

July 8, 2026

Mayor and Members of Council

City of Calgary
Municipal Building
800 Macleod Trail S.E.
Calgary, Alberta T2G 5E6

RE: Public Hearing July 21
File Number: Land Use Redesignation – LOC2025-0061 (the “Application”)
Development Permit – DP2026-03372
Subject Site: 108 Mission Road SW (the “Subject Site”)

Dear Mayor and Members of Council,

JCB Engineering Ltd. (JCB) is pleased to present this analysis of transportation related issues that need to be addressed to support a proposed 61 unit affordable housing development at 108 Mission Road in the Erlton Community of the City of Calgary, Alberta. This assessment was requested by representatives of the 108 Mission Road Community Opposition Group.

1. Documents Reviewed

The following documents were either provided by the community or were available through the City of Calgary Development Map.

- LOC2025-0061 Circulation Package dated March 25, 2026
- 108 Mission Road Access Review from CIMA+ dated May 6, 2026
- Open House slides from May 20, 2026 presentation by Onward Homes
- DP2026-03372 Application Notice dated June 23, 2026
- Email correspondence between B&A Studios and the Erlton Community Association

In addition to these documents, Justin Barrett of JCB visited the subject site on June 20 and July 4, 2026 and was accompanied by representatives of the 108 Mission Road Community Opposition Group to observe some of the issues related to transportation with the proposed development on both occasions. Pictures taken by Justin Barrett during the site visits are attached to this letter.

References to the above listed documents and site visit pictures will be made as appropriate during the discussion on the transportation issues with this application.

2. Transportation Issues to Address

This document is only concerned with transportation related issues that, in the opinion of the author, should be addressed prior to approval of the development permit. Addressing these issues and providing the appropriate mitigation, if necessary, would minimize the impact of the proposed development on the surrounding transportation network.

2.1. Parkade Access to Mission Road SW

Sight lines are a concern for vehicles using the proposed parkade access on Mission Road SW. The location of the access is desirable as it lines up as the north leg for the existing 1 Street SW intersection, but the access is on the inside of a curve. During the site visits it was noted that the sightlines to the northwest along Mission Road SW for a vehicle exiting the parkade may be limited. The posted speed on Mission Road SW is 40 km/h, which has a minimum stopping sight distance of 50 metres as per the guidelines from the Transportation Association of Canada¹. Often a factor of safety is used for these sight distance calculations, increasing the speed by 10 km/h; at 50 km/h the minimum stopping sight distance is 65 metres. It is important to note that the stopping sight distance is the minimum to allow a vehicle to stop when a problem is observed ahead on the roadway, for many maneuvers, including left turns, the longer decision sight distance is often used.

Picture (1) from the site visit shows what a driver would see to the northwest upon exiting the parkade from 108 Mission Road SW, a southbound vehicle approaching the crosswalk across Mission Road SW that is visible in the picture would be approximately 45 metres from the location where the picture was taken. This location would be the decision point for drivers exiting the parkade, before they cross the sidewalk on the north side of Mission Road SW. **Picture (2)** is taken from the other side of the sidewalk, the vehicle would be blocking the sidewalk from this position, and now a southbound vehicle would be visible approximately 65 metres to the northwest. Based on this information, a vehicle exiting the parkade would have to cross the sidewalk on the north side of Mission Road SW before adequate sight lines were possible to achieve the minimum stopping sight distance for even 40 km/h.

In the Road Access Review conducted by CIMA+² to support the Application the site lines are illustrated from the decision point of a driver exiting the proposed parkade and then looking northwest along Mission Road SW. The conclusion is that 85 metres of sight distance is available to the driver exiting the parkade. However, no mention of the impacts of the existing topography is mentioned in the report and from the elevations provided in the DP2026-03372 Application package, it appears that at least some of the existing slope on the north side of Mission Road SW, visible in **Pictures (1) and (2)**, will remain and with a proposed retaining wall on the west side of the parkade access. It is likely that the sight lines to the northwest will be continue to be limited for drivers exiting the proposed parkade.

The Road Access Review mentions that implementing all-way control at the intersection of Mission Road and 1 Street SW, such as a button roundabout, would eliminate the need to address sight line concerns. The size of a button, or mini, roundabout³ for a 9.0 metre wide roadway would require a central island of approximately 5.7 to 7.2 metres in diameter with 3.0 to 7.5 metre curb return radii; this would not likely fit within the existing footprint of the Mission Road and 1 Street SW intersection and so would require additional corner cuts, including from the Subject Site. Also, sight lines must still be analysed at an intersection, even with stop or yield controls on all approaches. Drivers must

¹ Geometric Design Guide for Canadian Roads, Table 2.5.2; Transportation Association of Canada; June 2017

² 108 Mission Road Access Review; CIMA+, A0002732; May 6, 2026

³ Roundabouts and Circular Intersections; National Association of City Transportation Officials; 2026

be able to see an approaching vehicle and have adequate time to react to an unexpected situation, such as a driver ignoring a stop or yield sign when approaching an intersection.

