

September 11, 2020

Project #: 23574

Mac Martin  
Martin Development  
P.O. Box 15523  
Seattle, WA 98115***RE: Hedges D Development Trip Debiting Letter – September 2020 Update***

Dear Mac:

This letter documents the anticipated site trip generation for Hedges D development within the Franklin Business Park in Tualatin. Kittelson & Associates, Inc. previously prepared a debiting letter for this site dated January 16, 2020 reflecting the anticipated construction of a 76,872 square foot manufacturing building. Based on evolving market conditions and tenant needs, a 349-space secure fleet surface parking facility is now proposed in lieu of the planned manufacturing building.

This letter provides trip generation estimates for the fleet parking use, documents trips associated with previously approved site development, and compares the total trip generation of the proposed and constructed uses with the vested overall site trip generation. As documented herein, the trip generation associated with the proposed Hedges D development is consistent with the previously analyzed full build-out of Franklin Business Park. Further, upon completion of Hedges D, additional vested trips will remain for other future site development. As such, no further traffic impact analysis is needed.

**BACKGROUND**

As documented in the 1999 traffic study for the Franklin Business Park, a total of 1,328 trips were vested for overall site development. To date, approved and constructed site development includes:

- 101,400 square foot warehousing building;
- 64,808 square foot building with 30,000 square feet of office space and 34,808 square feet of warehousing space; and,
- 72,255 square foot Hedges C manufacturing building (as constructed).

The proposed new secure surface parking lot will be used for overnight storage of a fleet of Sprinter delivery vans (the delivery vans will all be dispatched off-site during the daytime supporting a nearby distribution center). Typical use of the surface parking lot is anticipated as follows:

- The parking area will house Sprinter vans overnight and employee's personal vehicles during the daytime hours.

- The drivers (employees) will arrive at the site in the morning, pick-up their assigned Sprinter van and travel off-site for package loading at the distribution center and subsequent customer delivery.
  - Sprinter drivers will arrive at the parking lot and then depart in their assigned delivery van over the course of staggered start times to allow for appropriate pick-up staging at the delivery center.
  - Sprinter drivers are expected to arrive for their workday in nine groups of people spaced between 9:15 AM and 1:00 PM. The drivers will participate in a daily safety meeting lasting about 15 minutes and then depart for loading off-site. The designated start time for individual drivers reflects both operator efforts to avoid their fleet mixing with peak traffic loading on the transportation network and the delivery needs (timing) of customers.
- Drivers will return their assigned Sprinter van to the parking area in the evening after completing their 10-hour delivery shift.
  - Sprinter drivers are expected to return to the overnight parking lot between approximately 7:10 PM and 10:30 PM (many customer deliveries occur in the late afternoon/early evening hours). The return times reflect operator efforts to spread out the arrivals of inbound drivers with the departures of outbound personal vehicles and outside the evening commuter peak.
- Most of the drivers are expected to commute to and from the fleet parking facility in one of three ways:
  - By personal vehicle, in which case they will park their vehicle on-site upon arrival in the morning and depart with their personal vehicle in the evening;
  - By a company shuttle that provides transportation for drivers to an off-site parking location whether their personal vehicles are housed; or
  - By bicycle, in which case they will park their bicycle in the designated bike rack on-site.

A small number of drivers may be dropped off at the parking area by others, given the somewhat uncertain return end-of-day pickup time associated with variable delivery needs/scheduling for any given driver.

## TRIP GENERATION ESTIMATE

To date, weekday daily, AM peak hour and PM peak hour vehicle trip generation estimates for Franklin Business Park site development have been prepared using trip rates from the *Trip Generation Manual, 9<sup>th</sup> Edition*, as published by the Institute of Transportation Engineers. Our review of both the 9<sup>th</sup> and

10<sup>th</sup> Edition of the *Trip Generation Manual* revealed that there is no land use data available directly reflective of the proposed fleet parking use or the unique staffing hours proposed for the fleet drivers.<sup>1</sup> Lacking data from the *Trip Generation Manual*, a quantitative estimate of the site trip generation was developed predicated on the following assumptions:

- The adjacent street system morning commute peak is generally considered to occur between 7:00 and 9:00 AM whereas the fleet parking shift arrival is expected to occur between 9:15 AM and 1:00 PM, suggesting the vast majority (and possibly all) of the inbound driver movements in the morning should occur outside the traditional commuter peak hour.
- The adjacent street system evening commute peak is generally considered to occur between 4:00 and 6:00 PM whereas the fleet parking shift is expected to conclude between 7:10 and 10:30 PM, suggesting all of the evening site trips could occur well outside the traditional commuter peak hour.
- The owner anticipates the parking lot will be fully utilized overnight during the peak November-early January delivery period and about 50% utilized the remainder of the year<sup>2</sup>.
- Trips can be tracked to individual Sprinter vehicles and employee vehicles as presented below by season.

