

**TENTATIVE TRACT MAP NO. 71210
RESIDENTIAL PROJECT
Revised Traffic and Circulation Study**

City of Lancaster, CA

August 26, 2019

P.N. 2064109000

Prepared By:



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INTRODUCTION

Stantec has prepared the following revised traffic and circulation study for the Tentative Tract Map 71210 Residential Project. The revised traffic and circulation study incorporates comments provided by City staff on the study submitted on August 2017 and May 2019. The study provides an assessment of the existing and future traffic conditions within the study area, determines the trip generation and trip distribution for the proposed development, evaluates the potential traffic impacts to the vicinity intersections, and provides feasible mitigations where applicable. A discussion of the site access and circulation plan is also provided.

Project Study Area

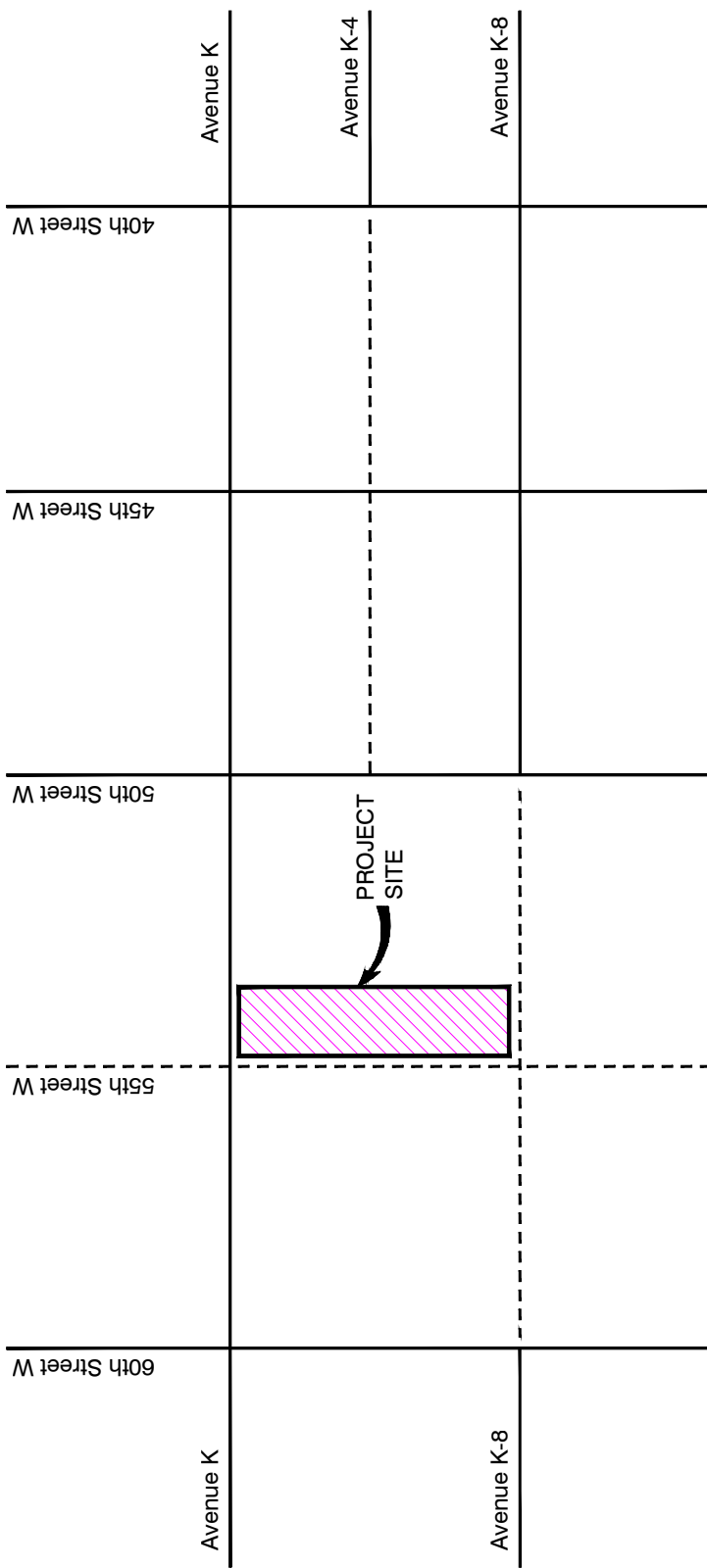
The project site is located south of Avenue K and east of the future 55th Street West in the western portion of the City of Lancaster. The project study area is generally bounded by Avenue K to the north, Avenue K-8 to the south, 52nd Street West to the east and 55th Street West to the west. The study area and the location of the project site are illustrated in Exhibit 1. Based on consultation with City staff, the following intersections were included in the traffic analysis.

Table 1
Study Area Intersections

Intersections	
1. Avenue K/60 th Street West	4. Avenue K/45 th Street West
2. Avenue K/55 th Street West	5. Avenue K/40 th Street West
3. Avenue K/50 th Street West	

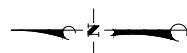
Project Description

The project proposes to construct 171 single family dwellings and 6.73 acres of park space on the 40.4 acre site. The site plan is illustrated in Exhibit 2. Access is proposed via two connections to the future 55th Street West and one connection to the future Avenue K-8. Frontage improvements include widening of Avenue K to major arterial width (including median plus one opposite travel lane) and construction of 55th Street West and Avenue K-8 to Master Plan width to the center line plus one lane. The new Avenue K/55th Street intersection will be a roundabout with yield control on approaches.



LEGEND

- Existing Roadway
- - - Future Roadway



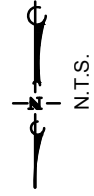
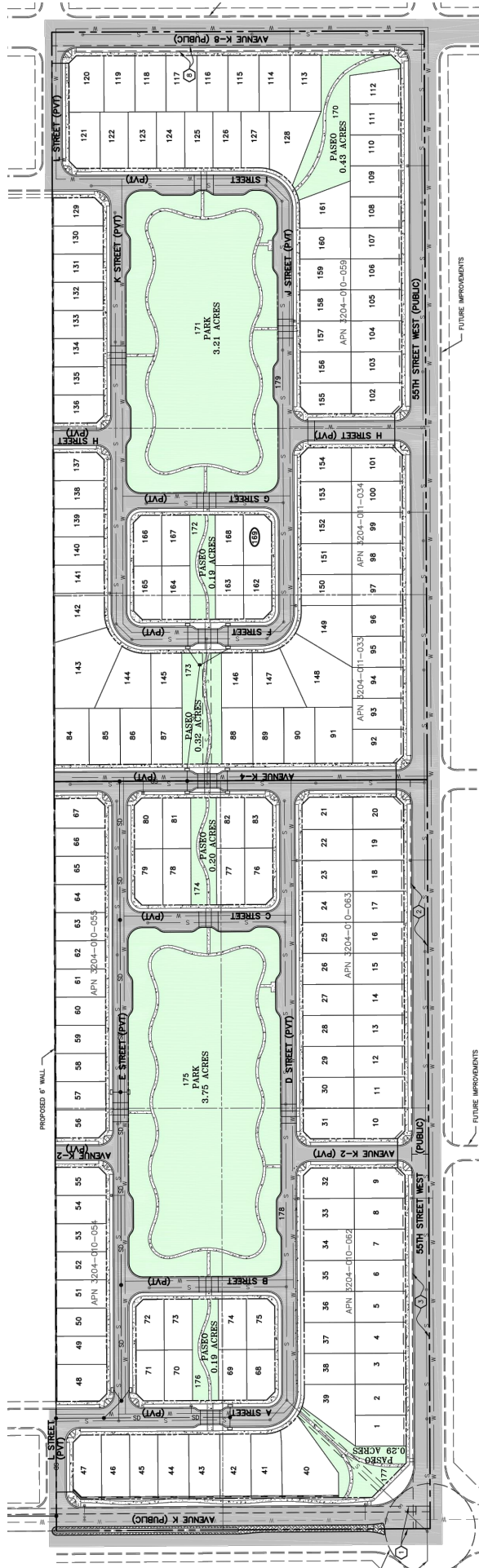
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EXHIBIT 1

EXISTING STREET NETWORK/ PROJECT SITE LOCATION



STUDY METHODOLOGY

Traffic Analysis Scenarios

Pursuant to City traffic impact study requirements, The traffic analysis includes the following traffic scenarios:

- Existing Conditions
- Existing + Project Conditions
- Baseline Conditions (Existing plus ambient growth percentage over five years)
- Cumulative Conditions (Baseline plus approved and pending projects)
- Cumulative + Project Conditions

Level of Service Criteria

The traffic analysis focuses on key intersections within the study area during the AM and PM commute periods, when peak traffic volumes typically occur. A level of service (LOS) ranking scale is used to identify the operating condition at intersections. This scale compares traffic volumes to intersection capacity and assigns a letter value to this relationship. The letter scale ranges from A to F with LOS A representing free flow conditions and LOS F representing congested conditions. The level of service criteria are summarized in Table 2.