2.2. Erlton Terrace SW Access

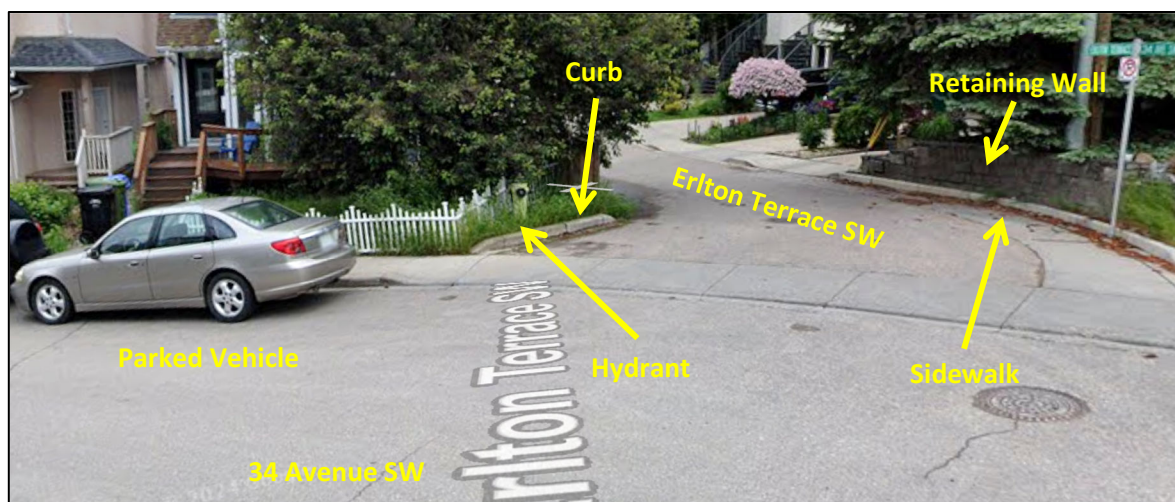
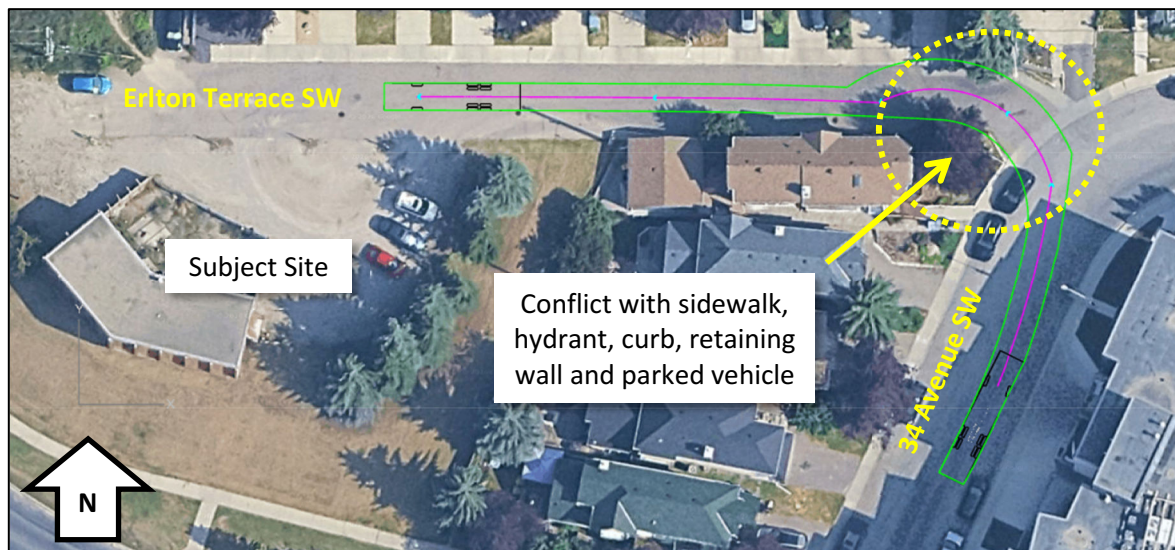
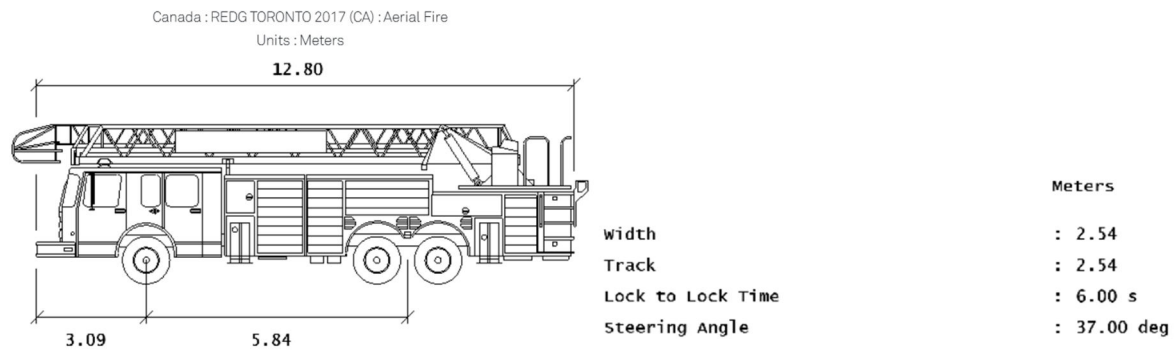
In the sweep path plans provided in the DP2026-03372 Application package, delivery, waste and fire design vehicles are shown accessing the Subject Site via Erlton Terrace SW. The four sweep paths provided on the plans are as follows.