### Sprinter Vehicle Trips

- Each Sprinter vehicle will depart the site in the morning at the start of the delivery driver shift (one trip out) and will enter the site in the evening at the end of the shift (one trip in), resulting in two trips at the site per day per Sprinter van.

#### *December-Early January Peak Season*

- Daily Sprinter van trips = (1 trip out + 1 trip in) × 349 Sprinter vans = 698 trips

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<sup>1</sup> The Park-and-Ride Lot with Bus or Light Rail Service (Land Use Code 90) was noted as a potential proxy use in the *Trip Generation Manual, 10<sup>th</sup> Edition* and has an average trip rate of 0.43 trips per parking space. While available, the Park-and-Ride Lot trip data is not reflective of the bi-directional nature of site trips with employees arriving in one vehicle and departing in another within the same hour.

<sup>2</sup> Additional “surge fleet” vehicle use is anticipated on-site during the Christmas holiday shopping season when supplemental delivery vehicles are used to support peak holiday delivery volume. The operator expects the entire surface parking lot to be occupied overnight by delivery vehicles during peak delivery season (typically November through late December/early January) with the lot approximately 50 percent utilized the remainder of the year.

- 9:15-1:00 PM trips = 1 trip out × 349 Sprinter vans = 349 trips out
  - Recognizing that all outbound trips are anticipated to occur starting after the safety briefing that begins at 9:15 AM, one could reasonably conclude no outbound trips occur between 7:00 and 9:00 AM.
- 7:10-10:30 PM trips = 1 trip in × 349 Sprinter vans = 349 trips in
  - Recognizing that all of inbound trips are anticipated to occur starting at 7:10 PM, one could reasonably conclude no site trips occur between 4:00 and 6:00 PM.

#### *Late January-October Season*

- Daily Sprinter van trips = (1 trip out + 1 trip in) × 175 Sprinter vans = 350 trips
- 9:15 AM-1:00 PM trips = 1 trip out × 175 Sprinter vans = 175 trips out
  - Recognizing that all outbound trips are anticipated to occur starting after the safety briefing that begins at 9:15 AM, one could reasonably conclude no outbound trips occur between 7:00 and 9:00 AM.
- 7:10-10:30 PM trips = 1 trip in × 175 Sprinter vans = 175 trips in
  - Recognizing that all of inbound trips are anticipated to occur starting at 7:10 PM, one could reasonably conclude no site trips occur between 4:00 and 6:00 PM.

#### Sprinter Employee Trips

- Each Sprinter vehicle is operated by a single employee during the course of a typical workday.
- Each employee that commutes to the fleet parking facility in a single occupant personal vehicle will generate one trip in at the start of their shift and one trip out at the end of their shift, resulting in two trips per day per employee single occupant vehicle.

#### *December-Early January Peak Season*

- Daily employee trips = (1 trip out + 1 trip in) × 349 employees = 698 trips
  - 9:15 AM-1:00 PM trips = 1 trip in × 349 employees = 349 trips in
- Assume up to 10% of 349 trips occur between 8:00 and 9:00 AM associated with employees who arrive early = 35 trips in

- Therefore AM commuter peak hour trips = 35 in
- 7:10-10:30 PM trips = 1 trip in × 349 employees = 349 trips out
  - As noted above, no trips occur between 4:00 and 6:00 PM