Table 2
Intersection Level of Service Criteria

LOS	Signalized Intersections (V/C Ratio)	Unsignalized Intersections (Sec. of Delay)	Definition
A	< 0.60	≤ 10	Conditions of free unobstructed flow, no delays and all signal phases sufficient in duration to clear all approaching vehicles.
B	0.61 – 0.70	> 10 and ≤ 15	Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles.
C	0.71- 0.80	> 15 and ≤ 25	Conditions of stable flow, delays are low to moderate, full use of peak direction signal phases is experienced.
D	0.81 – 0.90	> 25 and ≤ 35	Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.
E	0.91 – 1.00	> 35 and ≤ 50	Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.
F	> 1.00	> 50	Conditions of forced flow, travel speeds are low and volumes are well above capacity. This condition is often caused when vehicles released by an upstream signal are unable to proceed because of back-ups from a downstream signal

Source: Highway Capacity Manual, 2010 Edition.

Level of Service Calculation Methodology

Pursuant to City of Lancaster requirements, the Intersection Capacity Utilization (ICU) methodology was used to determine levels of service for signalized intersections, and the results are shown as a volume-to-capacity (V/C) ratio. Level of service for the unsignalized intersections

were calculated using the methodologies outlined in the Highway Capacity Manual (HCM)¹ and the results are presented as seconds of delay. Levels of service for unsignalized intersections were calculated using *HCS software*².

City of Lancaster Traffic Impact Thresholds

The City's minimum level of service standard for intersections and roadways is LOS D. The City has adopted LOS D as the minimum acceptable operation standard for roadways and intersections. The project will have a significant impact if:

1. The project would degrade the level of service at a location from a standard LOS (A, B, C or D) to a less than standard LOS (E or F); or
2. The project adds a significant number of trips to an intersection that is currently or is projected to operate at LOS E or F. The project could result in a significant impact if it increases the V/C ratio by V/C 0.02 or more at signalized intersections. For stop sign controlled intersections, a threshold of 2% increase in traffic volume was applied.

EXISTING CONDITIONS

Roadway Network

The roadway system in the study-area is comprised of a network of arterials and collectors. The study area roadway network is shown in Exhibit 1 and a brief description of the major components is provided below.

Avenue K is located directly north of the project site and extends east-west through the City of Lancaster and the County of Los Angeles. The roadway is designated as a Major Arterial³. Within the study-area, the roadway is a rural roadway that contains two travel lanes with widened segments adjacent to new developments at 60th Street West and 45th Street West. The project will widen Avenue K along its frontage to Master Plan width plus one travel lane. The intersections of Avenue K with 60th Street West, 45th Street West and 40th Street West are signalized. The posted speed limit is 55 mph.

Avenue K-8 is a Secondary Arterial that currently extends as a two-lane facility approximately 1,300' east from 60th Street West. An undivided mostly unpaved segment extends eastward from 52nd Street West to 40th Street West. This unpaved segment is located within County of Los Angeles limits and is not planned for improvements.

60th Street West is a two- to four-lane Regional Arterial that extends from Rosamond through the City of Lancaster to Quartz Hill to the south, where it transitions into Godde Hill Road. The intersections with the primary east-west arterials are controlled by traffic signals and parking is generally prohibited along the roadway. The posted speed limit is 55 mph.

¹ Highway Capacity Manual, Transportation Research Board, 2010.

² Highway Capacity Software 2010 Unsignal, Version 5.6, McTrans, 2012.

HCS 7 Roundabouts Version 7.2.1, McTrans, 2017.

³ City of Lancaster Master Plan of Streets and Highways, City of Lancaster.

55th Street West is a Secondary Arterial roadway that provides discontinuous north-south access within Lancaster. The roadway currently extends south from Avenue L to Avenue N-8 in Palmdale. Within the study-area the roadway is a one-lane unpaved facility. The Avenue K/55th Street West intersection is uncontrolled. The project will develop 55th Street West along its frontage to Master Plan width plus one travel lane beyond the center lane

50th Street West is a north-south Major Arterial that extends from Avenue G to its terminus at Rancho Vista Boulevard in the City of Palmdale. The roadway contains two to four travel lanes within the study area. The segment south of Avenue K-8 is within County limits. The speed limit is 55 mph.

Existing Intersection Operations

Existing intersection turning volumes for the AM and PM peak commute periods were collected on March 8, 2016. Intersection turning counts are included in the Technical Appendix for reference. The existing lane geometry and control for the intersections within the study area are shown in Exhibit 3 and the AM and PM peak hour volumes are illustrated in Exhibit 4.

Levels of service were calculated for the study-area intersections based on the level of service methodology outlined previously. The existing intersection levels of service are summarized in Table 3 and technical worksheets are included in the Technical Appendix. As shown, the Avenue K/50th Street West intersection currently operates in the LOS E range during the AM peak hour.

Table 3
AM and PM Peak Hour Intersection Levels of Service
Existing Conditions

Intersection	Traffic Control	AM Peak Hour LOS	PM Peak Hour LOS
1. Avenue K/60th Street West	Signal	0.52/LOS A	0.36/LOS A
2. Avenue K/55th Street West	-	-	-
3. Avenue K/50th Street West	All-Way Stop	45.0 sec/LOS E	21.5 sec/LOS C
4. Avenue K/45th Street West	Signal	0.63/LOS B	0.45/LOS A
5. Avenue K/40th Street West	Signal	0.56/LOS A	0.58/LOS A

Levels of service for unsignalized intersections based on delay.

Bolden values exceed City LOS D standard.

EXISTING PLUS PROJECT CONDITIONS

Project Trip Generation

Trip generation estimates for the proposed project based on rates contained in the Institute of Transportation Engineers *Trip Generation Manual (9th Edition, 2012)* for Land Use #210 – Single Family Detached Housing and rates contained in the San Diego Association of Governments SANDAG *Traffic Generators Manual (2002)* for Neighborhood/County Park (undeveloped). The trip generation rates are summarized in Table 4 and the trip generation estimates are shown in Table 5.

