



# Recommended Conditions of Approval for Equitable Stanford Development

Stanford Coalition for Planning an Equitable 2035 (SCoPE 2035)

March 15, 2019

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## Overview of the Conditions of Approval

### Call for Engagement with the City of East Palo Alto

**We stand in solidarity with other groups impacted by Stanford's development.**

- Muwekma-Ohlone People
- The City and People of East Palo Alto
- The Board, Parents, and Students of PAUSD
- Advocates for Open Space Protections
- Advocates for Public Transportation

### Conditions of Approval:

1. **Housing**
    - a. Adoption of Housing Alternative A
    - b. Housing Linkage Ratio Update
    - c. Affordable Housing Proportion and Unit Requirements
    - d. Adoption of Housing Ordinances in Conditions of Approval
  2. **Transportation**
    - a. Expansion of Transportation Benefits
    - b. Expansion of Stanford-Managed Transportation
    - c. Transportation Survey Updates
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### **Call for Engagement with the City of East Palo Alto**

The County of Santa Clara must intentionally include the City of East Palo Alto in conversations about Stanford's impact and development. The county must host a town hall in East Palo Alto, in conjunction with the City Council and Planning Commission, to incorporate East Palo Alto residents' concerns in the negotiation process. The County of Santa Clara should privately meet with the City Council and Planning Commission of East Palo Alto to explore what resources can be shared.

The City of East Palo Alto must be included as a part of negotiations between Stanford and the County of Santa Clara. East Palo Alto has been and will be acutely impacted by Stanford's development, but according to standard procedure, they are not guaranteed to receive any of the affordable housing fees, transit extensions, traffic improvements, or other community benefits. Furthermore, a large number of Stanford workers live in East Palo Alto and would benefit from a more equitable distribution of resources.



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### **We support other advocates and groups that continue to demand equity and/or are impacted by the Stanford General Use Permit process.**

**We are in solidarity with the Muwekma-Owlone,** and continue to advocate for development that is respectful to their knowledge and culture. Stanford must not develop on protected or unprotected indigenous sacred sites and should be more accountable to members of the Muwekma-Owlone tribe, as outlined in our Platform for Equitable Stanford Development (May 2018).<sup>1</sup>

**We are in solidarity with the parents, students and school board of the Palo Alto Unified School District,** and support their calls for the full mitigation of school impacts. We support their seven mitigation requests, outlined in the PAUSD school board resolution 2018-2019.07,<sup>2</sup> the PTA Council Fact Sheet,<sup>3</sup> and the PTA Safe Routes to Schools letter to the Santa Clara County Board of Supervisors:<sup>4</sup>

1. Annual per-student payments for each student living in a property tax exempt residence;
2. Land for a new elementary school for Quarry Road students;
3. Funds to build the new school;
4. Contributions to PAUSD safe routes to school;
5. Funds for the expansion of oversubscribed after-school childcare on PAUSD school sites;
6. Housing for PAUSD full time teachers and staff;
7. Regular GUP meetings when school is in session for meaningful parent engagement

**We are in solidarity with advocates for open space protections,** including the Committee for Green Foothills. Their request to extend the current requirement of a supermajority vote by the County Board of Supervisors for any development in the Stanford foothills to be a *permanent requirement in perpetuity* is vital to responsible development.

**We are in solidarity with advocates for public transit,** including Californians Advocating Responsible Rail Design (CARRD) and Friends of Caltrain. CARRD's analysis, submitted as a comment on the DEIR, determined that Stanford's projected growth has significant impacts on Caltrain and must be considered in negotiations. We continue to advocate that Stanford contribute monetary resources to Caltrain for grade separations, electrification efforts, and long-term system maintenance. We also support adjustments to the "no net new trips" policy that will hold Stanford accountable for its long-term transit impacts.

<sup>1</sup> <https://docs.google.com/document/d/1pgsi7-eBH7FRnd4SGupdTNxdzDvQVNzuz8bmw9oOFyQ/edit>

<sup>2</sup> [https://ptac.paloalopta.org/wp-content/uploads/PAUSD\\_BoardResolution\\_StanfordtoMitigateGrowthImpact.pdf](https://ptac.paloalopta.org/wp-content/uploads/PAUSD_BoardResolution_StanfordtoMitigateGrowthImpact.pdf)

<sup>3</sup> [https://ptac.paloalopta.org/wp-content/uploads/PTAC\\_Stanford\\_GUP\\_Development\\_Agreement\\_Fact\\_Sheet\\_final.pdf](https://ptac.paloalopta.org/wp-content/uploads/PTAC_Stanford_GUP_Development_Agreement_Fact_Sheet_final.pdf)

<sup>4</sup> [https://ptac.paloalopta.org/wp-content/uploads/GUP\\_SRTS\\_2019\\_Signed\\_Letter.pdf](https://ptac.paloalopta.org/wp-content/uploads/GUP_SRTS_2019_Signed_Letter.pdf)



## Housing Conditions of Approval

### **Condition of Approval 1A: Adoption of Housing Alternative A**

Stanford shall be allowed to build a total of 5,699 new on-campus housing units/beds, an equivalent increase of 2,549 units/beds over the proposed 2018 General Use Permit. (See “Housing Alternative A,” Final Environmental Impact Report.)

#### **Rationale:**

Under the County’s analysis in the FEIR, it was determined that the proposed 2018 General Use Permit would result in an estimated increase of 2,425 off-campus housing units. The FEIR ran a new analysis under a scenario called Housing Alternative A in which the off-campus housing demand would instead be accommodated by building on-campus housing. This accommodation would translate to an equivalent increase of 2,549 new on-campus housing units/beds.

We acknowledge that the FEIR cites three significant and unavoidable environmental impacts of Housing Alternative A. However, **all three impacts boil down to just one root issue:** the projected emissions of PM<sub>10</sub>, mainly as a result of increased vehicular miles traveled, would slightly exceed BAAQMD thresholds. We find that this conclusion is fundamentally flawed due to a set of inaccurate assumptions in the County’s analysis. An example of such an assumption in the County’s analysis is that, on average, every undergraduate student takes at least one vehicular trip per weekday. In reality, it is well-known that Stanford students live on campus (eliminating the need for vehicular trips to campus) and typically take a few trips off-campus per month. By correcting this single assumption, we find that the projection for the tons of PM<sub>10</sub> generated by Housing Alternative A per year falls by 0.92 tons/yr to a level that **does not exceed the BAAQMD significance threshold.** (cf. Appendix A: VMT Analysis for more detail.)

In addition, the County’s VMT analysis effectively assumes that new Stanford residents appear out of thin air: it does not take into account that many of the Stanford population expected under the 2018 GUP — in particular, newly hired staff — were *already* generating VMT in Santa Clara County. Under the current analysis methodology, simply moving a sufficiently large number of Santa Clara County residents to the Stanford area would create “significant and unavoidable impacts,” even if the move would not actually change their average VMT/week. Thus, the analysis overstates the VMT generated by the proposed Project. Notably, we could not correct for these assumptions in our own analysis, so our VMT estimates, which find that PM<sub>10</sub> emissions would not exceed BAAQMD’s significance threshold, likely *overstate* the emissions that would be generated.



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In addition, even if the PM<sub>10</sub> projections are accurate, we note that other large-scale development projects in the Bay Area have been approved even after a final environmental report concluded that there would be significant and unavoidable impacts due to violations of BAAQMD's air quality standard. For example, [Facebook's Campus Project](#) was approved by Menlo Park's City Council in 2013, despite the City of Menlo Park's findings in its Final Environmental Report that the total project would generate emissions of ROG, NOx, and PM<sub>10</sub> exceeding BAAQMD's significance thresholds.<sup>5</sup>

Considering historic approvals of projects that have slightly exceeded BAAQMD's significance thresholds and the mistaken assumptions present in the County's VMT analysis, we recommend that Stanford build a total of 5,699 new on-campus housing units/beds, an equivalent increase of 2,549 units/beds over the proposed 2018 General Use Permit.

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<sup>5</sup> City of Menlo Park, [Facebook Campus Project Final Environmental Impact Report](#)



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### Condition of Approval 1B: Housing Linkage Ratio Update

Stanford shall comply with the following housing linkage requirements:

- a. Stanford shall provide a cumulative net increase in housing commensurate with academic development that counts toward the GUP building area cap as specified in Table 1B-1. This housing shall be provided on Stanford land in unincorporated Santa Clara County in compliance with the Community Plan and all conditions of this GUP.

**Table 1B-1: Housing Linkage**

Academic Development (gsf)	Number of Housing Units
500,000	1,252
1,000,000	2,504
1,500,000	3,756

- b. For additional academic development between 1,500,000 and 2,275,000 square feet that counts toward the GUP building area cap, Stanford shall provide a net increase in housing at a rate commensurate with academic development by providing 1 additional housing unit for every 399 square feet of development.

