

<b>Contact Information</b>	
1. Lead Agency	City of Glendale
2. Contact Name	Allan Galicia
3. Phone	623 930 2761
4. E-Mail Address	agalicia@glendaleaz.com
5. Mailing Address	6210 W. Myrtle Ave., Glendale, AZ 85301

**CMAQ Data**

This part of the form is used to gather project related data to calculate an CMAQ Score and also gather the minimum data needed for a listing of the project in the Transportation Improvement Program.

**Federal Funding Eligibility**

All ITS projects to be funded with Federal CMAQ funds must be located within a nonattainment area. Please use the map provided in the tab named "Map" to verify that the project is located in a nonattainment area.

**1. Traffic Estimate and Roadway Characteristics**

a. Current Average Daily Traffic (ADT) on the facility or the nearest parallel facility of a similar facility type:	<input style="width: 100%;" type="text" value="25,730"/>
b. Please describe how the ADT was estimated:	<div style="border: 1px solid black; padding: 10px; text-align: center;">                 City of Glendale's Traffic Count Program. In addition, City of Glendale uses its permanent count stations to determine ADT. The average ADT on Glendale Ave. (25,730) were used to come up with the ADT.             </div>
c. When was the ADT estimate developed:	<input style="width: 100%;" type="text" value="2018"/>
d. Name of the roadway section used for the ADT estimate:	<input style="width: 100%;" type="text" value="Glendale Ave."/>
e. Starting limit of the roadway section:	<input style="width: 100%;" type="text" value="Glendale Ave. at 27th Ave."/>
f. Ending limit of the roadway section:	<input style="width: 100%;" type="text" value="Glendale Ave. at Litchfield Rd."/>
g. Length (miles):	<input style="width: 100%;" type="text" value="14"/>
h. Total number of through lanes on the roadway section:	<input style="width: 100%;" type="text" value="4"/>
i. Federal Functional Classification of the roadway section:	<input style="width: 100%;" type="text" value="Minor Arterial"/> <a href="#">Link to ADOT Functional Classification Maps</a>

**CMAQ Data**

**2. Improvements in Traffic Management & Operations**

a. Enter the pre-improvement (current) average corridor traffic speed: 28

b. In the table, check the box that best describes the project (Check only one box):

	Before (pre-improvement) condition	After (post-improvement) condition	Expected increase in speed
X	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
	Interconnected, pre-timed signals with various forms of master control and various qualities of	Optimization of signal timing plans. No change in hardware	12.0 percent
	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

NOTE: All ITS projects MUST involve eligible infrastructure improvements.

**3. Other Improvements (Check all that apply)**

- Traffic signal system improvements at a single agency
- Traffic signal system improvements that apply to more than one agency
- Includes improvements to coordination between arterial and freeway traffic operations
- Project conforms to local land use plans
- Adds features to traffic signals that would better accommodate seniors at pedestrian crossings

**4. Traffic Flow Improvement Due to Project (Not required for Traffic Mgmt & Operations Improvements)**

a. Enter the pre-improvement (current) average traffic speed of the corridor: (populated from #2a) 28

b. Enter the post-improvement average traffic speed of the corridor: 33

## ITS Project Information

Enter information in highlighted cells ONLY. Links to various websites are provided for additional information and help.

### 1. Project Title & Sponsor

a. Project Title	Detection Upgrade on Glendale Ave. Regional Priority Corridor
b. Lead Agency	City of Glendale
c. Other Partnering Agencies	City of Phoenix

### 2. Project Type

Prioritize SMO Buckets for the funding application

First Priority	Bucket #2 – Regional Priority Arterials
Second Priority	Bucket #3 – Local Priority Corridors
Third Priority	(Please Select a Bucket)

### 3. Project Goals & Objectives

a. Project Goals	<ul style="list-style-type: none"> <li>*Reduce travel times/delays/stops on citywide arterial intersections/corridors.</li> <li>*Improve traffic safety on citywide arterial intersections/corridors.</li> <li>*Reduce delays and reduce volatility of commute time at intersections/corridors during non-planned events when crashes, stalled vehicles, or any other event that blocks travel lane(s) occurs.</li> <li>*Reduce delays and reduce volatility of travel times during planned events such as sporting events, community events, construction, and any other events that restricts travel lane(s) or a significant increase in traffic is expected.</li> </ul>
b. Project Objectives	<ul style="list-style-type: none"> <li>*Actively manage traffic signals in real-time using the Traffic Management Center's assets such as CCTVs, detections, network devices, video management software, and central signal command software.</li> <li>*Run the intersections on Free Mode during low volume condition to reduce overall delays.</li> <li>*Remove Night Time Flash Mode and Run the intersections on Free Mode to improve safety.</li> </ul>