LEGEND

- Traffic Signal
- Stop Sign
- Lane Assignments

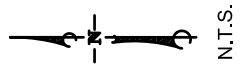
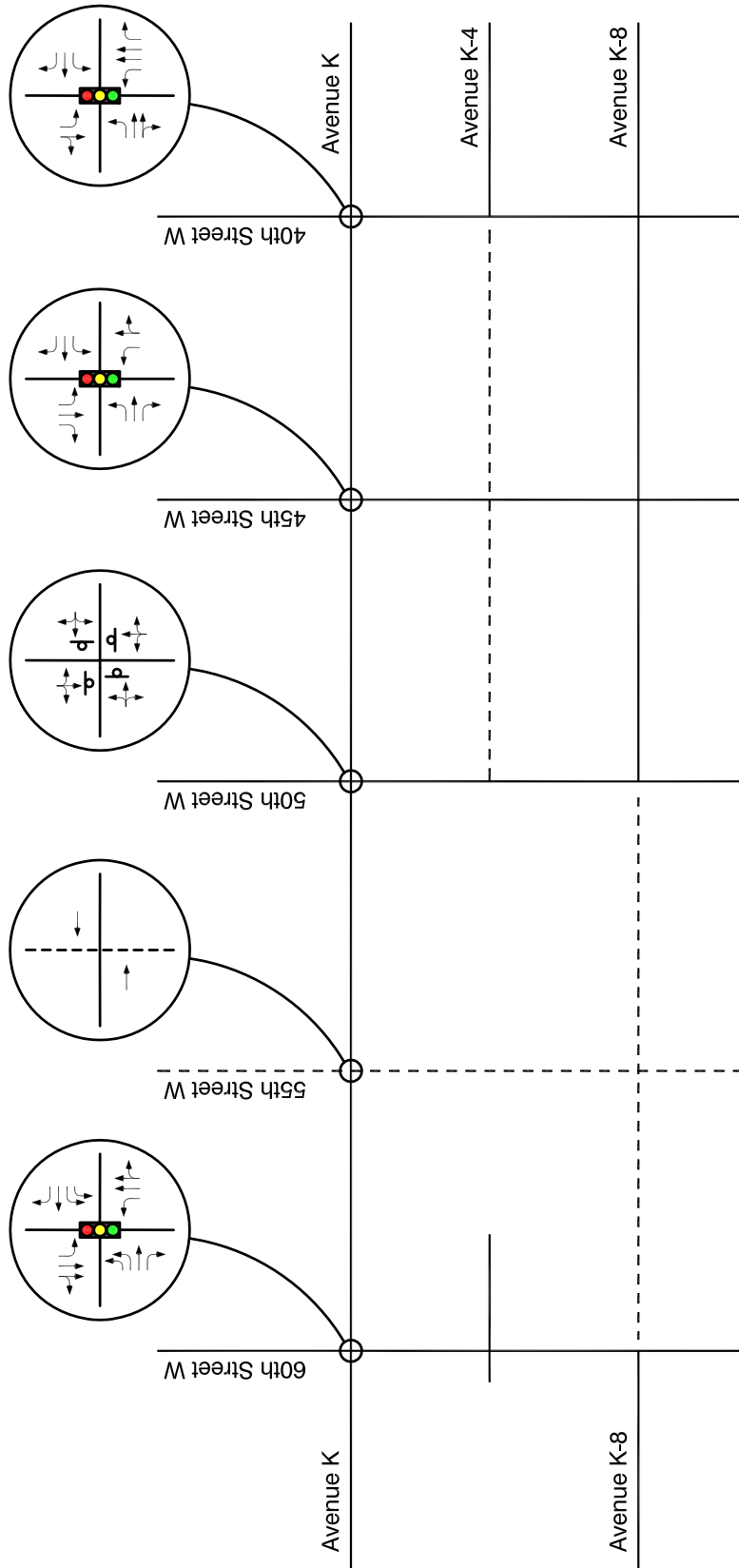


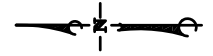
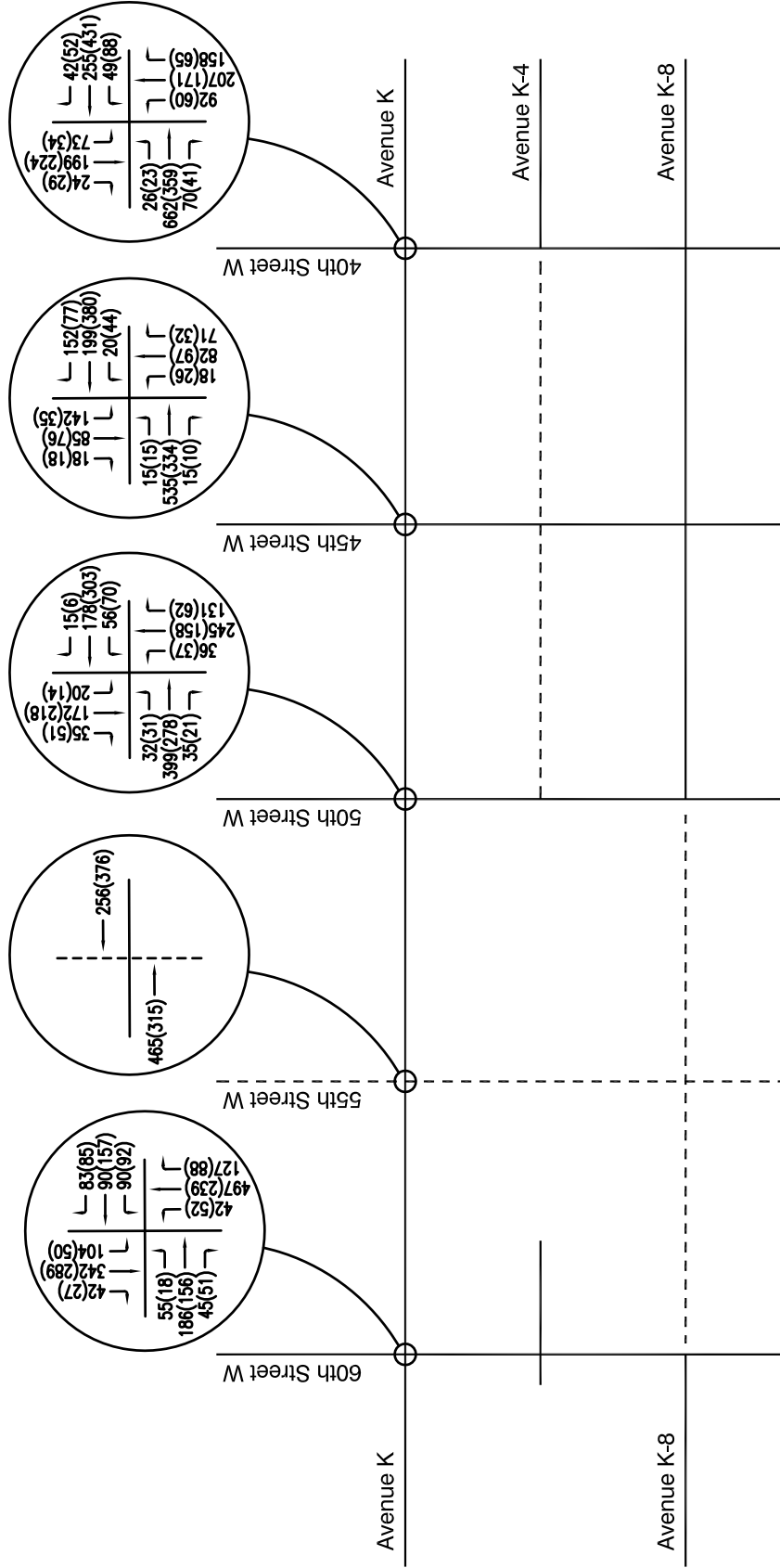
EXHIBIT 3

EXISTING INTERSECTION GEOMETRY

LEGEND

XX(XX) - AM(PM) Peak Hour Volume

└ Traffic Movement



N.T.S.

Table 4
Project Trip Generation Rates

Land Use	ITE Code	Unit	Daily Rate	AM Peak Hour Rate			PM Peak Hour Rate		
				In	Out	Total	In	Out	Total
Single Family Detached Housing	210	SFD	9.52	0.19	0.56	0.75	0.63	0.37	1.00
Neighborhood/County Park	N/A	Acre	5.0	0.33	0.32	0.65	0.22	0.23	0.45

Table 5
Project Trip Generation

Land Use	Size	ADT	AM Peak Hour Rate			PM Peak Hour Rate		
			In	Out	Total	In	Out	Total
Single Family Detached Housing	171 Units	1,628	32	96	128	108	63	171
Neighborhood/County Park	6.73 Acres	34	2	2	4	1	2	3
Total		1,662	34	98	132	109	65	174

Table 5 indicates that project is expected to generate 1,662 average daily trips (ADT), with 132 trips occurring during the AM peak hour and 174 trips occurring during the PM peak hour.

