CIVIL ENGINEERING / SURVEYING / UTILITIES

DRAFT

January 18, 2023

Re: Traffic Impact Study for 710 NW Arkansas Way – Panda Express

BHC has been asked to review the traffic impact of a proposed redevelopment at 710 NW Arkansas Way in Chehalis, Washington. The development involves adding a Panda Express restaurant to an existing parking area within the Twin City Town Center shopping area.

The existing parcel is 2.23-acres, which is proposed to be split into two parcels. The proposed Panda Express will be located on a 1-acre parcel, and the other portion of the lot will remain unchanged.

EXISTING CONDITIONS

The location is currently an existing parking area and vacant pad site at the dead-end road of NW Arkansas Way west of Louisiana Avenue. Arkansas Way is a two-lane roadway with a center turning lane. Vehicles entering and exiting the site west of the existing shared driveway between Wal-Mart and Home Depot will use the proposed drive for the restaurant or traverse to the end of Arkansas Way to an access drive intended for larger vehicles. Approximately 400 feet east of the site is a two-lane roundabout at the intersection of NW Arkansas Way and Louisiana Avenue. All vehicles coming to the site that are not already in the shopping center will come from Louisiana Avenue. Louisiana Avenue is a four-lane arterial road with a center turning lane.

The surrounding area is located in the Twin City Town Center shopping area, which is anchored by Walmart and Home Depot. The Walmart and Home Depot parking lots both provide several access points to Louisiana Avenue along the shopping center frontage. The shopping center is west of Interstate 5 between Chehalis and Centralia. To the west of the shopping center is the Chehalis-Centralia Airport. A general site location may be seen in Figure 1.

EXISTING CONDITIONS (continued)

Figure 1: Project Location

PROPOSED CONDITIONS

The proposed site is a 2,600 sf Panda Express restaurant with a drive-thru and associated parking. The proposed site includes one main driveway from NW Arkansas Way and another driveway to the Home Depot site. A proposed site layout may be seen below in Figure 2.

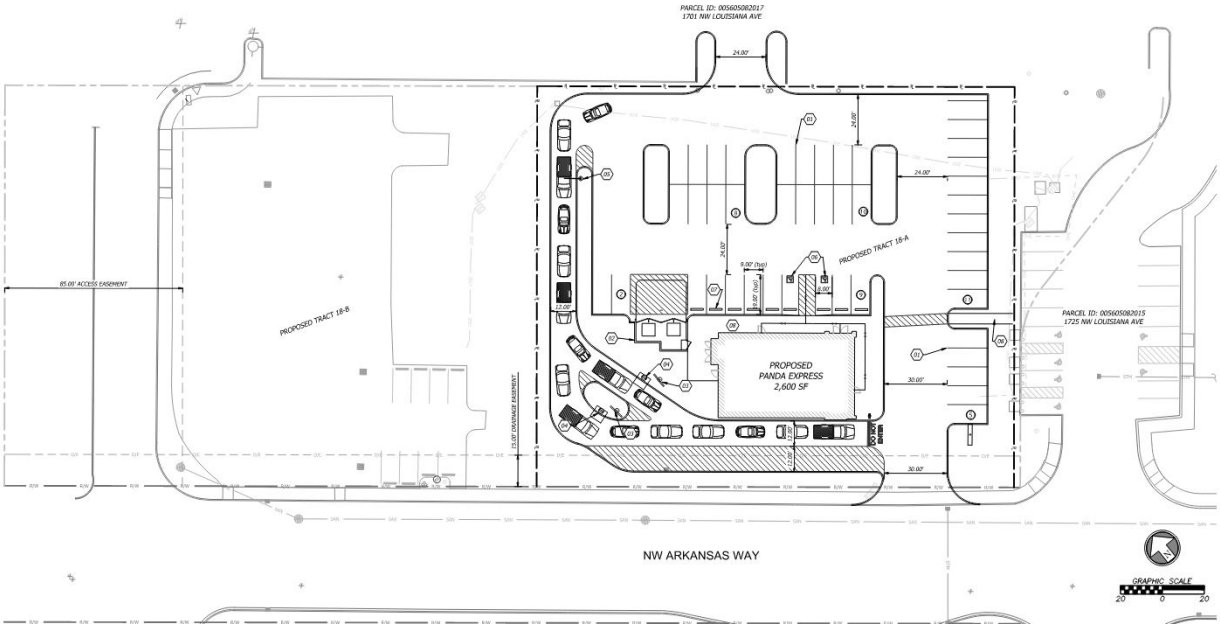

Figure 2: Proposed Site Layout

TRIP DISTRIBUTION

With the project location situated within a well-established shopping center, a large percentage of the restaurant's traffic is expected to be pass-by and/or internal capture trips already on the surrounding roadway network. To account for this, an acceptable ITE pass-by percentage will be applied to the trip generation.