### 4. Project Information

a. Project location description	Detection upgrades on Glendale Ave. regional priority arterial corridors. A total of 20 intersections are proposed to upgrade the detection system. 15 of the 20 intersections are under regional priority arterial corridors. See attached spreadsheet and map.
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<b>ITS Project Information</b>	
	Note: a PDF file of a map must be submitted to MAG as an attachment.
b. Scope of the project	Procurement and installation of of smart detection system at 20 signalized intersections in Glendale and Phoenix using federal CMAQ funds. No ground disturbance or ROW acquisition are planned.

## ITS Project Information

### 5. Identify Project Components in MAG Regional ITS Architecture

Service Area	Addressed in this Project? <small>(Dropdown: Y/N)</small>	Applicable ITS Service Packages
Traffic Management	Yes	ATMS01, ATMS03
Maintenance and Construction	No	
Public Transportation	No	
Traveler Information	No	
Emergency Management	No	
Archived Data Management	No	

NOTE: Insert the relevant ITS Architecture flow diagram in the "ITS Architecture" worksheet.

### 6. Quantitative Criteria

Enter Quantitative Criteria for Bucket(s) selected in Section 2 "Project Type"

Average Daily Traffic (ADT) from 'CMAQ Data' tab in this funding application.	-
Crashes Per Mile Per Year (MAG Will Complete)	
Maximum Peak Period Travel Time Index (MAG Will Complete)	
Percentage network communication connectivity to traffic signals & ITS devices.	100%
Regional Priority Corridor Ranking (Enter shares of work in "Regional Priority - Top 100")	75%
Latest year of your agency's Operations/Management Center upgrade.	2013

### 7. Program Year Preference

Preferred Program Year

ITS Project Information				
<b>8. Project Budget by SMO Strategy</b>				
Strategies for Bucket #1 – ICM Corridors	Federal Cost	Local Match (min 5.7%)	Total Cost	Share of Total Project
2-Real-time CCTV monitoring capabilities at all major-major arterial intersections on ICM corridors	675,671			
3-Vehicle and pedestrian actuated detection at all signalized intersections to support signal operations and real-time collection of data collection, including data on turning movement counts				
11-Regional Asset Upgrade/Replace Program - ICM Corridors & Priority Arterials				
<b>Total</b>		40,842		
<b>Cost Percentage</b>				
Strategies for Bucket #2 – Regional Priority Arterials	Federal Cost	Local Match (min 5.7%)	Total Cost	Share of Total Project
8-Real-time visual monitoring capability at all major-major intersections on Priority Arterials	675,671			100%
9-Additional detection at signalized intersections for real-time collection of data, including turning movement counts stored by individual agencies and archived in RADS				0%
10-Reliable communications between TMCs and major-major intersections to facilitate remote management of traffic operations - Adds both fiber and wireless infrastructure				0%
11-Regional Asset Upgrade/Replace Program - ICM Corridors & Priority Arterials				0%
<b>Total</b>	\$ 675,671.00	40,842	\$ 716,513.00	100%
<b>Cost Percentage</b>	94.3%	5.7%		
Strategies for Bucket #3 – Local Priority Corridors	Federal Cost	Local Match (min 5.7%)	Total Cost	Share of Total Project
12-Local priority ITS projects	675,671			100%
<b>Total</b>	\$ 675,671.00	40,842	\$ 716,513.00	100%
<b>Cost Percentage</b>	94.3%	5.7%		

## ITS Project Information

### 9. System Maintenance and Operations

a. Current staff resources available to support ITS operations at the local agency (in FTEs)	10
b. Additional staff resources required for fully utilizing features added by project (in FTEs)	0
c. Agency's estimated current annual ITS operations & maintenance (O & M) budget	\$1,636,252
d. Estimated additional annual O & M funds required for features added by this project	\$0
e. Estimated DATE from when required additional local O & M funds will be available	N/A
f. Other comments	<div style="border: 1px solid black; padding: 5px;">                     The Traffic Signals team is the primary team responsible for O &amp; M of these additional ITS assets. The ITS team is cross training and will assist the Traffic Signals team when needed for O &amp; M.                 </div>

### 10. Systems Engineering Analysis Requirement

**Commitment to address the federal requirement for Systems Engineering Analysis:**

Agency's intent to follow the process described in the 'V' diagram during the project development process.