Project Trip Distribution

Project trips were distributed based on the location of the project site, knowledge of the local street network and travel patterns. The distribution percentages listed in Table 6 and the project-added traffic volumes are shown in Exhibit 5.

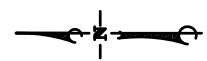
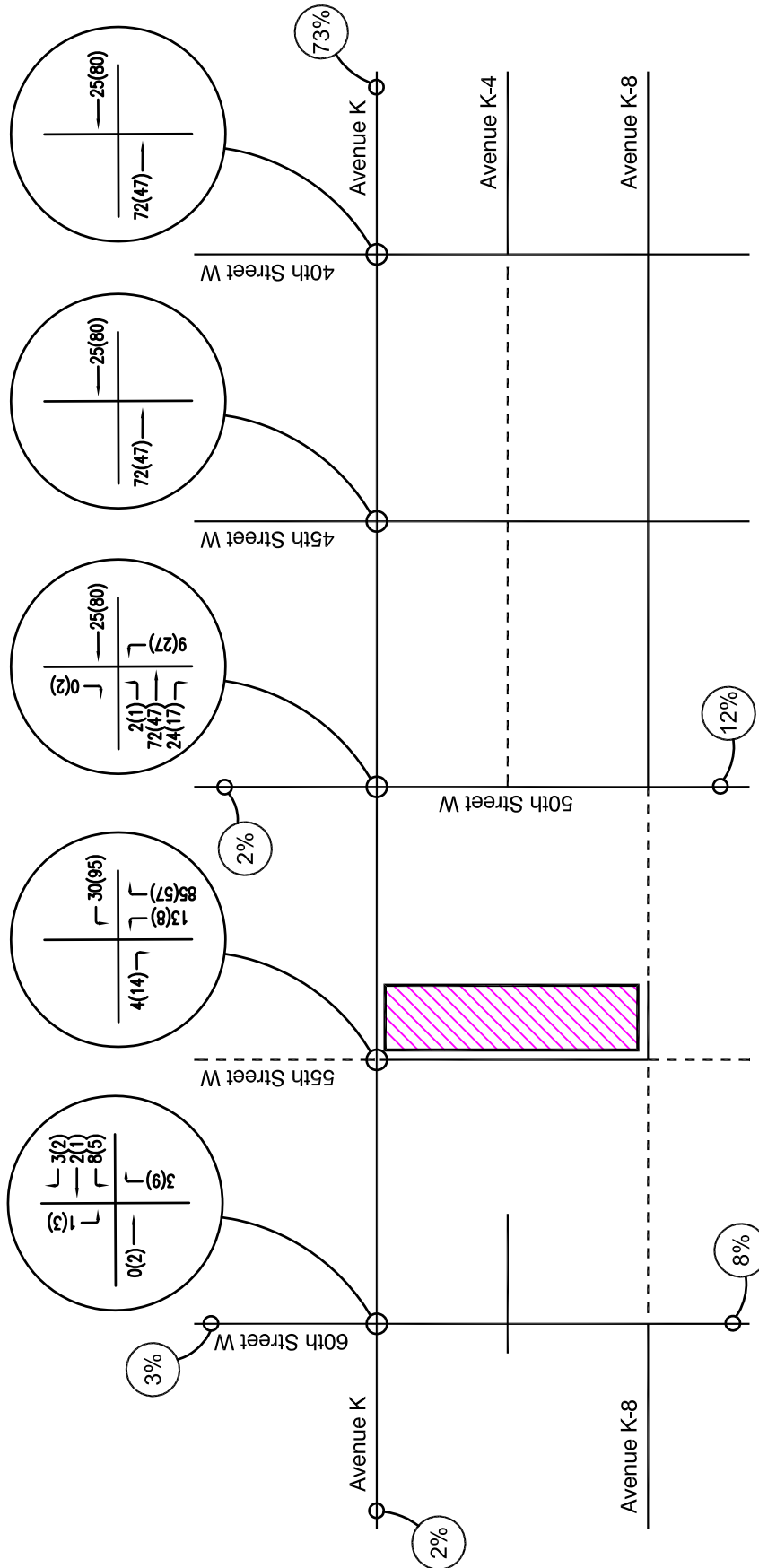
Table 6
Project Trip Distribution

Street	Direction	Trips
Avenue K	East	73%
	West	2%
60 th Street West	North	3%
	South	8%
50 th Street West	North	2%
	South	12%
Total Traffic		100%

LEGEND

- (25%) - Trip Distribution Percentage
- XX(XX) - AM(PM) Peak Hour Volume
- └ - Traffic Movement

PROJECT TRIP GENERATION			
	In	Out	Total
ADT			1,662
AM PEAK HOUR	34	98	132
PM PEAK HOUR	(109)	(65)	(174)



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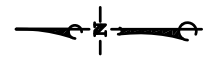
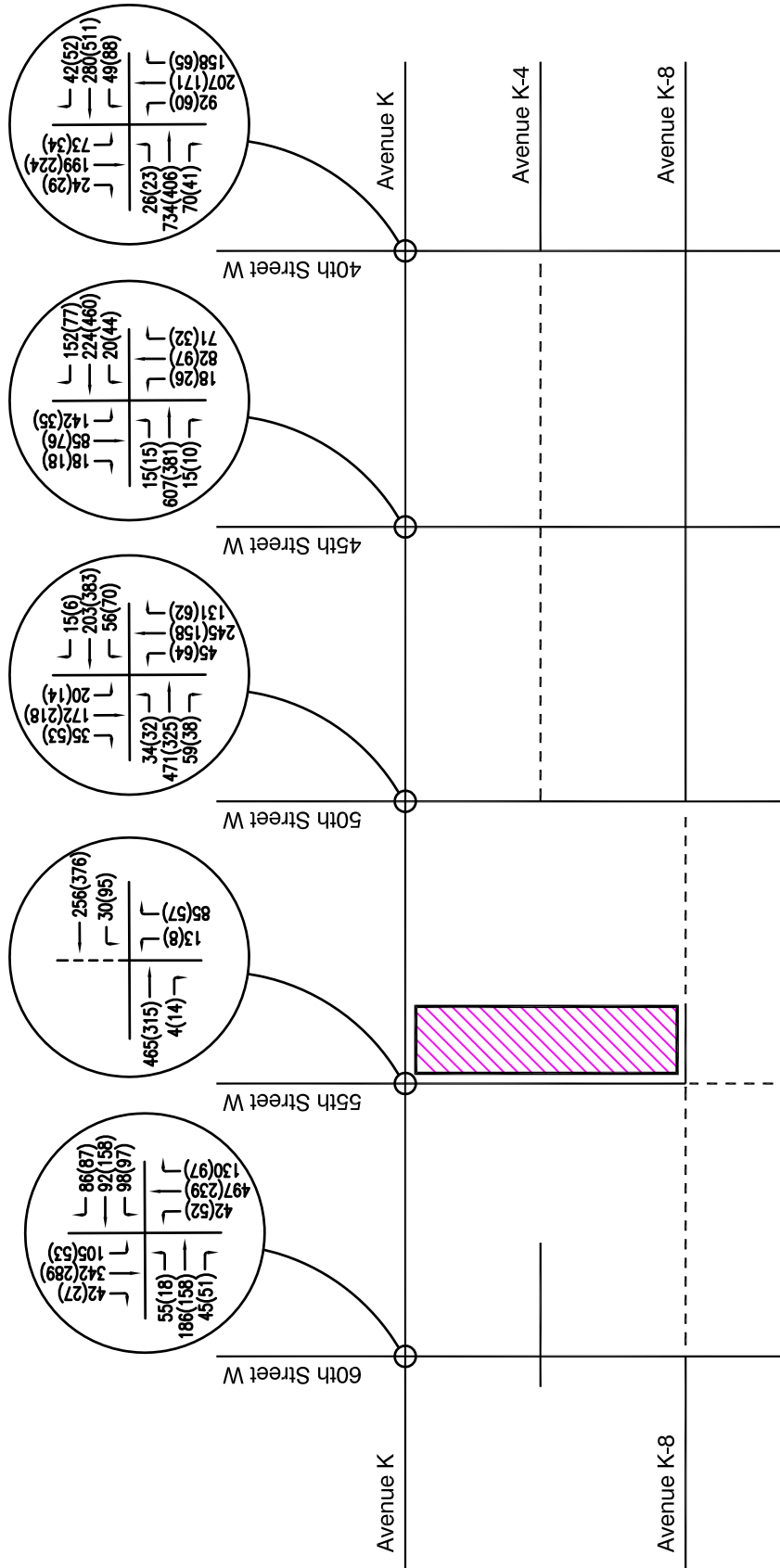
EXHIBIT 5

