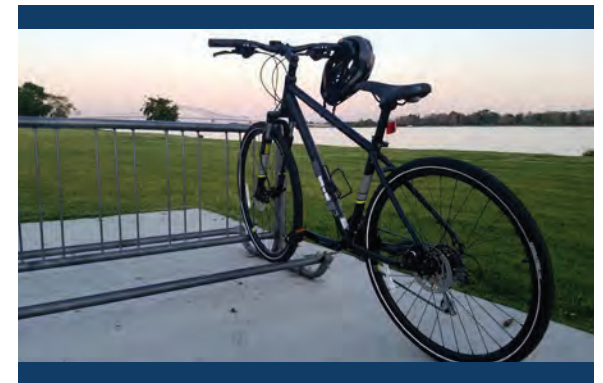


Photo Credit: Jacob Gonzalez



In many areas of the city, the transportation system does not support travel for Pasco residents without a car. Notable corridors that require attention are portions of Burns Road, Sandifur Parkway, Burden Boulevard, Court Street and Sylvester Street. For automobile drivers, long block lengths and limited access options increase out-of-direction travel and concentrate higher traffic volumes at the entry points to the neighborhoods. The residents that live adjacent to these entry/exit points experience significantly higher traffic volumes than others in the same neighborhood. These same features also significantly increase the distance that must be traveled by pedestrians or bicyclists to access transit or other destinations, making it more difficult to walk or bike in Pasco.

The current transit service routes generally are within one-quarter to one-half mile as the crow flies, to many of the key destinations and neighborhoods within the existing city limits, as shown in Figure 8, but limited street connectivity in certain areas puts these stops beyond a reasonable walking distance for many residents. Today, the exceptions are in the industrial areas east of US 12, and the edges of the urban area, particularly in the southern portions of Broadmoor Boulevard and westerly end of Argent Road. As noted previously, BFT is planning to extend bus route services along Road 84 south of Argent Road connecting to Court Street.

In general, as new development occurs, there is an opportunity for the city and its regional partners to provide better quality and more consistent connection options as part of the new neighborhood designs. This will enable city residents, employees, and visitors to have safer and more convenient access to transit services and general walking and biking trips. The primary growth area is north of I-182 in the greater Broadmoor Boulevard Area. As new streets and neighborhoods are developed, providing direct, safe, and convenient walking and bicycling access to existing and planned transit routes will be critical to maintaining a safe and reliable transportation options for our residents.

Forecasted Growth In Pasco

The Benton-Franklin Council of Governments (BFCG) travel demand model was applied to forecast 2040 travel demand within the City of Pasco, and the resulting traffic volumes were evaluated at study intersections by the project team to flag major degradations or changes in traffic operations compared to present day conditions.

Forecasts were developed from the Base Year (2015) and Future No-Build (2040) BFCG regional travel demand model, following the process described in the Traffic Analysis and Forecasting Methodology memo.² Key assumptions are highlighted in the following sections along with performance results.

The travel demand forecasting is directly influenced by expected land use growth throughout the Tri-Cities region. For this Transportation System Master Plan, the BFCG model was updated to a 2040 horizon year, by refining the previous 2017–2037 Pasco Comprehensive Plan Update land use to reflect the Broadmoor Master Plan and Urban Growth Area (UGA) expansion that was identified

during the Comprehensive Plan Update. The updated 2040 land use significantly changed both the geographic distribution of growth and population and employment projections for the City of Pasco and its UGA. The land use totals are summarized in Table 1.

The 2040 land use assumptions are the catalyst for the forecasted growth and changes of traffic patterns within the City of Pasco. Significant shifts are expected north of I-182 as higher office, retail, and mixed-use growth in the Broadmoor area reduced the number of residents traveling out of Pasco for jobs, goods, and services. Reduced regional travel was also shown to reduce peak demands at interchanges with I-182, compared to historical growth patterns in Pasco where a high share of local residents left the city for employment and shopping purposes. Overall, households are predicted to grow by 81 percent from 2015 (the BFCG model base year) to 2040, while employment is predicted to grow by about 73 percent during the same period.