ADOT Systems Engineering Checklist

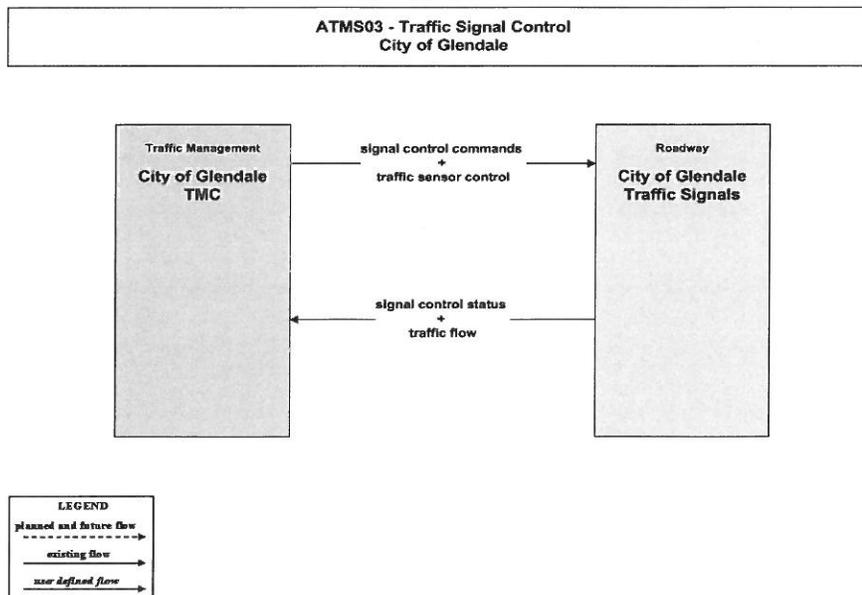
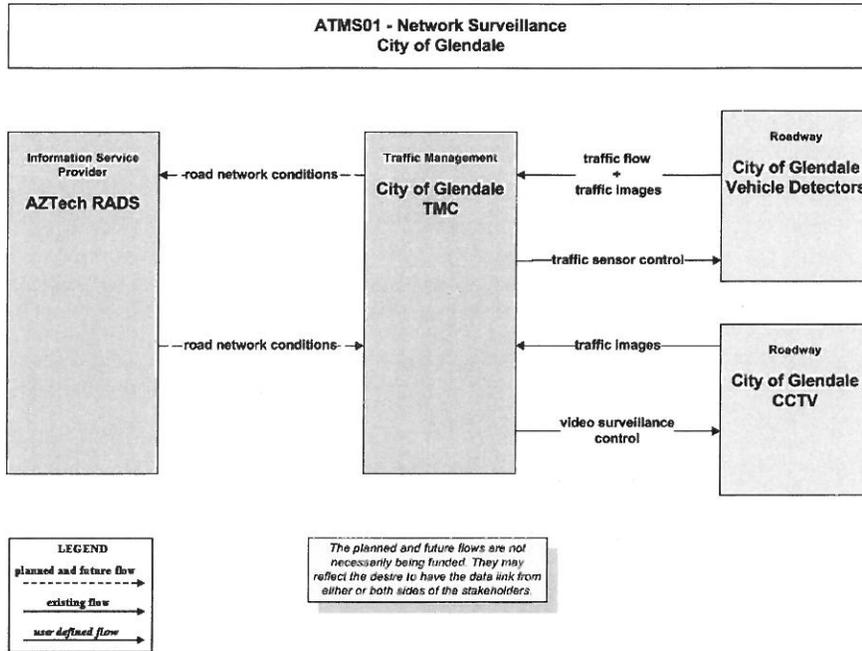
The project sponsor/lead agency of this application intends to incorporate the Systems Engineering Analysis in the project's scope of work, following guidance on the ADOT's System Engineering Checklist.	<input checked="" type="checkbox"/> Yes, the agency intends to follow the process.
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### ITS Architecture Flow Diagram

All relevant ITS Architecture Flow Diagrams MUST be inserted below for the relevant ITS Service Packages addressed by the proposed ITS project. This is to ensure that the project complies with the Regional ITS Architecture and meets a federal requirement for all federally funded ITS projects.