#### Rationale:

According to projections in Table 7A-1 of the 2018 GUP Environmental Impact Report, Stanford's academic expansion will generate demand for 5,699 new housing units over the next seventeen years.<sup>6</sup> As in the 2000 GUP and per the Stanford Community Plan, Stanford should comply with a housing linkage requirement to ensure that housing development meets this demand concurrently with academic space development.

As a point of comparison, the linkage ratio set in 2000 required that the University build 605 units for every 500,000 sq ft. of academic space development. The linkage ratio set in 2000 was based on data from 1993, and should be updated to reflect local trends. The ratio proposed by SCoPE approximately doubles the 2000 ratio, a reasonable increase given that:

1. The City of Palo Alto, a close analog to Stanford, recently raised its affordable housing mitigation fee from \$20 to \$35, an increase of 75%.

<sup>6</sup> Santa Clara County, [Recirculated Draft Environmental Impact Report](#) (2-56)



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2. The affordable housing mitigation fee set by Santa Clara County in the Affordable Housing Impact Mitigation Fee Ordinance raised Stanford's affordable housing mitigation fee from \$35 to \$68.50, an increase of slightly less than 100%.<sup>7</sup>

In other words, local policy is moving toward proportionally similar increases in housing requirements, reflecting the escalating severity of the Bay Area housing crisis. An increase in the linkage ratio would be in line with these efforts.

Furthermore, raising the linkage ratio would complement other policy efforts, such as the affordable housing ordinances. A higher linkage ratio incentivizes more development on campus, which in combination with the inclusionary zoning ordinances, promotes the development of affordable housing. This requirement also benefits the University, since by building affordable units on campus, the University avoids paying the in-lieu fee set in the Affordable Housing Impact Mitigation Fee Ordinance.

Many stakeholders in this process, including Stanford, have emphasized a preference for producing units over paying fees. A higher linkage ratio is *crucial* to ensure that this preference is met, leading to more units being built sooner, instead of money being collected in the form of fees and potentially never being converted to actual units.

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<sup>7</sup> Santa Clara County, [Ordinance No. NS-300.929](#)



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### Condition of Approval 1C: Affordable Housing Proportion and Unit Requirements

Stanford shall build affordable housing on its land, and shall comply with the following affordable housing requirements:

- a) For every 2,132 square feet of academic space development, Stanford shall provide one affordable housing unit.
- b) The units should be supplied at the proportions specified in Table 1C-1.

**Table 1C-1: Affordable Housing Proportions**

Income Level	Percentage of Affordable Units
Extremely Low Income	12.1%
Very Low Income	15.4%
Low Income	34.1%
Moderate Income	38.4%

- c) None of the units shall be occupied by persons who are undergraduate students, graduate students, post-graduate fellows, or medical residents associated with Stanford or its affiliates (e.g., Stanford University Medical Center).
- d) To ensure affordability, the units shall be made available at an annualized rent not to exceed 30% of the income level for the group (extremely-low, very-low, low or moderate income) for which the units are provided, or at a for-sale price not to exceed 40% of the income level for the group for which the units are provided. The affordability of each unit shall be ensured for a period of at least 50 years from the date a certificate of occupancy is issued for the unit. For purposes of this condition, extremely-low income persons are those who earn less than 30% of the Santa Clara County median income; very-low income persons are those who earn 30-50% of the Santa Clara County median income; low income persons are those who earn 50-80% of the Santa Clara County median income, and moderate income persons are those who earn 80-120% of the Santa Clara County median income.

In implementing this condition, Santa Clara County must include strong legal language in its Development Agreement, equivalent to the legal standard found in Regulatory Agreements signed between housing developers and cities or counties. Such language must provide provisions that guarantees that these units will be built on the time frame specified above, that they will be marketed



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and rented to households at the appropriate income levels, and that there are strong repercussions for violations of such standards.

In order to fully mitigate Stanford's affordable housing impact by housing all low and moderate income households generated by the 2018 Stanford General Use Permit, Stanford shall build units in accordance with the linkage and proportion outlined above and in accordance with Table 1C-2.

<b>Table 1C-2: Affordable Housing Units</b>	
<b>Income Level</b>	<b>Number of Units</b>
Extremely Low Income	129
Very Low Income	164
Low Income	364
Moderate Income	410
Total	1067

### Rationale:

As the housing crisis worsens and land becomes more expensive, Stanford is uniquely positioned to mitigate its environmental impacts by building units on large swathes of undeveloped land. Stanford must be encouraged to build affordable housing with its own funds and on its own land in order to accommodate workers and other low-income staff members. Such an approach will have a range of positive impacts on the environment and equity outcomes for Stanford development, as fewer staff members will need to drive to campus and more low-income families will be able to take advantage of the resources offered by an affluent, well-educated, and well-resourced community on campus and in the surrounding municipal jurisdictions.

In the Conditions of Approval for the 2000 General Use Permit, the county defines a separate linkage-ratio for affordable units, as well as a proportion of what income levels the units should be offered as, as we replicated in stipulation (a) and (b). To derive the linkage-ratio in stipulation (a), we divided the total 2,275,000 square feet by 1067 low income units, which would be the number of low income units necessitated by a full-mitigation approach. While this methodology would be standard for a housing-linkage ratio, even if fewer low income units are expected of Stanford, we believe that the



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housing linkage ratio should remain at the rate presented in (a): 1 unit for every 2,132 square feet of academic space development. In order to meaningfully reduce displacement effects of new employment centers, low income housing must be built *prior* to the construction of buildings that will generate population growth (academic space development). As such, we encourage a strong housing-linkage ratio for affordable housing because it is a necessity to ensuring that affordable housing is built promptly and in accordance with other development. An aggressive housing-linkage ratio for affordable housing is an important potential mechanism for reducing displacement effects.

The proportions in stipulation (b) and the table of units (which totals 1067 units) constitute what is required if Stanford is to mitigate its full affordable housing impact. The affordability proportions and total amount of housing required are tailored to affordable housing needs of Stanford's workforce. In particular, **we have outlined the full number of BMR-units needed to accommodate the low-income households generated by the development of the 2018 General Use Permit, disaggregated by income level of employee households as defined in the Nexus Study** (methodology is outlined in Appendix B). Thus, if the County is to have Stanford fully account for its affordable housing impacts, it should require the linkage ratio and affordability proportions that we described.

Additionally, strong legal language within the Development Agreement or Conditions of Approval for any condition in which Stanford must build affordable housing is crucial. If Stanford is required to finance and construct affordable housing through such mechanisms, the language may not bind the university to the same compliance standards as developer would in the event that local, state or federal funding sources would be used. Such enforcement language is critical to ensure that Stanford will face actual consequences in the event of non-compliance. Furthermore, negotiations for the Development Agreement occur between Stanford and Santa Clara County behind closed doors, limiting public input during the process. The County should include oversight and accountability measures to ensure Stanford complies with its affordable housing development in a timely manner.

Lastly, there are **current provisions that the county must use as a baseline** for a minimum acceptable number of affordable units:

1. The Inclusionary Housing Ordinance as applied to Housing Alternative A (which houses the full population generated by the General Use Permit) would produce 465 units.
2. A Net-Present Value Analysis of Affordable Housing Impact Mitigation Fee Ordinance and the Inclusionary Housing Ordinance would produce between 556 - 662 units, depending on when the units are built.



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We understand that our proposal of 1067 units requires more than the Inclusionary Zoning Ordinance passed by the County last year. The Inclusionary Zoning Ordinance requires that 16% of non student-housing (not undergraduate or graduate housing) must be BMR. Under the original GUP application in which Stanford proposed to build 550 non-student units, the ordinance would require Stanford to build 88 affordable units.

If the County were to adopt SCoPE's proposed conditions 1A and 1B, Stanford will then build 2342 additional (not currently proposed) non-student dwelling units to compensate for off-campus housing demand.<sup>8</sup> Therefore, Stanford must build  $0.16 * (2342 + 550) = 465$  BMR units under Housing Alternative A and the Inclusionary Zoning Ordinance.

### Breakdown by Income Level (as required by Inclusionary Zoning):

Extremely Low Income and Very Low Income	$0.15 * 463$	70 (round up)
Low Income	$0.45 * 463$	209 (round up)
Moderate Income	$0.4 * 463$	186 (round up)
Total		<b>465</b>

In the event that Stanford refuses to build more than 465 units of affordable housing on its own land as suggested by the baseline above, we encourage the Santa Clara County Board of Supervisors to consider requiring a number of units to be built and financed by Stanford on-campus as a floor. This "affordable housing floor" would ensure that affordable housing is built on campus on a faster time-frame and will provide BMR units to low-income Stanford workers. Yet, it also ensures that Stanford is providing its fair share toward its affordable housing impacts for the county and region. While the 465 affordable units that would be required under the Inclusionary Zoning Ordinance with Housing Alternative A, this is still far from the 1067 affordable units needed for full mitigation, as Stanford can opt entirely for the in-lieu fee instead of building housing beyond the level required.