A review of the surrounding population centers and existing roadway network was completed to estimate a reasonable trip distribution. Several assumptions were made for the distribution and are outlined below.

1) 30% of site generated traffic is expected to originate from Centralia or other points to the north of the site, which are expected to utilize southbound Louisiana Avenue or Interstate 5.

2) 70% of site generated traffic will originate from Chehalis or other points from the south or east of the site, which are expected to utilize northbound Louisiana Avenue, Interstate 5 or Chamber of Commerce Way (Commerce Way).

3) Local traffic generated by the proposed site, not already visiting the site as a pass-by trip, is typically knowledgeable of the local frontage road system and Interstate 5 traffic.

4) For the local site generated traffic from the Centralia area, 2/3rds of the southbound traffic is expected to utilize Louisiana Avenue as opposed to Interstate 5.

5) For the local site generated traffic from the Chehalis area, the northbound traffic is expected to be fairly split between Louisiana Avenue, Interstate 5, and Commerce Way. A slightly larger portion of trips are expected to utilize Commerce Way, as there is a denser population center attributable to that route.

Figure 3 illustrates the entering and exiting trip distribution percentage selected based on the assumptions outlined on the previous page.

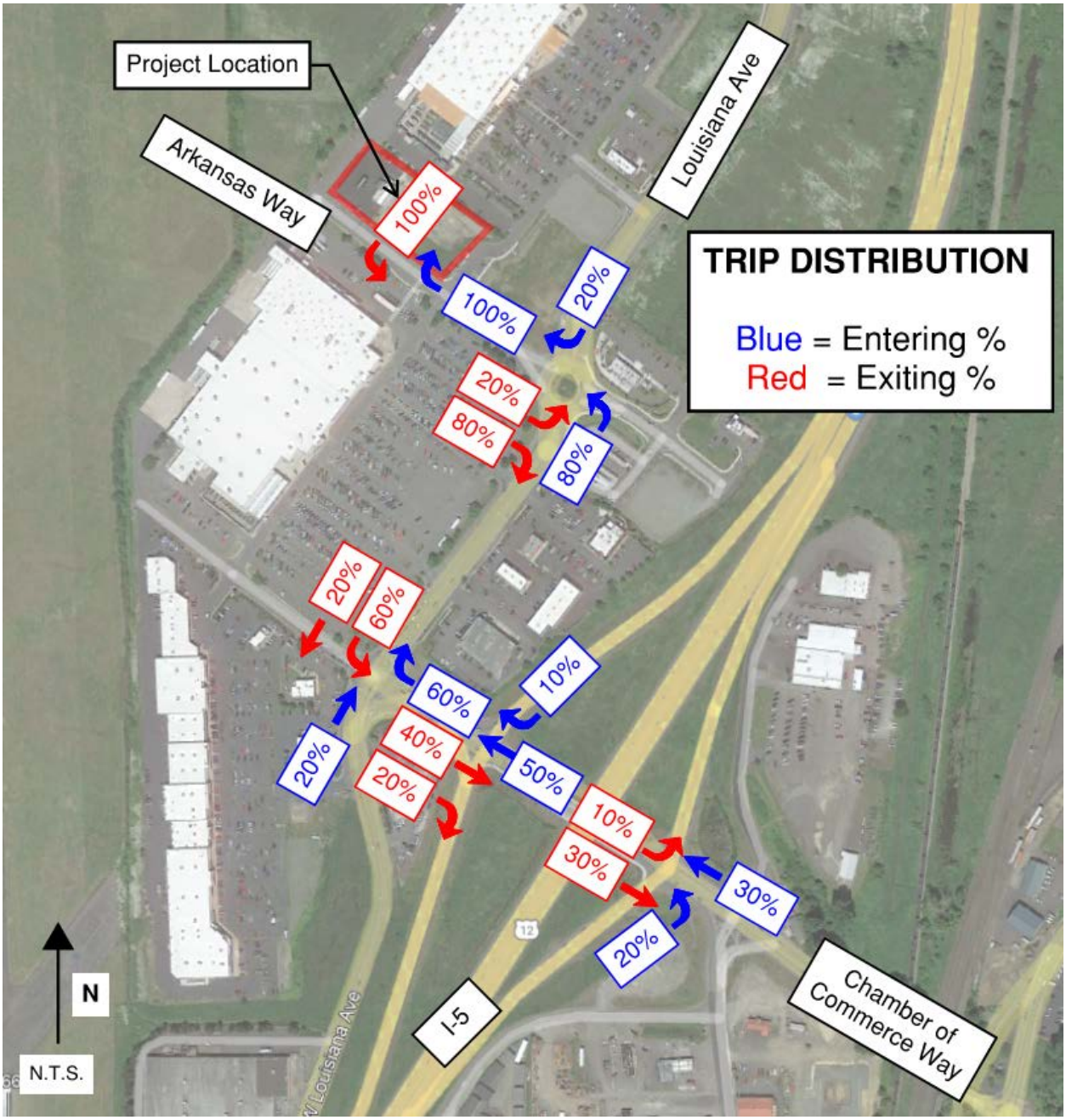

Figure 3: Proposed Trip Distribution

TRIP GENERATION

A trip generation analysis was performed using the ITE TripGen web-based app. The 11th edition of the ITE Trip Generation Manual was used. The land use code selected for the proposed use is 934 – Fast-Food Restaurant with Drive-Through Window.

Because the site is located in a commercial shopping center, the proposed trips during the peak hour on a Saturday were generated as well as for the PM peak hour. Panda Express restaurants are not open during the AM peak hour, and thus a trip generation was not calculated for the AM peak hour condition. A summary of the proposed trips may be seen in Table 1.

