11. ORDINANCE – Consideration of an Ordinance of Eagle Mountain City, Utah, Adopting the Master Transportation Plan.

The Master Transportation Plan was presented in Work Session on May 17, 2016, so no agenda summary is provided for this meeting.

# ORDINANCE NO. O-  -2016

**AN ORDINANCE OF THE CITY COUNCIL OF EAGLE MOUNTAIN CITY, UTAH, ADOPTING THE EAGLE MOUNTAIN CITY MASTER TRANSPORTATION PLAN**

*PREAMBLE*

The City Council of Eagle Mountain City, Utah finds that it is in the public interest to adopt the Eagle Mountain City Master Transportation Plan as set forth more specifically in Exhibit A.

BE IT ORDAINED by the City Council of Eagle Mountain City, Utah:

1. The City Council finds that all required notices and hearings have been completed as required by law to consider and approve the proposed Master Transportation Plan as set forth in Exhibit A.

2. The Eagle Mountain City Master Transportation Plan is hereby amended as set forth more specifically in Exhibit A.

3. This Ordinance shall take effect upon its first publication or posting.

ADOPTED by the City Council of Eagle Mountain City, Utah, this 5th day of July, 2016.

EAGLE MOUNTAIN CITY, UTAH

_____
Chris Pengra, Mayor

ATTEST:

_____
Fionnuala B. Kofoed, MMC
City Recorder

00049042.DOC

## CERTIFICATION

The above ordinance was adopted by the City Council of Eagle Mountain City on the 5th day of July, 2016.

| Those voting aye: | Those voting nay: |
|---|---|
| ☐ Adam Bradley | ☐ Adam Bradley |
| ☐ Colby Curtis | ☐ Colby Curtis |
| ☐ Stephanie Gricius | ☐ Stephanie Gricius |
| ☐ Benjamin Reaves | ☐ Benjamin Reaves |
| ☐ Tom Westmoreland | ☐ Tom Westmoreland |

_____
Fionnuala B. Kofoed, MMC
City Recorder

# EXHIBIT A

# EAGLE MOUNTAIN

## MASTER TRANSPORTATION PLAN

Prepared For

November 2014

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# Introduction

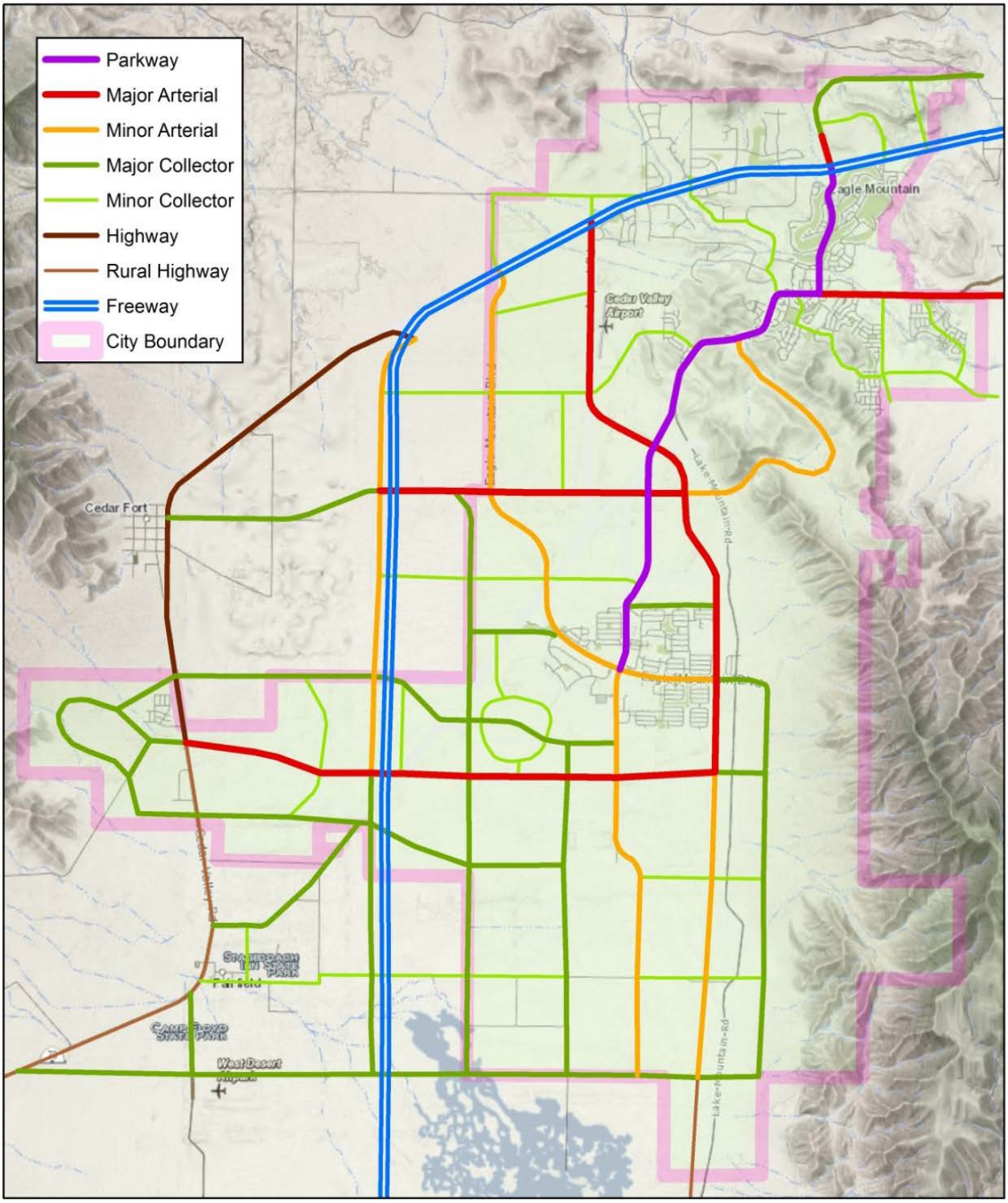
The purpose of the Eagle Mountain Master Transportation Plan is to create a transportation plan uphold Eagle Mountain as a "community that captures a neighborhood feel in the midst of Utah's urban corridor," while effectively managing an increasing need for transportation infrastructure. Eagle Mountain has seen rapid growth in the past decade and is projected to nearly triple in population by 2040. This growth will ultimately exceed the capacity of the City's existing transportation system. This plan responds to future demands on the City's transportation system while retaining safe and active streets for non-motorized travel.

This plan has been organized into six sections, which cover the components of the transportation master plan. They include the following sections:

1. Introduction
2. Existing Conditions
3. Future Conditions
4. Plan Recommendations
5. Capital Facilities Plan
6. Appendix

A map of the proposed Eagle Mountain Master Transportation Plan streets is shown in Figure 1.

**Figure 1 – Eagle Mountain Master Transportation Plan Map**




Source: InterPlan

## Planning Process

Eagle Mountain contracted with InterPlan to update the existing Master Transportation Plan to make recommendations to Eagle Mountain City on policy issues that affect the drivability and safety of the road network. Major efforts to create this plan began in May of 2014. InterPlan relied on its master transportation planning experience, and a stakeholders committee, as well as the existing plan to guide the update.

A stakeholder committee was formed to ensure that the new plan was consistent with the needs of those who play a major role in the development of the city. The committee consisted of city staff, local officials, developers, as well as representatives from Utah County, The Utah Department of Transportation (UDOT), Mountainland Association of Governments (MAG) and the Utah Transit Authority (UTA). The Stakeholder Committee provided input in three meetings during the development of this document. The stakeholder committee member are listed in the Appendix.

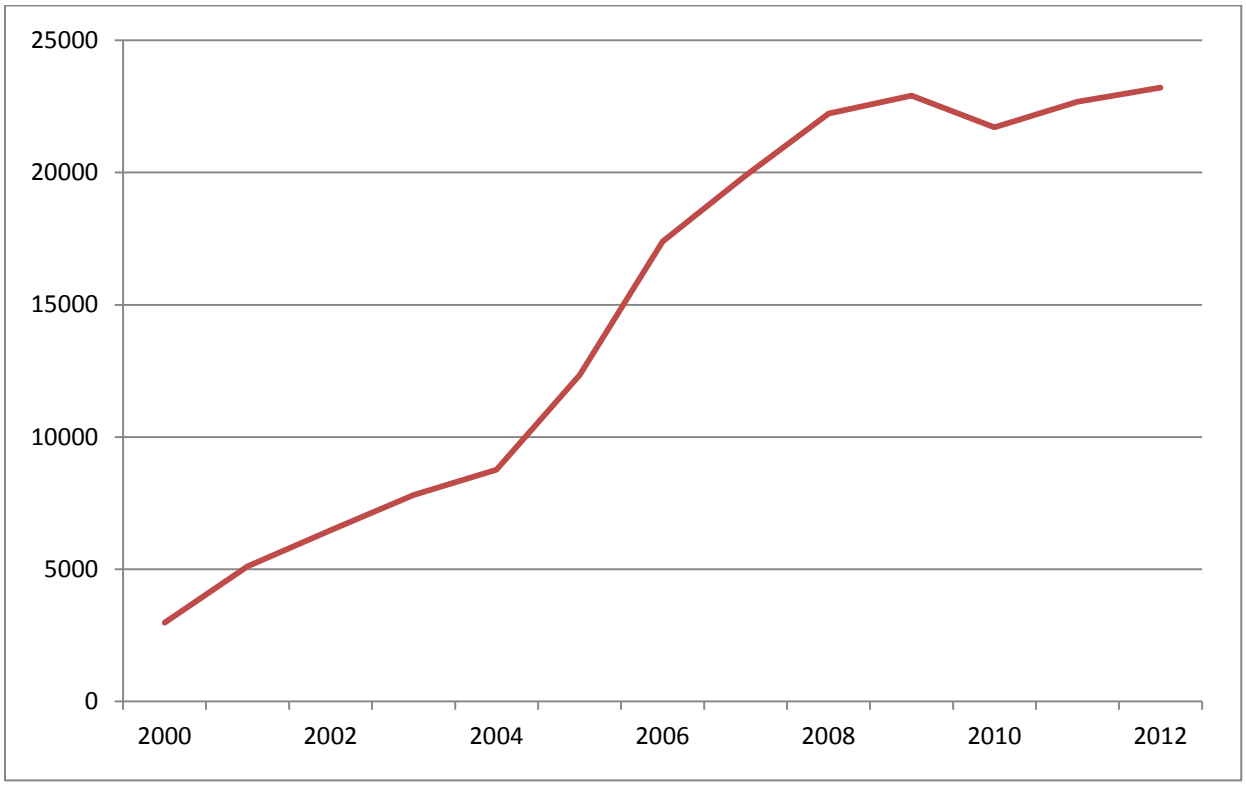
Coordination between city staff and InterPlan was key to the process. Frequent internal coordination meetings occurred as well as email and phone communications. This coordination was to insure that the development of the plan was on course and on schedule. The meetings hosted key discussions on all aspects of the plan including: population, households, and employment forecasts, street alignments and cross-sections, and plan phasing.

# Existing Conditions

## Demographics

Eagle Mountain City is located on the north-western side of Utah Lake in Utah County and has experienced significant population growth since 2000 as shown in Figure 2. It was incorporated in 1996 with a population of just 250 people.

**Figure 2 – Eagle Mountain City Population**




Source: US Census

The household characteristics of Eagle Mountain are unique from the Utah County and the State of Utah. Compared to the county and sttate, Eagle Mountain has an above average household size of 4.19 and a younger than average median age of 21.7. Dependency ratios are an age-population ratio for those typically too young (0-14, child dependency) or too old

(65 and over, aged dependency) to be in the labor force, and are used as an indication of what portion of the population is dependent. The aged dependency ratio for Eagle Mountain is less than the county and state, while the child dependency ratio is significantly higher. These household characteristics all point to a young population of larger families.

**Table 1 – Household Characteristics**

| Household Characteristics | Eagle Mountain | Utah County | Utah State |
|---|---|---|---|
| Average Household Size | 4.19 | 3.57 | 3.09 |
| Median Age | 21.70 | 24.50 | 29.30 |
| Aged Dependency Ratio | 4.10 | 11.20 | 15.30 |
| Child Dependency Ratio | 92.50 | 59.80 | 52.60 |
| Bachelor's Degree or Higher | 29.50% | 35.70% | 29.90% |

Source: US Census, 2012 American Community Survey Five-Year Estimates

Economically speaking, Eagle Mountain is above average as compared to Utah County and the Utah. Table 2 shows several economic characteristics for Eagle Mountain as well as county and state comparisons. Eagle Mountain is doing well with more workers, higher median income, and a lower poverty rate than both the county and state.

**Table 2 – Economic Characteristics**

| Economic Indicator | Eagle Mountain | Utah County | Utah State |
|---|---|---|---|
| In Labor Force | 73.4% | 68.2% | 68.9% |
| Unemployed | 4.7% | 4.7% | 4.9% |
| Median Household Income | $66,238 | $59,864 | $58,164 |
| People whose income in the past 12 months is below the poverty level | 6.6% | 13.6% | 12.1% |

Source: US Census, 2012 American Community Survey Five-Year Estimates

## Existing Land Use

Development in Eagle Mountain is located primarily in two isolated areas. The first is found to the northeast, bordering Saratoga Springs, and contains a majority of residential housing units. The second and less established area is located in the geographic center of the city and is home to Eagle Mountain City offices.

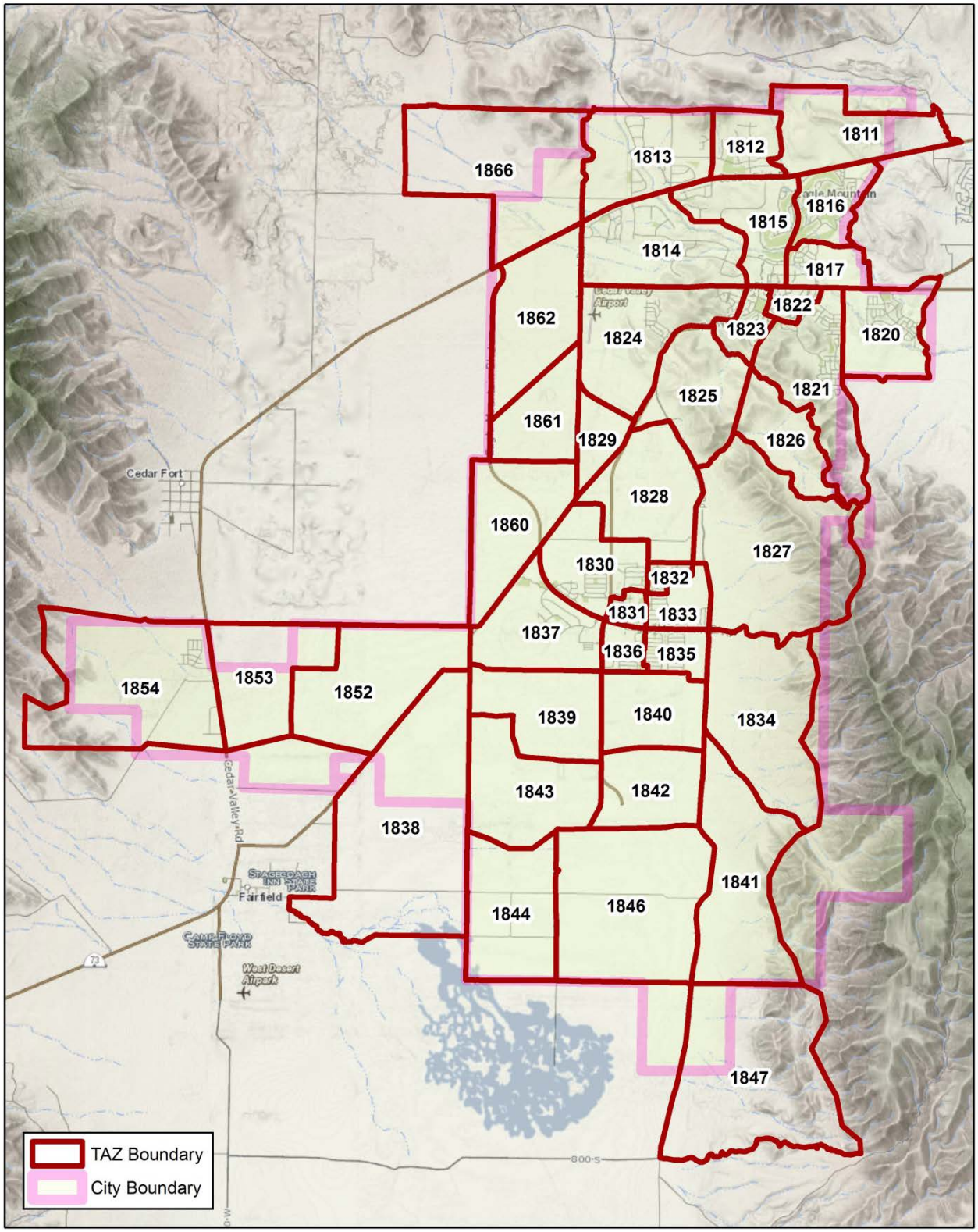
Transportation planning depends on estimating land uses in addition to demographic changes. This information is used in a computer modeling tool, known as the Travel Demand Model, which forecasts trips to and from destinations based on smaller regions known as traffic analysis zones (TAZs). The traffic analysis zones are geographically smaller than a municipality and are similar in size to census block groups. Traffic analysis zones are defined by the Wasatch Front Regional Council (WFRC) and Mountainland Association of

Governments (MAG). The existing land use in Eagle Mountain was used by city staff and the consulting team to generate 2014 population, households, and employment numbers for each TAZ within Eagle Mountain City. Figure 3 shows the TAZs within Eagle Mountain.

