June 25, 2025

City of Tualatin
Attention: Mike McCarthy
18880 SW Martinazzi Avenue
Tualatin, OR 97062

Re: **Lam TUX**
Updated Transportation Impact Analysis Scoping
Project Number 2250180.00

Dear Mike:

Mackenzie has prepared this updated scoping letter reflecting the updated site plan described below and planned changes to the required Transportation Impact Analysis (TIA) for the proposed laboratory/research and development building, office building, and utility building at the Lam Research campus in Tualatin, Oregon.

TUX Proposal

The TUX project includes the addition of three buildings. Building H is a four-story office building with an area of up to 120,000 square feet (SF), Building U is a two-story utility building with approximately 29,000 SF, and Building X is a laboratory building with approximately 85,000 SF. The total area of the TUX projects adds up to approximately 234,000 SF with an estimated net gain of 600 employees to the campus when the new buildings are at full occupancy.

The new office will be located on the east side of campus replacing the existing parking between Building G and Building B. The new lab and utility buildings will be located at the southwest corner of the site, replacing the existing surface parking. The existing access to SW Leveton Drive will remain and an additional driveway adjacent to the access road and loading dock at building C will serve as truck access for deliveries to the existing and proposed buildings.

The parking areas along the north side of the campus will be expanded and additional parking will be added to the adjacent west property to offset the loss of the southwest lot and to accommodate additional need with the TUX project. The permanent access to the expanded employee parking lots is proposed at the existing West Access from SW Leveton Drive and the North Access from SW 108th Avenue. North Access has previously been used for access to Lam's existing utility yard north of Building B and has served low volumes of employee trips. With this proposal, the driveway will be convenient for employees in the north lots, but no connection is planned to the parking lot constructed with Building G.

Two phases of development are proposed, with all buildings in Phase 1. Phase 2 will add infrastructure such as additional parking and utilities. For this reason, we propose to analyze both phases in a single buildout year.

PARKING AND ACCESS

The project will increase the available parking spaces from 1,728 to approximately 2,384. This includes a net loss of 82 parking spaces in the center of the campus with Building H (105 removed and 23 added back) and 286 spaces in the southwest lot for the lab and CUB buildings (347 removed and 61 added back).

The impact of these parking changes is that approximately 6% of vehicles at the site that currently park in the central area would instead use the parking lot constructed with Building G, shifting trips from the Center Access on SW Leveton Drive to the two accesses on SW 108th Avenue.

The additional parking added with the project will primarily be served by opening the North Access on SW 108th Avenue and the existing West Access on SW Leveton Drive. A smaller number of vehicles may access the new parking areas from the Center Access on SW Leveton Drive.

The attached site plan presents the proposed site plan with new parking areas identified (Attachment A).

TRIP GENERATION

The three buildings operate in conjunction with each other and best match the description of a "Research and Development Center" (LUC 760) from the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition.

The appropriateness of this land use was confirmed by comparing campus conditions in 2024. Due to current construction on site, we are presenting a comparison to observed employment and trips in 2024. In 2024, the campus had approximately 1,160 office and lab employees assigned and working a day shift (generally 8-5) plus 400 manufacturing staff who worked 12-hour shifts with changes outside the peak hours (7-7 shift schedule). The 2024 campus driveway counts during the peak hours of the site (8-9 AM, 4:45-5:45 PM) were 371 and 378, respectively. Applying the R&D trip rate to the 1,160 employees working a typical day shift results in an estimate of 418 AM, 402 PM and 3,609 daily trips, indicating actual trip generation was about 10% lower than predicted using this approach.

The proposed trip generation for the TUX project is presented in Table 1 below. We utilized the trip generation equations for each time period based on the full occupancy of 600 net new employees.

TABLE 1 – PROPOSED TRIP GENERATION

ITE LUC	ITE Land Use	Employees	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
860	Research and Development Center	600	207	37	244	28	205	233	2,036

As shown in Table 1, the planned campus expansion is estimated to generate an additional 244 AM peak hour, 233 PM peak hour, and 2,036 daily trips with both phases of development.

TRIP DISTRIBUTION

Site trip distribution has been modified slightly from the original master plan based on counts conducted in May 2025 at the active site driveways on SW Leveton Drive. With access now provided on SW 108th Avenue, there has been a small increase in trips on SW Tualatin Road. The overall distribution onto the greater roadway network remains consistent with employee zip code data provided by Lam. Unless otherwise noted, the following percentages apply to both the AM and PM peak hours.

- 24.5% to/from the north on Highway 99W.
- 26.5% to/from the south on Highway 99W.
- 13.5% to/from the east on SW Tualatin Road and SW Herman Road.
  - 8.5% on SW Tualatin Road and 5% on SW Herman Road in the AM peak hour.
  - 4% on SW Tualatin Road and 9.5% on SW Herman Road in the PM peak hour.
- 4.5% to/from the south on SW 118th Avenue.
- 10% to/from the south on SW 124th Avenue.
- 21% to/from the south on SW Teton Avenue.

The attached trip distribution figure (Attachment B) presents the percentage of trips at each study area intersection based on the locations of proposed parking and access points. Trip distribution near the site will reflect the following assumptions:

- 30% of new site trips are expected to utilize the West Leveton Access, 20% at the Center Leveton Access, 30% split evenly between the Center and South 108th Accesses, and the remaining 20% at the North 108th Access.
- 10% of new site trips will use SW Tualatin Road to access the North 108th Access.
  - Half of these trips, or 5% total, are expected to use SW 115th Avenue and SW Hazelbrook Road to access Highway 99W when exiting the site.