Table 1 – Proposed Trip Generation

					Trip Ends		
ITE Code	**ITE Land Use**	**Variable**	**Value**	**Avg. Rate**	**Total**	**Enter**	**Exit**
Saturday Peak Hour							
934	Fast-Food Restaurant with Drive-Through Window	Per 1000 SF	2.6	55.25	144	73	71
			Total Trips		**144**	**73**	**71**
PM Peak Hour							
934	Fast-Food Restaurant with Drive-Through Window	Per 1000 SF	2.6	33.03	86	45	41
			Total Trips		**86**	**45**	**41**

TRIP GENERATION (continued)

Pass-By Assumption

Not all traffic entering or exiting a site driveway is necessarily new traffic added to the roadway network. The actual amount of new traffic is dependent upon the purpose of the trip and route used from its origin to its destination. For example, retail-oriented developments such as shopping centers, restaurants, service stations, and convenience markets are often located adjacent to busy roads with the intent of attracting motorists already on the roadway network. These developments attract a portion of their trips from existing traffic passing the site. Thus, these "pass-by" trips do not add new traffic and may be reduced from the total external trips generated by a study site.

Considering the proposed fast-food land use in the existing shopping center, an average pass-by percentage reduction of 50% is an acceptable practice.

The result of applying a 50% pass-by reduction rate to the trip ends shown in Table 1 may be seen in Table 2.

Table 2 – Proposed Trip Generation (Pass-By Applied)

					Trip Ends		
ITE Code	**ITE Land Use**	**Variable**	**Value**	**Pass By**	**Total**	**Enter**	**Exit**
Saturday Peak Hour							
934	Fast-Food Restaurant with Drive-Through Window	Per 1000 SF	2.6	50%	73	37	36
			Total Trips		**73**	**37**	**36**
PM Peak Hour							
934	Fast-Food Restaurant with Drive-Through Window	Per 1000 SF	2.6	50%	43	22	21
			Total Trips		**43**	**22**	**21**

The trips in Table 2 will be applied to the surrounding roadway network by using the proposed trip distributions in Figure 3. The results may be seen in Figure 4 on the following page.

TRIP GENERATION (continued)