PROJECT-ADDED TRAFFIC VOLUMES

LEGEND

XX(XX) - AM(PM) Peak Hour Volume

└ Traffic Movement



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EXHIBIT 6 EXISTING + PROJECT PEAK HOUR VOLUMES

Existing plus Project Intersection Operations

Project traffic was added to the existing volumes and intersection levels of service were recalculated assuming existing plus project traffic conditions. The existing plus project volumes are illustrated in Exhibit 6 and the level of service calculations are summarized in Tables 7 and 8. The project-specific analysis incorporates the project's frontage improvements, which result in construction of a roundabout at the Avenue K/55th W intersection. The level of service analysis assumes a single-lane roundabout under project-specific conditions.

Table 7
AM Peak Hour Intersection Levels of Service
Existing + Project Conditions

Intersection	Traffic Control	Existing AM Peak Hour LOS	Existing + Project AM Peak Hour LOS	Increase in V/C or Percent Change	Impact?
1. Avenue K/60 th Street West	Signal	0.52/LOS A	0.52/LOS A	0.00	No
2. Avenue K/55 th Street West	Single-Lane ROB	-	5.2 sec/LOS A	n/a	No
3. Avenue K/50 th Street West	All-Way Stop	45.0 sec/LOS E	>50.0 sec/LOS F	>2%	Yes
4. Avenue K/45 th Street West	Signal	0.63/LOS B	0.68/LOS B	0.05	No
5. Avenue K/40 th Street West	Signal	0.56/LOS A	0.58/LOS A	0.02	No

Levels of service for unsignalized intersections based on delay.
Bolded values indicate project-specific impact.

Table 8
PM Peak Hour Intersection Levels of Service
Existing + Project Conditions

Intersection	Traffic Control	Existing PM Peak Hour LOS	Existing + Project PM Peak Hour LOS	Increase in V/C or Percent Change	Impact?
1. Avenue K/60 th Street West	Signal	0.36/LOS A	0.37/LOS A	0.00	No
2. Avenue K/55 th Street West	Single-Lane ROB	-	5.3 sec/LOS A	n/a	No
3. Avenue K/50 th Street West	All-Way Stop	21.5 sec/LOS C	>50.0 sec/LOS F	>2%	Yes
4. Avenue K/45 th Street West	Signal	0.45/LOS A	0.50/LOS A	0.05	No
5. Avenue K/45 th Street West	Signal	0.58/LOS A	0.63/LOS B	0.05	No

Levels of service for unsignalized intersections based on delay.
Bolded values indicate project-specific impact.

Tables 7 and 8 indicate that the project is expected to generate a project-specific impact at the Avenue K/50th Street West intersection by exceeding the City's impact threshold. Mitigations are provided in the Mitigations section of this report.

BASELINE CONDITIONS

Baseline (Year 2021) traffic volume forecasts were developed by applying an ambient growth rate of 2% per year to the existing traffic volumes from the Year 2016 to the Year 2021. The baseline traffic volumes are illustrated in Exhibit 7.

Levels of service were recalculated for the study-area intersections assuming baseline traffic conditions. The baseline intersection levels of service are summarized in Table 9. All intersections would continue to operate at LOS B or better, except the Avenue K/50th Street West intersection, which would operate in the LOS F range during the AM and PM peak hours.

Table 9
AM and PM Peak Hour Intersection Levels of Service
Baseline Conditions

Intersection	Traffic Control	AM Peak Hour LOS	PM Peak Hour LOS
1. Avenue K/60 th Street West	Signal	0.56/LOS A	0.41/LOS A
2. Avenue K/55 th Street West	-	-	-
3. Avenue K/50 th Street West	All-Way Stop	>50.0 sec/LOS F	>50.0 sec/LOS F
4. Avenue K/45 th Street West	Signal	0.70/LOS B	0.50/LOS A
5. Avenue K/40 th Street West	Signal	0.63/LOS B	0.65/LOS B

Levels of service for unsignalized intersections based on delay.
Bolden values exceed City LOS D standard.

CUMULATIVE CONDITIONS

Cumulative Projects Trip Generation

Cumulative traffic conditions were developed by adding traffic generated by all future projects within the study area to the baseline (Year 2021) volumes. The cumulative-added traffic was determined by including projects contained in the City's *Development Summary Report* (February 2016) that were recently approved, are pending approval, or are under review, and are located within a two-mile radius from the project location. Exhibit 8 shows the location of cumulative projects in the study-area.

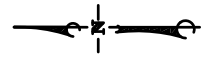
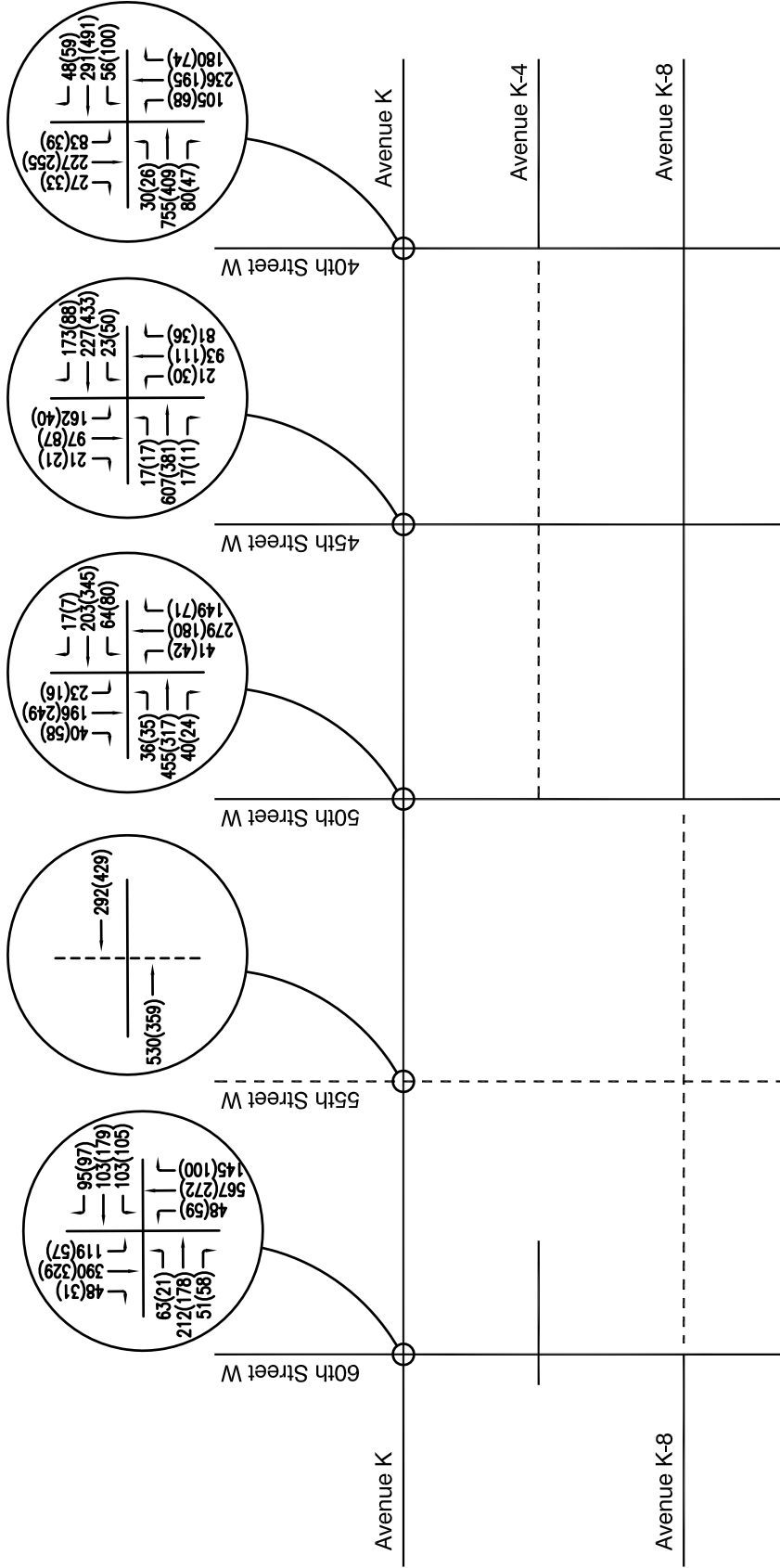
Trip generation estimates were developed for these cumulative developments within the study area using rates presented in the Institute of Transportation Engineers *Trip Generation Manual*⁴. A cumulative projects trip generation calculation worksheet is included in the Technical Appendix. Cumulative-added volumes were distributed and assigned onto the study area street network according to existing distribution patterns and each cumulative project's location, and then added to the baseline volumes to generate the cumulative intersection turning volumes.