TABLE 1. PASCO COMPREHENSIVE PLAN URBAN GROWTH AREA

LAND USE TOTAL	2015	2040	PERCENT GROWTH
HOUSEHOLDS	22,500	39,645	81%
POPULATION	70,855	120,275	71%
EMPLOYMENT	19,765	33,895	73%

² DKS Associates. Traffic Analysis & Forecasting Methodology memo. July, 2020
³ Benton-Franklin Council of Governments. Transition 2040, Appendix F. 2018.

EXPECTED TRANSPORTATION IMPROVEMENTS

It was assumed that near-term transportation improvements that are reasonably likely to be funded and constructed by the cities of Pasco, Kennewick, Richland, West Richland, and WSDOT will be operational by 2040. These new improvements projects within Pasco include the following. As noted, several of these projects have been recently completed, while others are actively in development or preparing for construction:

- Argent Road Improvements (Road 40 to 20th Avenue) - under construction
- Wrigley Drive Extension (Convention Drive to Clemente Lane) - completed
- Chapel Hill Boulevard Extension (Road 84 to Road 68) - completed
- Sandifur Parkway Improvements (Road 68 to Convention Drive)
- Road 68 Widening (I-182 to Argent Road) – in progress
- Burns Road Improvements/Extension (Road 52 to Pasco City Limits)
- Lewis Street Downtown Overpass – in progress

Other projects included in the 2040 BFCG model outside of Pasco are summarized in Transition 2040, the Tri-Cities Metropolitan Area Regional Transportation Plan.³

System Conditions After Growth

The system performance with growth in 2040 was re-evaluated to determine if traffic congestion would reach unacceptable levels with the added traffic volumes. We found that sixteen intersections would drop below the agency's target, which is LOS D. This corresponds to significant delay for the average vehicle using that location during commute hours. The locations that are expected to have major congestion issues are mapped in Figure 12 and listed in Table 2. These locations and the roadways serving them were further reviewed to help gauge the scale and nature of system improvements that would adequately serve the higher travel demands, and recommendations are made in the following section.

The traffic operations results showed increased congestion and below standard operating conditions throughout much of the City of Pasco west of US 395 (south), and in and around the industrial employment growth expected to occur along US 395 (north) and US 12. The Broadmoor Boulevard and I-182 interchange ramp terminal intersection failures were particularly concerning, as ramp queues could lead to safety and operations issues on I-182. The operations issues at the US 12 and A Street intersection, the US 395 and Kartchner Street interchange, and the 4th Avenue and I-182 interchange are of particular concern for freight movement, as these are all key gateways into the City of Pasco's industrial growth centers.

LEVEL OF SERVICE (LOS) For motor vehicles, the LOS is an indicator of how much extra time it takes to travel through an intersection during busy travel hours. The LOS scale ranges from little or no delay (LOS A) to extreme delay (LOS F). Pasco's target is LOS D, which is moderate delay. During off-peak hours, delay conditions improve significantly. See Appendix C for more information.

TABLE 2. INTERSECTIONS WITH MAJOR CONGESTION BY 2040 (OPERATING AT LOS E OR F)

#	STUDY INTERSECTION	AM PEAK HOUR LEVEL OF SERVICE		PM PEAK HOUR LEVEL OF SERVICE	
		EXISTING	FUTURE NO-BUILD	EXISTING	FUTURE NO-BUILD
1	BROADMOOR BOULEVARD & I 182 WB ON RAMP/I 182 WB ON/OFF RAMP	B	B	A	E
2	BROADMOOR BOULEVARD & I 182 EB OFF RAMP/I 182 EB ON RAMP	B	C	B	F
8	SYLVESTER ST & US 395 NB OFF RAMP	A/C	A/C	A/E	A/F
11	4TH AVE & US 395 WB ON/OFF RAMP	A	B	D	E
13	US 395 & FOSTER WELLS RD	A/F	C/F	B/F	C/F
14	RAINIER AVE/US 395 SB ON/OFF RAMP & KARTCHNER ST	A/C	A/D	B/F	B/F
15	COMMERCIAL AVE/US 395 NB ON/OFF RAMP & KARTCHNER ST	A/D	A/E	A/D	A/F
18	HWY 12 & E A ST	A/C	A/E	A/C	A/F
19	ROAD 68 & BURDEN BLVD	E	E	E	E
20	BROADMOOR BOULEVARD & DENT RD/ EDELMAN RD			A/C	A/F
27	ROAD 68 & SANDIFUR PKWY			C	E
30	ROAD 68 & COURT ST			A/D	A/F
31	ROAD 60 & COURT ST			A/C	A/F
32	MADISON AVE & BURDEN BLVD			A/F	A/F
33	ARGENT RD & RD 44			A/F	B/F
52	CEDAR AVE & LEWIS ST			A/C	A/E

Red text indicates where conditions will exceed accepted LOS limits.