Figures 4 and 5 show the current number of households and population by TAZ respectivly. The highest number of households is found in the northeast portion of the city, namely in the Ranches development.

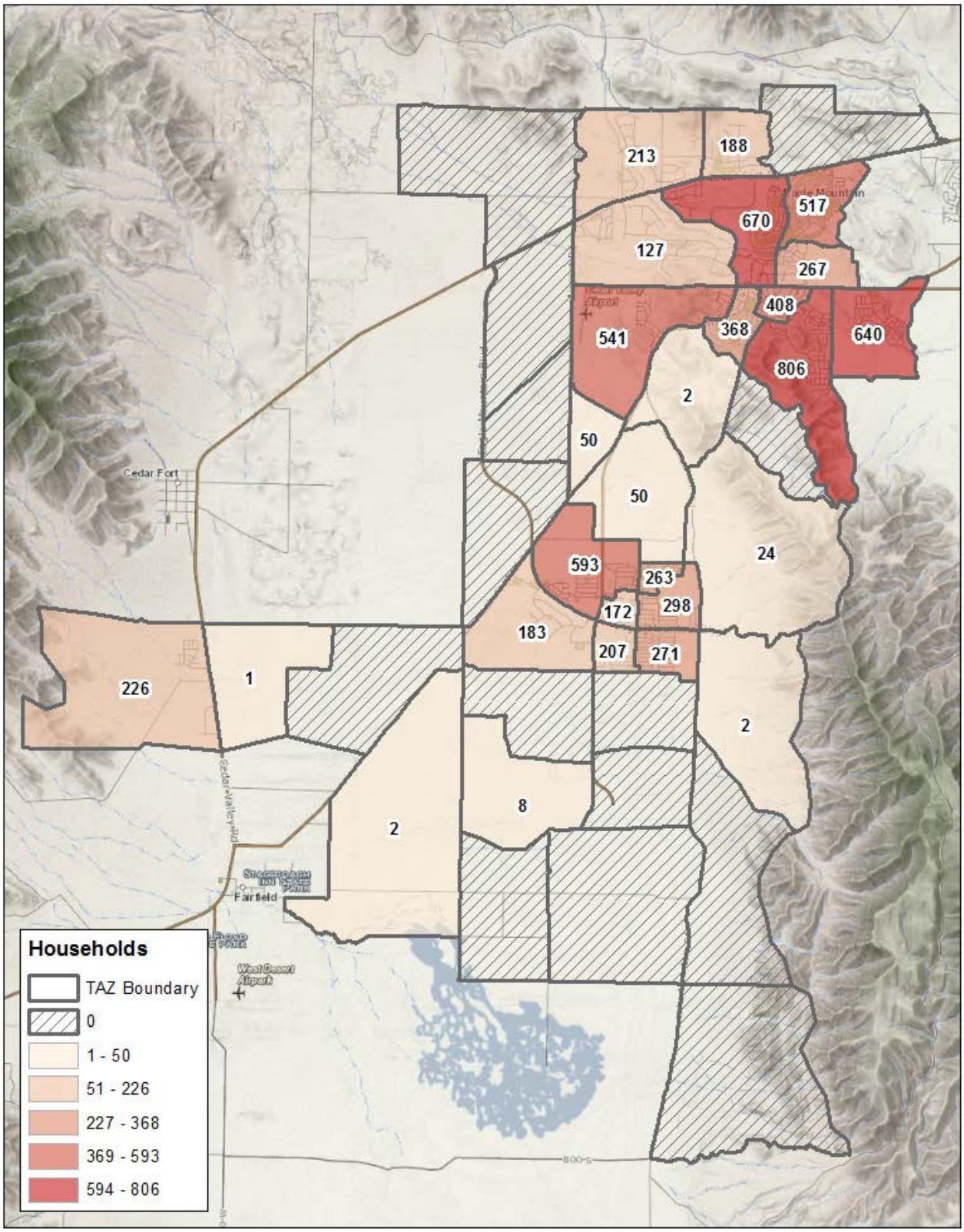
Figure 6 shows the employment, as a number of jobs, in Eagle Mountain by TAZ. Here you will notice an even spread of employment to the northeast, as well as two concentrations along the southern portion of Pony Express Parkway, explained by Frontier Middle School and the city center.

**Figure 3 – Eagle Mountain Area Traffic Analysis Zones**



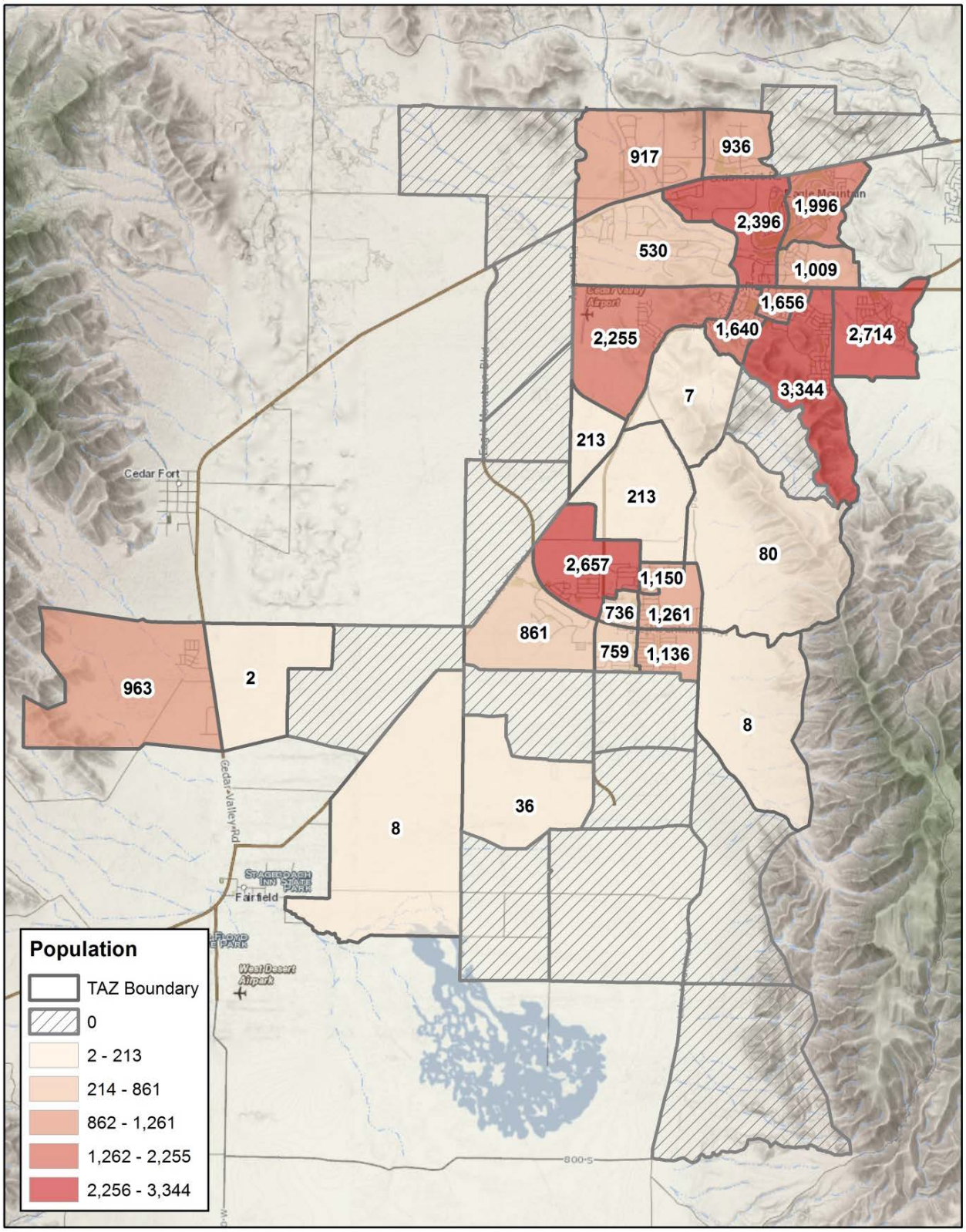

Source: WFRC-MAG Travel Demand Model

**Figure 4 – Households by Traffic Analysis Zone**



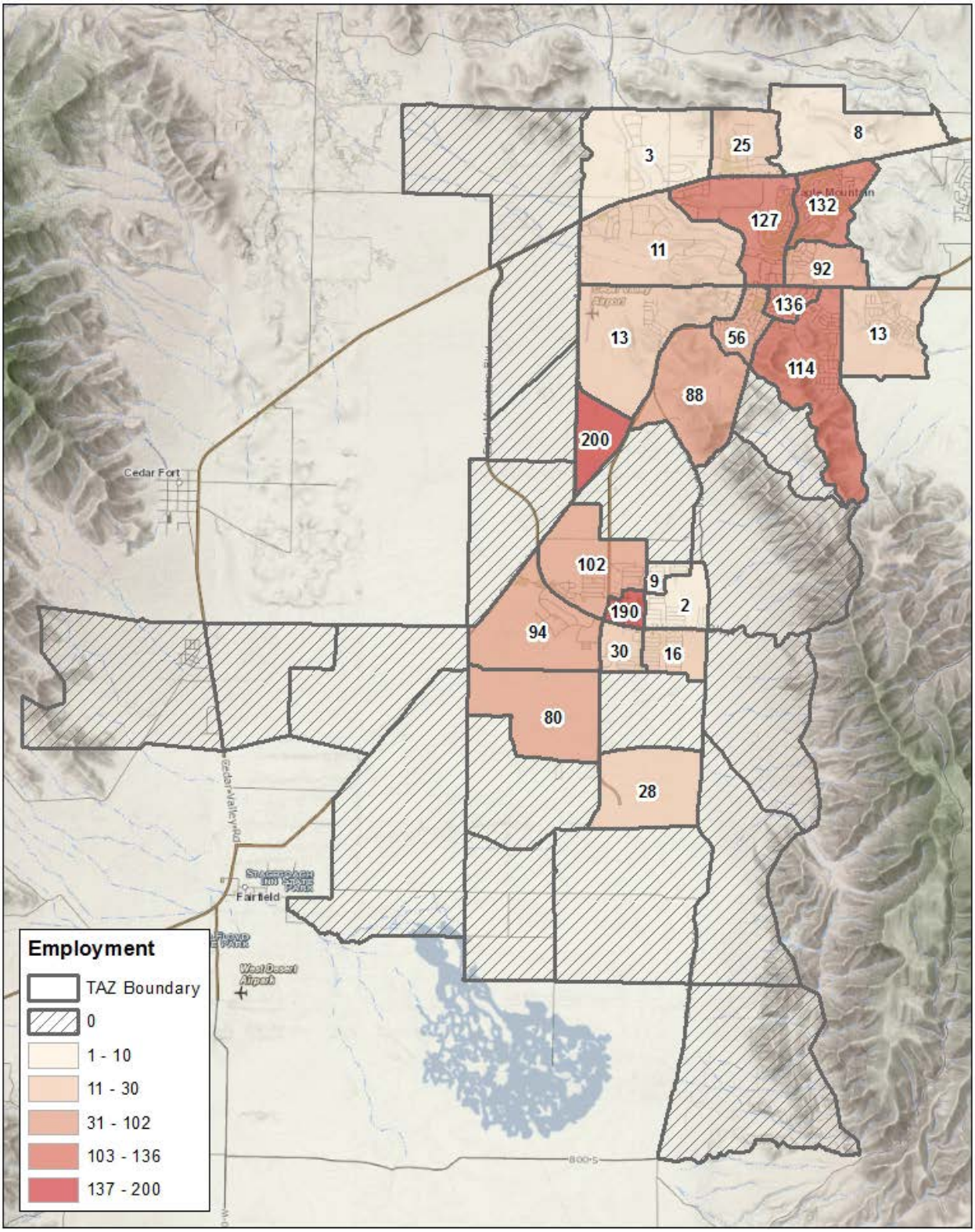

Source: InterPlan

## Figure 5 – Population by Traffic Analysis Zone




Source: InterPlan

**Figure 6 – Employment by Traffic Analysis Zone**

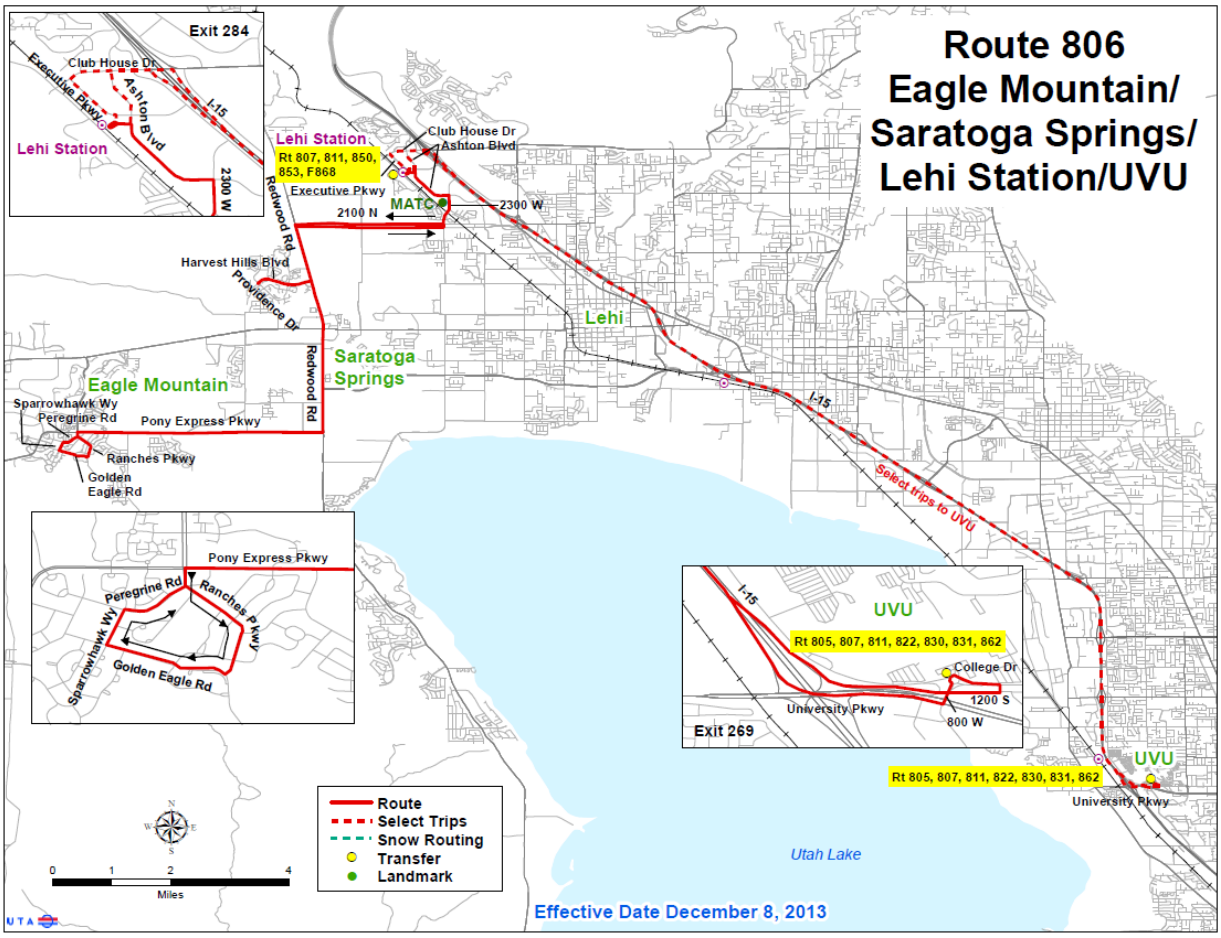



Source: InterPlan

## Existing Transit

UTA currently offers one bus route in Eagle Mountain, the Eagle Mountain/Saratoga Springs/Lehi Station/Utah Valley University (UVU), route 806. This route offers weekday-only 30 minute AM peak service northbound and 30 minute PM peak service southbound. As the route's name suggests, it brings commuters from Eagle Mountain and Saratoga Springs to the Lehi commuter rail station and Utah Valley University and back again in the evenings. Figure 7 depicts the route and Table 3 shows the schedule.