- A delivery truck approaching the Subject Site after travelling north on 34 Avenue SW from Mission Road SW
- A delivery truck leaving the Subject Site and travelling south on 34 Avenue SW to Mission Road SW
- A waste truck approaching the Subject Site after travelling north on 34 Avenue SW from Mission Road SW
- A waste truck leaving the Subject Site and travelling east on 34 Avenue SW

Both the delivery truck and waste truck design vehicles had to use the full width, of approximately 5.5 metres, of Erlton Terrace SW to approach and leave the subject site, and required the use of the loading stall provided to be able to turn around. If there was another vehicle parked in this loading stall, then the vehicle could not turn around and would have to exit Erlton Terrace SW by reversing onto 34 Avenue SW or using one of the existing residential driveways on the north side of the roadway. There is no cul-de-sac or hammerhead to use at the west terminus of Erlton Terrace SW to use to turn around **Picture (3)**, there is only an existing parking stall on the north side of Erlton Terrace, shown in **Picture (4)**. This stall cannot be used as a turnaround as it is only 3.5 metres wide, 5.0 metres deep and has a small retaining wall on three sides, making it impractical to be used by any vehicle larger than a standard passenger car. Currently, vehicles use either the substation site or one of the residential driveways to turn around at the west end of Erlton Terrace SW.

It is important to note that the fire design vehicle shown on the plan in the Application package was not tested for access to the Subject Site from Erlton Terrace SW. JCB used AutoTurn to test a similar fire truck design vehicle, as the custom CFD Bronto Skylift was not available in the vehicle library, a smaller Canadian fire truck design vehicle was chosen. The information about the design vehicle used in the analysis is illustrated in the following figure along with the sweep path overlaid on a Google Maps image with the accompanying Google Street View image.

Figure 2-1: Fire Truck Design Vehicle Sweep Path



The fire truck design vehicle could not make the turn from 34 Avenue SW northbound to Erlton Terrace SW westbound, and due to its size would not be capable of turning around on Erlton Terrace SW, the delivery and waste design vehicles shown in the application package were both less than 10 metres long and required the full width of Erlton Terrace to turn around, a 13 metre long fire truck may not be able to make that turn even with the use of the proposed parking stalls on the south side of Erlton Terrace SW.

If there are any vehicles using the proposed parking stalls on the south side of Erlton Terrace SW, particularly the single loading stall, then a delivery or waste truck would not be able to turn around when leaving the Subject Site. A fire truck would not be able to access the Subject Site from Erlton Terrace SW due to the narrow width of Erlton Terrace SW.

It is noted that the existing townhouses on the north side of Erlton Terrace SW currently use this roadway for access, but it is only for personal vehicles as there is lane access on the north side of the townhouses where the waste and recycling vehicles service the lots. There is a hammerhead cul-de-sac at the west end of that lane that provides adequate space for the larger waste trucks to turn around. These townhouses require emergency vehicle access, as would the proposed development from Erlton Terrace SW, and there are still significant limitations for those vehicles to access the townhouses.

2.3. Trip Generation

In the DP2026-03372 Application package there are a total of 61 dwelling units proposed for the Subject Site. Data from the Institute of Transportation Engineers Trip Generation Manual, 12th Edition, for Affordable Housing indicates that for 61 dwelling units, there would be 293 to 367 trips generated on a typical weekday, with 22 to 36 trips generated in each of the peak hours. The information and data plots from ITE for the Affordable House land use are attached to this report for reference.

From the City of Calgary Transportation Impact Assessment (TIA) Guidelines:

In Calgary, as a rule of thumb, if a development has the potential for generating more than 100 person trips per hour (considering all modes) at any given peak period or for any given mode, a TIA will be required. On occasions, despite the development on reaching the threshold value above mentioned, a TIA will still be requested due to particular circumstances in the area surrounding the project or due to concerns of the surrounding / adjacent communities, or other circumstances that TDS deems appropriate to review.