If the County decides not to require that Stanford fully mitigate its affordable housing impact, it at least ought to adopt the affordability ratios proposed by SCoPE. These ratios ensure that those most impacted by and vulnerable to housing instability are provided for, instead of being neglected as is currently the case under the Inclusionary Zoning Ordinance.

<sup>8</sup> Santa Clara County, [Recirculated Draft Environmental Impact Report](#) (82)



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Overall, the SCoPE proposal of 1067 below market rate units is necessary to ensure that Stanford is held fully accountable for its affordable housing impact. Any lower standard will lead to an escalation of the housing crisis, with impacts felt by the County and other municipalities. Further, any agreement that offers considerably less affordable housing than the baseline suggested above will be unacceptable and will force County residents to bear the burden of Stanford's housing impact.



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### **Condition of Approval 1D: Adoption of Housing Ordinances in Conditions of Approval**

Stanford shall follow the requirements established in County Ordinance No. NS-1200.368 and County Ordinance No. NS-300.929 to guide its affordable housing development through inclusionary zoning and payment of in-lieu fees. If these ordinances are declared unconstitutional by court during the timeframe of this General Use Permit, the County shall establish the amount of payment required moving forwards and proportion of affordable units required. This proportion and payment should be based on the results of the KMA Nexus study, accepted by the County in December 2016, and enacted with the same level of stringency as required by the two ordinances (e.g. same definition and duration of affordability, same reporting requirements for Academic Space Fee payment, etc.). The payment shall be made to an escrow account established and maintained by the County for the purpose of funding affordable housing projects within a 6-mile radius of the boundary of the Stanford campus. Units funded with Stanford payments shall provide first priority to Stanford employees to the extent allowed by law and/or financing restrictions.

In the event that the ordinances are abolished, similar conditions should be included in the Conditions of Approval. If Stanford chooses to pay the in-lieu fee for academic space development, instead of building affordable units, Stanford shall comply with the mandates set forth in the Affordable Housing Impact Mitigation Fee Ordinance. As Stanford builds residential units, Stanford shall comply with the mandates set forth in the Inclusionary Housing Ordinance. The Ordinances should be adopted as conditions of approval within the Stanford General Use Permit.

#### **Rationale:**

In December 2018, Stanford filed a lawsuit against Santa Clara County to challenge the Inclusionary Zoning Ordinance, alleging that the ordinance violated the Equal Protection clauses of the U.S. and California Constitutions. They have stated their intention to file a second suit challenging the Affordable Housing Mitigation Fee.

It is unlikely that these suits will be resolved before the acceptance of the General Use Permit. Consequently, it is important that the County establish mechanisms to ensure Stanford's housing development remains equitable if either of the ordinances are struck down. To accomplish this, the County should adopt the ordinances in some form as Conditions of Approval for the General Use Permit.

The County has already stated that the ordinances are intended to serve as a baseline for negotiations on a Development Agreement with Stanford. Stanford's lawsuit has made that baseline more



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uncertain: if the University believes that the ordinances will be struck down, they have no reason to negotiate with the ordinances in mind.

Furthermore, if the ordinances were to be struck down after the passage of the General Use Permit, there would be no provision for an affordable housing mitigation fee or inclusionary zoning requirement built into the Conditions of Approval. Given that the 2000 GUP established an in-lieu fee and an affordable housing linkage ratio, it is reasonable for the County to do duplicate this mechanism in 2018. While the ordinances currently serve this role, if voided there would be no mitigation for housing impacts in the 2018 GUP. The establishment of an in-lieu fee and affordable housing linkage ratio consistent with the ordinances would solve this issue.

Passing the ordinances as a Condition of Approval would strengthen the County's negotiating position, create regulatory certainty, and ensure that County taxpayers are protected from paying for Stanford's housing impacts in all possible future outcomes.

It is important to note that Stanford's lawsuit against the Inclusionary Zoning Ordinance is not aimed at inclusionary zoning requirements in general. While the University might disagree with the methodology of the Nexus Study, they do not contest the legality of its findings. Instead, they object to the mechanism of a County Ordinance, arguing that the County violates Equal Protection by passing an ordinance that they purport specifically targets Stanford.

Stanford cannot argue the same if the ordinances were passed as Conditions of Approval. The existence of the General Use Permit itself represents how Stanford is treated differently from any other institution in the County. Other major developers of both housing and businesses must submit fully fledged building permits for proposed projects. The General Use Permit allows Stanford to bypass this process and build with flexibility. In exchange for this flexibility, the County is allowed to pass blanket Conditions of Approval, instead of approving buildings on a project-by-project basis. By definition, all of the Conditions of Approval single Stanford out because all of the requirements are specific to Stanford's planned development. Passing the ordinances as Conditions of Approval therefore would not leave them vulnerable to the same arguments in court of being in violation of Equal Protection. Indeed, the 2000 Conditions of Approval already set an inclusionary zoning requirement through its affordable housing linkage ratio and an affordable housing mitigation fee through its in-lieu fee. Stanford did not see any reason to sue the County then, and they would have no standing to sue the County over similar requirements now.

If Stanford takes issue with the mechanism of a policy, but not the content of the policy itself, the County should take steps to ensure that the content of the policy is enacted instead of allowing worse



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policy outcomes due to technicalities. Passing the ordinances as a Condition of Approval ensures that, regardless of what courts decide on the legality of the ordinances, Stanford still accounts for the full extent of its impacts, which the County always has been and always will be legally allowed to mandate.



## **Transportation for Workers - Conditions of Approval**

### **Condition of Approval 2A: Extension of Transportation Benefits to All Workers**

Stanford shall extend transportation benefits equitably to all people who are at Stanford or at Stanford-affiliated places primarily for employment, regardless of status and place of residence, and Stanford shall strongly publicize information about the availability of these benefits. These individuals include but are not limited to: subcontractors, casual and temporary workers, staff, janitorial workers, unionized workers, and night-shift workers. These changes should include the following:

- Stanford shall extend Commute Club eligibility to all people who are Stanford or Stanford-affiliated places primarily for employment, regardless of status and place of residence. This especially includes employees who do not work on main campus, subcontracted workers, part-time workers, and night-shift workers.
- Stanford shall extend Caltrain Go Passes to all people who are at Stanford or at Stanford-affiliated places primarily for employment and who are eligible for the Caltrain Go Pass by the eligibility standards set forth by Caltrain<sup>9</sup>. This especially includes employees who are working less than 20 hours per week and interns.
- Stanford shall extend VTA SmartPasses to all people who are at Stanford or at Stanford-affiliated places primarily for employment, regardless of status and place of residence, in accordance with the allowances made in the 2019 VTA SmartPass Agreement Form and future iterations of this agreement form.
- Stanford should fully subsidize transportation needs, including transit passes, transit parking, and parking permits for all people who are at Stanford primarily for work. This especially includes workers who live outside a 6 mile radius from Stanford and workers who live in their vehicles on-campus.
- Stanford should ensure that all employees are aware of the transportation benefits for which they are eligible.

### **Rationale:**

Stanford provides an array of benefits to encourage alternative transportation, mitigate traffic, and lower commute costs. However, the University restricts access to these benefits to certain classes of workers, regardless of whether those workers have greater need. For instance, the Caltrain Go Pass, VTA SmartPass, and transportation tax deductions are not available to temporary, casual, contracted,

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<sup>9</sup>[http://www.caltrain.com/Fares/tickettypes/GO\\_Pass.html](http://www.caltrain.com/Fares/tickettypes/GO_Pass.html)



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and part-time workers. In addition to being unavailable for those categories of workers, Commute Club membership is also explicitly denied to night-shift, evening-shift, and off-campus workers, and the SmartPass is unavailable to postdocs. Stanford manipulates its Transportation Demand Management (TDM) program to comply with the “no net new trips” requirement while excluding certain classes of workers. Stanford should modify the TDM program to allocate transportation benefits to workers effectively and equitably.

Lower-income workers, often must commute longer distances to Stanford, from places such as Monterey and Stockton, and face associated scheduling hardships (see also Figure 9).<sup>10</sup> Lower-income Stanford workers must also bear a disproportionate financial burden of their transportation costs. These workers should receive the same or better commute benefits than moderate to high-income employees who commute during peak hours.

Certain employees are excluded from Commute Club eligibility, preventing them from receiving benefits such as Clean Air Cash or free carpool parking permits<sup>11</sup>. We ask that Stanford extend Commute Club eligibility to all employees. These employees include:

- Employees who do not work at Stanford’s main campus or Stanford Redwood City
- Employees at the VA Hospital, SLAC, and any other worksite that do not participate in Stanford’s parking permit system or that does not have an arrangement with P&TS
- Workers who are not directly employed by Stanford, such as subcontracted workers and third-party workers
- Employees who work less than 20 hours a week on Stanford’s main campus or Stanford Redwood City
- Evening and night-shift workers

These individuals still commute to Stanford’s campus or Stanford-affiliated properties on a daily or weekly basis, and accordingly, they should be eligible for the Commute Club. Furthermore, evening and night-shift workers face additional hardships while commuting, such as safety concerns while walking, biking, or using public transportation at night.