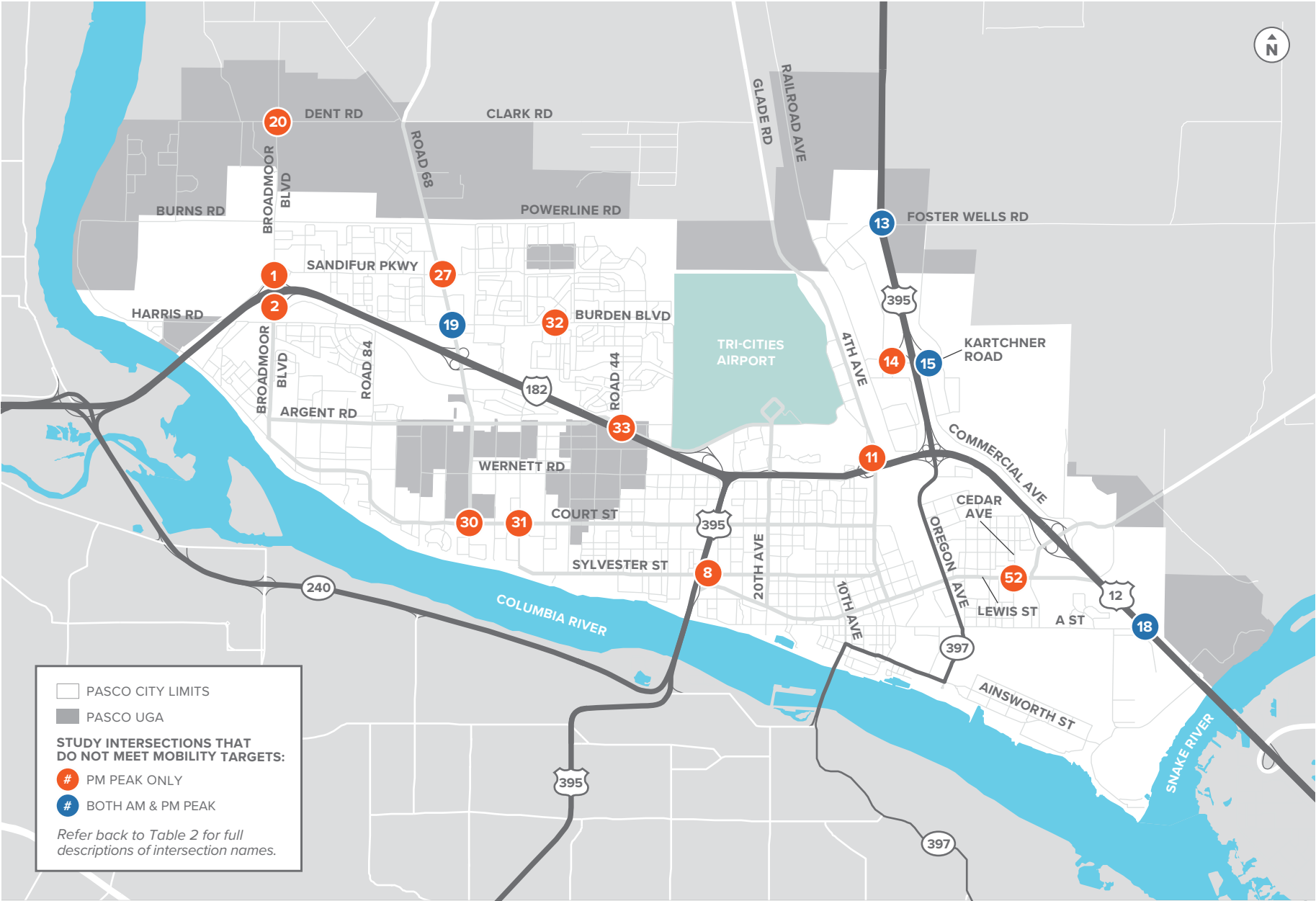


FIGURE 12. INTERSECTIONS WITH MAJOR CONGESTION BY 2040