It is understood that because the Subject Site is expected to generate less than 100 person trips per hour in a peak period, no TIA was requested by the City of Calgary to support the Application. While the ITE trip generation data does support this 'rule of thumb' for the request of a TIA, because the Subject Site is a brownfields development within a community that has mature development there are 'particular circumstances' that would support the request of a TIA for the Subject Site. Increased densification, above what was previously allowed under the land use bylaw, is a justification that the City of Calgary has used for requesting a TIA. At a minimum, a TIA can review the trip generation expected due to densification and confirm quantifiably if there will be an impact to the existing

transportation infrastructure. Without this basic analysis being conducted, the impact of a development is unknown and just assumed to not be an issue for the community.

As mentioned previously, the Road Access Review for the Subject Site mentions that implementing all-way control at the intersection of Mission Road and 1 Street SW, such as a button roundabout, would be beneficial for sight lines for vehicles exiting the parkade. However, not only would this change in the traffic control not remove the need for a sight line analysis, but would have an impact on the operation of Mission Road SW. Currently, this roadway operates with no traffic control on it between the signalised intersections with Macleod Trail and 30 Avenue SW; a roundabout would result in yield signs being placed in both directions on Mission Road SW and so would result in some vehicles having to stop prior to entering the roundabout if there is already a vehicle circulating, including to vehicles using the access to the parkade. The impact of the delay and capacity of this new traffic control would need to be analysed as part of a TIA to confirm that such a significant change to the operation of the Mission Road and 1 Street SW intersection would not be detrimental to traffic flow on Mission Road SW or to the adjacent intersections with 34 Avenue NW that are less than 60 metres to the west and east.

2.4. Parking Generation

In the DP2026-03372 Application package there are proposed to be 25 vehicle parking stalls in the parkade for residents of the Subject Site, including 2 stalls that are used only for electric vehicle charging, and 3 visitor vehicle parking stalls located on Erlton Terrace SW to support a total of 61 dwelling units. Data from the Institute of Transportation Engineers Parking Generation Manual, 6th Edition, for Affordable Housing indicates that for 61 dwelling units, the average parking demand is between 49 and 61 stalls, and the 85th percentile demand is 85 parking stalls. The information and data plots from ITE for the Affordable House land use are attached to this report for reference.

It is understood that no parking assessment has been completed for the Subject Site to justify the reduced number of parking stalls on site than what the ITE studies state there is potentially demand for. It is possible that because the Subject Site is on the edge of the transit oriented development radius that this is support for the parking variance; this will be discussed in the next section of this report.

When the City of Calgary removed many of the parking minimums from the land use bylaw, there became a greater need for parking assessments to be conducted to determine what the parking demand would be for a development and how this demand could be supplied or mitigated. Without a parking assessment, the parking demand for the Subject Site cannot be quantified and the measures taken to either supply parking on site or mitigate the demand cannot be known if they will be effective. As a result, there could be a significant reliance to use on-street parking, which is already limited as there is already a high use of on-street parking in the area, particularly along the adjacent section of 34 Avenue SW, which was observed during the site visit by JCB.

2.5. Active Transportation and Transit

The distance from the Subject Site to the 39 Avenue C-Train station, the nearest primary transit station, is 600 metres in a straight line connecting the two sites; however, if the distance measured along the existing sidewalks is used, the distance is 800 metres. These measurements place the Subject Site just on the edge of the radius used by the City of Calgary to plan transit oriented development areas, but to actually travel to the C-Train station from the Subject Site requires additional distance. There are transit stops in both directions on Mission Road SW that provide convenient access to Route 15, which has 40 minute headways on weekdays, and has a connection to the 39 Avenue C-Train station. There is also storage proposed for bicycles and electric scooters in the parkade to help support these modes of travel. However, as the ITE trip and parking generation data from the previous sections in this report show, there will likely still be a significant demand for personal vehicle use by residents and visitors to the Subject Site. Without a TIA being conducted, there is no quantifiable information that the availability of transit or additional parking for bicycles and scooters will offset the need for vehicle parking to be supplied for the Subject Site.

There have been several existing commercial and multi-family developments recently completed along Mission Road SW and Macleod Trail to the east of the Subject Site that are well within the transit oriented development radius for the 39 Avenue C-Train station. These developments are already taking advantage of their proximity to primary transit to obtain parking variances, which reduces the availability of on-street parking for future developments in the area.

3. Summary

In my professional opinion as a transportation engineer, the impact on the transportation network of the proposed 61 unit affordable multi-family development at 108 Mission Road SW needs to be assessed by conducting a transportation impact assessment. This assessment needs to include the following components.