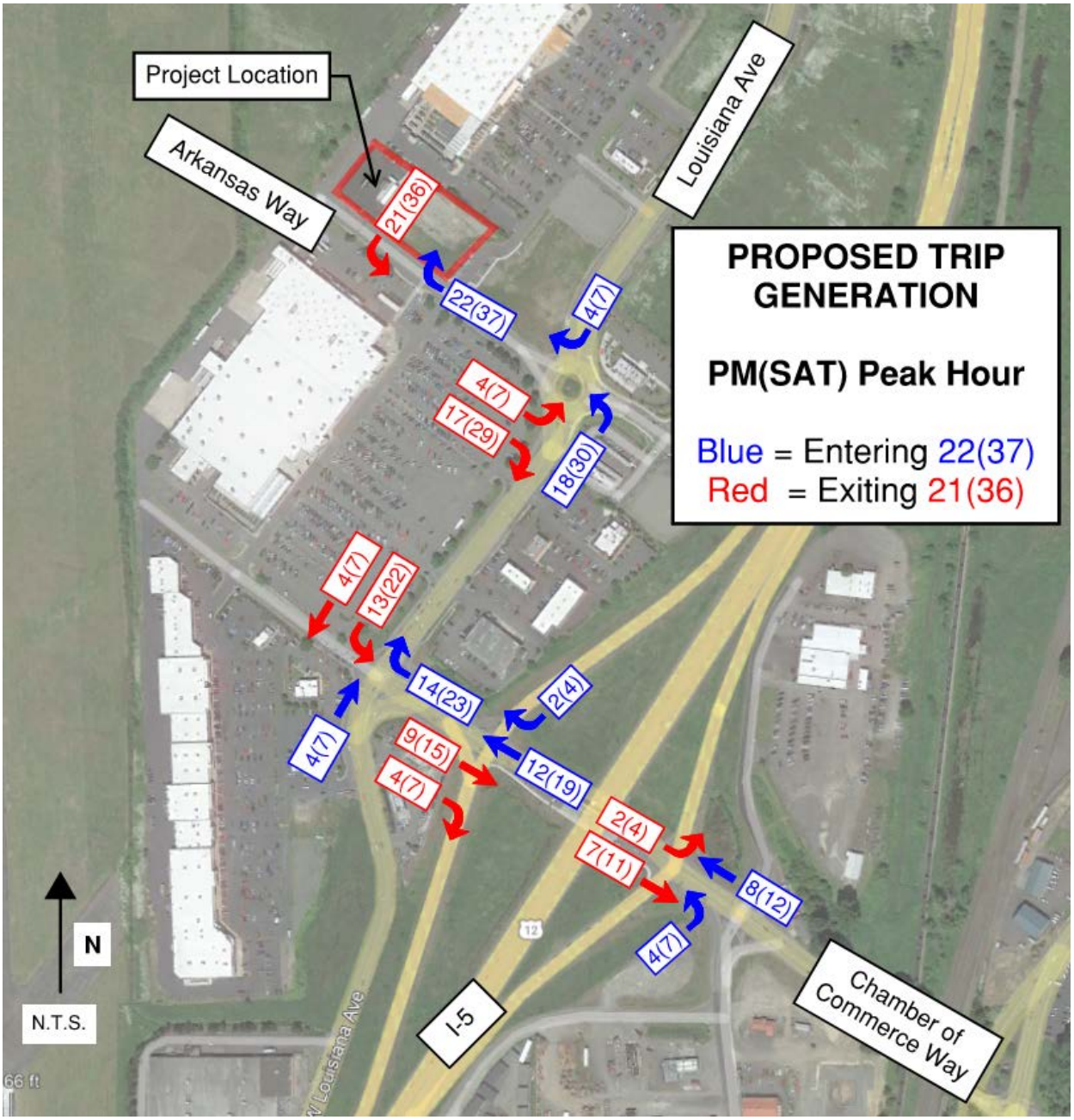

Figure 4: Proposed Trip Generation

Figure 4 shows relatively small traffic increases to the surrounding roadway network, with the Saturday peak adding a total of 37 new entering and 36 new exiting vehicles. Of all movements shown in Figure 4, the movement of most potential impact may be the Saturday westbound-thru movement (19 vehicles) of Commerce Way at the southbound Interstate 5 ramps. The highest projected left-turn volume increase on Commerce Way is the southbound left-turn from Louisiana Ave to eastbound Commerce Way (22 vehicles).

CONCLUSION

With the application of a reasonable 50% pass-by reduction, the proposed site is expected to result in 73 additional vehicle trips during the Saturday peak hour, and 43 additional trips in the PM peak hour as shown in Table 2. In an attempt to be conservative, there was no internal capture reduction applied, which could result in an additional 5% reduction in trips if utilized.

The proposed site is on a dead-end road well within the Twin City Town Center shopping center. It is expected that both Arkansas Way and Louisiana Avenue will have adequate capacity for the additional traffic generated by the proposed Panda Express.

The trip distribution selected represents a 30% / 70% split in originating traffic (30% from north / 70% from south). These movements are further split between the local roadway network (frontage roads) and Interstate 5.

The result of the trip distribution and generation analyses may be seen in Figure 4. The movement of most potential impact may be the Saturday westbound-thru movement (19 vehicles) of Commerce Way at the southbound Interstate 5 ramps. Left-turn volume increases entering and exiting the Commerce Way corridor are minor.

WSDOT comments requested that the revised traffic memo expand on the trip distribution and generation analyses previously conducted to better illustrate potential impacts to the Commerce Way interchange for Saturday and PM peak hours.

An extensive amount of traffic count and existing signal timing data would be required to conduct a thorough level of service analyses. With the minimal amount of additional traffic generated by the site, geometric improvements along Commerce Way would not be necessary. It is possible that traffic signal timing modifications could be implemented to mitigate current or future congestion along Commerce Way.

If there are any questions regarding this traffic memo, please contact me at your convenience at 913-663-1900 or mark.sherfy@ibhc.com.

Sincerely,

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