⁴ Trip Generation, Institute of Transportation Engineers, 9th Edition, 2012.

LEGEND

XX(XX) - AM(PM) Peak Hour Volume

└ Traffic Movement



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EXHIBIT 7

BASELINE PEAK HOUR VOLUMES



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LEGEND

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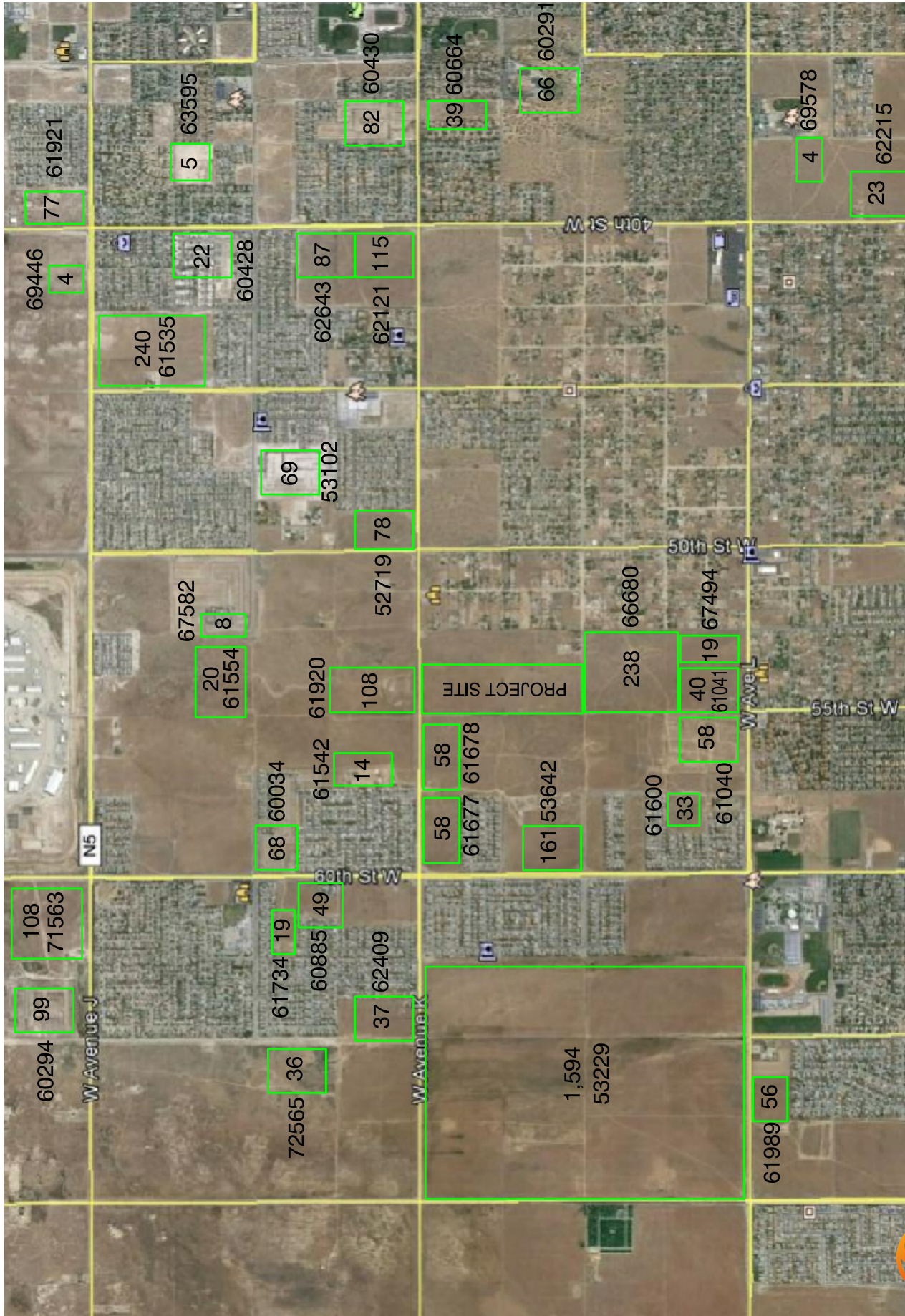


EXHIBIT 8
 CUMULATIVE PROJECTS
 LOCATION MAP

Cumulative and Cumulative plus Project Intersection Operations

The cumulative and cumulative plus project AM and PM peak hour volumes are illustrated in Exhibits 9 and 10, respectively. Intersection levels of service were recalculated assuming cumulative and cumulative plus project AM and PM peak hour traffic volumes. It is noted that per City staff direction, no roadway or intersection improvements associated with approved or pending projects are assumed in the cumulative analysis. The roadway and intersection geometries under cumulative conditions are therefore conform existing conditions.

The level of service calculation results are summarized in Tables 10 and 11. As shown, the Avenue K/50th Street West intersection and the Avenue K/45th Street West intersection would operate in the LOS F range under cumulative conditions.

Table 10
AM Peak Hour Intersection Levels of Service
Cumulative + Project Conditions

Intersection	Traffic Control	Cumulative AM Peak Hour LOS	Cumulative+ Project AM Peak Hour LOS	Increase in V/C or Delay	Impact?
1. Avenue K/60 th Street West	Signal	0.88/LOS D	0.88/LOS D	0.00	No
2. Avenue K/55 th Street West	Two-Way Stop Single-Lane ROB	20.0 sec/LOS C -	- 15.8 sec/LOS C	-4.2 sec	No
3. Avenue K/50 th Street West	All-Way Stop	>50.0 sec/LOS F	>50.0 sec/LOS F	>2%	Yes
4. Avenue K/45 th Street West	Signal	1.08/LOS F	1.13/LOS F	0.05	Yes
5. Avenue K/40 th Street West	Signal	0.84/LOS D	0.86/LOS D	0.02	No

Bolded values indicate cumulative project impact.