**Figure 7 – Utah Transit Authority Bus Route 806**




Source: Utah Transit Authority

**Table 3 – Route 806 Schedule**

| Weekday Northbound to Lehi Station | | | | | | Weekday Southbound to Eagle Mountain | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Eagle Mtn Church Park & Ride | Pony Express & Silver Lake Pkwy | Hwy 73 & Redwood Rd | Harvest Hills Church Park & Ride | Thanksgiving Point Comm. Rail St | Utah Valley University | Utah Valley University | Thanksgiving Point Comm. Rail St | Harvest Hills Church Park & Ride | Hwy 73 & Redwood Rd | Pony Express & Silver Lake Pkwy | Eagle Mtn Church Park & Ride |
| 5:39 AM | 5:43 AM | 5:52 AM | 5:56 AM | 6:06 AM | | 4:03 PM | 4:23 PM | 4:36 PM | 4:40 PM | 4:48 PM | 4:53 PM |
| 6:09 AM | 6:13 AM | 6:22 AM | 6:26 AM | 6:36 AM | | 4:33 PM | 4:53 PM | 5:06 PM | 5:10 PM | 5:18 PM | 5:23 PM |
| 6:39 AM | 6:43 AM | 6:52 AM | 6:56 AM | 7:06 AM | 7:28 AM | | 5:23 PM | 5:36 PM | 5:40 PM | 5:48 PM | 5:53 PM |
| 7:09 AM | 7:13 AM | 7:22 AM | 7:26 AM | 7:36 AM | 7:58 AM | | 5:53 PM | 6:06 PM | 6:10 PM | 6:18 PM | 6:23 PM |

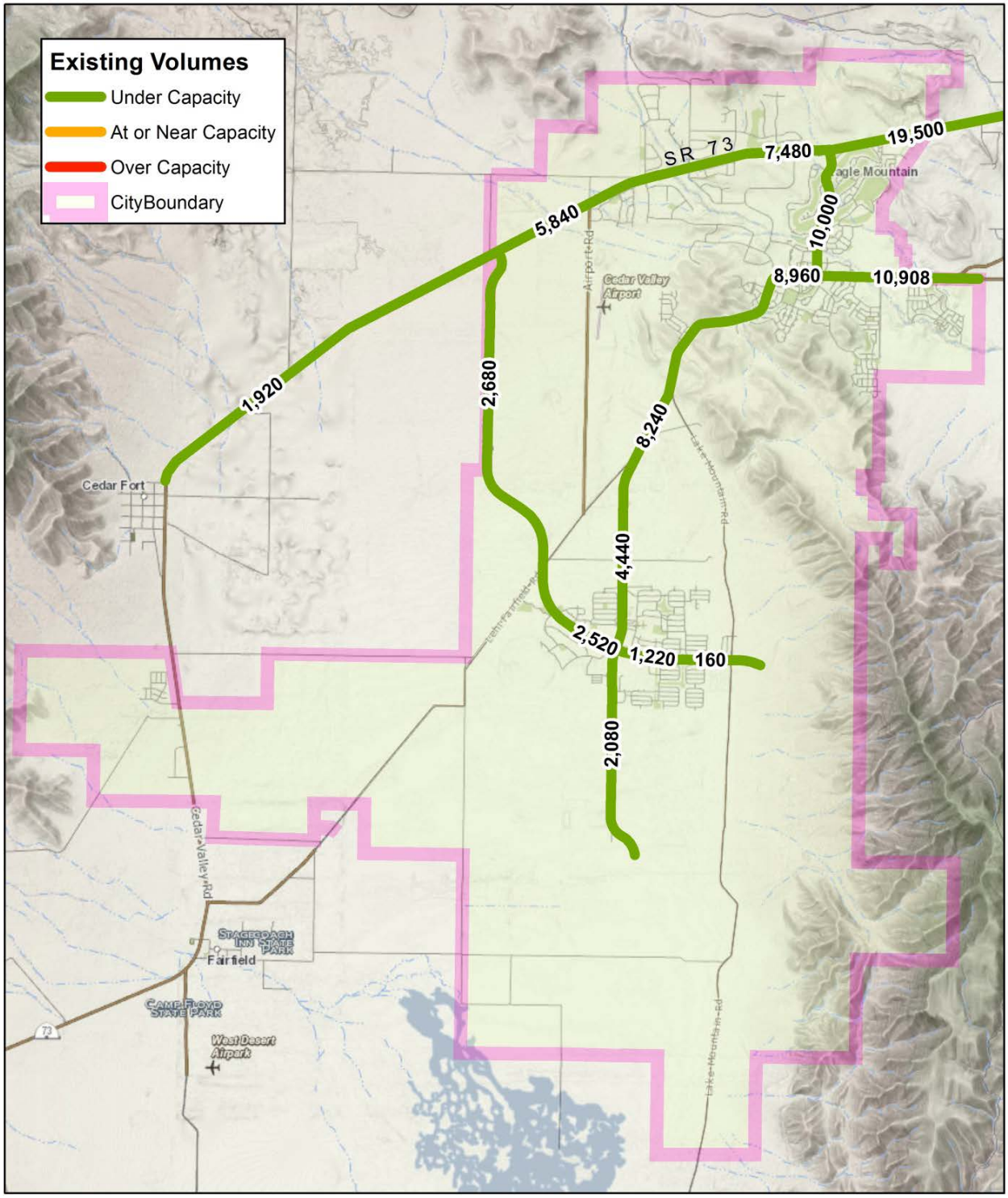
Source: Utah Transit Authority

## Level of Service

Level of service (LOS) is defined in the Impact Fees Act as “the defined performance standard or unit of demand for each capital component of a public facility within a service area.” Level of service standards for transportation are defined in the American Association of State and Territorial Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets, 2011 ( 6th Edition). Eagle Mountain presently maintains a road system with little traffic congestion and has opted to maintain this standard in the future. According the AASHTO standards, such as transportation level can be defined by LOS D, which is defined as "Approaching unstable flow." This level can be measured by methods included in the Transportation Research Board (TRB), Highway Capacity Manual HCM2010, October 2010.

Traffic volumes in Eagle Mountain are currently modest, with all roads maintaining LOS D or better. The highest volume roads are found to the northeast, peaking at nearly 20,000 vehicles per day along S.R. 73 east of Ranches Parkway. Figure 8 shows the daily volumes for roads in Eagle Mountain.

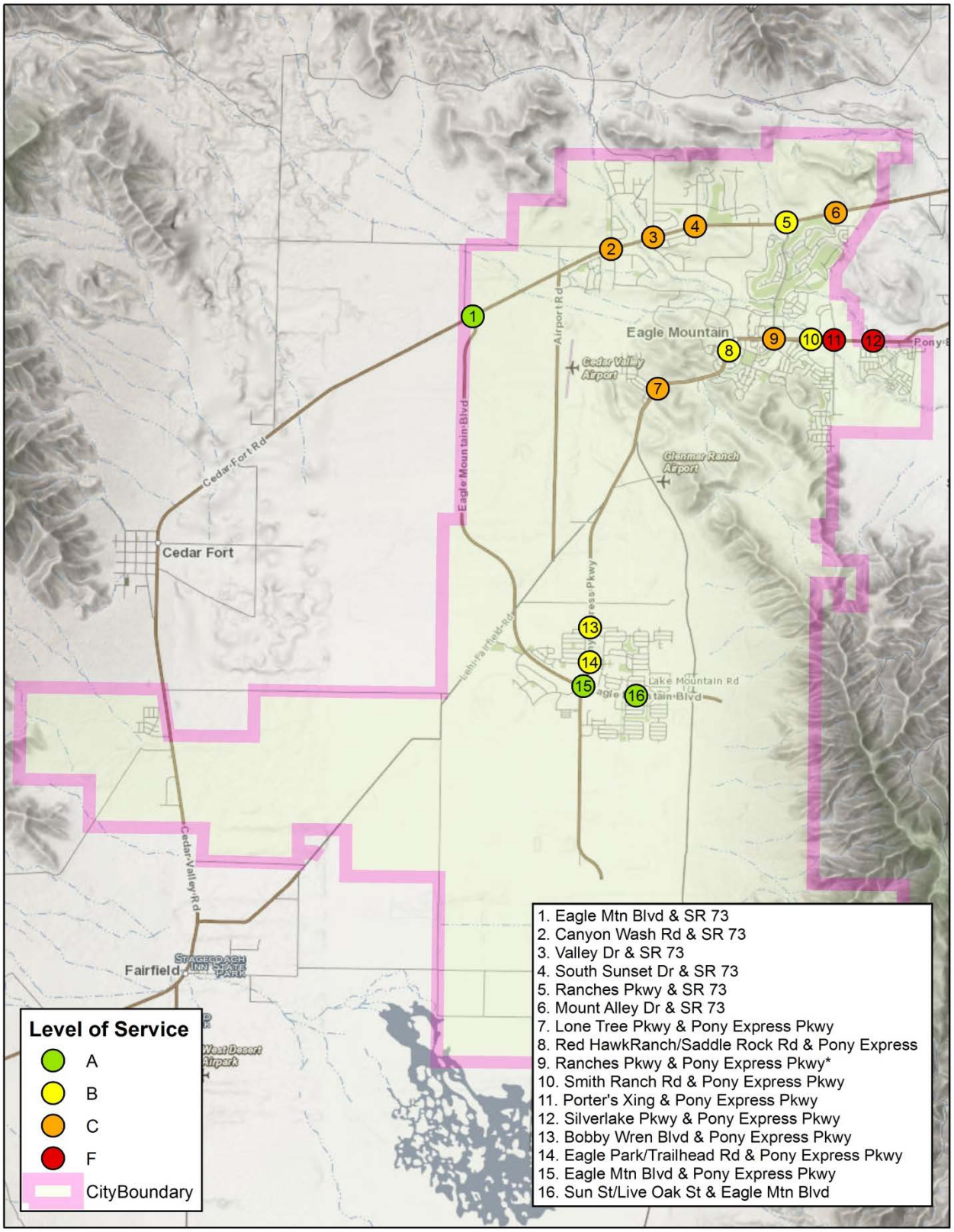
**Figure 8 – Existing Traffic Volumes**




Source: Derived from intersection counts collected by InterPlan, May 2014

To understand the existing state of the intersections in Eagle Mountain, the consultant, InterPlan, conducted intersection counts at 16 intersections of interest throughout Eagle Mountain, two of which (5 and 9) are signalized. Once collected, the data was used to conduct a LOS analysis, which measures the delay at each leg of an intersection and gives it a grade of A through F. Grades A through C are generally regarded as acceptable. The LOS of the intersections in Eagle Mountain were found to be, in general, at acceptable conditions; with all but two of the analyzed intersections functioning at a LOS of C or better. The two most eastern intersections, along Pony Express Parkway, are the only two with poor LOS, currently functioning at a LOS F. These two, three-way and stop sign controlled intersections, would benefit from signalization. Figure 9 shows the LOS of each intersection analyzed.

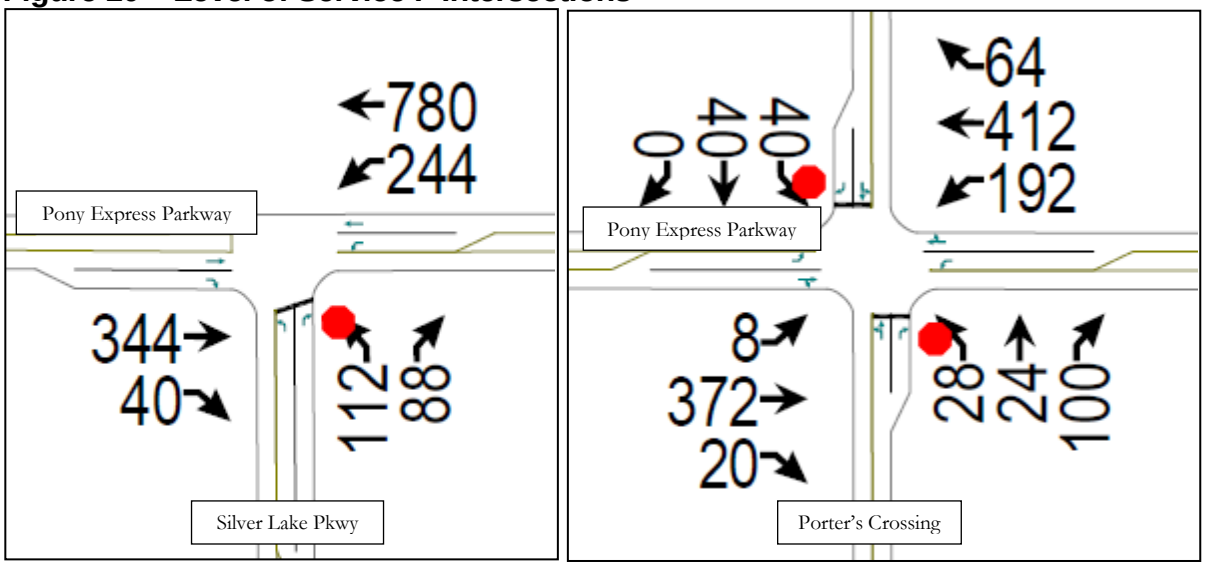
## Figure 9 – Intersection Level of Service




Source: Intersection counts collected by InterPlan, May 2014
*Note: Counts at Ranches Pkwy & Pony Express Pkwy were collected before signalization

Figure 10 diagrams the intersections of Silver Lake Parkway and Porter's Crossing intersections respectively and show the turning movements. Silverlake Parkway and Pony Express Parkway is a three-way stop-controlled intersection, with Silver Lake Parkway being the third leg. Silver Lake Parkway sees a 262 second per vehicle delay at this intersection, causing it to have a LOS F.

**Figure 10 – Level of Service F Intersections**




Source: InterPlan

## Safety Hot Spots

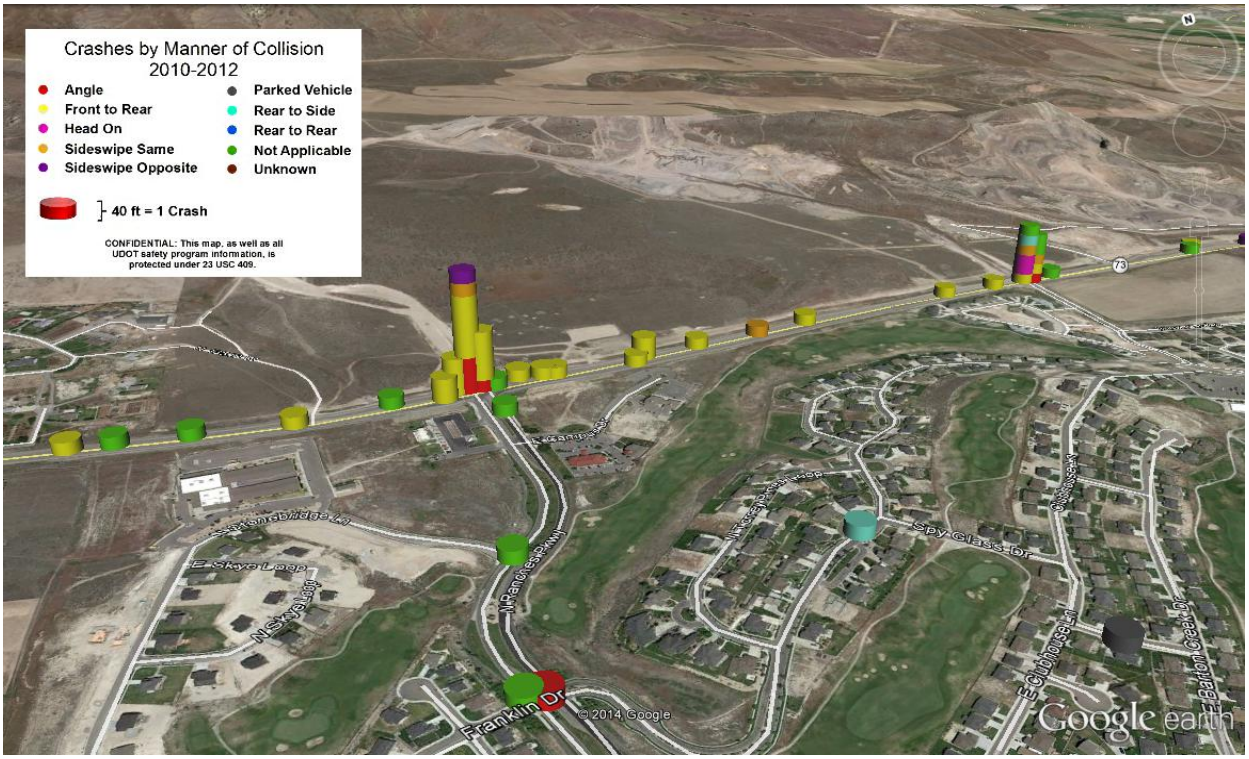
InterPlan obtained the most recent available (2010-2012) crash data for Eagle Mountain from the Utah Department of Transportation (UDOT) Traffic and Safety Division. A safety analysis was performed and based on the frequency of crashes; several intersections were identified as "intersection hot spots." Table 4 details the intersections in Eagle Mountain with the highest number of vehicle crashes from 2010 to 2012. The two intersections, located at S.R. 73 and Ranches Parkway and S.R. 73 and Mt. Alley Drive reported the highest number of crashes. Figure 11 shows crashes by manner of collision for S.R. 73 and Ranches Parkway and S.R. 73 and Mt. Airey Drive. Although high relative to Eagle Mountain, crash rates are not high relative to Utah County and do not pose major concerns.

**Table 4 – Intersection Hot Spots**

| Rank | Location | Crash Count (2010 – 2012) |
|---|---|---|
| 1 | S.R. 73 and Ranches Parkway | 21 |
| 2 | S.R. 73 and Mt. Airey Drive | 11 |
| 3 | Pony Express and Ranches Parkway | 7 |
| 4 | Pony Express and Smith Ranch Road | 6 |

Source: InterPlan

**Figure 11 – Intersection Hot Spot Crashes by Manner of Collision**




Source: InterPlan

# Future Conditions

## Land Use

Eagle Mountain City expects its population to grow to 83,705 by 2040, which is slightly more than region-wide population estimates made by MAG, who project a population of 78,404 for the city. These new estimates, based on future land use provided by Eagle Mountain City were utilized for the purposes of this plan, primarily to adjust TAZ level demographic information. Table 5 shows projections for population, households, and employment from MAG and Eagle Mountain City. For detailed tables with information at the TAZ level see the TAZ Projections Appendix.

