Re: Trip Generation & Distribution Letter for the Pacific Northwest Technology Park-West Binding Site Plan
Spokane, Washington

Dear Inga,

DCI Engineers understands that the City of Spokane is requesting a trip generation and distribution letter as part of the SEPA process to understand the possible traffic impacts for the proposed Pacific Northwest Technology Park to be constructed in Spokane. A vicinity map of the site location is included in Appendix I.

Project Description
The proposed project includes the completion of a binding site plan which would subdivide 3 existing lots into 19 new lots and multiple associated ROW dedications for new public roads. The total project area is approximately 88.3 acres in total. The existing land is undeveloped. There are 2 specific projects included in this trip letter which are the McKinstry Warehouse and Puget Sound Pipe and Supply Warehouse. The developments will occur on Lot 3 and Lot 2 of Block 1 of the Preliminary BSP. There are no other specific projects included in this letter. The 2 specific projects’ site plans will be used as approximate representations of future development for the purposes of estimating. This will allow us to approximate the total building square footages for the remainder of the project. See Appendix II for the proposed binding site plan. It is estimated that the entire proposed project will generate approximately 226 entering trips and 55 exiting trips during the AM peak hour and 61 entering trips and 222 exiting trips during the PM peak hour.

The BSP will be completed in 3 proposed Phases. The first phase will include Blocks 1 and 2 of the BSP. These blocks include a total of 9 lots accounting for a total of 33.664 acres. This phase includes the two known projects (McKinstry Warehouse and Puget Sound Pipe and supply) along with 23.987 additional acres of light industrial land use. See Appendix V for a proposed phasing plan for the BSP.

Trip Generation Summary:
The number of trips generated by this project was estimated using information found in the 10th Edition of ITE’s Trip Generation Manual. The Trip Generation Manual was used to calculate the estimated total number of proposed trips entering and exiting the site during the AM and PM peak hours based on prior and proposed land uses. Two of the 19 parcels have known land uses of Warehousing and, thus, Land use 150 – Warehousing will be used for those two parcels. The
remainder of the parcels will use Land Use 130 – Industrial Park which should be a good representation of the remaining parcels. The two parcels with proposed site plans completed have building coverages of 30% (67,500 square foot building on a 222,548 square foot parcel) and 9.8% (19,500 square foot building on a 198,982 square foot parcel). Averaging these two numbers, we will assume a typical building coverage of 20% throughout the park. Excluding the ROW areas, there is a total of approximately 79.9 acres in total. Also excluding the two planned sites, the total remaining land to be developed is 70.2 acres (3,057,702 square feet). Using an assumed building coverage of 20% results in an estimated total building area of 611,540 square feet.

Land Use 150 – Warehousing (for the Proposed McKinstry and Puget Sound Pipe & Supply Developments)

- Weekday
  - Average vehicle trip ends vs. 1000 sf of gross floor area (87)
    - Approximately 183 trips are generated (Fitted Curve)
      - 50% IN, 91 trips
      - 50% OUT, 92 trips

- Weekday, Peak Hour of Adjacent Street Traffic, One hour between 7-9 AM
  - Average vehicle trip ends vs. 1000 sf of gross floor area (87)
    - Approximately 36 trips are generated (Fitted Curve)
      - 77% IN, 28 trips
      - 23% OUT, 8 trips

- Weekday, Peak Hour of Adjacent Street Traffic, One hour between 4-6 PM
  - Average vehicle trip ends vs. 1000 sf of gross floor area (87)
    - Approximately 38 trips are generated (Fitted Curve)
      - 27% IN, 10 trips
      - 73% OUT, 28 trips

Land Use 130 – Industrial Park (for the remaining 17 Lots in the BSP)

- Weekday
  - Average vehicle trip ends vs. 1000 sf of gross floor area (612)
    - Approximately 2,408 trips are generated (Fitted Curve)
      - 50% IN, 1,204 trips
      - 50% OUT, 1,204 trips