Find the relevant Service Packages addressed by the project in the MAG ITS Architecture (found in the link below). Copy and paste the graphic in the space provided.

MAG Regional ITS Architecture



PROJECT COST ESTIMATE WORKSHEET (Cost Estimates Are Required Regardless of Programming)									
DESIGN	REQUESTED PROGRAMMING (Complete if item will be programmed in the MAG TIP)	Location Description	20 Intersections in Glendale and Phoenix						
		Work Description	Detection Upgrade						
		Funding Source	Local						
		Preferred Year to Program Work	2021						
	COST ESTIMATE FOR DESIGN		UNITS	QUANTITY	UNIT COST	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL
	PRELIMINARY ENGINEERING (15% plans) (Required for Budget)	Topographic Survey	LS	1		\$ -	No	-	-
		Project Assessment Report or Detailed Workplan	LS	1	10,000	\$ 5,000.00	No	-	5,000
		Systems Engineering Analysis (must address FHWA requirements)	LS	1	5,000	\$ 2,500.00	No	-	2,500
		Federal Project Environmental Determination	LS	1	10,000	\$ 5,000.00	No	-	5,000
		HAZMAT Assessment	LS	1		\$ -	No	-	-
	SUBTOTAL - PRELIMINARY ENGINEERING COSTS					\$ 12,500.00		-	12,500
	FINAL DESIGN (30, 60, 95, 100% plans) (Required for Budget)	Right-of-Way Acquisition	LS	1		\$ -	No	-	-
		Plans, Specifications, Cost Estimates, Bidding	LS	1		\$ 62,500.00	No	-	62,500
		Geotechnical Report	LS	1		\$ -	No	-	-
		Drainage Report	LS	1		\$ -	No	-	-
SWPPP		LS	1		\$ -	No	-	-	
SUBTOTAL - FINAL DESIGN COSTS					\$ 62,500.00		-	62,500	
TOTAL PRELIMINARY ENGINEERING AND DESIGN COST AVAILABLE FOR PROGRAMMING					\$ 75,000.00		-	75,000	
PROCUREMENT	REQUESTED PROGRAMMING (Complete only if construction will be programmed in the MAG TIP)	Location Description	20 Intersections in Glendale and Phoenix						
		Work Description	Detection Upgrade						
		Funding Source	CMAQ						
		Preferred Year to Program Work	2022						
	COST ESTIMATE FOR PROCUREMENT		UNITS	QUANTITY	UNIT COST	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL
	PROCUREMENT COSTS	Detection System	EA	20	25,000	\$ 500,000.00	Yes	471,500	28,500
		Place for entering item #2	EA			\$ -	Yes	-	-
		Place for entering item #3	EA			\$ -	Yes	-	-
		Place for entering item #4	EA			\$ -	Yes	-	-
		Place for entering item #5	EA			\$ -	Yes	-	-
		Place for entering item #6	EA			\$ -	Yes	-	-
		Place for entering item #7	EA			\$ -	Yes	-	-
		Place for entering item #8	EA			\$ -	Yes	-	-
		Place for entering item #9	EA			\$ -	Yes	-	-
		Place for entering item #10	EA			\$ -	Yes	-	-
TOTAL - PROCUREMENT					\$ 500,000.00		471,500	28,500	
CONSTRUCTION	REQUESTED PROGRAMMING (Complete only if construction will be programmed in the MAG TIP)	Location Description	20 Intersections in Glendale and Phoenix						
		Work Description	Detection Upgrade						
		Funding Source	CMAQ						
		Preferred Year to Program Work	2022						
	COST ESTIMATE FOR CONSTRUCTION		UNITS	QUANTITY	UNIT COST	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL
	UTILITY RELOCATIONS (Required for Budget. May be 0 if no utilities)  The cost of utility relocation for the transportation project are eligible for federal aid if the costs/activities involved are directly related to the transportation project. Generally, burying overhead utilities is cost prohibitive.	Relocate 69 kv (+) Poles	EA			\$ -	Yes	-	-