Stanford currently excludes temporary and casual employees, contractors, and employees working less than 20 hours per week from Go Pass eligibility<sup>12</sup>. However, Caltrain allows institutions to extend Go

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<sup>10</sup> <https://magazine.stanforddaily.com/2018/05/19/getting-by-in-the-bay/>

<sup>11</sup> <https://transportation.stanford.edu/commute-club/about-commute-club/are-you-eligible>

<sup>12</sup> <https://transportation.stanford.edu/transit/free-transit-incentives/caltrain-go-pass/eligibility>



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Pass eligibility to employees working less than 20 hours per week and interns<sup>13</sup>. Stanford shall continue to extend Caltrain Go Passes to all persons who are at Stanford and Stanford-affiliated places primarily for employment and who meet Caltrain's Go Pass eligibility requirements.

According to the 2019 VTA SmartPass Agreement Form<sup>14</sup>, students and all classes of employees, including part-time employees, contractors, and staffing agency employees, are eligible for the VTA SmartPass. However, individuals currently excluded by Stanford from VTA SmartPass eligibility include:

- Students
- Workers on campus who are not employed directly by the University or the Hospitals
- Contingent, temporary, and casual employees
- Postdoctoral scholars and visiting scholars
- Employees working less than 20 hours per week

Stanford should extend the VTA SmartPass in accordance with the allowances made by VTA in the 2019 VTA SmartPass Agreement Form.

According to our conversations with workers and Service Employees International Union Local 2007, many employees are unaware of the transportation benefits for which they are eligible. Stanford does not make the eligibility of transportation benefits transparent to its workers, especially to those whose first language is not English and those who have limited Internet access. Stanford should be more sensitive to its communication with workers by better advertising its transportation demand management programs and employee eligibility for transportation benefits.

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<sup>13</sup> [http://www.caltrain.com/Fares/tickettypes/GO\\_Pass.html](http://www.caltrain.com/Fares/tickettypes/GO_Pass.html)

<sup>14</sup> <http://www.vta.org/getting-around/fares/smартpass>



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### **Condition of Approval 2B: Expand Funding for Stanford-Managed Transportation**

Stanford shall extend and fully fund public transportation initiatives for which there has been demonstrated worker need. Specifically:

- Stanford shall reinstate and fully fund the Marguerite shuttle connecting the University Avenue Caltrain Station and various locations in East Palo Alto. Stanford shall work with SamTrans to connect to the current route for the SamTrans Route 280, which currently extends from Palo Alto Transit Center to the edge of East Palo Alto.
- Stanford shall extend the hours of the SLAC shuttle, which runs between Stanford's main campus and SLAC facilities, to begin service at 6:00 AM.

#### **Rationale:**

Between 2014 and 2016, a partnership between Palo Alto and East Palo Alto created a free bus shuttle, the East Palo Alto Caltrain shuttle, that ran from West Bayshore and Cooley Avenue to Woodland and Newell to the Palo Alto Caltrain Station<sup>15</sup>. This shuttle was terminated when Stanford withdrew its funding and EPA could not cover the added expense.<sup>16</sup> The shuttle was then replaced with SamTrans Route 280<sup>17</sup>. The shuttle's closure has forced workers to resort to alternate means of transport, which can be prohibitively expensive. Workers may drive to work and pay a minimum of \$396 for a parking permit<sup>18</sup>, ride SamTrans and the Marguerite and pay a minimum of \$787.20 a year<sup>19</sup>, or use expensive ride-sharing services such as Uber and Lyft. Other workers are forced to bike to work along unsafe routes. The creation of a free East Palo Alto shuttle would provide a critical service for vulnerable workers.

SLAC shuttles that run between the Palo Alto Transit Center, Main Campus, and the SLAC campus do not have sufficient hours. Many workers work early shifts, and current SLAC shuttles do not offer these workers transportation from Caltrain to the SLAC campus. As such, Stanford should extend the hours of the SLAC shuttle to begin at 5:00 AM, when the first Caltrain arrives.

Both expanding transportation benefits (2A) and expanding Stanford-managed transportation (2B) would facilitate progress towards CEQA environmental impact targets and Stanford sustainability

<sup>15</sup> <http://paloalto.parkingguide.com/wp-content/uploads/2015/07/EPA-final-Shuttle-Brochure.pdf>

<sup>16</sup> <https://www.cityofpaloalto.org/civicax/filebank/documents/53872>

<sup>17</sup> [http://trainer.samtrans.com/schedulesandmaps/timetables/280/Route\\_280\\_-\\_Effective\\_08\\_07\\_16.html](http://trainer.samtrans.com/schedulesandmaps/timetables/280/Route_280_-_Effective_08_07_16.html)

<sup>18</sup> <https://transportation.stanford.edu/parking/purchase-a-parking-permit/permit-prices-2017-18>

<sup>19</sup> <http://trainer.samtrans.com/fares/faretypes.html>



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goals. Increased public transit and carpool options will reduce VMT for individuals commuting from East Palo Alto and the East Bay, a large yet undercounted population. These expansions will also boost public transit ridership, broadly increasing compact development in the Bay Area.



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### Condition of Approval 2C: Transportation Survey Update

Stanford shall ensure that its annual Transportation Survey<sup>20</sup> reaches all classes of workers — including third-party and contracted workers, not just full-time University employees, students, and part time workers. The Transportation Survey should be disaggregated by worker type and income level, and it should gather information on the previous commutes of new employees to more accurately determine how new employees affect regional VMT and greenhouse gas emissions.

Using the results of the survey, Stanford should expand its transportation demand management (TDM) programs accordingly. Stanford shall conduct comprehensive transportation and commute surveys and research to determine the transportation needs of its workforce. Finally, the methodology, anonymized data, and results of this survey should be made publicly available.

#### Rationale:

Everyone in the Stanford community should have the opportunity to participate in the annual Transportation and Commute survey, including but not limited to undergraduate and graduate students, faculty, postdocs, staff, and other workers. Currently, third-party contracts, janitorial shift workers, and construction workers, who make up roughly 1,740 of Stanford's nearly 23,000 faculty, staff, and workers (GUP DEIR Vol 3, Appendix VMT), do not have the opportunity to participate in the Transportation and Commute Survey. This exclusion is particularly concerning given that low-income workers spend a disproportionately higher share of their income on transportation and housing, especially when they must drive to work.<sup>21</sup> Stanford should expand the survey population to capture the transportation patterns of all workers. The survey results should be anonymized, publicly released, and used to inform TDM programs that support low-income workers.

Stanford should ensure that, where possible, it includes questions on the Transportation and Commute Survey that are directly relevant to VMT analysis. These may include, but are not limited to:

- How many vehicular trips do you take on an average weekend? How many of these are to off-campus locations?
- How many vehicular trips do you take on an average weekday? How many of these are to off-campus locations?

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<sup>20</sup> <https://gup.stanford.edu/transportation-no-net-new-commute-trips>

<sup>21</sup> [https://www.brookings.edu/wp-content/uploads/2016/06/0314\\_transportation\\_puentes.pdf](https://www.brookings.edu/wp-content/uploads/2016/06/0314_transportation_puentes.pdf)



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- On average, how many other people do you share the vehicle with when you take these trips? Which mode of transportation do you use?

This is especially important given the decreasing value of the “no net new commute trips” standard. Stanford has frequently touted its ability to reach this standard, but reducing commute hour trips merely has the effect of shifting congestion to different hours and expanding the range of peak commute time. Furthermore, reducing commute hour trips has no effect on greenhouse gas emissions. Finally, in attempting to reach this standard, Stanford is incentivized to give workers shifts with unorthodox hours, leading to more night shifts and inconvenient hours for workers. These scheduling shifts lead to complications for workers, such as with arranging carpools, providing child care, or spending time with family.

In order to move away from the “no net new commute trips” standard, the public needs clearly communicated information regarding current transportation trends in VMT, a more holistic standard. After setting a baseline for Stanford’s VMT impact, the County will be better equipped to regulate Stanford’s VMT. Improved data collection will also enable more accurate analysis and regulation of VMT standards.

Data from the Transportation and Commute survey should be made public once completed. The methodology for the survey, including any “reweighting” schemes to account for response rates, should also be made public. In addition, there should be a public feedback mechanism for anyone who has questions about the survey design or the results. Survey results should be disaggregated by worker type (student, faculty, staff, other workers, etc.) and income level to yield further insight into the transportation and commute patterns of different Stanford populations. Specifically, survey results for faculty/staff should be disaggregated.

Each employee and student will be asked to submit an initial transportation and commute survey, with requests for update sent out quarterly. In this survey, students and employees will list their current place(s) of residence and current means of transportation for each day they work, including rail, bus, and automobile usage.