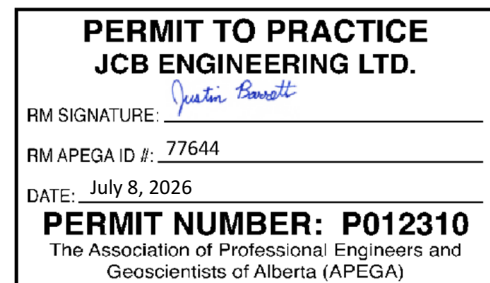
- A review of the additional trips that are expected to be generated by the increase in density of the Subject Site.
- The impact of additional traffic and potential changes to traffic control on the operations of Mission Road SW.
- Whether sufficient parking has been provided on site to meet the expected demand or if there is adequate mitigation to support a parking variance.

Critically, the accesses to the Subject Site via the parkade access from Mission Road SW and from Erlton Terrace SW need to be reviewed in more detail. The current reviews of these access points are insufficient, as the Mission Road SW parkade access sight lines appear to not take into account the topography of the Subject Site and assume that changes to the control of the Mission Road and 1 Street SW intersection will resolve sight line concerns. The Erlton Terrace SW access has more significant issues as emergency vehicle access is likely to be restricted due to existing constraints, and delivery and waste

vehicles cannot turn to leave the Subject Site unless the loading area is available for their exclusive use and there is only one vehicle present at a time.

During the preparation of this report there was some information provided that the proposed development at 108 Mission Road SW may change the number of residential units on the site. Regardless of size of development the issues discussed in this study still need to be addressed. The trip and parking generation values will decrease if there are fewer units, but there will still be an impact on the transportation network, especially for on-street parking availability if a parking variance is still pursued. The access issues from both Mission Road SW and Erlton Terrace SW identified in this study would be present for any development on the Subject Site regardless of the number of units proposed.

If you wish to discuss any issues within this document, please contact the undersigned at (403) 714-5798 or jcbarrett@jcbengineering.ca.



Justin Barrett, P. Eng., PTOE
President and Transportation Engineer
JCB Engineering Ltd.

Attachments

- Site Pictures (Justin Barrett; June 20, 2026)
- Institute of Transportation Engineers, Trip Generation Manual, 12th Edition Excerpts
- Institute of Transportation Engineers, Parking Generation Manual, 6th Edition Excerpts

**Site Pictures by Justin Barrett
June 20, 2026**

(1)



108 Mission Road SW Proposed Parkade Access, Looking Northwest From Behind Sidewalk

(2)



108 Mission Road SW Proposed Parkade Access, Looking Northwest From in Front of Sidewalk

(3)



Existing West Terminus of Erlton Terrace SW, Looking West

(4)



Existing Turnaround at West Terminus of Erlton Terrace SW

Land Use: 223

Affordable Housing

Description

Affordable housing includes all multifamily housing that is rented at below market rate. Facilities that are subject to income limitations must also include at least one employed member. Facilities with age restrictions or residents with special needs may not have any employed household members. Eligibility to live in affordable housing can be a function of limited household income, resident age, or special needs.

Land Use Subcategory

Data are presented for three subcategories for this land use: (1) sites with income limitations for its tenants (denoted as income limits in the data plots), (2) sites with both minimum age thresholds and income limitations for its tenants (denoted as senior in the data plots), and (3) sites designed for and occupied by residents with special needs, such as persons with physical and mental impairments, single mothers, recovering addicts and others living in a group setting (denoted as special needs in the data plots).

Additional Data

For most study sites contained in this land use, all dwelling units in the development are classified as affordable units. For residential study sites that provide a mix of market value and affordable units, the study sites with at least 75 percent of the dwelling units designated as affordable are also included in this land use database.

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1990s and the 2010s in California, Florida, Illinois, New Hampshire, and New Jersey.

Source Numbers

436, 501, 918, 934, 1003, 1004, 1046, 1057

Affordable Housing - Income Limits (223)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 5