		Relocate/Underground 12 kv lines	LF			\$ -	Yes	-	-
		Relocate/Underground Irrigation Canal	LF			\$ -	Yes	-	-
		SWG Relocations	LS			\$ -	Yes	-	-
		Telephone/Cable TV Relocations	LS			\$ -	Yes	-	-
		Upgrade Railroad Crossings	LS			\$ -	Yes	-	-
		Other Utilities	LS			\$ -	Yes	-	-
		Other Utilities	LS			\$ -	Yes	-	-
	SUBTOTAL - UTILITY RELOCATION COSTS					\$ -		-	-
	CONSTRUCTION (Required for Budget)	Field Installation and programming of Equipment (No Ground Disturbance)	EA	20	7,000	\$ 140,000.00	Yes	132,020	7,980
		Post Design Services	EA	1	19,200	\$ 19,200.00	Yes	18,106	1,094
		Example - New Conduit	LF			\$ -	Yes	-	-
		Example - Intersection conduit work				\$ -	Yes	-	-
		Example - Wireless Communication Link	EA			\$ -	Yes	-	-
		Place for entering an additional item #1				\$ -	Yes	-	-
		Place for entering an additional item #2				\$ -	Yes	-	-
		Place for entering an additional item #3				\$ -	Yes	-	-
		Place for entering an additional item #4				\$ -	Yes	-	-
		Place for entering an additional item #5				\$ -	Yes	-	-
		Place for entering an additional item #6				\$ -	Yes	-	-
Place for entering an additional item #7				\$ -	Yes	-	-		
Place for entering an additional item #8				\$ -	Yes	-	-		
Place for entering an additional item #9				\$ -	Yes	-	-		
Place for entering an additional item #10				\$ -	Yes	-	-		
SUBTOTAL - CONSTRUCTION COST					\$ 159,200.00		150,126	9,074	
MOBILIZATION AND ADMINISTRATION COSTS	CONTRACTOR MOBILIZATION (Typically 8% of construction cost)			12,736	\$ 12,736.00	Yes	12,010	726	
	TRAFFIC CONTROL (0-8% of construction cost)			7,960	\$ 7,960.00	Yes	7,506	454	
	CONSTRUCTION SURVEY & LAYOUT (Typically 1% of construction cost)				\$ -	Yes	-	-	
	CONSTRUCTION CONTINGENCIES (Typically 5% of construction cost)			7,960	\$ 7,960.00	Yes	7,506	454	
	CONSTRUCTION ADMINISTRATION (Averaging 18% of construction cost)			28,656	\$ 28,656.00	Yes	27,023	1,633	
SUBTOTAL - MOBILIZATION & ADMINISTRATION COSTS					\$ 57,312.00		54,045	3,267	
TOTAL UTILITIES, CONSTRUCTION AND MOBILIZATION FOR PROGRAMMING					\$ 216,512.00		204,171	12,341	
ADOT REVIEW FEE	Please enter "Yes" if your agency is certified accepted by ADOT for construction			No					
	ADOT REVIEW FEE	AGENCY TYPE	RATE	HOURS	TOTAL	USES FEDERAL AID	FEDERAL	LOCAL	
	Contracts and Specs \ Advertise Project	Non CA	55	100	\$ 5,500	No	-	5,500	
	District \ Review Stage Submittals	Non CA	50	40	\$ 2,000	No	-	2,000	
	Environmental Planning \ Issue Clearance	All	50	40	\$ 2,000	No	-	2,000	
	Right of Way \ Issue Clearance	Non CA	55	24	\$ 1,320	No	-	1,320	
	Compliance Review\ Compliance Review	Non CA	175	40	\$ 7,000	No	-	7,000	
	Project Management Group\ Project Management	Non CA	120	100	\$ 12,000	No	-	12,000	
	Project Management Group\ Project Management	CA Only	120	60	\$ -	No	-	-	
	Utilities and Railroad Sections\ Issue Clearance	Non CA	50	24	\$ 1,200	No	-	1,200	
					\$ 31,020		-	31,020	
TOTAL COST ESTIMATE					\$ 822,532		675,671	146,861	