Stanford should conduct comprehensive research to provide estimates for the transportation and commute impacts generated by members of employee households before being hired at Stanford (e.g., how long was their commute at previous jobs before being hired at Stanford?). This would allow Stanford to have realistic estimates of how hiring and housing new workers impacts regional VMT and greenhouse gas emissions, recognizing that many employees were already generating VMT in the Santa



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Clara County prior to being hired at Stanford. These estimates should then be incorporated into any future VMT analyses, especially any future Environmental Impact Reports on Stanford development.

Stanford will conduct additional research for employee commutes for each region of residence, such as greater research on commuting from the East Bay, Central Valley, and so forth. Stanford will then list out commute options by rail and bus, vanpool, and carpool, and send this information to each employee. The employee's preferred method of transportation among these options will be fully covered (or tax-deductible) by Stanford, with no change in employee wages or other benefits.



## Appendix A: VMT Analysis

In the following analysis, we present a series of modified statistics based upon corrections to assumptions about vehicular travel made in the FEIR.

1. 8,317 undergraduates generate a total of **1,109 vehicular trips per weekday**.
  - a. *Original Calculation in FEIR:* 8,317 undergraduates generate 12,143 vehicular trips per weekday (Figure 1, column D)
  - b. *Corrected Calculation:* Most undergraduates make an off-campus vehicular trip about once or twice a month, and when they do, they often carpool with someone else. If we assume that the average undergraduate makes 2 vehicular trips every 15 weekdays (i.e., every 3 weeks, the average undergraduate takes 2 vehicular trips on weekdays), we see that  $(8,317 \text{ undergraduates}) * (2 \text{ vehicular trips per undergraduate}) / (15 \text{ weekdays}) = 1109$  total vehicular trips per weekday.
2. 8,317 undergraduates generate a total of **8,317 vehicular trips per weekend-day**.
  - a. *Original Calculation in FEIR:* 8,317 undergraduates generate 12,143 vehicular trips per day of weekend (Figure 1, columns M + N)
  - b. *Corrected Calculation:* A very conservative estimate is that *every single undergraduate* takes one vehicular trip for *every single day of the weekend/holiday per year*. If we assume that the average undergraduate makes 1 vehicular trip per day of the weekend/holiday, we see that  $(8,317 \text{ undergraduates}) * (1 \text{ vehicular trips per undergraduate}) / (1 \text{ day of weekend/holiday}) = 8,317$  total vehicular trips per day of a weekend.
3. Undergraduates generate a total of **2,806,332 VMT / year**.
  - a. *Original Calculation in FEIR*
    - i. 12,143 vehicular trips per weekday results in 6,685,122 weekday VMT/year (Figure 1, column J).
    - ii. 12,143 vehicular trips per day of weekend/holiday results in 3,205,956 weekend VMT/year (Figure 1, column S).
    - iii. Total UG VMT/year:  $6,685,122 + 3,205,956 = 9,891,078$  VMT/year (Figure 1, Column U)
  - b. *Corrected Calculation*
    - i. VMT scales linearly with the # of vehicular trips made per day. Therefore, if we use our new assumption of 1,109 vehicular trips per weekday, the VMT/year generated by undergraduates on weekdays is  $(6,685,122 \text{ VMT/year}) * (1,109 / 12,143) = 610,504$  weekday VMT / year.



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- ii. Next, we use the assumption of 8,317 undergrad vehicular trips per day of weekend/holiday to calculate the contribution from weekends/holidays:  
 $(3,205,956 \text{ weekend VMT/year}) * (8,317 / 12,143) = 2,195,8286 \text{ total VMT / year.}$
  - iii. Total UG VMT/year:  $610,504 + 2,195,828 = 2,806,332 \text{ VMT/year.}$
4. Total annual VMT of Stanford population: **223,169,584 VMT / year**
  - a. *Original Calculation in FEIR:* Total VMT / year at Stanford is 230,254,330 VMT / year (Figure 6, bottom row). This figure includes the 9,891,078 VMT / year from undergraduates.
  - b. *Corrected Calculation:* Substituting the old 9,891,078 VMT / year from undergraduates with the newly calculated 2,806,332 VMT / year, we find that the total annual VMT / year is:  $(230,254,330 - 9,891,078 + 2806332) \text{ VMT / year} = 223,169,584 \text{ VMT / year.}$
5. **31.24 tons of PM<sub>10</sub> are generated per year** by entrained roadway dust.
  - a. *Original Calculation in FEIR:*  $230,254,329 \text{ total VMT/year} * (0.00028 \text{ pounds of PM}_{10} \text{ per VMT}) * (1 \text{ ton} / 2000 \text{ pounds}) \approx 31.9 \text{ tons per year from entrained roadway dust.}$  (The calculated number is actually higher than this, so they likely rounded up the emissions factor in the figure. We use the rounded emission figure anyway, so we likely overreport PM<sub>10</sub> emissions.) (Figure 2, , “FO Alternative” Column)
  - b. *Corrected Calculation:*  $223,169,584 \text{ VMT / year} * (0.00028 \text{ pounds of PM}_{10} \text{ per VMT}) * (1 \text{ ton} / 2000 \text{ pounds}) = 31.2 \text{ tons per year from entrained roadway dust.}$
6. Undergraduates generate **0.14 tons of PM<sub>10</sub> / year by “mobile use”**
  - a. *Original Calculation in FEIR:* Total undergraduate VMT / year:  $9,891,078 * \text{linear scaling factor} = 0.51 \text{ tons of PM}_{10} / \text{year.}$
  - b. *Corrected Calculation:* Total undergraduate VMT / year:  $2,806,332 * \text{linear scaling factor} = 0.51 \text{ tons of PM}_{10} / \text{year} * (9,891,078 / 2,806,332) = 0.1447 \text{ tons of PM}_{10} / \text{year.}$
7. Total tons of PM<sub>10</sub> generated per year by Housing Alternative A: **47.98 tons PM<sub>10</sub> / year.** This is a net change of +14.98 PM<sub>10</sub>/year from 33 tons of PM<sub>10</sub> / year, **which falls below the significance threshold of 15 tons PM<sub>10</sub> / year.**
  - a. Original Calculation in FEIR: Total tons of PM<sub>10</sub> year = 49. (Figure 3, PM<sub>10</sub> column of FO section, bottom row)
  - b. Corrected Calculation: Replacing the two incorrect tons of PM<sub>10</sub> / year numbers, we arrive at:  $49 \text{ tons / year} - (31.9 \text{ tons/yr from entrained roadway dust}) - (0.51 \text{ tons of PM}_{10} / \text{year from mobile sources}) + (31.2437417739 \text{ tons of PM}_{10} \text{ per year from entrained roadway dust}) + (0.14469902778 \text{ tons of PM}_{10} / \text{year from mobile sources}) = 47.98 \text{ PM}_{10} \text{ tons / year.}$



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## Appendix B: Affordable Housing Unit Methodology

According to the Nexus studies prepared for the County in April 2018, levels of affordable housing need (as measured by income category) are distributed among various employee types as follows<sup>22</sup>:

Table II – 7A Estimated Distribution of Employee Households by Income Category								
Income Category	Staff	Faculty	Post-Doc	Contract	Janitorial	Casual and Temp	Contingent	Weighted Average
Extremely Low	0.6%	0.0%	0.9%	33.3%	25.2%	18.2%	0.0%	2.1%
Very Low	3.3%	0.0%	11.1%	36.6%	36.4%	13.3%	0.0%	5.5%
Low	20.0%	0.4%	42.4%	21.9%	20.9%	12.9%	0.4%	20.1%
Moderate	23.6%	3.5%	21.6%	6.8%	14.7%	18.0%	3.5%	18.3%
Subtotal	47.5%	3.9%	75.9%	98.7%	97.3%	62.3%	3.9%	46.0%
Above Moderate	52.5%	96.1%	24.1%	1.3%	2.7%	37.7%	96.1%	54.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Stanford University, California Department of Housing and Community Development, KMA.  
See Tables II-12 to II-15 and Appendix B Table 1 to 7 for supporting information.

Therefore, based on HUD 2017's AMI breakdown, Stanford's development would result in affordable housing need as described below:

<sup>22</sup> [2018 Affordable Housing Nexus Studies](#), page 204



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	<b>Staff</b>	<b>Other workers</b>	<b>Total<sup>23</sup></b>
Total	1385	610	<b>1067</b>
Extremely Low	8	120	<b>129</b>
Very Low	46	118	<b>164</b>
Low	277	86	<b>364</b>
Moderate	327	82	<b>410</b>

The above calculations are elaborated on below:

Staff, Extremely Low Income: 0.6% of 1385 total new staff households = 8.31 households

Staff, Very Low Income: 3.3% of 1385 total new staff households = 45.705 households

Staff, Low Income: 20% of 1385 total new staff households = 277 households

Staff, Moderate Income: 23.6% of 1385 total new staff households = 326.86 households

Because housing need is broken down in Table II-7A of the Nexus studies by subcategories of the Other Workers employee type, we use Figure 7 to estimate breakdown of Other Workers into these subcategories.