STUDY AREA

Based on previous studies, as well as the City's *Traffic Study Requirements* document requiring that all intersections within a 1/4-mile radius of the project site be included as part of the study area and City and neighborhood concerns, the following public intersections are included in the study area:

- SW Leveton Drive/SW 118th Avenue.
- SW Leveton Drive/SW 108th Avenue.
- SW Tualatin Road/SW Teton Road.
- SW Tualatin Road/SW 108th Avenue.
- SW Tualatin Road/SW 112th Avenue.
- SW Tualatin Road/SW 115th Avenue.
- SW 124th Avenue/SW Leveton Road.
- SW 124th Avenue/SW Tualatin Road.
- SW 124th Avenue/OR 99W.
- SW Herman Road/SW 108th Avenue.
- SW Hazelbrook Road/SW 115th Avenue.
- SW Hazelbrook Road/OR 99W.

The following site driveways will also be studied (includes those opposite public streets listed above):

- SW Leveton Drive/West Access.
- SW Leveton Drive/Proposed New Access (between existing West and Center Accesses).
- SW Leveton Drive/Center Access.
- SW Leveton Drive/East Access.
- SW 108th Avenue/North Access.

- SW 108th Avenue/Center Access (constructed with Building G).
- SW 108th Avenue/South Access (constructed with Building G).

No additional Washington County intersections are proposed because projected trips are not expected to meet the threshold of 10% impact of the roadway's average daily traffic (ADT).

TRAFFIC COUNTS

Traffic counts were conducted at the intersections listed above for standard peak periods of 7:00-9:00 AM and 4:00-6:00 PM. An extended PM time period from 3:00-6:00 PM was counted at five intersections where the nearby Hazelbrook Middle School might cause an earlier peak. Intersections were counted on Tuesday, May 13, 2025. Raw traffic counts as well as 2025 existing traffic figures are enclosed with this letter (Attachments C and D).

Per ODOT standards, system peak hours from 7:30 AM to 8:30 AM and 4:30 PM to 5:30 PM are proposed for the OR 99W intersections in the AM and PM.

The observed site peaks from 8:00 AM to 9:00 AM and 4:45 PM to 5:45 PM are proposed as a system peak for all site driveways. The remaining intersections will be analyzed at individual intersection peaks. The site volumes are 449 (391 enter/58 exit) in the AM and 430 (67 enter/363 exit) in the PM, which is approximately 7% higher than 2024 counts, mostly due to construction activity for Building G with 85 contractors.

Traffic volumes on Tualatin Road have increased since 2024, which may be in part to construction activity on SW Tualatin-Sherwood Road and the small increase in site trips. No adjustments are proposed for this analysis.

TRANSPORTATION IMPACT ANALYSIS

Based on the City's traffic study requirements, as well as the required scope for the new Lam Research office building, the TIA will review AM and PM peak hour conditions at the study area intersections for the following scenarios:

- 2025 Existing.
- 2030 Pre-Development without project.
- 2030 Post-Development with project.

The TIA will also include the following analysis components:

- 1% annual background growth per ODOT's 2040 Future Volumes table for OR 99W south of 124th Avenue.
- Seasonal adjustment factor of 1.03 applied to through volumes on OR 99W per ODOT's Seasonal Trend Table for count date of May 13, 2025.
- 6% of existing site trips rerouted from the Center Leveton Access to the South and Center 108th Accesses due to proposed changes to parking as noted above.
- Intersection capacity analyses will be conducted at the study area intersections using Synchro 12 software which implements the methodologies of the *Highway Capacity Manual* (HCM) 7th Edition, with v/c calculated using ODOT methodology in the APM for ODOT intersections and HCM 2000 for all other intersections.
- Trips from the approved Lam Building G project will be included as in-process volumes.

- We reviewed the prior and any new in-process project trips to include. We propose to add the KAI USA Warehouse Expansion on SW Herman Road. The land use approval has expired for Tualatin Logistics Park so it will not be included. The proposed in-process projects include the following:
  - Lam Building G.
  - Fujimi Expansion.
  - 124th Business Park.
  - KAI USA Warehouse Expansion.
  - An adjustment of site trips will be made for the existing contractors on site and is estimated to be 34 AM and 32 PM trips. Because these contractors are parking in the lot for Building G, we propose reducing the in-process trips for Building G by these amounts.
- Crash data for the most recent five years will be compiled and evaluated for safety concerns.
- Intersection sight distance evaluations will be based on AASHTO methodology for the proposed site access points.
- Intersection queuing, turn-lane warrants, and signal warrants will also be evaluated where appropriate. Queueing will be estimated using SimTraffic, with adjustments as needed to calibrate to observed conditions and/or Synchro output. Signal warrants will follow MUTCD standards and TTI for turn lane warrants.

Please confirm the proposed trip generation, trip distribution, study area, TIA analysis components, and in-process project list are acceptable for the required TIA.

Please contact me at bahrend@mcknze.com or 971-346-3781 if you have any questions or comments regarding the information presented in this scoping letter.

Sincerely,

Brent Ahrend, PE
Associate Principal | Traffic Engineer

Enclosure(s): Attachment A – Site Plan
Attachment B – Existing Parking Rerouted Volumes
Attachment C – New TUX Trip Distribution
Attachment D – 2025 Existing Traffic Volumes
Attachment E – 2025 Turning Movement Counts

c: Steve Koper, Kim McMillan, Mike McCarthy, Abby McFetridge, Tony Doran, Hayden Ausland – City of Tualatin
Jinde Zhu – Washington County
John Russell – ODOT
Jennifer Otterness Majid, Mike Halvorson, Stefanie McEvers, Danielle Nonamaker, Paul Roessler, Todd Fosler – Lam Research
Joel Rabinovitz, Garth Appanaitis – DKS Associates
Suzannah Stanley, Bill Bezio, Megan Diaz, Mike Rueter, Clara Layton, Nicole Burrell – Mackenzie