- Weekday, Peak Hour of Adjacent Street Traffic, One hour between 7-9 AM
  - Average vehicle trip ends vs. 1000 sf of gross floor area (612)
    - Approximately 245 trips are generated (Average Rate)
      - 81% IN, 198 trips
      - 19% OUT, 47 trips
• Weekday, Peak Hour of Adjacent Street Traffic, One hour between 4-6 PM
  ▪ Average vehicle trip ends vs. 1000 sf of gross floor area (612)
    ➢ Approximately 245 trips are generated (Average Rate)
      ➢ 21% IN, 51 trips
      ➢ 79% OUT, 194 trips

Summary

Based on the results provided above, accounting for existing trips along with infill trips, the estimated net total trips generated by the proposed site are as follows:

<table>
<thead>
<tr>
<th>Estimated Trips</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday Trips:</td>
<td>2,591</td>
</tr>
<tr>
<td>Entering:</td>
<td>1,295</td>
</tr>
<tr>
<td>Exiting:</td>
<td>1,296</td>
</tr>
<tr>
<td>AM Trips:</td>
<td>281</td>
</tr>
<tr>
<td>Entering:</td>
<td>226</td>
</tr>
<tr>
<td>Exiting:</td>
<td>55</td>
</tr>
<tr>
<td>PM Trips:</td>
<td>283</td>
</tr>
<tr>
<td>Entering:</td>
<td>61</td>
</tr>
<tr>
<td>Exiting:</td>
<td>222</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHASE 1 ONLY Estimated Trips</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday Trips:</td>
<td>1,560</td>
</tr>
<tr>
<td>Entering:</td>
<td>779</td>
</tr>
<tr>
<td>Exiting:</td>
<td>781</td>
</tr>
<tr>
<td>AM Trips:</td>
<td>120</td>
</tr>
<tr>
<td>Entering:</td>
<td>96</td>
</tr>
<tr>
<td>Exiting:</td>
<td>24</td>
</tr>
<tr>
<td>PM Trips:</td>
<td>122</td>
</tr>
<tr>
<td>Entering:</td>
<td>28</td>
</tr>
<tr>
<td>Exiting:</td>
<td>94</td>
</tr>
</tbody>
</table>

These trip calculations along with the appropriate pages from the ITE Manual can be found in Appendix III.

**Trip Distribution and Assignment:**

Trips for this project site will enter and exit the site via 21st Avenue, Deer Heights Road, and Lucas Road. These roads will be used to access Hazelwood Road, Flint Road, and US Highway 2.

The table below describes the movements at the boundary of the analysis extents, the potential destinations/originations associated with that movement, and the anticipated percentage of trips that
would be associated with that movement. It is assumed that these percentages will be consistent across both the AM and PM peak hours.

<table>
<thead>
<tr>
<th>Roadway (Direction)</th>
<th>Origination/Destination</th>
<th>Anticipated Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Highway 2 (East)</td>
<td>Spokane, I-90 East</td>
<td>45%</td>
</tr>
<tr>
<td>US Highway 2 (West)</td>
<td>Airway Heights, Fairchild AFB</td>
<td>10%</td>
</tr>
<tr>
<td>Flint Road (South)</td>
<td>Spokane International Airport</td>
<td>5%</td>
</tr>
<tr>
<td>Hayford Road (South)</td>
<td>I-90 West</td>
<td>25%</td>
</tr>
<tr>
<td>Misc. Other Roads</td>
<td>Airway Heights Residential/Rural</td>
<td>15%</td>
</tr>
</tbody>
</table>

Exhibits showing the anticipated distribution of trips created by the proposed project have been included in Appendix III. Included exhibits show the proposed AM and PM peak hour trips.

If you have any questions, please don’t hesitate to contact me.

Sincerely,

DCI Engineers Inc.

Wade Gelhausen, P.E.
Associate Principal

Sam Shastany, E.I.T.
Project Engineer

Appendix I: Vicinity Map
Appendix II: Preliminary Binding Site Plan
Appendix III: Calculations/ITE Manual (AM & PM Peak Hour
Appendix IV: Trip Distribution
Appendix V: BSP Phasing Plan
Appendix I
Land Use: 150
Warehousing

Description

A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas. High-cube transload and short-term storage warehouse (Land Use 154), high-cube fulfillment center warehouse (Land Use 155), high-cube parcel hub warehouse (Land Use 156), and high-cube cold storage warehouse (Land Use 157) are related uses.