Other workers, Extremely Low Income: (18.75% of other workers households from contractors) \* (33.3% of contractors households with ELI) \* 610 other workers + (14.775% of other workers households from janitorial) \* (25.2% of janitorial households with ELI) \* 610 other workers + (53.41% of other workers households from casual and temp) \* (18.2% of casual and temp households with ELI)  
\* 610 other workers = 120.087101 other workers households with ELI

Other workers, Very Low Income: (18.75% of other workers households from contractors) \* (36.6% of contractors households with VLI) \* 610 other workers + (14.775% of other workers households from janitorial) \* (36.4% of janitorial households with VLI) \* 610 other workers + (53.41% of other workers households from casual and temp) \* (13.3% of casual and temp households with VLI) \* 610 other workers = 177.988 other workers households with VLI

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<sup>23</sup> Total numbers are the sum of the unrounded numbers under the “Staff” and “Other workers” column, rounded up to the nearest household.



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Other workers, Low Income: (18.75% of other workers households from contractors) \* (21.9% of contractors households with LI) \* 610 other workers + (14.775% of other workers households from janitorial) \* (20.9% of janitorial households with LI) \* 610 other workers + (53.41% of other workers households from casual and temp) \* (12.9% of casual and temp households with LI) \* 610 other workers + (13.07% of other workers households from contingent) \* (0.4% of contingent households with LI) \* 610 other workers = 86.2256 other workers households with LI

Other workers, Moderate Income: (18.75% of other workers households from contractors) \* (6.8% of contractors households with MI) \* 610 other workers + (14.775% of other workers households from janitorial) \* (14.7% of janitorial households with MI) \* 610 other workers + (53.41% of other workers households from casual and temp) \* (18.0% of casual and temp households with MI) \* 610 other workers + (13.07% of other workers households from contingent) \* (3.5% of contingent households with MI) \* 610 other workers = 86.456 other workers households with MI



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## Supporting Figures

**Figure 1.** VMT analysis of housing alternative A - p. 2378 of [RDEIR Appendices](#)



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**Figure 2.** Entrained roadway dust calculations - p. 36 of [RDEIR Appendices](#)

**Table 3-7**  
**Entrained Roadway Dust Calculations**  
Stanford University  
Stanford, California

**NEW Table (not in DEIR)**

Variable	Units	2018 Baseline		Project		FO Alternative		HO Alternative	
		PM <sub>10</sub>	PM <sub>2.5</sub>						
Entrained Roadway Dust Emissions, Santa Clara County <sup>1</sup>	(tons/year)	1,946	291.9	1,946	291.9	1,946	291.9	1,946	291.9
VMT, Santa Clara County <sup>1</sup>	(million VMT per year)				14,041				
Emission Factor	(pounds PM per VMT)	0.00028	0.000042	0.00028	0.000042	0.00028	0.000042	0.00028	0.000042
VMT (Baseline, Project, and Alternatives) <sup>2</sup>	(VMT per year)	148,955,504		195,519,644		230,254,329		213,035,578	
Entrained Roadway Dust Emissions, Baseline, Project, and Alternatives	(tons per year)	20.6	3.1	27.1	4.1	31.9	4.8	29.5	4.4
	(pounds per day)	113	17	148	22	175	26	162	24

**Notes:**

<sup>1</sup> ARB. 2016. Miscellaneous Process Methodology 7.9 Entrained Road Travel, Paved Road Dust. Available at: [https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9\\_2016.pdf](https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2016.pdf). Table 5.

<sup>2</sup> 2018 Baseline and 2035 Project VMT from DEIR Appendix AQT, Tables 3-4-8 and 3-4-9. FO Alternative and HO Alternative VMT from Fehr & Peers in Stanford 2018 General Use Permit: Housing Alternatives SB 743 VMT Analysis (also shown in Tables 3-4 and 3-5).

**Abbreviations:**

ARB - California Air Resources Board  
DEIR - Draft Environmental Impact Report  
FO - full offset  
HO - half offset

PM<sub>2.5</sub> - particulate matter under 2.5 microns in diameter  
PM<sub>10</sub> - particulate matter under 10 microns in diameter  
VMT - vehicle miles traveled



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**Figure 3.** Summary of Emissions - p. 28 of [RDEIR Appendices](#)

Table 3-1  
Project and Alternatives CAP Emissions - Summary  
Stanford University  
Stanford, CA

Sources	Criteria Pollutant Emissions																							
	Fall 2018 (Baseline) Inventory					Fall 2035 (Project) Inventory <sup>1</sup>					Fall 2035 (FO Alternative) Inventory <sup>2</sup>					Fall 2035 (HO Alternative) Inventory <sup>2</sup>								
	NO <sub>x</sub>	CO	SO <sub>2</sub>	ROG	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	CO	SO <sub>2</sub>	ROG	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	CO	SO <sub>2</sub>	ROG	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	CO	SO <sub>2</sub>	ROG	PM <sub>10</sub>	PM <sub>2.5</sub>
<i>Change from DEIR Fall 2035 analysis</i>																								
<b>Stationary Sources</b>	[ton/yr]																							
Cardinal Cogen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Hot Water Generators	0.61	2.1	0.032	0.33	0.38	0.38	0.74	2.5	0.039	0.40	0.47	0.47	0.74	2.5	0.039	0.40	0.47	0.47	0.74	2.5	0.039	0.40	0.47	0.47
Replacement Process Steam	0.82	13	0.026	0.24	0.33	0.33	1.0	16	0.032	0.29	0.40	0.40	1.0	16	0.032	0.29	0.40	0.40	1.0	16	0.032	0.29	0.40	0.40
Other Natural Gas (e.g., PGE boilers)	19	16	0.11	1.0	1.4	1.4	23	20	0.14	1.3	1.8	1.8	25	21	0.15	1.4	1.9	1.9	24	20	0.14	1.3	1.8	1.8
Emergency Generators	7.3	1.9	0.01	0.3827	0.21	0.21	9.0	2.3	0.01	0.47	0.26	0.26	9.0	2.3	0.01	0.47	0.26	0.26	9.0	2.3	0.01	0.47	0.26	0.26
Laboratories	-	-	-	15	-	-	-	-	-	19	-	-	-	-	-	-	19	-	-	-	-	19	-	
Valero Fuel Station	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bonair Fuel Station	-	-	-	0.074	-	-	-	-	-	0.037	-	-	-	-	-	0.037	-	-	-	-	0.037	-	-	
<b>Subtotal [ton/yr]</b>	<b>27</b>	<b>33</b>	<b>0.18</b>	<b>17</b>	<b>2.3</b>	<b>2.3</b>	<b>34</b>	<b>41</b>	<b>0.22</b>	<b>21</b>	<b>2.9</b>	<b>2.9</b>	<b>35</b>	<b>42</b>	<b>0.23</b>	<b>21</b>	<b>3.0</b>	<b>3.0</b>	<b>35</b>	<b>41</b>	<b>0.22</b>	<b>21</b>	<b>3.0</b>	<b>3.0</b>
<b>Mobile Sources</b>	[ton/yr]																							
Worker Trips	7.2	74	0.22	7.6	3.2	1.4	2.7	36.3	0.17	3.8	3.8	1.5	2.5	34.2	0.16	4.5	3.5	1.4	2.6	35.3	0.16	4.1	3.6	1.5
Resident Trips	5.0	54	0.14	7	1.9	0.8	2.6	36.8	0.15	5.4	3.3	1.4	4.1	58.1	0.24	8.3	5.3	2.2	3.4	47.5	0.20	6.9	4.3	1.8
Campus Vehicles - On Road	22	15	0.057	1.9	1.8	0.9	1.8	3.1	0.0198	0.56	2.1	0.9	1.8	3.1	0.0198	0.56	2.1	0.9	1.8	3.1	0.0198	0.56	2.1	0.9
Campus Vehicles - Off Road	2.1	18.5	0.0041	4.4	0.19	0.18	2.1	18.5	0.0041	4.4	0.19	0.18	2.1	18.5	0.0041	4.4	0.19	0.18	2.1	18.5	0.0041	4.4	0.19	0.18
Other Trips	17	52	0.16	6.8	2.6	1.2	5.6	26.3	0.13	3.6	2.8	1.2	5.8	27	0.13	3.7	2.9	1.2	5.7	26	0.13	3.6	2.9	1.2
Entrained Roadway Dust <sup>4</sup>	-	-	-	-	20.6	3.1	-	-	-	-	27.1	4.1	-	-	-	-	31.9	4.8	-	-	-	-	29.5	4.4
Construction Off-Road Equipment <sup>5</sup>	0.51	2.7	0.0042	1.2	0.20	0.20	0.39	2.7	0.0048	1.2	0.19	0.19	0.87	4.6	0.0084	2.2	0.20	0.20	0.81	4.3	0.0070	1.7	0.20	0.20
<b>Subtotal [ton/yr]</b>	<b>54</b>	<b>215</b>	<b>0.58</b>	<b>29</b>	<b>31</b>	<b>7.7</b>	<b>15</b>	<b>124</b>	<b>0.47</b>	<b>19</b>	<b>39</b>	<b>9.5</b>	<b>17</b>	<b>145</b>	<b>0.56</b>	<b>24</b>	<b>46</b>	<b>11</b>	<b>16</b>	<b>135</b>	<b>0.52</b>	<b>21</b>	<b>43</b>	<b>10</b>
<b>Total [ton/year]</b>	<b>82</b>	<b>248</b>	<b>0.75</b>	<b>47</b>	<b>33</b>	<b>10</b>	<b>49</b>	<b>165</b>	<b>0.69</b>	<b>40</b>	<b>42</b>	<b>12.4</b>	<b>53</b>	<b>187</b>	<b>0.78</b>	<b>45</b>	<b>49</b>	<b>14</b>	<b>51</b>	<b>176</b>	<b>0.74</b>	<b>43</b>	<b>46</b>	<b>13</b>