**Table 5 – Demographic Projections**

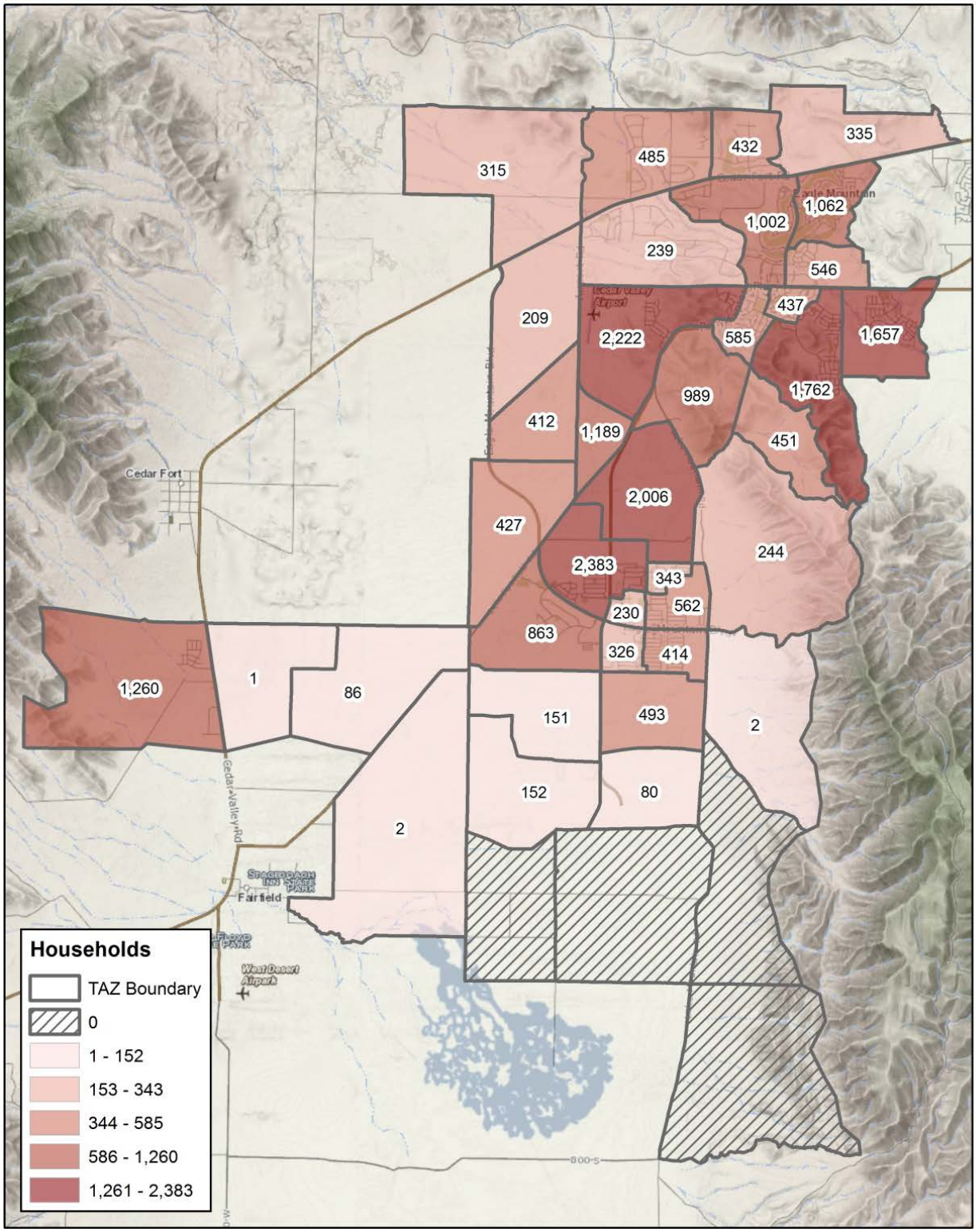
| Measurement | Current MAG 2014 | Eagle Mountain Revisions 2014 | MAG Projections 2040 | Eagle Mountain Projections 2040 |
|---|---|---|---|---|
| Population | 29,483 | 28,767 | 78,404 | 83,705 |
| Households | 7,097 | 6,852 | 24,354 | 24,926 |
| Employment | 1,569 | 1,569 | 20,229 | 20,221 |

Source: MAG, Eagle Mountain Staff, InterPlan

The number of projected 2040 households  and population by TAZ are shown in Figures 12 and 13 respectivly. A majority of the households are expected to develop in central Eagle Mountain, north of the city center and straddling the northern tip of the Lake Mountains, on the east side of the Cedar Valley.

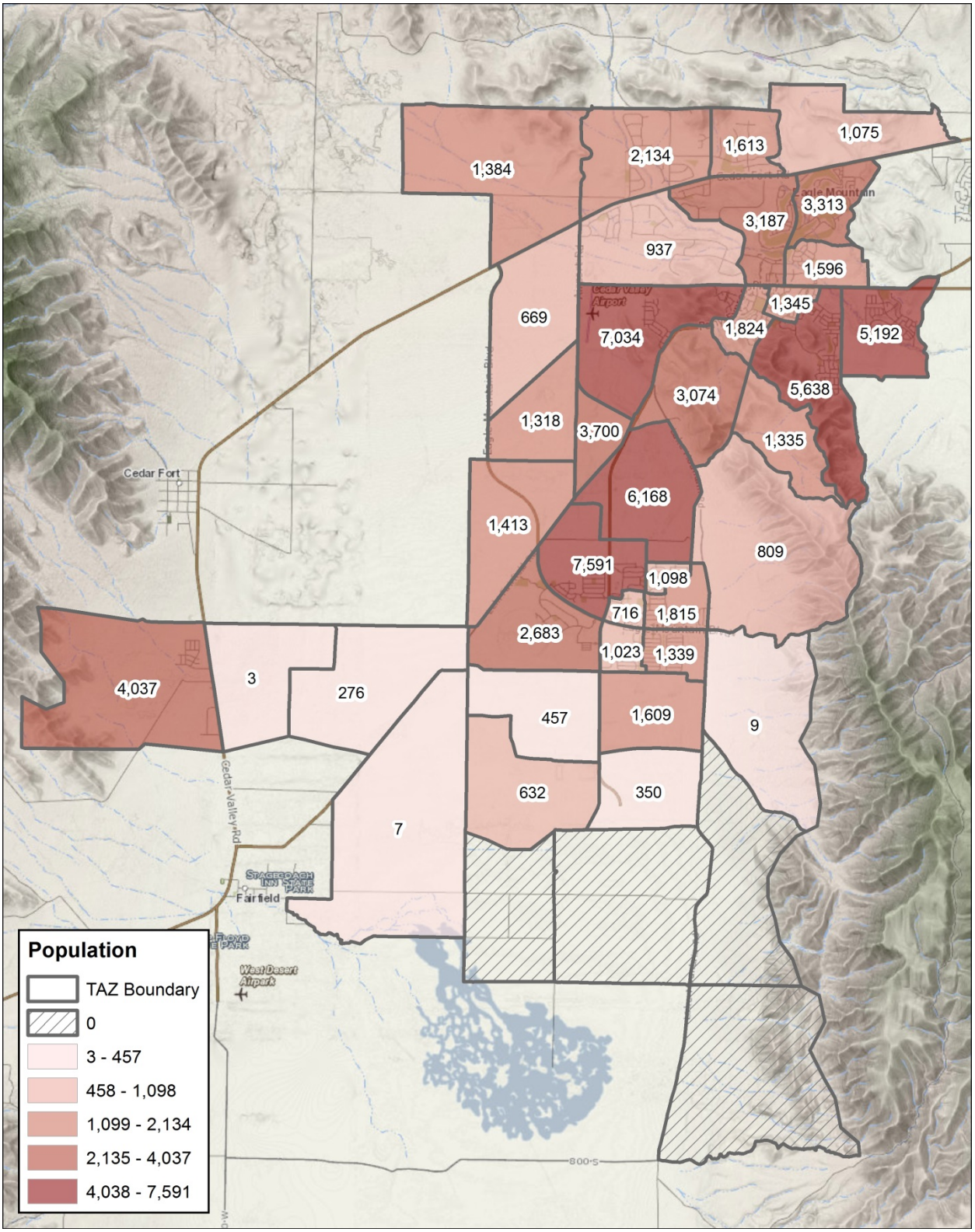
The 2040 employment forecasts are shown in Figure 14. Nearly all of the employment is projected to develop in the northern portion of the city, with big developments just north of the city center and in the far northeast corner of the city.

**Figure 12 – 2040 Households by Traffic Analysis Zone, City Forecast**



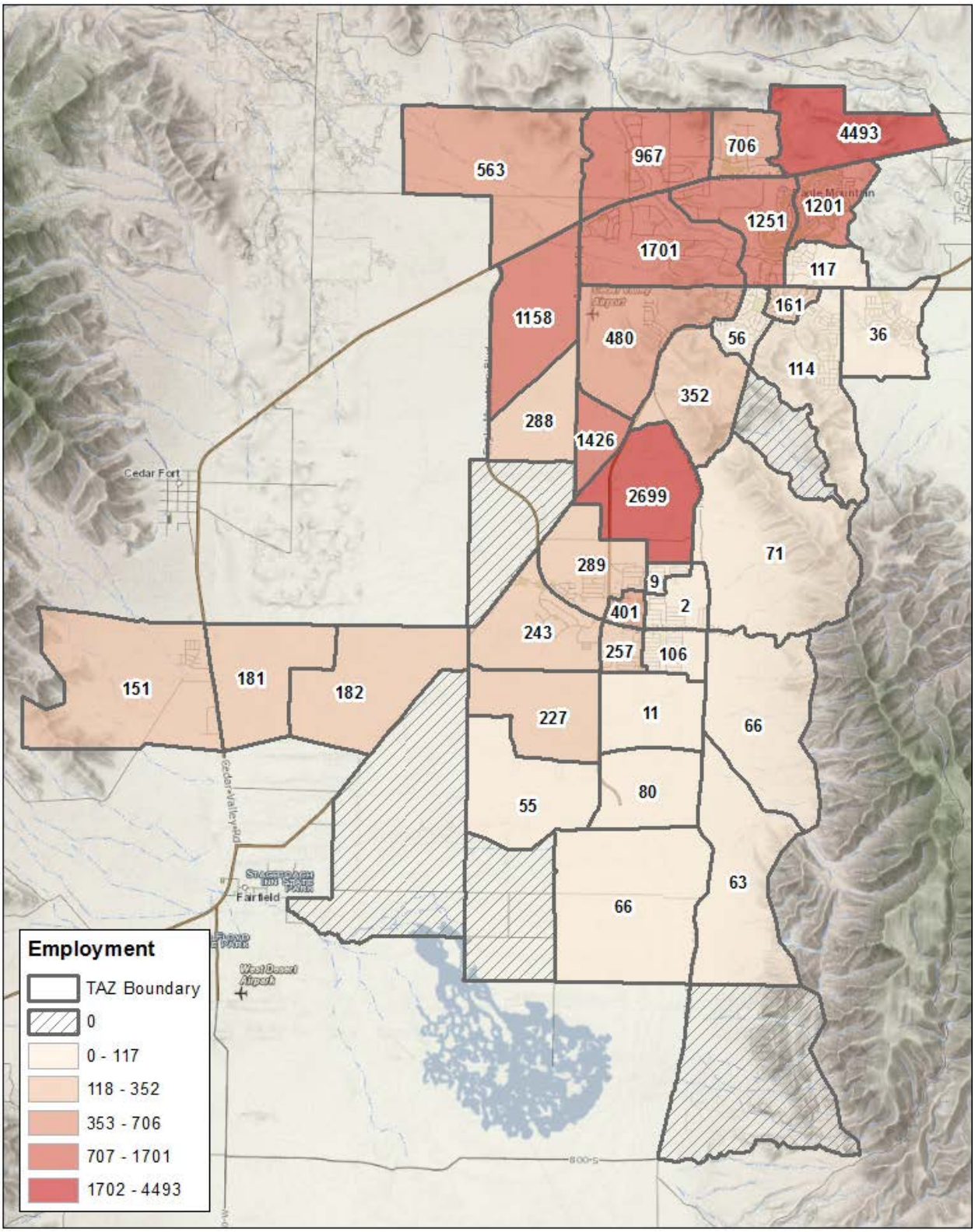

Source: InterPlan

**Figure 13 – 2040 Population by Traffic Analysis Zone, City Forecast**




Source: InterPlan

**Figure 14 – 2040 Employment by Traffic Analysis Zone, City Forecast**



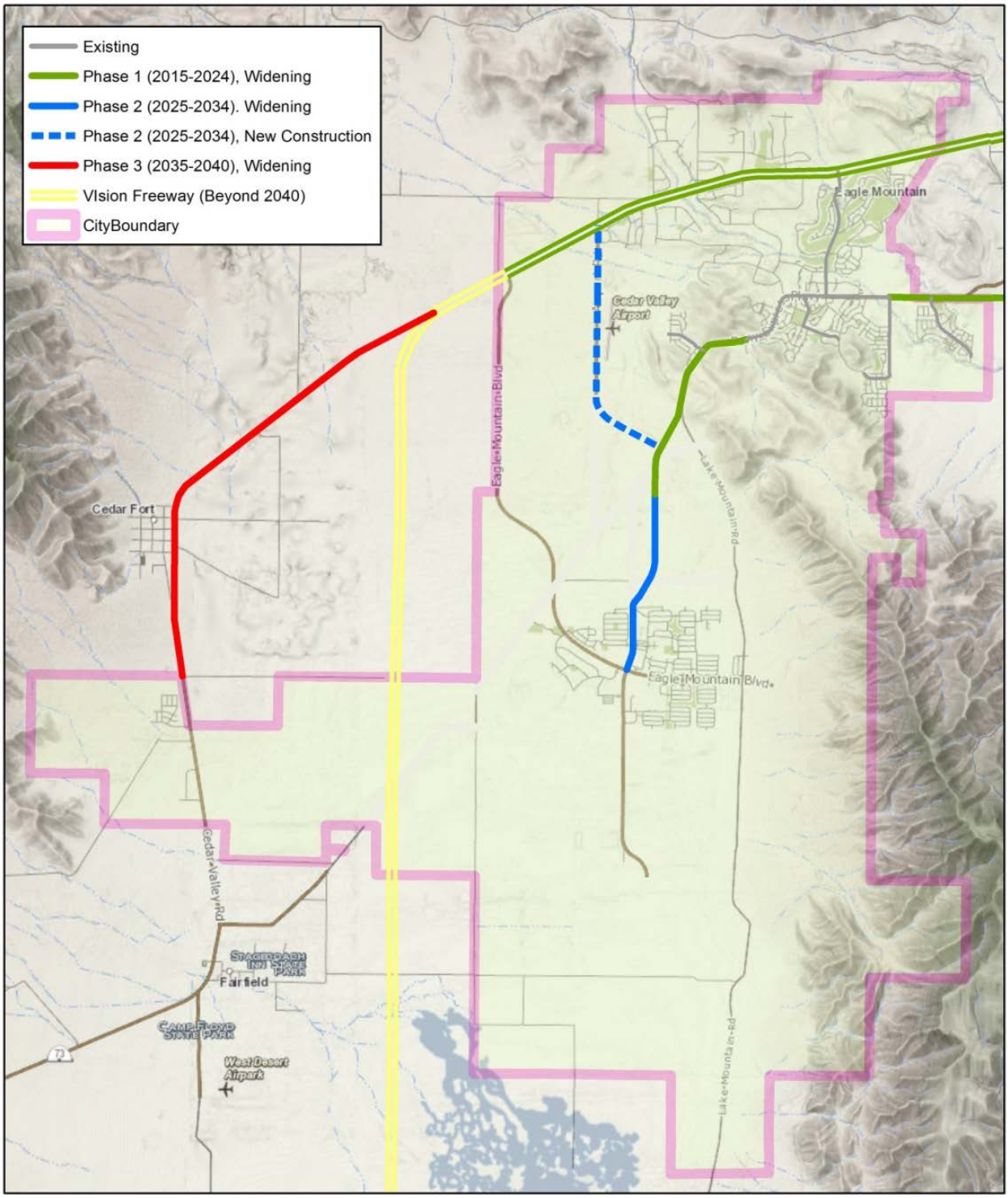

Source: InterPlan

## Regional Plans

The forecasting and planning undertaken by Eagle Mountain City is complimented region-wide by agencies which preform regional planning such as the MAG, UDOT, and UTA.

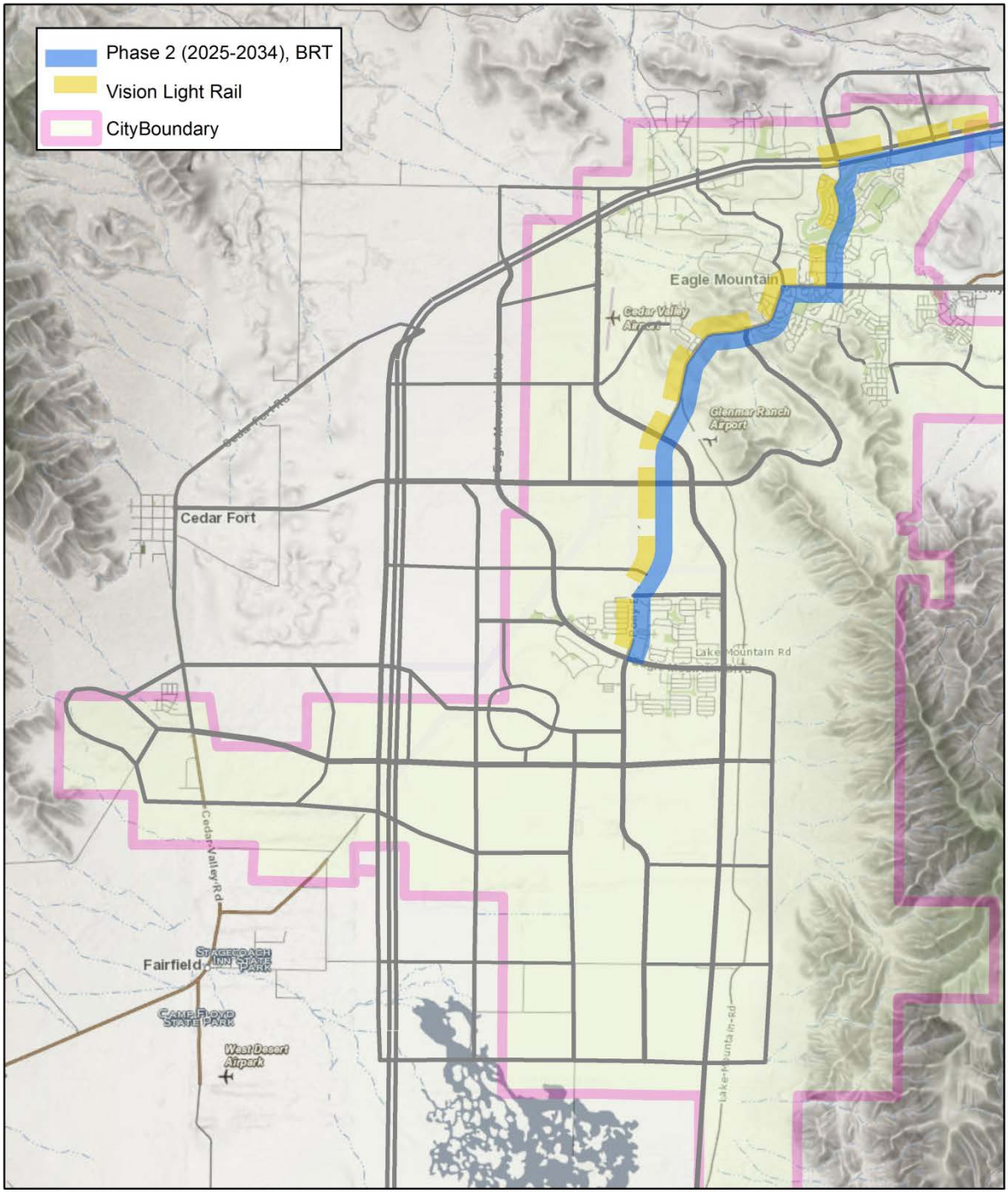
Every four years, MAG produces a Regional Transportation Plan (RTP) which is a long term blueprint of the region's transportation system. The plan produces a list of highway and transit projects in the future by phase. MAG's 2015 draft RTP is currently under review, Figures 15 and 16 show the draft highway and transit projects, phased to 2040. S.R. 73 and the vision freeway are the two state routes in Eagle Mountain in this plan.