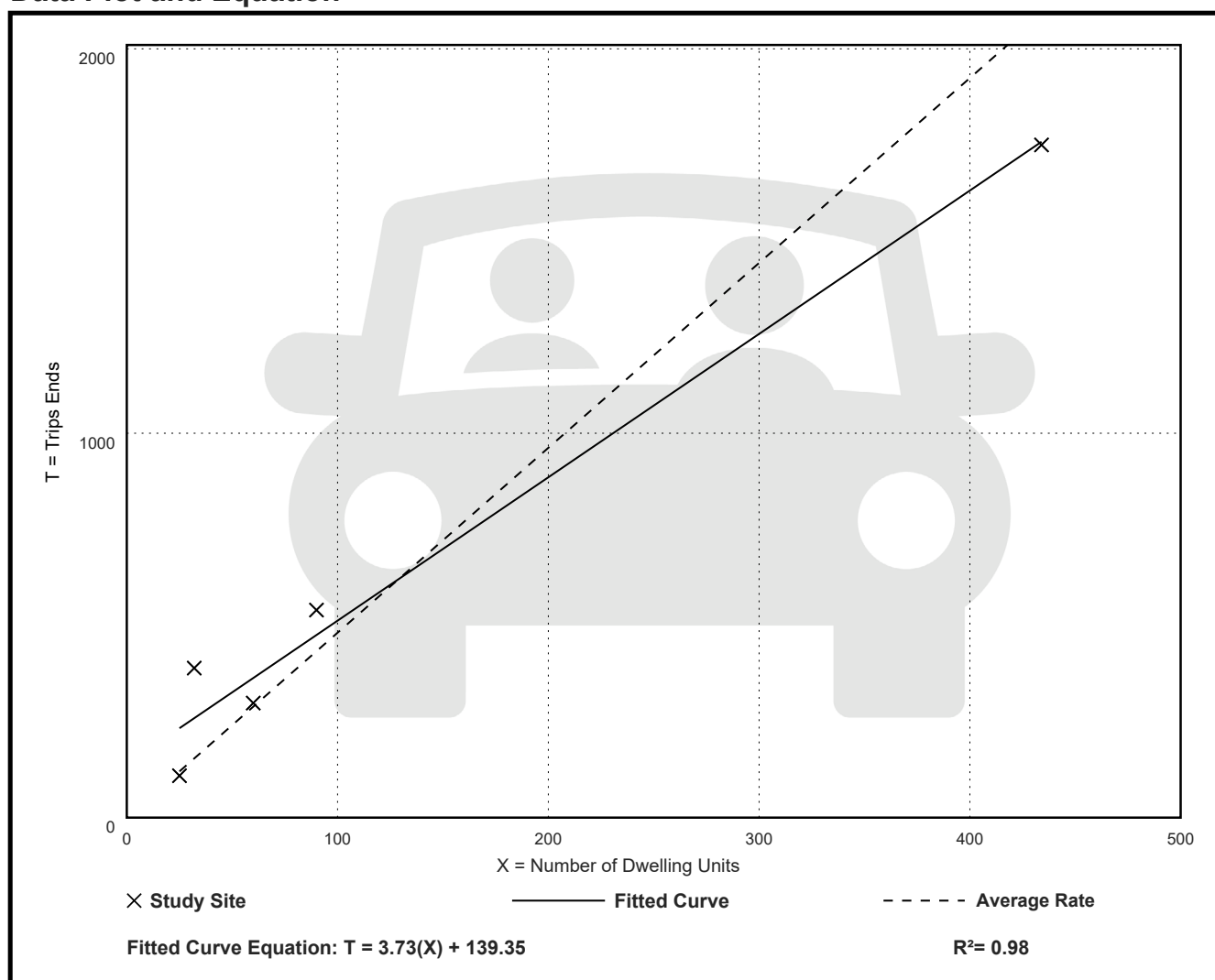
Avg. Num. of Dwelling Units: 128

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.81	4.03 - 12.16	2.03

Data Plot and Equation



Affordable Housing - Income Limits (223)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,
AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 6