**Notes:**

<sup>1</sup> Fall 2035 represents full buildout of the Project. Mobile emission factors are conservatively used from year 2030, to be consistent with the GHG report and comparison to State 2030 targets.

<sup>2</sup> The FO and HO Alternatives inventories include emissions changes due to additional graduate student beds and faculty/staff housing compared to the Project.

<sup>3</sup> PM<sub>2.5</sub> has conservatively been assumed to equal PM<sub>10</sub> for non-mobile sources.

<sup>4</sup> Entrained road dust has been added for consistency with BAAQMD operational thresholds, as described in Section 3.4.2.1.

<sup>5</sup> For the Project inventory, construction emissions are estimated using CalEEMod® 2013.2.2 using the average annual square footage of construction and demolition and estimated excavation from fiscal year 2001 through fiscal year 2015 with default construction schedules and equipment lists. For the Alternatives inventories, construction emissions are added for the annual average number of additional dwelling units. For all inventories, construction equipment is all assumed to meet Final Tier 4 standards, except for chainsaws and paving phase equipment. Construction on-road emissions (worker, vendor, and hauling trips) are included in the mobile sources.



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**Figure 4.** Project alternative CAP Emissions (Mobile Use) - p. 31 of [RDEIR Appendices](#)

**Table 3-4**  
**FO Alternative CAP Emissions - Mobile Use**  
**Stanford University**  
**Stanford, CA**

Change from DEIR Fall 2035 analysis												
Trip Type	Trip Information <sup>a</sup>						Total Emissions [ton/year] <sup>11</sup>					
	Group	Number of Vehicles <sup>2</sup>	Trips per Day per Vehicle <sup>2</sup>	Total Vehicle Trips per Year <sup>2</sup>	Trip Length [mile]	Total VMT [mile/year]	ROG	CO	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	
Off-Campus (Worker) Trips <sup>3</sup>	Undergraduate	185	2.0	55,470		404,378	0.028	0.21	0.015	0.021	0.0085	9.3E-04
	Graduate	701	2.0	291,607		2,668,207	0.15	1.3	0.10	0.14	0.056	0.0061
	Post-doc	971	2.0	431,163		3,129,103	0.22	1.6	0.12	0.16	0.066	0.0072
	Faculty/Staff	7,350	2.0	3,263,320		31,275,093	1.7	16	1.1	1.6	0.66	0.071
	Casual Employees	398	2.0	176,852		2,368,054	0.10	1.1	0.084	0.12	0.050	0.0054
	Contingent Employees	387	2.0	171,987		2,106,846	0.094	1.0	0.076	0.11	0.044	0.0048
	Temporary Employees	797	2.0	354,016		4,517,250	0.19	2.2	0.16	0.23	0.095	0.010
	Non-Employee Affiliates: 20% FTEs	223	2.0	99,182		1,178,277	0.054	0.57	0.042	0.060	0.025	0.0027
	Non-Employee Affiliates: FTEs	1,222	2.0	542,399		6,443,705	0.29	3.1	0.23	0.33	0.13	0.015
	Third Party Contractors	321	2.0	142,671		2,027,352	0.079	1.0	0.072	0.10	0.042	0.0046
On-Campus (Resident) Trips <sup>3</sup>	Janitorial Shift Workers	257	2.0	114,049		1,620,630	0.063	0.76	0.057	0.082	0.034	0.0037
	First Mile to Transit (all Workers + Students)	2,475	2.0	1,098,257		4,528,261	0.54	2.7	0.19	0.23	0.096	0.0106
	Construction	11,987	0.2	454,737		6,421,953	0.95	3.0	0.23	0.33	0.13	0.015
	<b>Sub-Total</b>	<b>27,275</b>		<b>7,195,712</b>		<b>68,689,109</b>	<b>4.5</b>	<b>34</b>	<b>2.5</b>	<b>3.5</b>	<b>1.4</b>	<b>0.16</b>
	Undergraduate	2,079	5.84	2,550,030		9,891,078	1.0	6.1	0.42	0.51	0.21	0.023
	Graduate	7,099	3.9	8,834,714		46,244,310	3.8	26	1.9	2.4	1.0	0.11
Campus Vehicles - On-road <sup>4</sup>	Post-doc	1,182	3.1	1,187,325		7,766,860	0.544	4.16	0.298	0.3958	0.1636	1.8E-02
	Faculty/Staff	6,376	2.7	6,175,536		40,396,939	2.93	21.6	1.56	2.06	0.85	0.093
	<b>Sub-Total</b>	<b>16,736</b>		<b>18,747,605</b>		<b>104,299,187</b>	<b>8.3</b>	<b>58</b>	<b>4.1</b>	<b>5.3</b>	<b>2.2</b>	<b>0.24</b>
	Bonair on-road - gas <sup>8</sup>	470	2.5	432,198	7.3	3,155,049	0.16	1.1	0.080	0.080	0.033	0.0048
Other Trips <sup>3</sup>	Bonair on-road - diesel	11	3.0	12,246	7.3	89,394	3.0E-04	0.0069	8.1E-04	0.0023	0.0010	9.6E-05
	Bonair on-road buses diesel	10	1.1	3,871	7.3	28,261	0.0029	0.030	0.079	0.0985	3.1E-04	2.6E-04
	Bonair Unfiltered - Assuming on-road - gas	74	1.6	43,051	7.3	314,270	0.017	0.11	0.0079	0.0080	0.0033	4.0E-04
	PSSI - Collection Trucks - diesel	28	4.0	40,880	59	2,424,184	0.36	1.6	1.6	0.29	0.14	0.014
	PSSI - Company Vehicles - diesel	10	6.7	24,303	7.3	177,409	0.0012	0.027	0.0032	0.0091	0.0038	3.8E-04
	Marguerite <sup>10</sup>	66				2,618,108	0	0	0	1.7	0.72	0
	Public Safety	31	2.6	31,879	7.3	232,720	0.022	0.17	0.012	0.012	0.0049	5.9E-04
	<b>Sub-Total</b>	<b>700</b>		<b>588,428</b>		<b>9,039,395</b>	<b>0.56</b>	<b>3.1</b>	<b>1.8</b>	<b>2.1</b>	<b>0.90</b>	<b>0.020</b>
	General Visitors (Vendor)	2,656,551	2.0	5,313,101		32,968,952	2.7	18	1.3	1.7	0.70	0.076
	Worker Non-Commute Trips			397,810		1,234,221	0.14	0.82	0.056	0.063	0.026	0.0030
Campus Vehicles - Off-road <sup>5,7</sup>	Non-event Visitor Trips - Passenger	61,835	2.0	140,047		3,675,599	0.088	1.6	0.13	0.19	0.077	0.0082
	Non-event Visitor Trips - Buses	5,250	2.0	10,500		390,000	0.073	0.79	1.7	0.23	0.11	0.0061
	Event Visitor Traffic	67,085	2.0	299,917		6,980,045	0.18	3.1	0.24	0.35	0.15	0.016
	Deliveries - Trucks	228,153	2.0	456,305		2,977,821	0.47	2.2	2.3	0.36	0.17	0.018
	Construction Vendor Trucks <sup>12</sup>	2.4	11,590	7.3	84,607	0.02	0.4	0.2	0.01	0.00	0.001	
	Construction Haul Trucks <sup>12</sup>	2.4	18,356	20	367,120	0.06	1.3	1.0	0.04	0.02	0.007	
	<b>Sub-Total</b>	<b>3,018,873</b>		<b>6,617,680</b>		<b>48,226,638</b>	<b>3.7</b>	<b>27</b>	<b>5.8</b>	<b>2.9</b>	<b>1.2</b>	<b>0.13</b>
	<b>Total VMT</b>						<b>230,254,329</b>					
							<b>[bhp-hr/yr]<sup>6</sup></b>					
Campus Vehicles - Off-road Equip <sup>5,7</sup>	Siebel and Red Barn equip - gas <sup>9</sup>					38,837	3.4	14	0.12	0.040	0.040	0.0015
	Siebel and Red Barn equip - diesel <sup>9</sup>					52,854	0.087	0.37	0.32	0.031	0.029	3.1E-04
	Off-road equip - gas					6,553	0.58	2.4	0.20	0.0068	0.0068	2.5E-04
	Off-road equip - diesel					102,570	0.17	0.72	0.62	0.060	0.055	6.1E-04
	Light Towers - gas					2,925	0.0026	0.0086	0.016	8.3E-04	8.3E-04	2.3E-05
	Light Towers - diesel					186,791	0.16	0.55	1.0	0.053	0.053	0.0014
	<b>Sub-Total</b>					<b>390,532</b>	<b>4.41</b>	<b>18.5</b>	<b>2.1</b>	<b>0.19</b>	<b>0.18</b>	<b>0.0041</b>
Total Emissions from Mobile Sources [tons/yr]						21.4	140	16.3	14.0	6.0	6.0	