**Figure 15 – MAG 2015 RTP Draft Highway Projects**




Source: MAG

**Figure 16 – MAG 2015 RTP Draft Transit Projects**




Source: MAG
*Note: Vision project alignments shown are conceptual

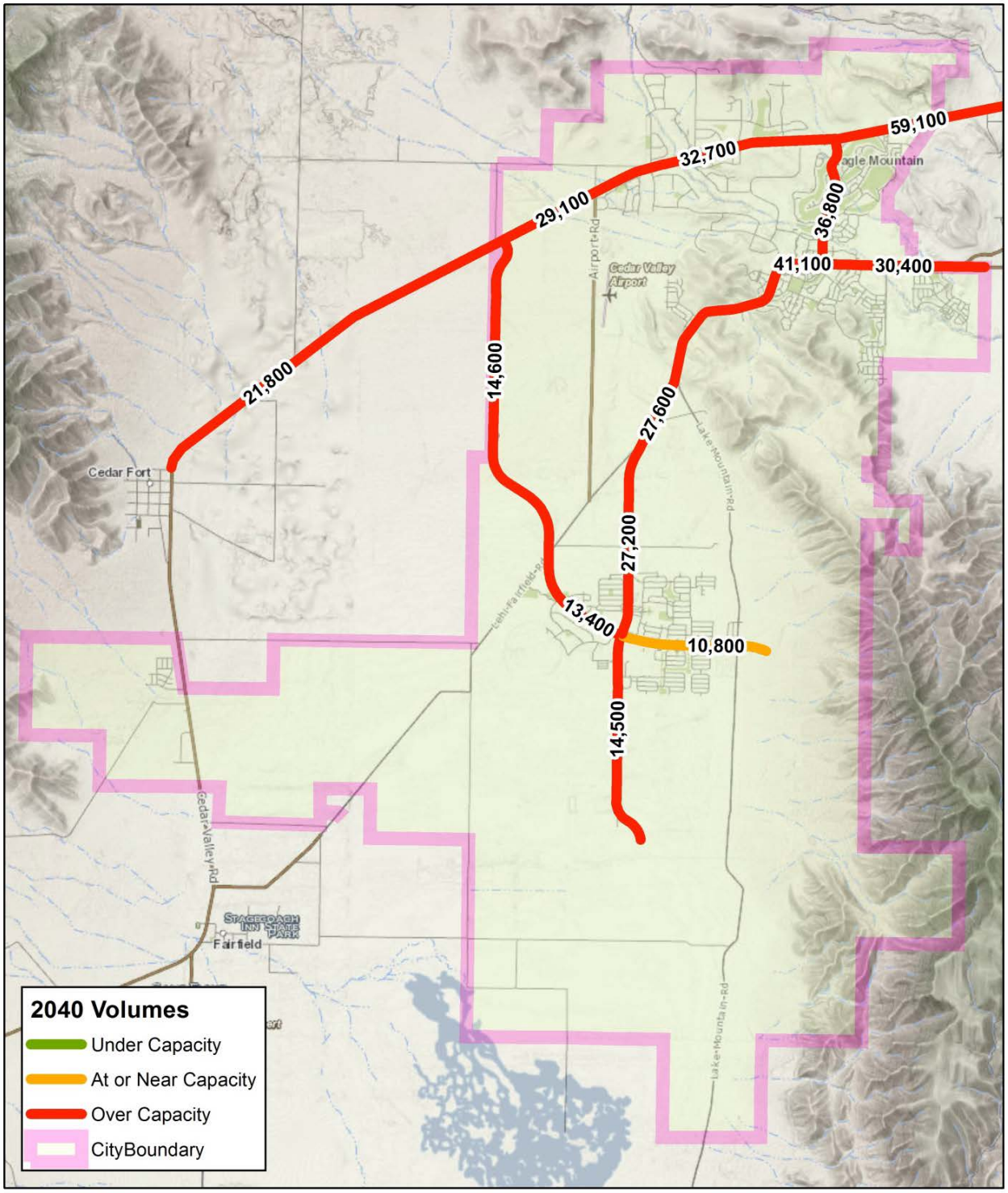
## Travel Demand Modeling

Travel demand modeling is a technique which utilizes socioeconomic forecasts along with a defined future network to forecast future conditions. For the purposes of this plan the WFRC/MAG regional travel demand model version 7.0 was utilized. The existing network in the model accurately reflected Eagle Mountain's current roadway network; however changes to the socio and economic data were needed. Base year data was updated as described above in the Existing Land Use section, and the 2040 forecasts were updated as described above in this section.

### Future Level of Service

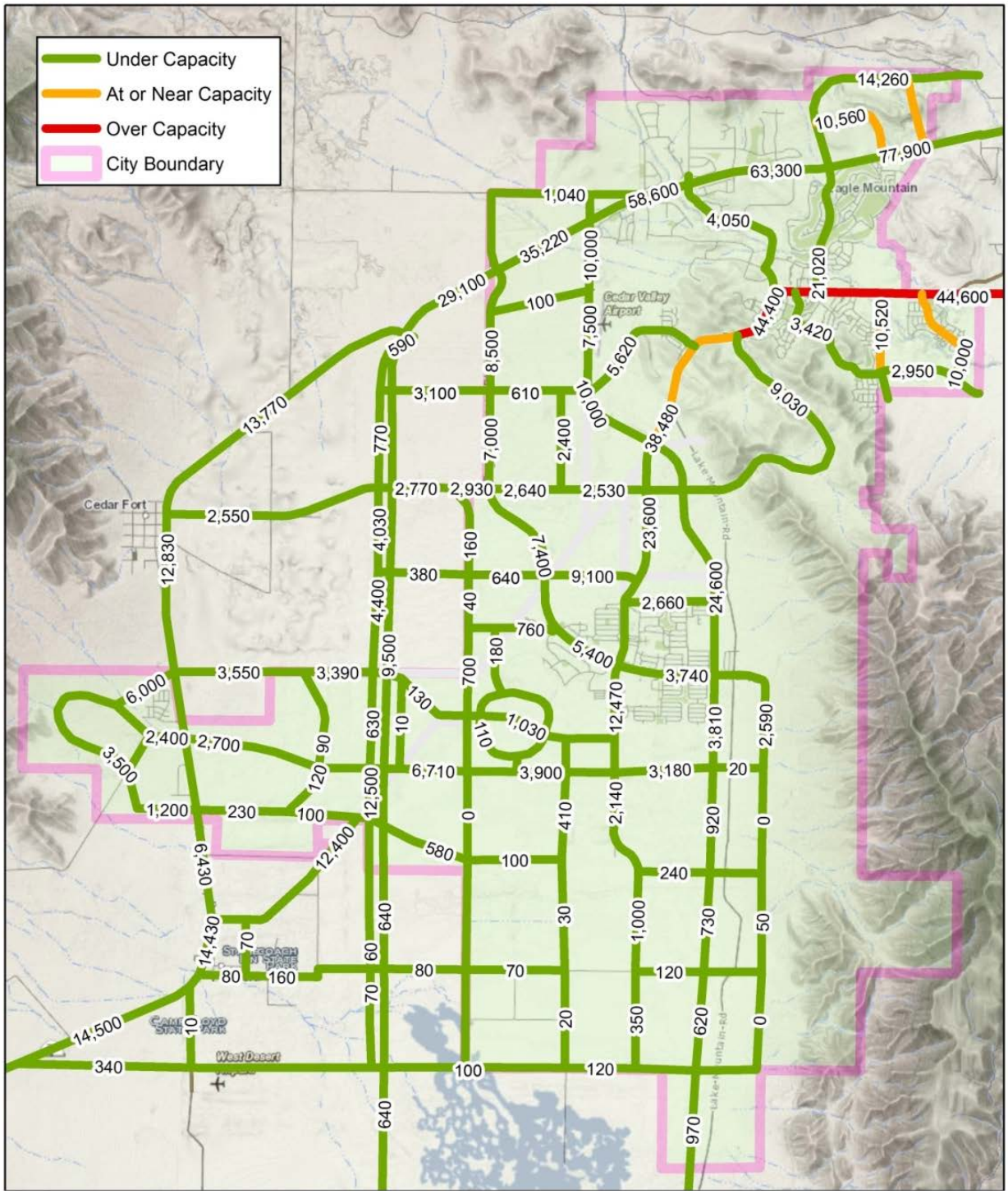
Once the base model was calibrated to best reflect current conditions, future 2040 population, households and employment data were used to model future 2040 travel volumes. Two 2040 scenarios were tested: a no-build and a build. The no-build scenario is shown in Figure 17 and shows the future LOS and daily travel volumes if the road network is not improved. A need for additional infrastructure in the future is clearly illustrated. The build scenario, shown in Figure 18, shows the future LOS and daily travel volumes with a proposed future network. This scenario shows a greatly improved LOS throughout the city.

**Figure 17 – 2040 Level of Service, No-Build**




Source: InterPlan

**Figure 18 – 2040 Level of Service, Future Proposed Network**




Source: InterPlan

# Plan Recommendations

## Functional Classification

A Functional Classification of streets is used to group roadways into classes according to the character of traffic they are intended to serve. The classes are based upon the degree of mobility (speed and trip length) and land access that they permit. Roadway functional classifications are generally comprised of a mix of arterials, collectors, and local streets. Arterials are designed to serve higher volumes of traffic at higher speeds, while collectors are designed to balance land access with traffic speeds and traffic capacity. Local streets are intended to provide low speed access to individual properties. Figure 19 summarizes the hierarchy of the functional classification of streets based upon mobility and access.

**Figure 19 – Mobility versus Access**

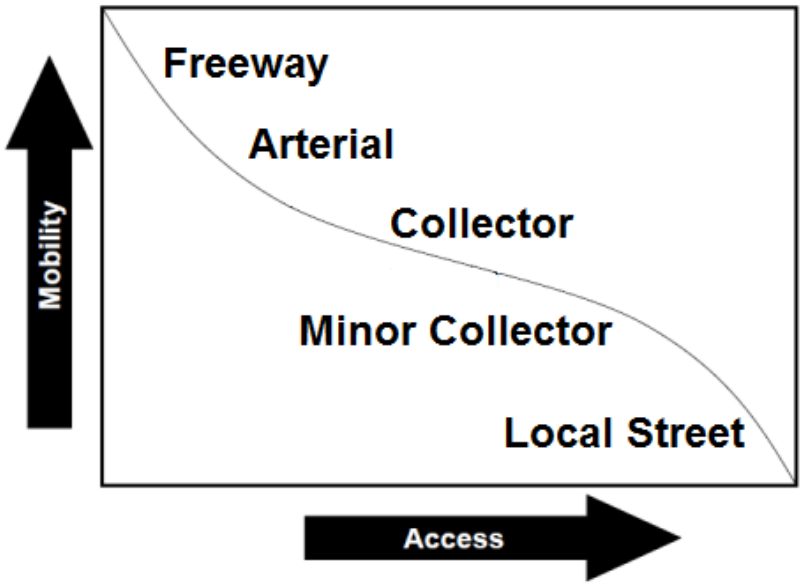


Table 6 provides general characteristics for the traffic operations of each functional classification. The definitions outlined include speed, average trip length, accident rate, and access control. Access control refers to the number of intersections, driveways, etc., interrupting the roadway.

**Table 6 – Functional Classification Summary**

| Functional Group | Speed (mph) | Average Trip Length (miles) | Expected Accident Rate (accidents per million vehicle miles) | Access Control |
|---|---|---|---|---|
| Local | <30 | <0.5 | Varies | None |
| Collector | 25-45 | 1-5 | 2 to 4 | Moderate |
| Arterial | 45+ | 3-15 | 3 to 5 | Significant |
| Parkway | 45+ | 3-15 | 3 to 5 | Significant |

## Local

Local streets are designed to offer access from residences to the roadway network. Local streets serve many driveways and provide a collection point to collector or arterial roadways. Local streets should be designed to minimize speed and cut-through traffic while meeting the requirements of emergency vehicles. Local streets are typically placed with driveways on both sides and have posted speed limits of 25 miles per hour. Generally, no striping is proposed on local streets. However, the city engineer may provide roadway striping as needed as a traffic calming measure. Parking may be restricted on local streets near intersections, in high density or commercial areas, where snow removal or storage issues arise, or at other locations deemed necessary by the city. Figure 20 shows the proposed 51-foot wide local cross-section with 28-foot of road width, 5-foot parkstrips and 4-foot sidewalks. Figure 21 shows the proposed 56-foot wide rural local cross-section with 27-foot of roadway, 10.5-foot drainage swales and one 8-foot sidewalk.

**Figure 20 – 51-foot Local Street**

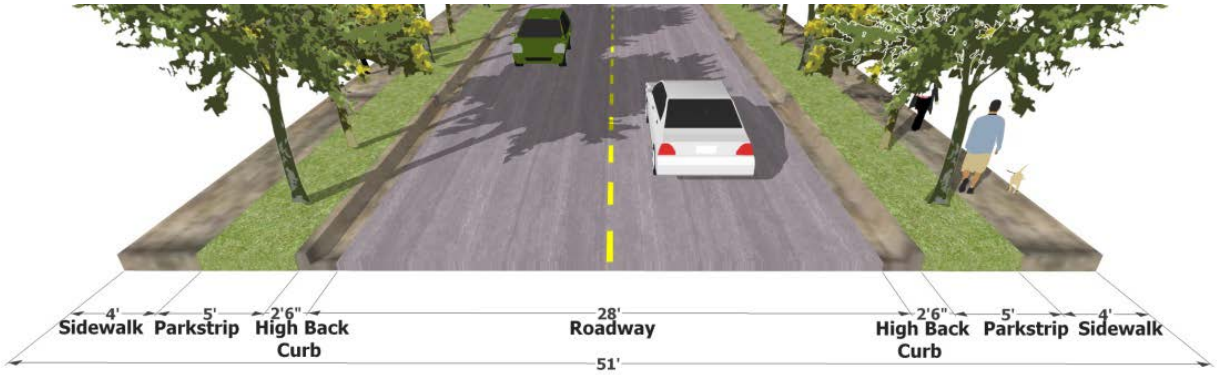
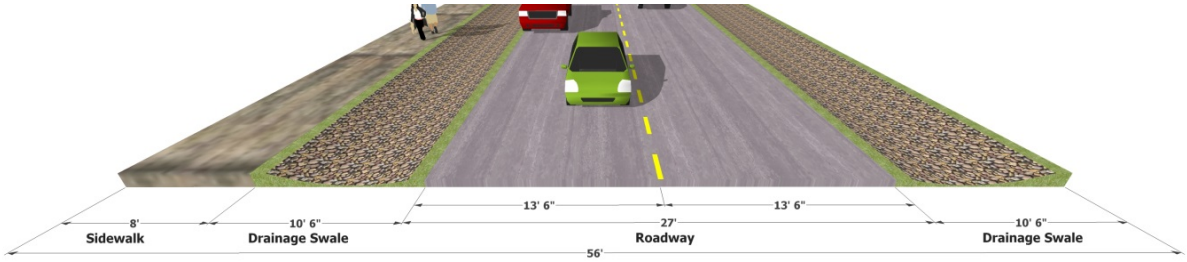


**Figure 21 – 56-foot Rural Local Street**




## Collector

Collector streets serve to collect traffic from local streets and feed them onto the arterial street network. They typically serve fewer driveways than locals and have higher posted speed limits. Eagle Mountain proposes both a minor and a major collector cross-section. The proposed minor collector cross-section, seen in Figure 22 is 77 feet wide, has two 12-foot travel lanes, and 8-foot shoulders. The 94-foot major collector cross-section, seen in Figure 23, is similar to the minor collector, but has a 13-foot planted median and wider parkstrips.