Additional Data

Time-of-day distribution data for this land use are presented in Appendix A. For the 13 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 11:30 a.m. and 12:30 p.m. and 3:00 and 4:00 p.m., respectively.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Connecticut, Minnesota, New Jersey, New York, Ohio, Oregon, Pennsylvania, and Texas.

Source Numbers

184, 331, 406, 411, 443, 579, 596, 598, 611, 619, 642, 752, 869, 875, 876, 914, 940
Warehousing
(150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban
Number of Studies: 34
Avg. 1000 Sq. Ft. GFA: 451
Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

<table>
<thead>
<tr>
<th>Average Rate</th>
<th>Range of Rates</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.17</td>
<td>0.02 - 1.93</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Data Plot and Equation

Fitted Curve Equation: \( T = 0.12(X) + 25.32 \)
\( R^2 = 0.69 \)
Warehousing
(150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 47
Avg. 1000 Sq. Ft. GFA: 400
Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

<table>
<thead>
<tr>
<th>Average Rate</th>
<th>Range of Rates</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.19</td>
<td>0.01 - 1.80</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Data Plot and Equation

Fitted Curve Equation: $\hat{T} = 0.12X + 27.82$

$R^2 = 0.65$

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Warehousing
(150)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 29
Avg. 1000 Sq. Ft. GFA: 285
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

<table>
<thead>
<tr>
<th>Average Rate</th>
<th>Range of Rates</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.74</td>
<td>0.15 - 16.93</td>
<td>1.55</td>
</tr>
</tbody>
</table>

Data Plot and Equation

Fitted Curve Equation: \( T = 1.58(X) + 45.54 \)
\( R^2 = 0.93 \)
Land Use: 130
Industrial Park

Description
An industrial park contains a number of industrial or related facilities. It is characterized by a mix of manufacturing, service, and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. Many industrial parks contain highly diversified facilities—some with a large number of small businesses and others with one or two dominant industries. General light industrial (Land Use 110) and manufacturing (Land Use 140) are related uses.

Additional Data
The sites were surveyed in the 1980s, the 2000s, and the 2010s in California, Georgia, New Jersey, New York, Ontario (CAN), and Pennsylvania.

Source Numbers
106, 162, 184, 251, 277, 422, 706, 747, 753, 937
Industrial Park
(130)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban
Number of Studies: 31
Avg. 1000 Sq. Ft. GFA: 776
Directional Distribution: 81% entering, 19% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

<table>
<thead>
<tr>
<th>Average Rate</th>
<th>Range of Rates</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.40</td>
<td>0.10 - 2.13</td>
<td>0.37</td>
</tr>
</tbody>
</table>

Data Plot and Equation

Fitted Curve Equation: Not Given

*R*² = ****
Industrial Park
(130)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 32
Avg. 1000 Sq. Ft. GFA: 720
Directional Distribution: 21% entering, 79% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

<table>
<thead>
<tr>
<th>Average Rate</th>
<th>Range of Rates</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.40</td>
<td>0.10 - 2.85</td>
<td>0.41</td>
</tr>
</tbody>
</table>

Data Plot and Equation

Fitted Curve Equation: Not Given

Average Rate

R² = ****

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Industrial Park  
(130)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 27  
Avg. 1000 Sq. Ft. GFA: 762  
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

<table>
<thead>
<tr>
<th>Average Rate</th>
<th>Range of Rates</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.37</td>
<td>1.41 - 14.98</td>
<td>2.60</td>
</tr>
</tbody>
</table>

Data Plot and Equation

![Data Plot](image_url)

Fitted Curve Equation: $\ln(T) = 0.52 \ln(X) + 4.45$  
$R^2 = 0.58$

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Appendix IV
AM Peak Hour
- 226 Entering Trips
- 55 Exiting Trips
PM Peak Hour
- 61 Entering Trips
- 222Exiting Trips

Project Location

[Map of traffic volumes and directions for various locations]
Appendix V