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**Figure 5.** Summary of air pollutant emissions - p. 102 of [RDEIR](#)

**TABLE 7A.2-3**

**NET CHANGE IN MAXIMUM ANNUAL AND AVERAGE DAILY OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS  
UNDER ADDITIONAL HOUSING ALTERNATIVE A**

Pollutant:	ROG	NOx	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>a</sup>
<b>Maximum Annual Emissions (Tons Per Year)</b>				
Total 2018 Baseline Emissions <sup>c</sup>	47	82	33 <sup>c</sup>	10 <sup>c</sup>
Total Emissions in 2035 with Buildout of Additional Housing Alternative A	45	53	49	14
Net Change in Emissions of Additional Housing Alternative A Compared to Baseline <sup>b</sup>	-2	-29	+16	+4
Threshold	10	10	15	10
Above Threshold?	No	No	<b>Yes</b>	No
Total Emissions in 2035 with Buildout of proposed 2018 General Use Permit <sup>c</sup>	40	49	42 <sup>c</sup>	12 <sup>c</sup>
Increase in Emissions of Additional Housing Alternative A over proposed 2018 General Use Permit <sup>b</sup>	+5	+4	+7	+2
<b>Average Daily Emissions (Pounds Per Day)</b>				
Total 2018 Baseline Emissions <sup>c</sup>	256	447	181 <sup>c</sup>	55 <sup>c</sup>
Total Emissions in 2035 with Buildout of Additional Housing Alternative A	246	288	269	76
Net Change in Emissions of Additional Housing Alternative A Compared to Baseline <sup>b</sup>	-10	-159	+88	+22
Threshold	54	54	82	54
Above Threshold?	No	No	<b>Yes</b>	No
Total Emissions in 2035 with Buildout of proposed 2018 General Use Permit <sup>c</sup>	220	270	232 <sup>c</sup>	68 <sup>c</sup>
Increase in Emissions of Additional Housing Alternative A over proposed 2018 General Use Permit <sup>b</sup>	+26	+19	+37	+9



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**Figure 6.** Annual VMT Summary of Full-housing Alternative

### STANFORD FALL 2035 WITH PROJECT VMT - FO Alternative

#### ANNUAL VMT SUMMARY

Category	Annual VMT Total Population			Source Tab
<b>Workers</b>	People	VT	Annual VMT	
Worker Commute - all employee types including all resident F/S	29,966	6,836,136	65,584,942	Worker-Student D29, M29, N29
Student Commute to Campus (live off campus)	2,803	359,527	3,104,168	Worker-Student D36, M36, N36
Resident Students - Grad / Undergrad	16,710	0	0	Worker-Student D39, M39, N39
<b>Residents</b>			(All Trips)	
Home-based Work / Home-based Other				
Faculty / Staff (including family members)	6,376	6,175,536	40,396,939	Resident Annual C9, T9, U9
Graduate Students (including family members)	9,724	8,834,714	46,244,310	Resident Annual C10, T10, U10
Undergraduate Students	8,317	2,550,030	9,891,078	Resident Annual C11, T11, U11
Post Doctoral	1,182	1,187,325	7,766,860	Resident Annual C12, T12, U12
<b>Visitors</b>				
General Visitors (Vendor) - business/academic meetings, deliveries by auto, informal unhosted conferences	5,313,101	32,968,952		Other GHG Inputs H27
Worker Non-Commute Trips	397,810	1,234,221		Other GHG Inputs H28
Deliveries via trucks	456,305	2,977,821		Other GHG Inputs H29
Non-event Visitor Trips - Alumni Center, Conferences, Tours distributed over 303 days excludes Sundays & Holidays		4,065,599		Other GHG Inputs H31
Event Visitor Traffic (not typical weekday)		6,980,045		Other GHG Inputs H30
Marguerite Shuttle/Bus Fleet		2,618,108		Other GHG Inputs H21
PSSI Fleet		2,601,593		Other GHG Inputs H22
Bonair Fleet		3,586,974		Other GHG Inputs H23
Public Safety Fleet		232,720		Other GHG Inputs H24
<b>Totals</b>	<b>75,078</b>	<b>32,110,484</b>	<b>230,254,330</b>	



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**Figure 7.** According to the Nexus Study<sup>24</sup>, new employee households in 2018-2035 will follow the following distribution:

Table II-2 New Employee Households, 2018-2035								
	Staff	Faculty	Post-Doc	Contract	Janitorial	Casual and Temp	Contingent	Total
Net New Workers	1,950	789	961	58	46	166	40	4,010
Workers Per Worker Household	1.77	1.77	2.14	1.77	1.77	1.77	1.77	
Net New Households	<b>1,102</b>	<b>446</b>	<b>449</b>	<b>33</b>	<b>26</b>	<b>94</b>	<b>23</b>	<b>2,172</b>

Contract, Janitorial, Casual and Temp, and Contingent categories comprise the “Other Workers” category referenced in the FEIR. Percentage-wise, the new “Other Workers” households will fall into these categories as follows<sup>25</sup>:

*Total net new “Other Workers” households:*

$33 \text{ Contract} + 26 \text{ Janitorial} + 94 \text{ Casual}/\text{Temp} + 23 \text{ Contingent} = 176$  net new Other Workers households

*Contract % of Other Workers:*  $33/176 = 18.75\%$

*Janitorial % Other Workers:*  $26/176 = 14.77\%$

*Casual and Temp % Other Workers:*  $94/176 = 53.41\%$

*Contingent % Other Workers:*  $23/176 = 13.07\%$

<sup>24</sup><https://www.sccgov.org/sites/osh/HousingandCommunityDevelopment/Documents/County%20of%20Santa%20Clara%20Affordable%20Housing%20Nexus%20Studies%20Public%20Review%20Draft.%2004-04-2018.pdf>

<sup>25</sup> NOTE: household #s don’t add up to the EIR total “other workers” households, but we assume that the rough percentages stay the same. We assume contract, janitorial, casual and temp, and contingent = Other Workers (see Housing Alternative A)



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**Figure 8.** EIR Estimated Growth for Off-Campus Housing Demand (Housing Alternative A)<sup>26</sup>

**TABLE 7A-1**  
**NET INCREASE IN HOUSING UNITS UNDER ADDITIONAL HOUSING ALTERNATIVE A**

	Undergraduate Students	Graduate Students	Postdoctoral Students <sup>a</sup>	Faculty <sup>b</sup>	Staff <sup>c</sup>	Other Workers <sup>d</sup>	Total
Total Growth During 2018 General Use Permit (Daily)	1,700	1,200	961	789	2,438	1,074	8,162
Less: Number Housed on Campus <sup>e</sup>	(1,700)	(918)	N/A	(550)	N/A	N/A	(3,168)
Off-Campus Stanford Population Growth	0	282	961	239	2,438	1,074	4,994
Less: Non-Stanford Population in On-Campus Housing <sup>f</sup>	0	(72)	0	(418)	0	0	(490)
Net Increase in Off-Campus Population under 2018 General Use Permit	0	210	961	(179)	2,438	1,074	4,504
<b>Calculation of Increase in Off-Campus Households under 2018 General Use Permit<sup>g</sup></b>	<b>0</b>	<b>83</b>	<b>449</b>	<b>(102)</b>	<b>1,385</b>	<b>610</b>	<b>2,425</b>
<b>Increase in Households if Beds are provided on Campus for Graduate Students rather than Off Campus Housing Units<sup>h</sup></b>		207					<b>2,549</b>
Household Adjustment Factor <sup>g</sup>	N/A	2.54/1.02	2.14	1.76	1.76	1.76	N/A

<sup>26</sup> [Final Environmental Impact Review](#) (page 817)



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**Figure 9.** Number of SEIU Local 2007 Employees by Zip (2017)