**Figure 22 – 77-foot Minor Collector Street**

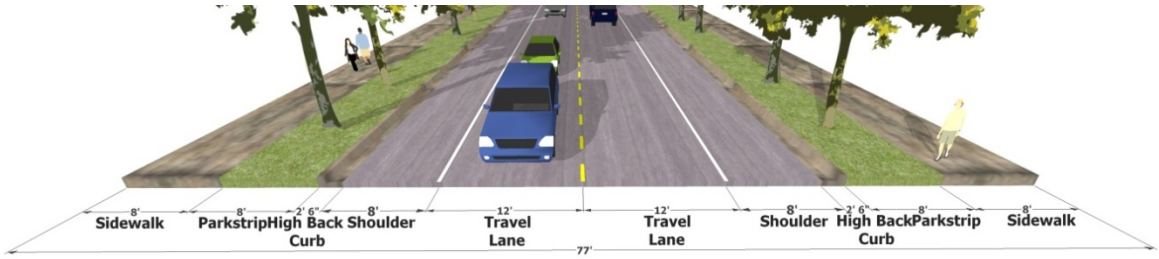
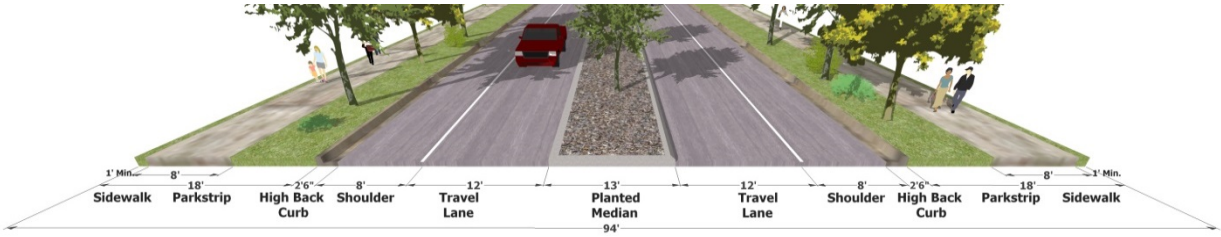



**Figure 23 – 94-foot Major Collector Street**




## Arterial

Arterial streets balance regional travel and local access. Eagle Mountain's proposed 122' minor arterial, shown in Figure 24, has four 12-foot travel lanes, 13-foot planted median or center turn lane, 8-foot shoulders, and 10-foot sidewalks within 20 feet of park strip. There are two versions of the major arterial, one with five lanes and one with seven lanes, both within 152 feet of right of way. The five lane major arterial has four 12-foot travel lanes, 12-foot shoulders, and 10-foot sidewalks within 30 feet of parkstrip. The seven lane major

arterial has six 12-foot travel lanes, 12-foot shoulders, and 10-foot sidewalks within 18 feet of parkstrip.

**Figure 24 – 122-foot Minor Arterial Street**

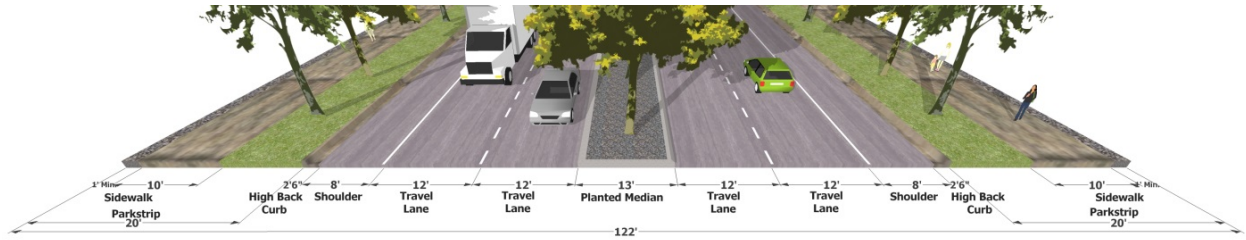



**Figure 25 – 152 foot Major Arterial (5 lanes)**

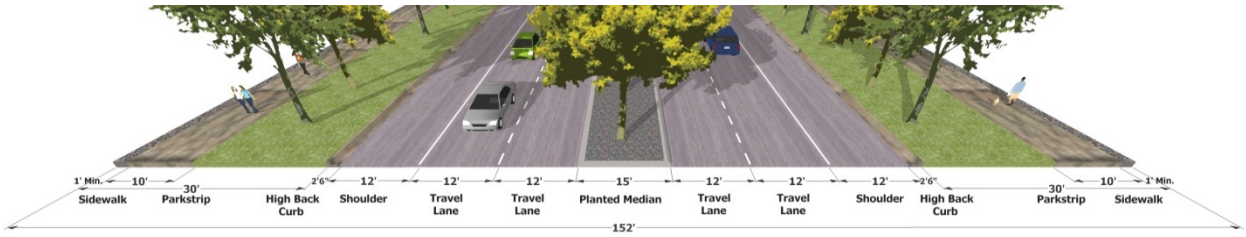
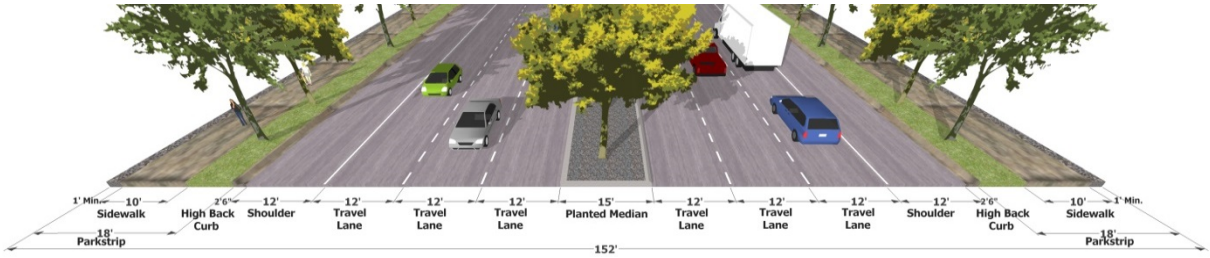


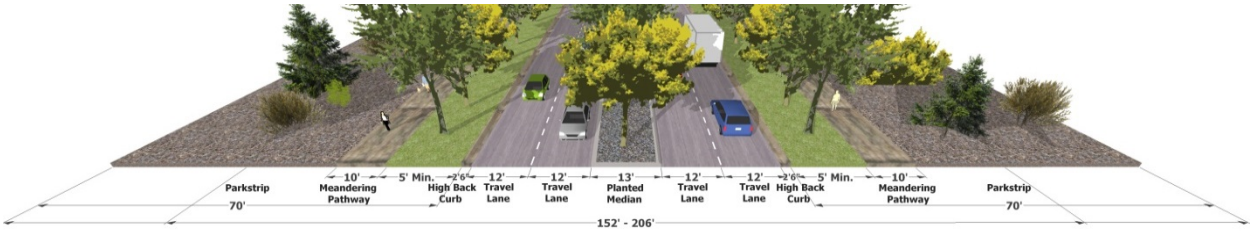

**Figure 26 – 152-foot Major Arterial (7 Lanes)**




## Parkway

The parkway cross-section functions similarly to an arterial, but with fewer access points and increased pedestrian amenities. It features four 12-foot travel lanes, a 12-foot planted median, no shoulders and a meandering 10-foot pathway within the parkstrip, totaling a right of way of between 152 feet and 206 feet. This cross-section will be implemented on Ranches Parkway, as well as Pony Express Parkway (west of Ranches Parkway).

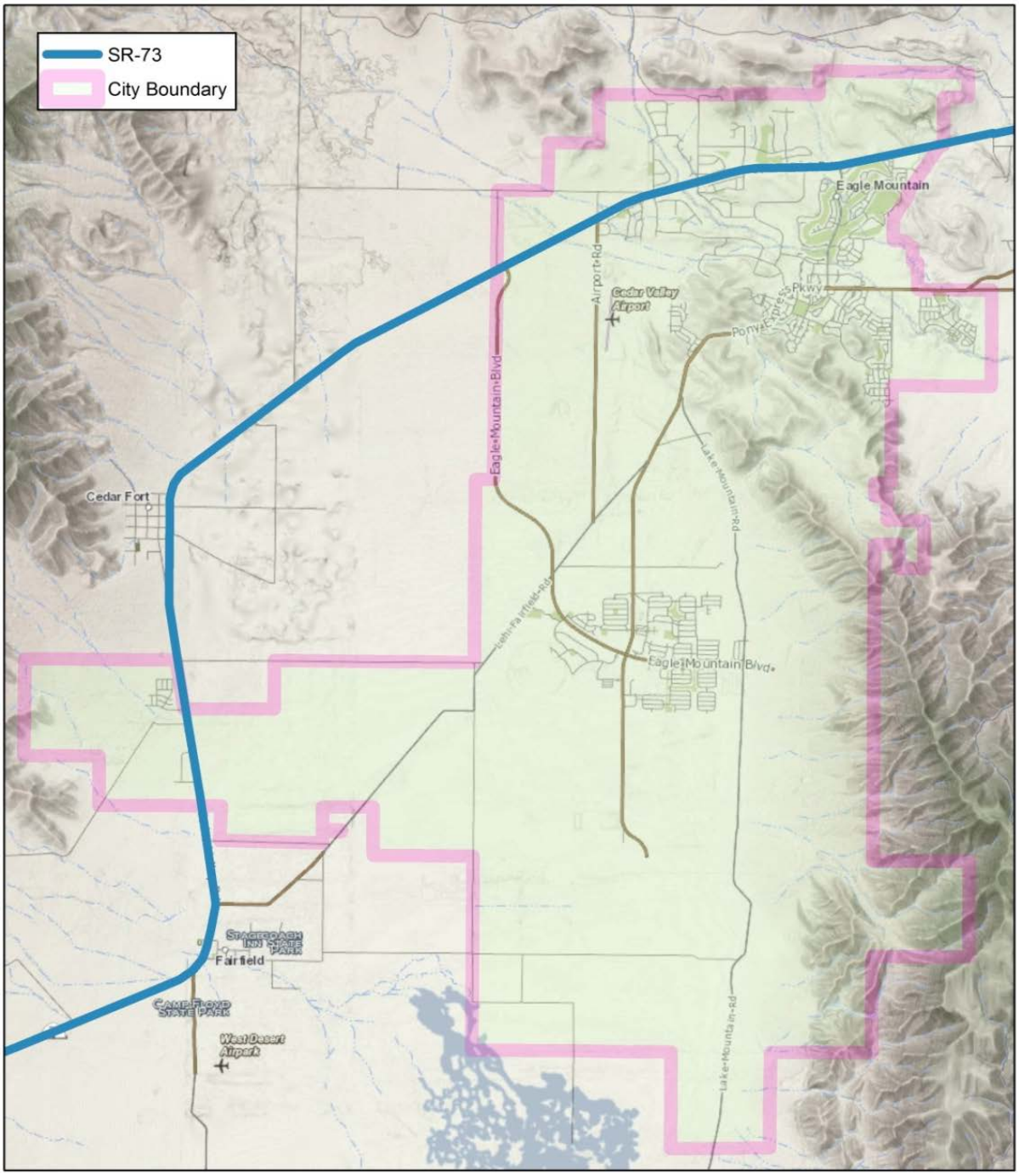
**Figure 27 – Parkway Cross-section**



## State Highways

State highways within Eagle Mountain boundaries will adhere to UDOTs own design standards and not those described above. Figure 28 shows the state highways currently within Eagle Mountain boundaries, currently just S.R. 73. The future freeway shown on Figure 27 would also fall under UDOT standards.

**Figure 28 – State Highway Locations**




Source: InterPlan

## Proposed Future Network

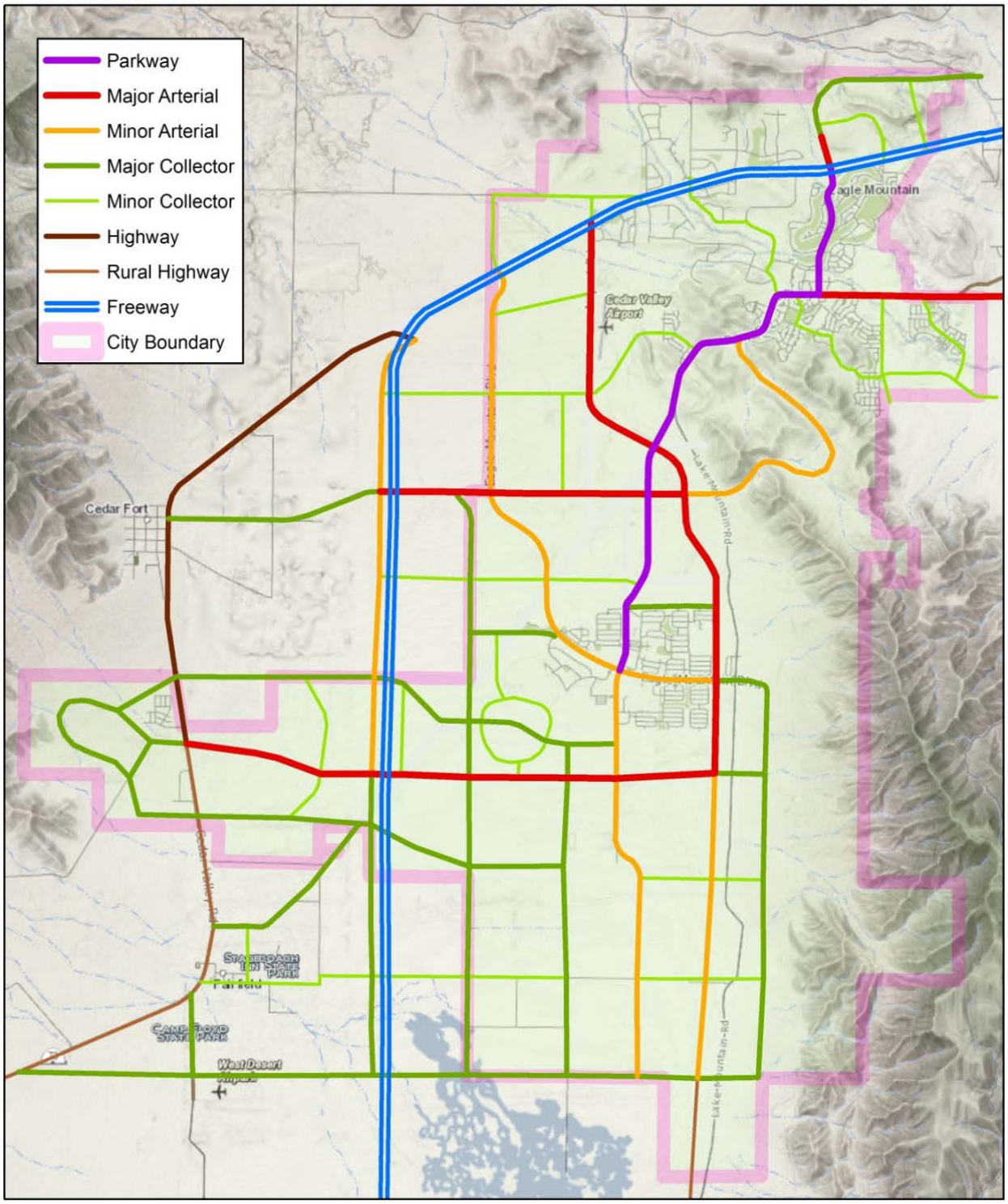
Figure 29 shows the proposed future street classification network for Eagle Mountain. Local roads are shown in grey.

## Transportation Standards

### Traffic Control

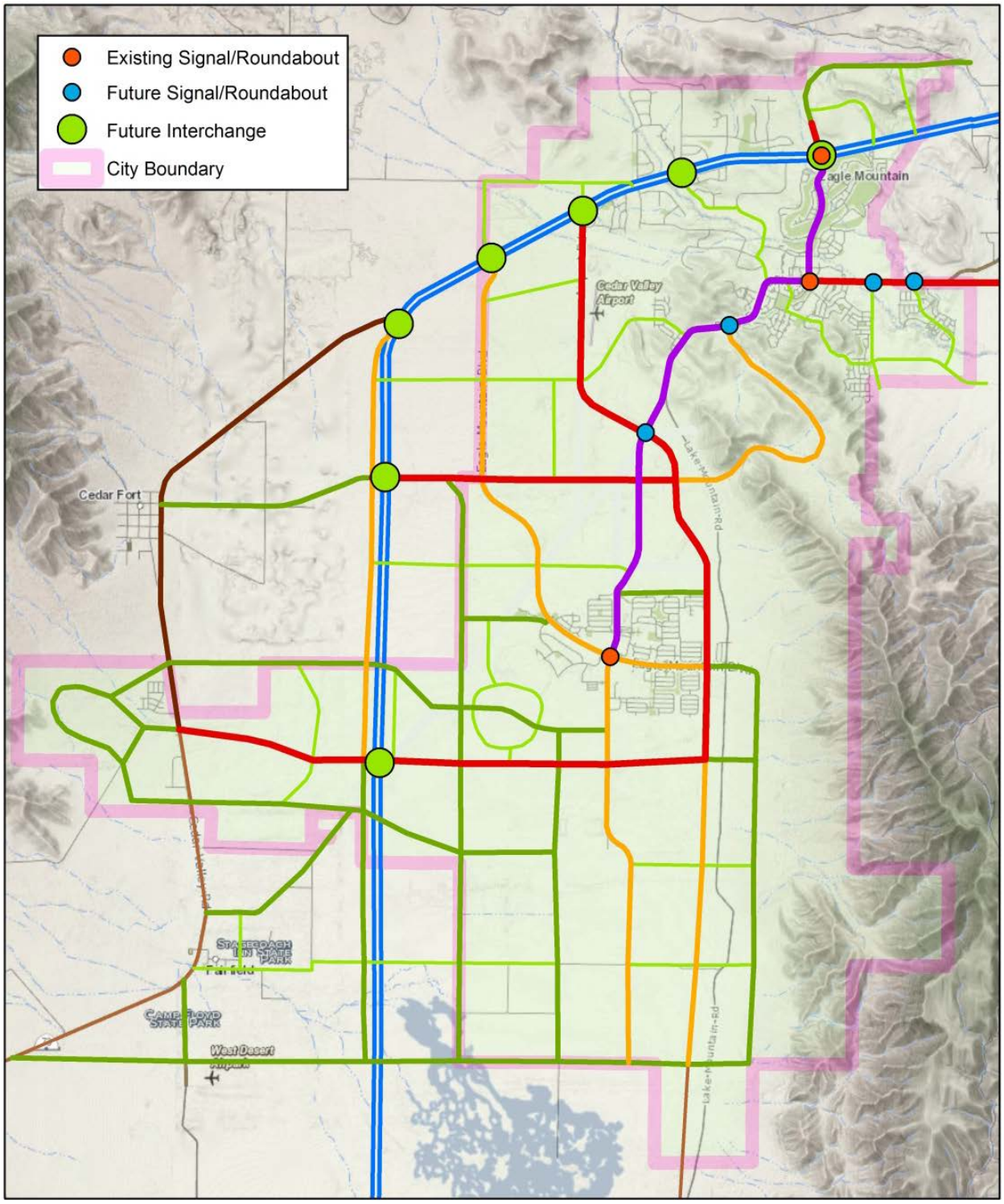
The need for traffic signals will increase as traffic volume and the road network throughout Eagle Mountain continues to grow. Per the Manual on Uniform Traffic Controll Devices (MUTCD), “an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.” There are eight different traffic signal warrants the MUTCD lists that need to be considered when investigating the need for a traffic control signal. These warrants look at vehicular volumes, pedestrian volumes, school crossings, signal coordination, vehicular crashes, and the adjacent road network. Potential future traffic signals based on future 2040 travel forecasts, are shown in Figure 30.