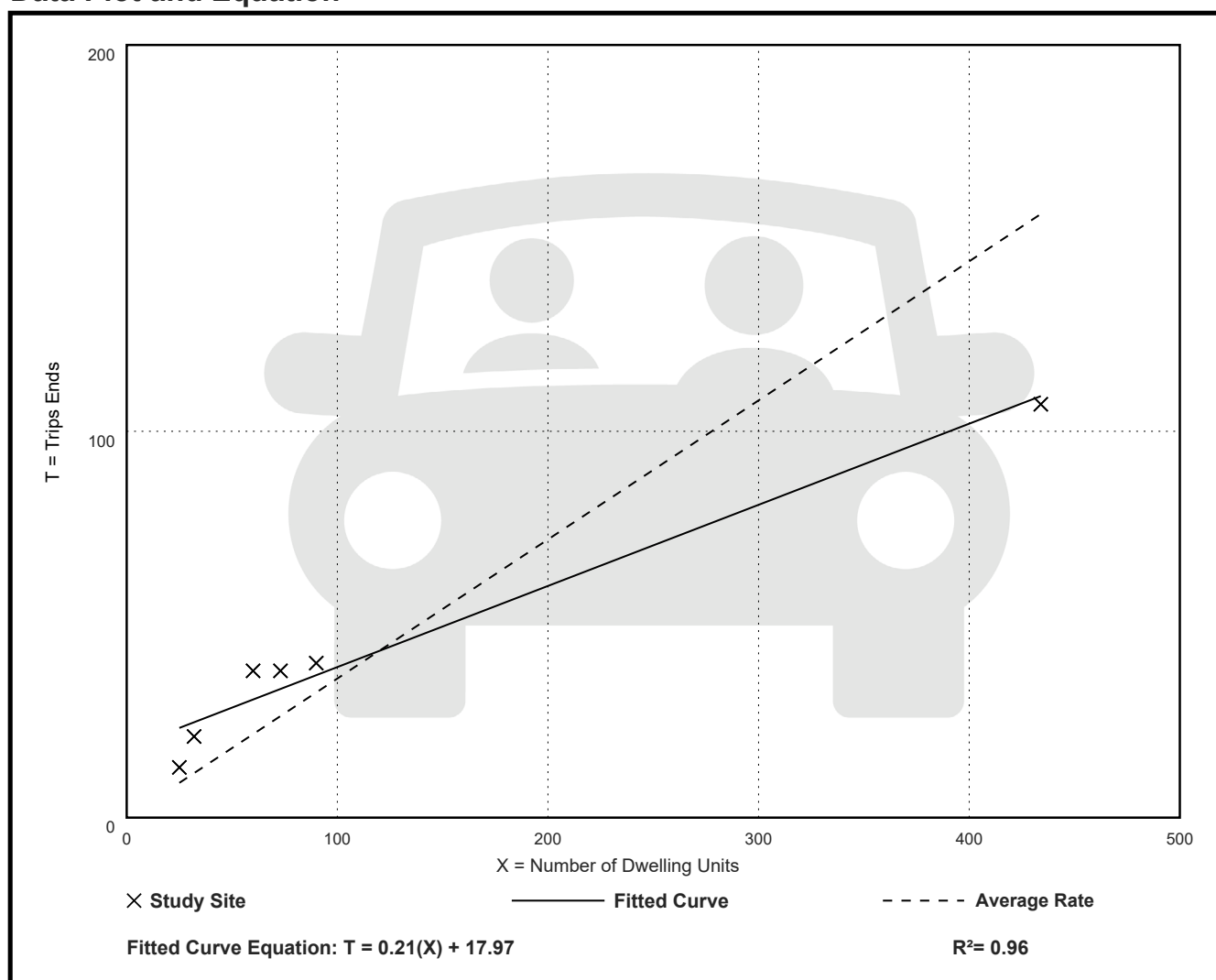
Avg. Num. of Dwelling Units: 119

Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.25 - 0.66	0.16

Data Plot and Equation



Affordable Housing - Income Limits (223)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 9