**Budget and Signature Page**

Phase	Location Description	Work Description	Year to be Programmed	Funding Source	Federal Amount	Local Amount	Total	Local Share
Procurement	20 Intersections in Glendale and Phoenix	Detection Upgrade	2022	CMAQ	\$ 471,500	\$ 28,500	\$ 500,000	5.7%
Design, excludes ADOT review fees	20 Intersections in Glendale and Phoenix	Detection Upgrade	2021	Local	\$ -	\$ 75,000	\$ 75,000	100.0%
Construction	20 Intersections in Glendale and Phoenix	Detection Upgrade	2022	CMAQ	\$ 204,171	\$ 12,341	\$ 216,512	5.7%
<b>Total Programmed</b>					\$ 675,671	\$ 115,841	\$ 791,512	14.6%
ADOT Design Review Fee					\$ -	\$ 31,020	\$ 31,020	100.0%
<b>Total Cost</b>					\$ 675,671	\$ 146,861	\$ 822,532	17.9%

**Signature: To be signed and scanned with PDF copy that is sent to MAG via email**

As the jurisdiction's manager/administrator or designated representative, I certify that the information contained in this application is accurate and complete and that the local funds for this project will be included in the sponsoring MAG member agency's local current CIP/TIP or budget document if the project is selected for federal funding.

Signature:

Name: Trevor Ebersole

Title: Director, Transportation Department

Date: 9/13/2019

**Detection Upgrade Regional Priority Corridors - City of Glendale City of Phoenix**

	Intersection	Detection	Agency	Regional Priority Intersection
1	Glendale Ave & 27th Ave	x	PHX	Y
2	Glendale Ave & 35th Ave	x	PHX	Y
3	Glendale Ave & 39th Ave	x	PHX	Y
4	Glendale Ave & 43rd Ave	x	PHX	Y
5	Glendale Ave & 45th Ave	x	GLN	Y
6	Glendale Ave & 47th Ave	x	GLN	Y
7	Glendale Ave & 54th Ave	x	GLN	Y
8	Glendale Ave & 55th Ave	x	GLN	Y
9	Glendale Ave & 56th Ave	x	GLN	Y
10	Glendale Ave & 57th Dr	x	GLN	Y
11	Glendale Ave & 57th Ave	x	GLN	Y
12	Glendale Ave & 58th Ave	x	GLN	Y
13	Glendale Ave & 59th Ave	x	GLN	Y
14	Glendale Ave & 62nd Ave	x	GLN	Y
15	Glendale Ave & 63rd Ave	x	GLN	Y
16	Glendale Ave & 71st Ave	x	GLN	Y
17	Glendale Ave & Dysart Rd	x	GLN	
18	Glendale Ave & El Mirage Rd	x	GLN	
19	Glendale Ave & Kachina Gate	x	GLN	
20	Glendale Ave & Landfill Rd	x	GLN	
21	Glendale Ave & Litchfield Rd	x	GLN	
22	20500 N & 59th Ave	x	GLN	
23	Acoma Dr & 59th Ave	x	GLN	Y
24	Behrend Dr & 59th Ave	x	GLN	
25	Bell Rd & 59th Ave	x	GLN	Y
26	Brown St & 59th Ave	x	GLN	Y
27	Cholla St & 59th Ave	x	GLN	Y
28	Country Gables Dr & 59th Ave	x	GLN	Y
29	Eugie Ave & 59th Ave	x	GLN	Y
30	Glenn Dr & 59th Ave	x	GLN	Y
31	Greenbrier Dr & 59th Ave	x	GLN	Y
32	Grovers Dr & 59th Ave	x	GLN	
33	Hayward Ave & 59th Ave	x	GLN	Y
34	Kings/Talavi & 59th Ave	x	GLN	Y
35	Mercer Ln & 59th Ave	x	GLN	Y
36	Missouri Ave & 59th Ave	x	GLN	Y
37	Mohawk Ln & 59th Ave	x	GLN	
38	Mountain View Rd & 59th Ave	x	GLN	Y
39	Northern Ave & 59th Ave	x	GLN	Y
40	Paradise Ln & 59th Ave	x	GLN	Y
41	Peoria Ave & 59th Ave	x	GLN	Y
42	Sweetwater Ave & 59th Ave	x	GLN	Y
43	Union Hills Dr & 59th Ave	x	GLN	
44	Utopia Rd & 59th Ave	x	GLN	
45	Vogel Ave & 59th Ave	x	GLN	Y
	Total Count	45		34
	Cost Each	\$25,000	Total Cost	\$1,125,000