**Figure 29 – Map of Future Network by Classification**




Source: InterPlan

**Figure 30 – Existing and Proposed Traffic Signals and Interchanges**




Source: InterPlan

## Access Spacing

Access spacing standards allow drivers to process one decision at a time. Through proper spacing, drivers may monitor upcoming conflict points and react accordingly to each conflict. Access spacing, also referred to as driveway spacing, is measured from the closest edge (perpendicular tangent section) of the nearest driveway to the center of the proposed driveway. For state highways, UDOT Administrative Rule R930-6 defines the driveway, public street and signal spacing.

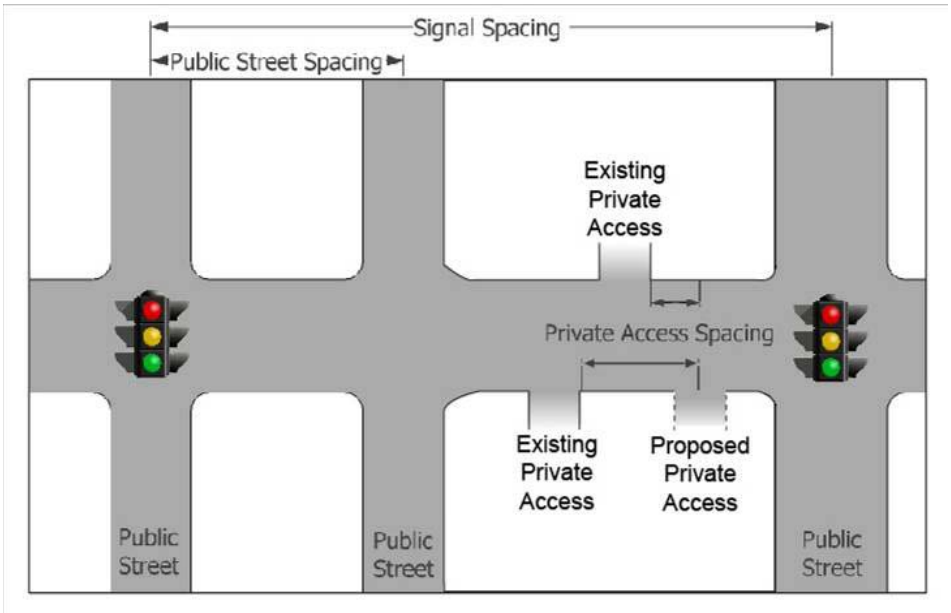
On non-state routes, access spacing may be adjusted by the city engineer based on localized conditions. Requests to decrease access spacing standards may be granted by the city engineer, provided that a traffic impact study is prepared documenting the preservation of safety, capacity, and speed with reduced access spacing. Table 7 lists the Eagle Mountain access spacing standards and Figure 31 illustrates spacing categories.

**Table 7 – Spacing Categories**

| Type | Minimum Signal Spacing (feet) | Minimum Public Street Spacing (feet) | Minimum Private Access Spacing (feet) |
|---|---|---|---|
| Parkway | 2,640 | 660 | 250 |
| Arterial Streets | 2,640 | 660 | 250 |
| Collector Streets | 1,320 | 300 | 150 |
| Local Streets | N.A. | 150 | No Minimum |

Source: R930-6 Rule, UDOT, 2013

**Figure 31 – Spacing Illustration**



## Corner Radii

The dimensions of curb radii directly affect the speed of turning motor vehicles. Large radii are needed to accommodate large trucks and busses, but also allow cars to make high speed turns and create increased crossing distances for pedestrians. A network of intersections with short curb radii would be of greatest benefit to pedestrians, but would hinder movement of fire trucks. Therefore, curb radii standards are needed in order to accommodate all types of users. Current Eagle Mountain standards provide for a 26-foot back of curb corner radii for all streets. Recommended back of curb corner radii for each street classification is shown in Table 8.

**Table 8 – Minimum Horizontal Curve Centerline Radius**

| | Parkway | Major Arterial (7 Lanes) | Major Arterial (5 Lanes) | Minor Arterial | Major Collector | Minor Collector | Local Street |
|---|---|---|---|---|---|---|---|
| Minimum Horizontal Curve Centerline Radius | 550 ft. | 550 ft. | 550 ft. | 250 ft. to 350 ft. | 250 ft. to 350 ft. | 150 ft. | 125 ft. |

Source: Eagle Mountain City, 2014

The above radii may be adjusted based on traffic volumes, intensity of large vehicle uses, and the needs of specific lane uses/truck routing. Changes to curb radii are subject to the discretion of the city engineer.

## Future Bicycle Infrastructure

Eagle Mountain City recognizes bicycle infrastructure as an important piece to a complete transportation system. For the purposes of illustrating the potential for bicycle infrastructure within the city Figures 32, 33, and 34 show potential cross-sections which include bicycle infrastructure and fit within established rights of way. The shown examples fit within a 152-foot arterial right of way, but could also be adapted to fit within the major collector and Pony Express Parkway cross-sections. A comprehensive bicycle plan is currently being created and should be referenced for more information regarding bicycle infrastructure once completed.

**Figure 32 – Buffered Bike Lanes**

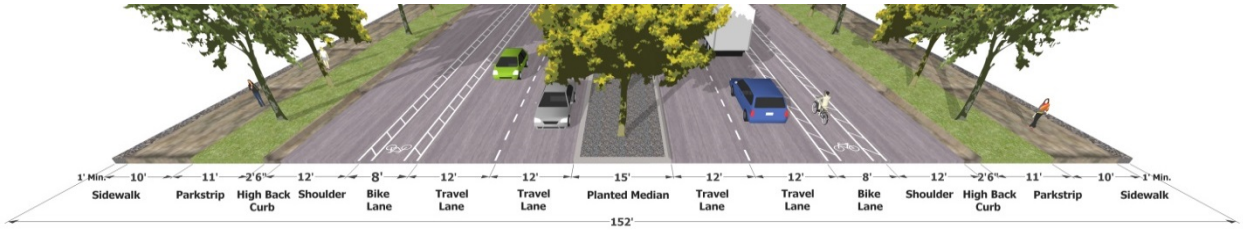



**Figure 33 – Dual One-Way Cycle Tracks**

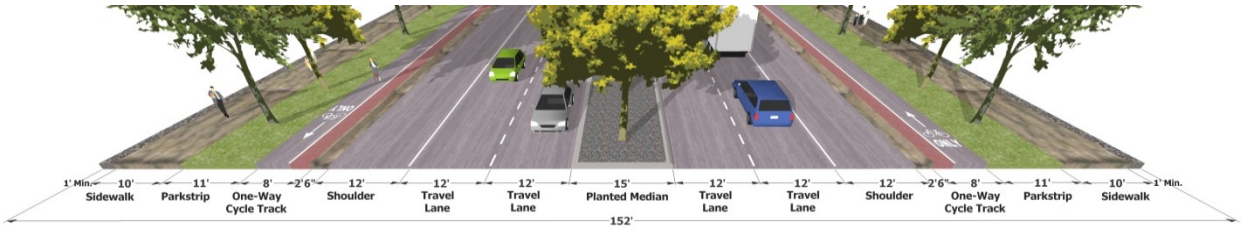
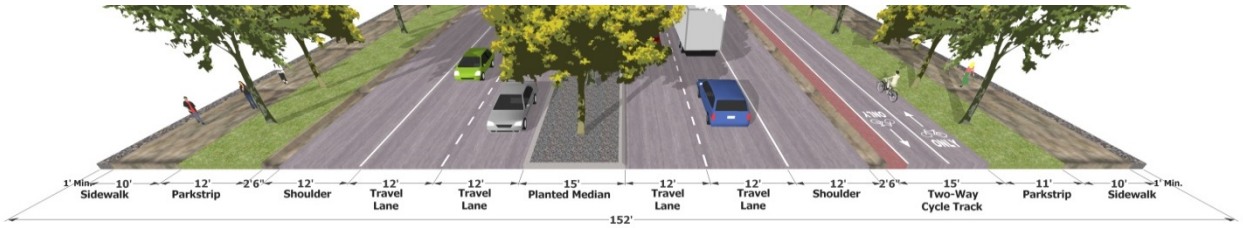



**Figure 34 – Single Two-Way Cycle Track**



## Future Transit

In anticipation of the healthy population growth expected in Eagle Mountain, MAG currently has plans for a bus rapid transit (BRT) system in phase 2 (2025-2034) of its regional transportation plan. Also included in the plan is a vision light rail, which would serve Eagle Mountain sometime beyond 2040. Figure 35 illustrates how BRT may be incorporated into the street cross-sections found long this corridor. Figure 36 shows conceptual routing for these systems and potential station locations.

**Figure 35 – Parkway Cross-Section with Bus Rapid Transit**

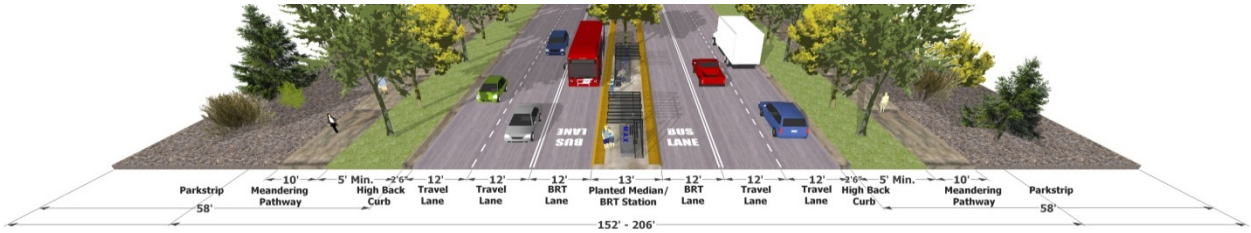
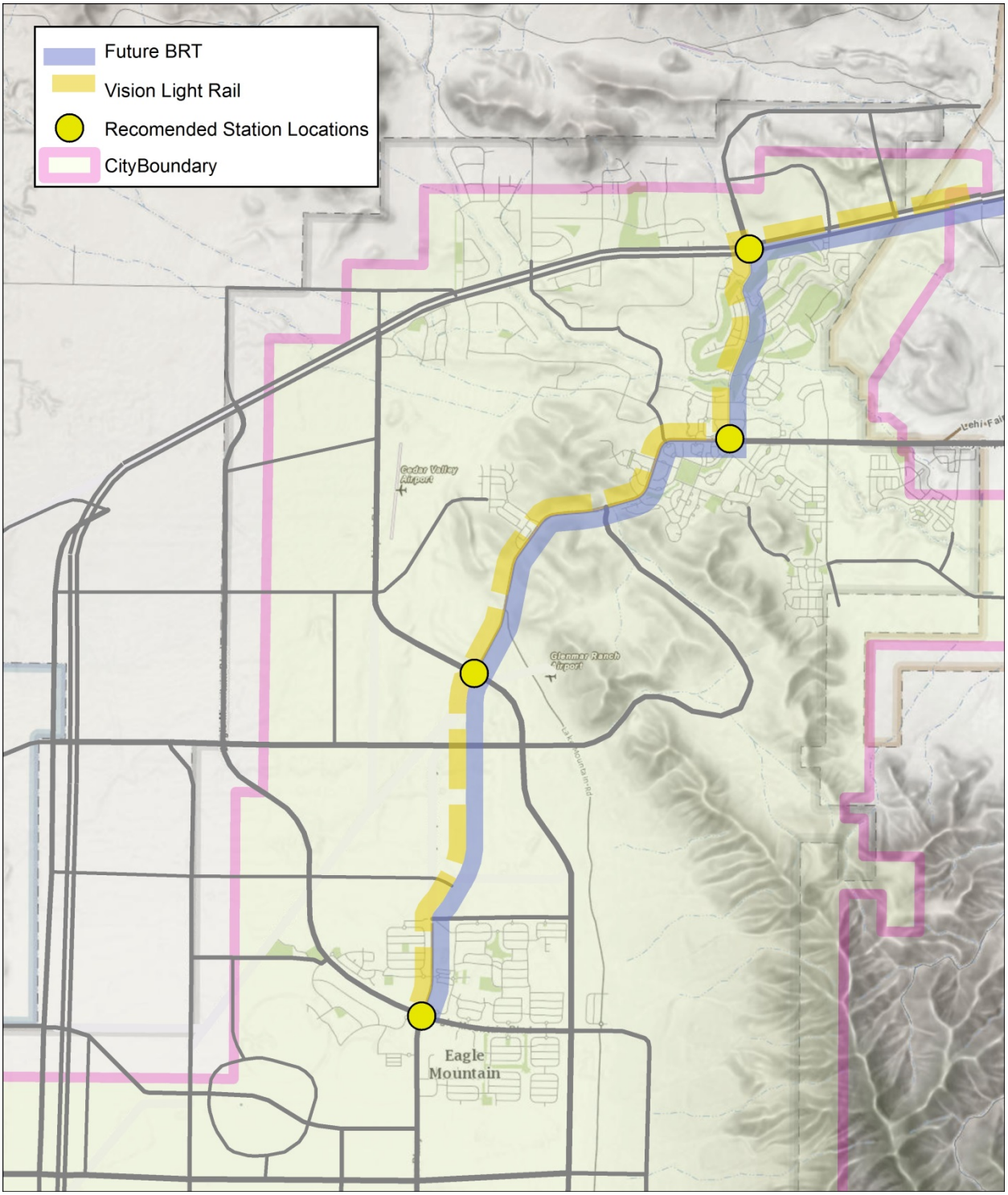


**Figure 36 – Future Eagle Mountain Transit**




Source: InterPlan
*Note: Alignments shown are conceptual

## Truck Routes

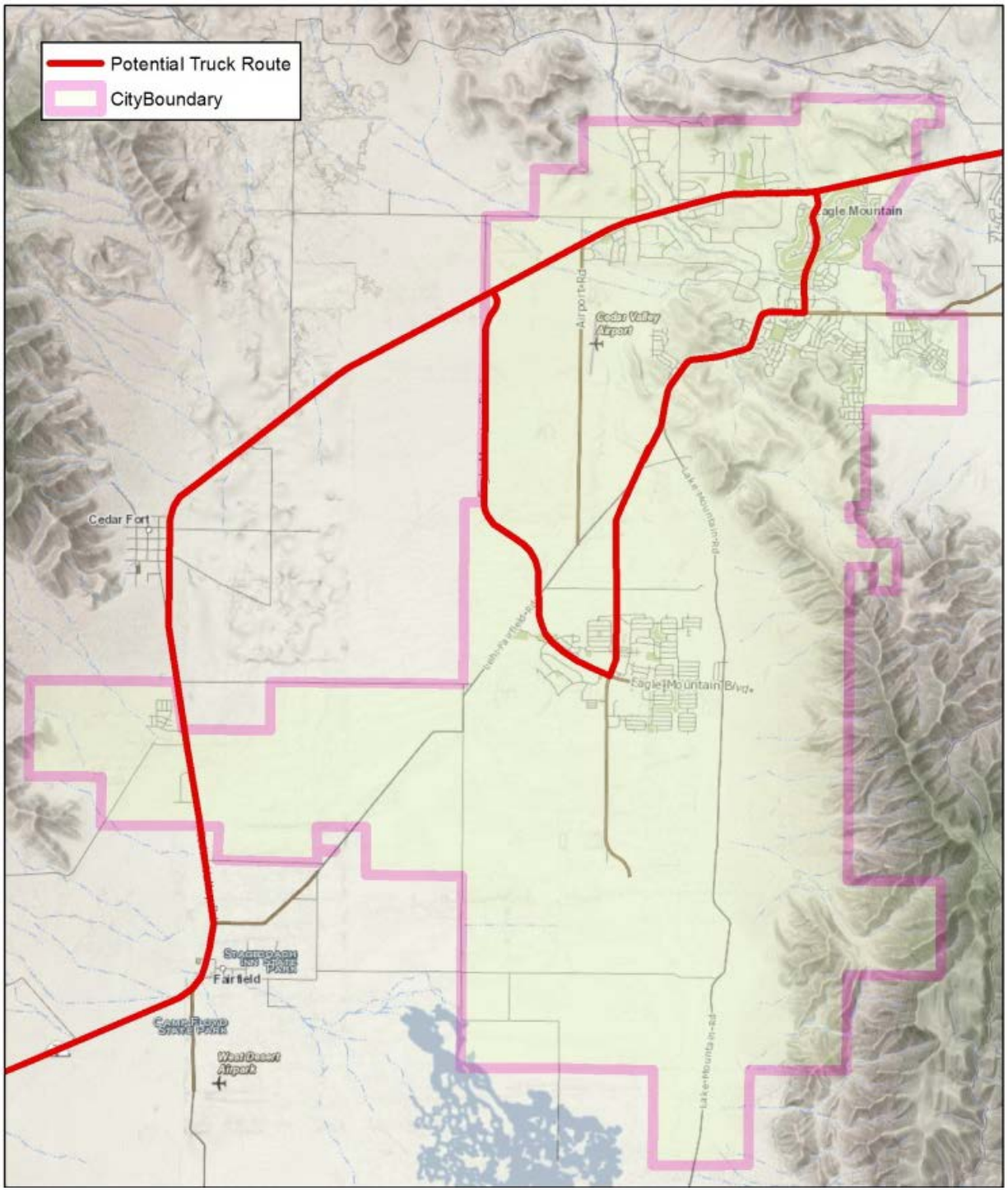
Safety concerns, roadway maintenance issues, and the desire to improve traffic operations have promoted a number of state and local governments in the United States to implement truck restrictions or controls on segments of roadway under their jurisdiction. Route, speed, and noice restrictions are the most common type of controls.