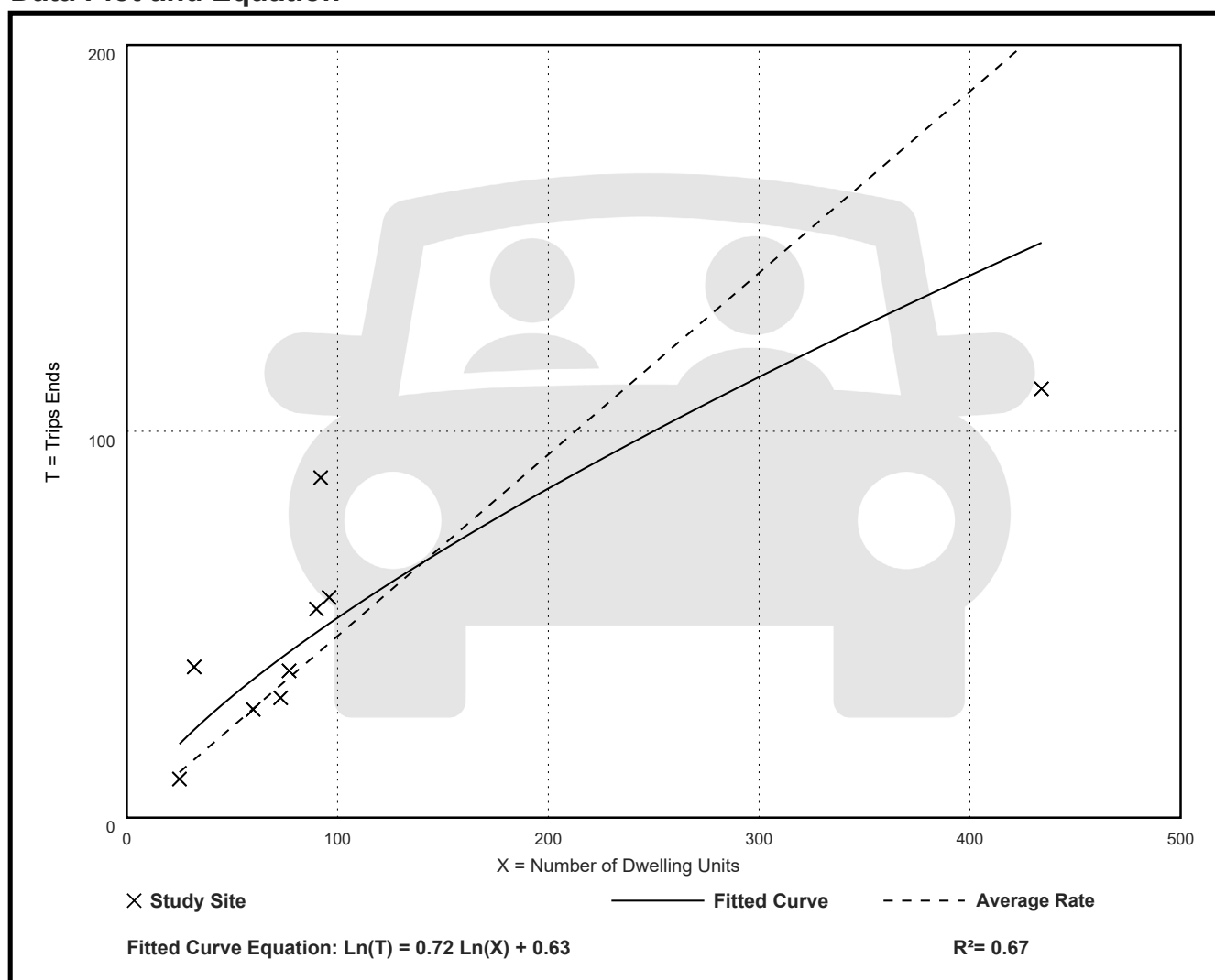
Avg. Num. of Dwelling Units: 109

Directional Distribution: 58% entering, 42% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.47	0.26 - 1.22	0.27

Data Plot and Equation



Land Use: 223 Affordable Housing

Description

Affordable housing includes all multifamily housing that is rented at below market rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age.

Land Use Subcategory

Data are separated into three subcategories for this land use: (1) sites with income limitations for its tenants (denoted as income limits in the data plots), (2) sites with both minimum age thresholds and income limitations for its tenants (denoted as senior in the data plots), and (3) sites designed for and occupied by residents with special needs, such as persons with physical and mental impairments, recovering addicts, and others living in a group setting (denoted as special needs in the data plots).

Time-of-Day Distribution for Parking Demand

The following table presents a Time-of-Day distribution of parking demand on a weekday in a general urban/suburban setting for the three land use subcategories: income limits (two study sites), senior (one study site), and special needs (two study sites).

Hour Beginning	Percent of Weekday Peak Parking Demand		
	Income Limits	Senior	Special Needs
12:00–4:00 a.m.	—	—	—
5:00 a.m.	100	74	86
6:00 a.m.	94	74	86
7:00 a.m.	85	70	93
8:00 a.m.	77	93	100
9:00 a.m.	73	100	93
10:00 a.m.	71	93	93
11:00 a.m.	—	70	100
12:00 p.m.	—	74	100
1:00 p.m.	—	70	93
2:00 p.m.	—	81	79
3:00 p.m.	—	81	93
4:00 p.m.	—	74	64
5:00 p.m.	—	74	86
6:00 p.m.	79	67	79
7:00 p.m.	83	67	71
8:00 p.m.	90	70	71
9:00 p.m.	93	70	79
10:00 p.m.	97	74	93
11:00 p.m.	—	74	93

Additional Data

For the majority of study sites in this land use code, 100 percent of the dwelling units are considered affordable. For residential study sites that provide a mix of market value and affordable units, the study sites with at least 75 percent of the dwelling units designated as affordable are also included in this land use.

The average parking supply ratios for the study sites with parking supply information are shown in the table below.

Setting	Land Use Subcategory	Parking Supply Per Dwelling Unit	Average Peak Parking Occupancy
Center City Core	Income Limits	0.32 (6 sites)	67%
	Senior	0.11 (1 site)	100%
Dense Multi-Use Urban	Income Limits	0.74 (24 sites)	75%
	Senior	0.69 (4 sites)	67%
General Urban/ Suburban	Income Limits	1.4 (26 sites)	75%
	Senior	0.43 (3 sites)	90%
	Special Needs	0.57 (2 sites)	68%

The sites were surveyed in the 1990s, the 2010s, and the 2020s in Alabama, California, Connecticut, District of Columbia, Maryland, Massachusetts, New Jersey, and Oregon.

Source Numbers

314, 514, 533, 535, 536, 537, 539, 541, 579, 582, 585, 586, 603, 611, 622

Affordable Housing - Income Limits (223)

Peak Period Parking Demand vs: Dwelling Units

On a: Weekday (Monday - Friday)

Setting/Location: General Urban/Suburban

Number of Studies: 30

Avg. Num. of Dwelling Units: 156

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.00	0.32 - 1.66	0.85 / 1.40	0.9 - 1.1	0.28 (28%)

Data Plot and Equation