*Late January-October Season*

- Daily employee trips = (1 trip out + 1 trip in) × 175 employees = 350 trips
  - 9:15 AM -1:00 PM trips = 1 trip in × 175 employees = 175 trips in
- Assume 10% of 175 trips occur between 8:00 and 9:00 AM = 18 trips in
  - Therefore AM commuter peak hour trips = 18 in
- 7:10-10:30 PM trips = 1 trip in × 175 employees = 175 trips out
  - As noted above, no trips occur between 4:00 and 6:00 PM
- Each employee commuting by bicycle to and from the site will result in one fewer entry and one fewer exit trip per day compared to commuting along in a private vehicle. For the purposes of the trip generation estimate, no reductions in vehicular trips were applied associated with employees arriving by bicycle.
- Each employee commuting by shuttle van has the potential to result in one fewer entry and one fewer exit trip per day compared to commuting along in a private vehicle, though any shuttle trips made for the exclusive transport of one employee will result in no net change to vehicle trips to and from the site. For the purposes of the trip generation estimate, no reductions in vehicular trips were applied associated with employees arriving via shuttle van.

Tables 1 and 2 summarize seasonal trip estimates for the site based on the assumptions above and conservatively assuming all employees commute by themselves in private vehicles.

**Table 1. November-Early January Fleet Parking Site Trip Generation Estimate (349 delivery vehicles)**

Trip Source	Daily Trips	7-9 AM Commuter Peak Hour			4-6 PM Commuter Peak Hour		
		Total	In	Out	Total	In	Out
Sprinter Vehicle	698	0	0	0	0	0	0
Employee Vehicle	698	35	35	0	0	0	0
<b>Total</b>	<b>1,396</b>	<b>35</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Table 2. Late January-October Fleet Parking Site Trip Generation Estimate (175 delivery vehicles)**

Trip Source	Daily Trips	AM Commuter Peak Hour			PM Commuter Peak Hour		
		Total	In	Out	Total	In	Out
Sprinter Vehicle	350	0	0	0	0	0	0
Employee Vehicle	350	18	18	0	0	0	0
<b>Total</b>	<b>700</b>	<b>18</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

The trip estimates shown in Tables 1 and 2 are considered conservatively high (over-estimating) because:

- The estimates assume 10% of site trips occur during the 7:00-9:00 AM commuter peak period even though the first group of the Sprinter van drivers are expected to arrive on site for a 9:15 AM delivery shift start.
- The trip estimates assume every employee commutes to and from the fleet parking site in their own personal vehicle.
  - No reduction was made for employee trips made by bicycle.
  - No reduction was made for employee trips made by carpool.
  - No reduction was made for employee trips made via the employer shuttle.

## OVERALL SITE TRIP DEBITING SUMMARY

Incorporating the trip data in Table 1 (peak season), trip generation estimates for the existing and proposed uses are summarized in Table 2.

**Table 2 Trip Generation Estimates**

Land Use	ITE Code	Size (square feet)	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
<b>Existing (Constructed) Uses</b>									
Light Industrial	110	101,300	710	93	82	11	98	12	86
Warehousing	150	136,208	485	41	32	9	44	11	33
Office	710	30,000	331	47	41	6	45	8	37
Manufacturing (Hedges C) <sup>1</sup>	140	72,255	276	53	41	12	53	19	34
<b>Subtotal Trips</b>			<b>1,802</b>	<b>234</b>	<b>196</b>	<b>38</b>	<b>240</b>	<b>50</b>	<b>190</b>
<b>Proposed Use</b>									
Fleet Parking (Peak Season)		-	1,396	35	35	0	0	0	0
<b>Existing + Proposed Uses</b>									
<b>Total Trips</b>			<b>3,198</b>	<b>269</b>	<b>231</b>	<b>38</b>	<b>240</b>	<b>50</b>	<b>190</b>

<sup>1</sup> The December 6, 2019 Hedges C Trip Debiting Letter assumed a 72,970 square foot building whereas the actual constructed is slightly smaller.

## Trip Accounting

Table 3 provides a trip summary of the existing and proposed uses at Franklin Business Park along with the corresponding trip debiting.

**Table 3 Trip Debiting Summary**

Use	Number of PM Peak Hour Trips	PM Peak Hour Vested Trips Remaining
1999 Traffic Study Vesting	1,328	1,328
Uses constructed to date	(240)	1,088
Proposed Hedges D	(0)	1,088

After accounting for the existing uses and the proposed Hedges D development, 1,088 weekday PM peak hour trips remain vested for future development of the site.

Please call us at (503) 535-7433 if additional information is needed regarding this evaluation or if you have questions.

Sincerely,  
KITTELSON & ASSOCIATES, INC.

Chris Brehmer, PE  
Senior Principal Engineer