Table 11
PM Peak Hour Intersection Levels of Service
Cumulative + Project Conditions

Intersection	Traffic Control	Cumulative PM Peak Hour LOS	Cumulative+ Project PM Peak Hour LOS	Increase in V/C or Delay	Impact?
1. Avenue K/60 th Street West	Signal	0.74/LOS C	0.74/LOS C	0.00	No
2. Avenue K/55 th Street West	Two-Way Stop Single-Lane ROB	23.4 sec/LOS C -	- 24.1 sec/LOS C	0.7 sec	No
3. Avenue K/50 th Street West	All-Way Stop	>50.0 sec/LOS F	>50.0 sec/LOS F	>2%	Yes
4. Avenue K/45 th Street West	Signal	0.87/LOS D	0.92/LOS E	0.05	Yes
5. Avenue K/40 th Street West	Signal	1.04/LOS F	1.09/LOS F	0.05	Yes

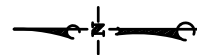
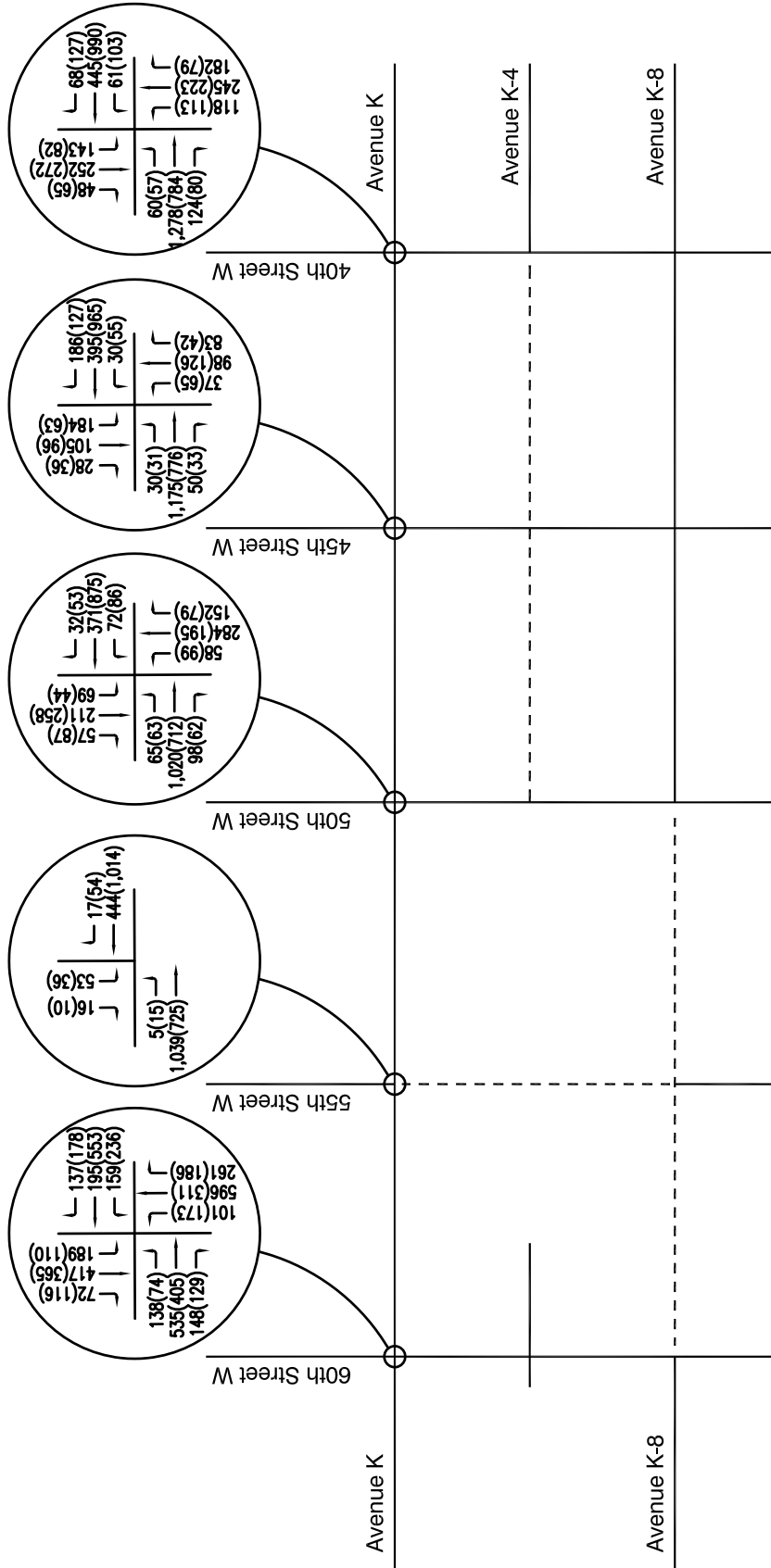
Bolded values indicate cumulative project impact.

Tables 10 and 11 indicate that the project is expected to generate cumulative impacts during the AM and PM peak hours by exceeding the City's impact threshold at the intersections of Avenue K with 50th Street west, 45th Street West and 40th Street West. Mitigations are provided in the Mitigations section of this report.

LEGEND

XX(XX) - AM(PM) Peak Hour Volume

└ Traffic Movement



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EXHIBIT 9

CUMULATIVE PEAK HOUR VOLUMES

 **Stantec**

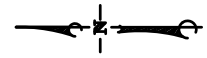
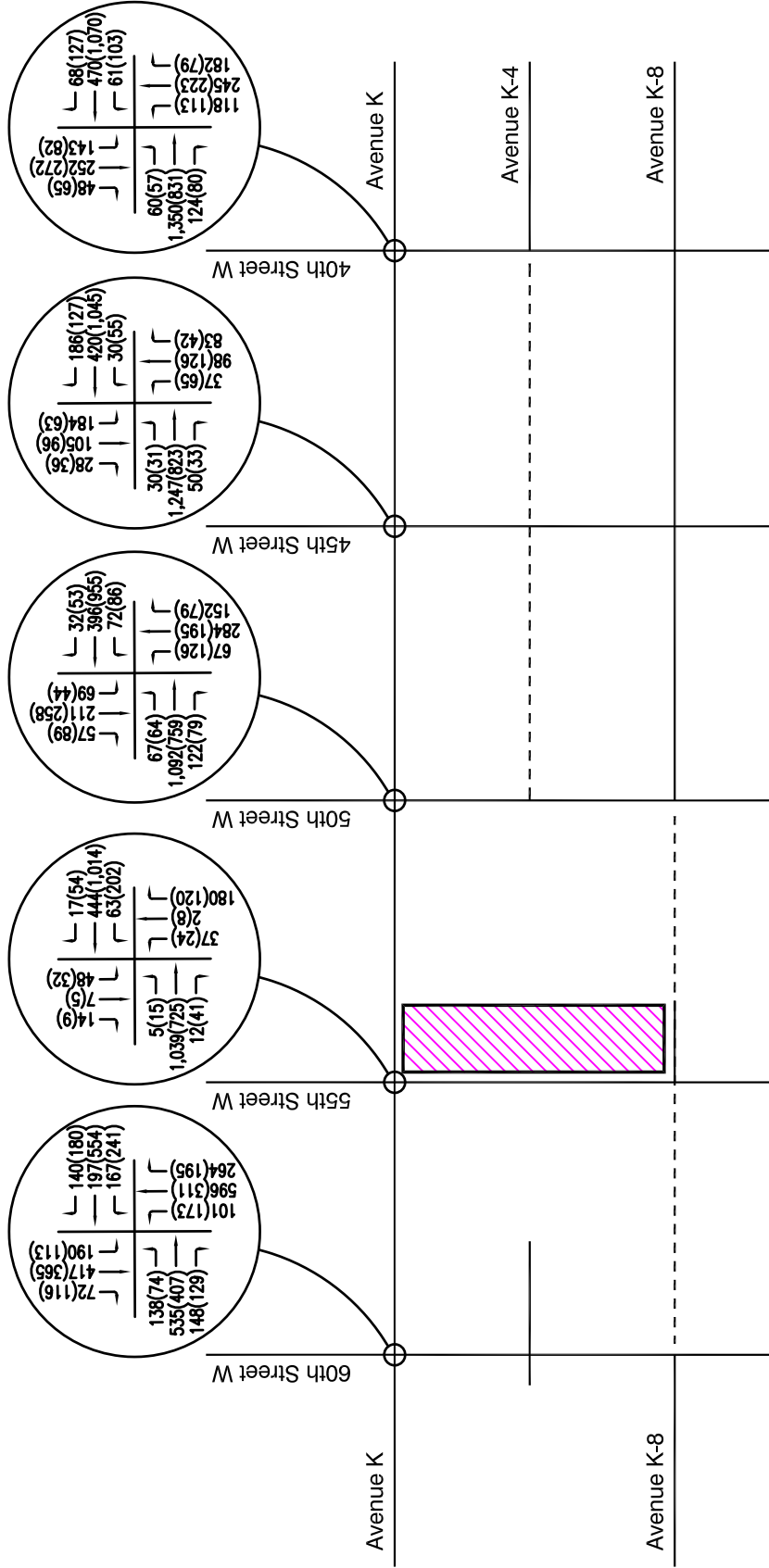
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LEGEND

XX(XX) - AM(PM) Peak Hour Volume

└ Traffic Movement



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EXHIBIT 10 CUMULATIVE + PROJECT PEAK HOUR VOLUMES

SITE ACCESS AND CIRCULATION

As shown on Exhibit 2, vehicular, bicycle and pedestrian access to the project site is proposed via 55th Street West, H Street and Avenues K, K-4 and K-8. 55th Street West and Avenue K-8 are secondary arterials and the project will construct half roadway section, consisting of a total of 42 feet with 28 feet of pavement from centerline and a 14-foot meandering sidewalk, along the project frontage as well as an additional 21 feet of pavement on the opposite half section. The segment of Avenue K-4 within the project boundary (660') will be fully constructed to its width.

Under baseline conditions, all traffic will use the Avenue K/55th Street intersection. Future development of Tracts 66680 and 61041, located south of the project site, will result in the extension of 55th Street to Avenue L. This will provide additional regional access to the project site. Given the expected traffic volumes generated by the project site and future residential tracts, the local street network and intersections are expected to accommodate the anticipated traffic volumes.

The internal circulation system shall comprise of local streets (52' of right-of-way) with 28 feet of pavement, landscape buffer and sidewalks on both sides. Local streets where parking on one side of the street is permitted are identified in the development's Tentative Tract Maps. Pedestrian connectivity is provided via sidewalks along all streets and trails that extend between 55th Street West and connect to the park trails.

Avenue K will be constructed to 78 feet partial width (half width plus one travel lane, including a westbound left-turn lane at the intersection with 55th Street West. Development of Tracts 61677 and 61678 will result in a fully constructed southern portion of Avenue K between 60th Street West and 55th Street West.

MITIGATIONS

Project-Specific Mitigations

The traffic analysis indicated that the project would generate an project-specific impact at the Avenue K/50th Street West intersection. The intersection is currently controlled by all-way stop control. Installation of a single-lane roundabout would provide for LOS A operations under project-specific conditions. It is recommended that a single-lane roundabout be installed at the intersection. The roundabout design should incorporate future conversion to two approach lanes and circulatory lanes on the eastbound and westbound approaches (see cumulative plus project mitigations). Exhibit 11 illustrates the mitigated intersection geometry.

Table 12
Mitigated Existing + Project
Intersection Levels of Service

Intersection	Traffic Control	AM Peak Hour LOS	PM Peak Hour LOS
3. Avenue K/50 th Street West	Single-Lane ROB	8.8 sec/LOS A	7.7 sec/LOS A

Construction of a single-lane roundabout would require an inscribed diameter of 140'. Additionally, a 5' landscape buffer and a 10' shared-use path may be provided. All approaches would require widening to a minimum width of 45', for a length of approximately 200', to accommodate 12' approach and exit lanes, 5' Class II bike lanes and a 10' splitter island. Width requirements would increase approaching the roundabout to accommodate the flared entry and exit lanes.

Under cumulative conditions, the inscribed diameter of the roundabout would be approximately 200'. Additionally, a 5' landscape buffer and a 10' shared-use path may be provided. The eastbound and westbound approaches would be widened to a minimum width of 70', for a length of approximately 300', to accommodate two 12' approach and exit lanes, 5' Class II bike lanes and a 10' splitter island. Width requirements would increase approaching the roundabout to accommodate the flared entry and exit lanes.

Cumulative plus Project Mitigations

The project would generate cumulative impacts at the intersections of Avenue K with 55th Street West, 50th Street West and 45th Street West.

Avenue K/50th Street West. The intersection is currently controlled by stop signs on all approaches. The intersection is expected to operate at LOS D/B assuming a multi-lane roundabout with two eastbound and westbound lanes and one northbound and southbound lane.

Alternatively, the cumulative plus project volumes satisfy traffic signal warrant *Warrant 3, Peak Hour* contained in the CAMUTCD. With signalization, widening of the northbound and southbound approaches to provide a left-turn lane and a shared through/right-turn lane, and widening of the eastbound and westbound approaches to provide a left-turn lane, a through lane and a shared through/right-turn lane would be required.

To provide for acceptable operations under cumulative plus project conditions, it is recommended that a multi-lane roundabout be installed with two eastbound and westbound lanes and one northbound and southbound lane.

Avenue K/45th Street West. The intersection is signalized. The eastbound, westbound and southbound approaches consist of a left-turn lane, a through lane and a right-turn lane. The northbound approach consists of a left-turn lane and a shared through/right-turn lane.

To provide for acceptable operations, the eastbound and westbound approaches will have to be restriped to a left-turn lane, a through lane and a shared through/right-turn lane. No widening is required to accommodate the restriping of the approaches.

The east and west legs would require widening provide two receiving lanes. The widening of the north side of the west leg would extend westerly for 600' to the existing buildout cross section (100' roadway width including sidewalks). The widening of the south side of the east leg would extend easterly from the intersection to existing widened segment at the Avenue K/40th Street West intersection (length of approximately 2,300 feet).

Avenue K/40th Street West. The intersection is signalized. The eastbound approach consists of a left-turn lane, a through lane and a shared through/right-turn lane. The westbound approach consist of a left-turn lane, a through lane and a right-turn lane. The northbound approach consists of a left-turn lane , two through lanes and a right-turn lane. The southbound approach consists of a left-turn lane and a shared through/right-turn lane.

To provide for acceptable operations, the westbound approaches will have to be restriped to a left-turn lane, a through lane and a shared through/right-turn lane. The east leg of the intersection is widened to its ultimate cross section and no widening is required to accommodate the restriping of the westbound approach.

The west leg would require widening provide two receiving lanes (if not yet constructed by TTM 62121, located on the northwest corner and included in the cumulative conditions analysis). The widening of the north side of the west leg would extend westerly for approximately 650', including 100' fully widened segment and a taper back to one travel lane. In addition, the south side of the west leg would be widened to provide two eastbound travel lanes between 40th Street West and 45th Street West (length of approximately 2,300 feet).

The mitigated levels of service and the project's proportionate share to the future improvements for the intersections are summarized in Table 13. The proportionate share calculations are included in the Appendix. Exhibit 11 illustrates the mitigated intersection geometries.

Table 13
Mitigated Cumulative + Project
Intersection Levels of Service

Intersection	Traffic Control	AM Peak Hour LOS	PM Peak Hour LOS	Project Proportionate Share
3. Avenue K/50 th Street West	Multi-Lane ROB Signal	26.5 sec/LOS D 0.86/LOS D	14.7 sec/LOS B 0.76/LOS C	10%
4. Avenue K/45 th Street West	Signal	0.76/LOS C	0.64/LOS B	10%
5. Avenue K/40 th Street West	Signal	0.86/LOS D	0.79/LOS C	8%

LEGEND

- Traffic Signal
- Stop Sign
- Existing Lane Assignments
- Mitigated Lane Geometry
- New Roundabout