Vehicles of different sizes and weights have different operation characteristics and impacts to roadways. Besides being heavier, trucks are generally slower and occupy more roadway space. Consequently, trucks have a greater individual effect on roadway maintenance and traffic operations than do passenger vehicles.

To protect and preserve roadway infrastructure, enhance safety, and facilitate the efficient flow of traffic, Eagle Mountain City may want to consider adopting an ordinance to identify truck routes within its city limits. Elements of a truck route ordinance may include:

1. Description of vehicle, which the ordinance governs. Typically includes dimensional and weight criteria.
2. List or map of routes identified trucks must adhere to.
3. Description of exceptions for trucks which by nature cannot adhere to the route described.
4. Hazardous Material requirement. All trucks, which contain hazardous materials, must only use designated routes regardless of dimensional and weight characteristics.

**Figure 37 – Potential Truck Routes**



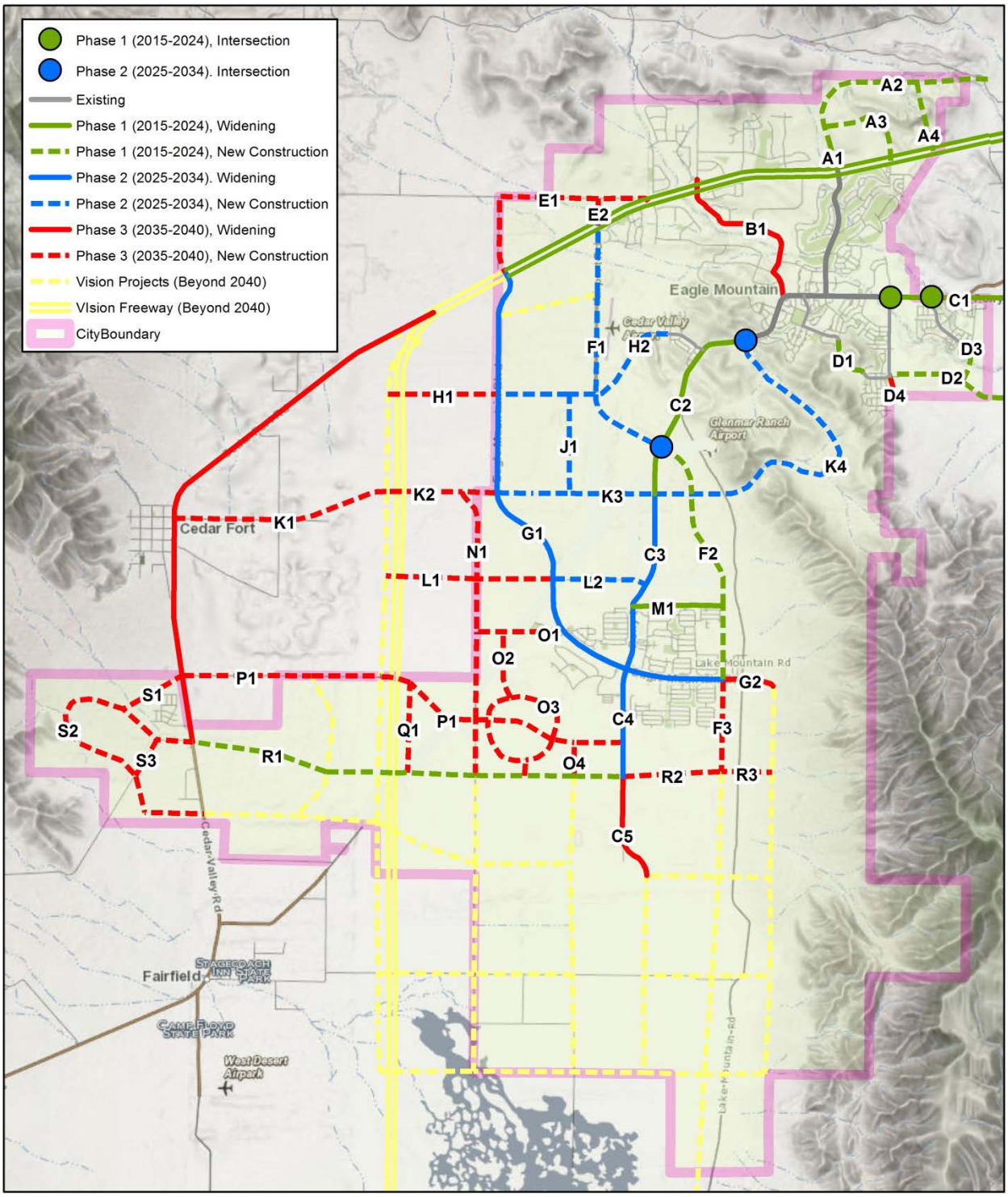

Source: InterPlan

# Capital Facilities Plan

The Capital Facilities Plan (CFP) identifies projects that are anticipated to be needed by a particular time and calculates a planning level cost estimate for each improvement. The recommended improvements are separated into four phases including Phase 1 (2015-2024), Phase 2 (2025-2034), Phase 3 (2035-2040) and Phase 4 (beyond 2040). These improvements are for collector streets and above. The CFP only includes projects that increase the capacity of the road network and does not include UDOT improvements.

Figure 38 is a map of the planned improvements by phase. Tables 9-13 list the projects by phase.

## Figure 38 – Capitol Facilities Plan Phasing Map




Source: InterPlan

## Table 9 – Capital Facilities Plan Projects: Phase 1 Roads (2015-2024)

| Name | From | To | Type | Roadway Type | Length (ft) | Project Cost (Millions) |
|---|---|---|---|---|---|---|
| A1 | SR-73 | A3 | New Construction | Major Arterial | 1,812 | $ 3.86 |
| A2 | A3 | City Boundary | New Construction | Major Collector | 11,328 | $ 11.79 |
| A3 | A1 | SR-73 | New Construction | Minor Collector | 5,390 | $ 4.67 |
| A4 | A2 | SR-73 | New Construction | Minor Collector | 3,812 | $ 3.31 |
| C1 (Pony Express Pkwy) | City Boundary | Porters Crossing Pkwy | Widening | Major Arterial | 8,051 | $ 14.24 |
| C2 (Pony Express Pkwy) | K4 | K3 | Widening | Parkway | 10,824 | $ 19.14 |
| D1 (Golden Eagle Road) | Jacob's Way | Eagle Top Ct | New Construction | Minor Collector | 2,553 | $ 2.21 |
| D2 | Porters Crossing Pkwy | City Boundary | New Construction | Minor Collector | 5,698 | $ 4.94 |
| D3 (Silverlake Pkwy) | Lakeview Blvd | D2 | New Construction | Minor Collector | 1,411 | $ 1.22 |
| F2 | C2 | G1 | New Construction | Major Arterial | 13,709 | $ 29.25 |
| M1 (Bobby Wren Blvd) | C3 | F2 | Widening | Major Collector | 4,872 | $ 5.07 |
| R1 | SR-73 | C4 | New Construction | Major Arterial | 23,448 | $ 50.03 |
| | | | **Phase 1 (2015-2024) Total** | | | **$ 149.75** |

## Table 10 – Capital Facilities Plan Projects: Phase 1 Intersections (2015-2024)

| Name | Type | Project Cost |
|---|---|---|
| Pony Express Parkway and Silverlake Parkway | 3-leg | $ 0.23 |
| Pony Express Parkway and Porter's Crossing | 4-Leg | $ 0.30 |
| | **Phase 1 (2015-2024) Total** | **$ 0.53** |

## Table 11 – Capital Facilities Plan Projects: Phase 2 Roads (2025-2034)

| Name | From | To | Type | Roadway Type | Length (ft) | Project Cost |
|---|---|---|---|---|---|---|
| C3 (Pony Express Pkwy) | K3 | G1 | Widening | Parkway | 9,824 | $ 27.60 |
| C4 (Pony Express Pkwy) | G1 | R1 | Widening | Minor Arterial | 5,814 | $ 10.03 |
| F1 | SR-73 | C2 | New Construction | Major Arterial | 13,923 | $ 29.71 |
| G1 (Eagle Mountain Blvd) | SR-73 | F2 | Widening | Minor Arterial | 30,157 | $ 20.66 |
| H2 | G1 | Bristlecone Road | New Construction | Minor Collector | 10,785 | $ 9.354 |
| J1 | H2 | K3 | New Construction | Minor Collector | 5,356 | $ 4.65 |
| K3 | G1 | F2 | New Construction | Major Arterial | 10,497 | $ 22.40 |
| K4 | F2 | C2 | New Construction | Minor Arterial | 17,720 | $ 30.58 |
| L2 | G1 | C3 | New Construction | Minor Collector | 5,054 | $ 4.38 |
| | | | **Phase 2 (2025-2034) Total** | | | **$ 143.08** |

**Table 12 – Capital Facilities Plan Projects: Phase 2 Intersections (2015-2024)**

| Name | Type | Project Cost |
|---|---|---|
| Pony Express Parkway and K4 | 4-leg | $ 0.30 |
| Pony Express Parkway and Airport Road | 4-Leg | $ 0.30 |
| | **Phase 1 (2015-2024) Total** | **$ 0.60** |

**Table 13 – Capital Facilities Plan Projects: Phase 3 Roads (2035-2040)**

| Name | From | To | Type | Roadway Type | Length (ft) | Project Cost |
|---|---|---|---|---|---|---|
| B1 | SR-73 | Pony Express Parkway | Widening | Minor Collector | 9,765 | $ 8.47 |
| C5 (Pony Express Pkwy) | R2 | | Widening | Minor Arterial | 5,851 | $ 4.00 |
| D4 (Porters Crossing Pkwy) | Golden Eagle Road | City Boundary | New Construction | Minor Collector | 1,495 | $ 1.30 |
| E1 | SR-73 | SR-73 | New Construction | Minor Collector | 12,366 | $ 10.72 |
| E2 | E1 | SR-73 | New Construction | Minor Collector | 1,432 | $ 1.24 |
| F3 | G2 | R3 | New Construction | Major Arterial | 4,976 | $ 10.62 |
| G2 (Eagle Mountain Blvd) | F3 | R3 | Widening | Major Collector | 2,780 | $ 1.90 |
| H1 | Freeway Frontage Rd | G1 | New Construction | Minor Collector | 5,947 | $ 5.16 |
| K1 | SR-73 | Freeway Frontage Road | New Construction | Major Collector | 11,715 | $ 12.19 |
| K2 | Freeway Frontage Road | G1 | New Construction | Major Arterial | 5,954 | $ 12.70 |
| L1 | Freeway Frontage Road | G1 | New Construction | Minor Collector | 9,024 | $ 7.83 |
| N1 | K2 | R1 | New Construction | Major Collector | 15,577 | $ 16.21 |
| O1 | N1 | G1 | New Construction | Major Collector | 4,859 | $ 5.06 |
| O2 | O1 | O3 | New Construction | Minor Collector | 3,654 | $ 3.17 |
| O3 | Loop | Loop | New Construction | Minor Collector | 12,456 | $ 10.80 |
| O4 | P1 | R1 | New Construction | Major Collector | 1,801 | $ 1.87 |
| P1 | SR-73 | C4 | New Construction | Major Collector | 24,905 | $ 25.92 |
| Q1 | P1 | R1 | New Construction | Minor Collector | 4,874 | $ 4.23 |
| R2 | C4 | F3 | New Construction | Major Arterial | 5,329 | $ 11.37 |
| R3 | F3 | | New Construction | Major Collector | 2,724 | $ 2.83 |
| S1 | S2 | SR-73 | New Construction | Major Collector | 3,657 | $ 3.80 |
| S2 | SR-73 | SR-73 | New Construction | Major Collector | 18,631 | $ 19.39 |
| S3 | S2 | S2 | New Construction | Major Collector | 2,251 | $ 2.34 |
| | | | **Phase 3 (2035-2040) Total** | | | **$ 183.14** |

Source: InterPlan planning level cost estimates, in 2014 dollars (See Appendix)

# Appendix

The following items can be found in the Appendix.

1. Stakeholder Committee Members
2. Public Open House
3. TAZ 2040 Projections
4. Travel Demand Modeling
5. Roadway Cost Estimates (In 2014 Dollars)

## Stakeholder Committee Members

| Name | Representation |
|---|---|
| Preston Dean | Eagle Mountain Planning Commission |
| Chad Eccles | Mountainland Association of Governments |
| Shawn Eliot | Mountainland Association of Governments |
| Elise Erler | School and Institutional Trust Lands Administration |
| Jeremy Lapin | Saratoga Springs |
| Allen Martin | Eagle Mountain Public Works Commission |
| Robert May | Utah County Community Development |
| Steve Mumford | Eagle Mountain Planning |
| Brent Schevaneveldt | Utah Department of Transportation Region 3 |
| Richard Steinkopf | Eagle Mountain City Council |
| Chris Trusty | Eagle Mountain Public Works |

## Public Open House

In order to insure that the community was able to participate in the development of the master transportation plan and have an opportunitiy to review and comment on it before adoption, a public open house was held on October 9, 2014. Elements from the plan were on display at the Eagle Mountain City Council Chambers from 6:30 p.m. to 8:00 p.m. InterPlan staff and stakeholder committee members were in attendance to address questions and comments. Comment forms were collected from the attendees and the resulting input was reviewed for incorporation into the plan.

# TAZ 2040 Projections

| TAZ ID | MAG Projections | | | Eagle Mountain Projections | | |
|---|---|---|---|---|---|---|
| | Households | Population | Employment | Households | Population | Employment |
| 1820 | 1,657 | 5,192 | 36 | 2,650 | 8,294 | 242 |
| 1821 | 1,762 | 5,638 | 114 | 1,200 | 3,840 | 164 |
| 1828 | 2,006 | 6,168 | 2,699 | 2,007 | 6,171 | 2,827 |
| 1815 | 1,002 | 3,187 | 1,251 | 900 | 2,862 | 1,379 |
| 1824 | 2,222 | 7,034 | 480 | 2,107 | 6,679 | 608 |
| 1825 | 989 | 3,074 | 352 | 1,279 | 3,977 | 235 |
| 1822 | 437 | 1,345 | 161 | 489 | 1,504 | 289 |
| 1827 | 244 | 809 | 71 | 266 | 882 | 17 |
| 1866 | 315 | 1,384 | 563 | 221 | 969 | 691 |
| 1838 | 2 | 7 | 0 | 2 | 7 | 128 |
| 1852 | 86 | 276 | 182 | 83 | 265 | 310 |
| 1837 | 863 | 2,683 | 243 | 1,066 | 3,313 | 371 |
| 1843 | 152 | 632 | 55 | 23 | 95 | 183 |
| 1841 | 0 | 0 | 63 | 0 | 0 | 0 |
| 1816 | 1,062 | 3,313 | 1,201 | 1,151 | 3,592 | 1,043 |
| 1833 | 562 | 1,815 | 2 | 604 | 1,949 | 2 |
| 1817 | 546 | 1,596 | 117 | 900 | 2,628 | 245 |
| 1813 | 485 | 2,134 | 967 | 384 | 1,689 | 1,095 |
| 1830 | 2,383 | 7,591 | 289 | 1,400 | 8,628 | 417 |
| 1836 | 326 | 1,023 | 257 | 332 | 1,041 | 385 |
| 1835 | 414 | 1,339 | 106 | 442 | 1,429 | 15 |
| 1860 | 427 | 1,413 | 0 | 397 | 1,314 | 0 |
| 1862 | 209 | 669 | 1,158 | 201 | 643 | 1,286 |
| 1811 | 335 | 1,075 | 4,493 | 456 | 1,463 | 4,621 |
| 1823 | 585 | 1,824 | 56 | 450 | 1,404 | 28 |
| 1832 | 343 | 1,098 | 9 | 377 | 1,206 | 9 |
| 1831 | 230 | 716 | 401 | 257 | 800 | 529 |
| 1812 | 432 | 1,613 | 706 | 327 | 1,219 | 834 |
| 1854 | 1,260 | 4,037 | 151 | 1,367 | 4,381 | 279 |
| 1853 | 1 | 3 | 181 | 753 | 2,409 | 309 |
| 1846 | 0 | 0 | 66 | 0 | 0 | 194 |
| 1842 | 80 | 350 | 80 | 56 | 246 | 208 |
| 1844 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1840 | 493 | 1,609 | 11 | 465 | 1,517 | 11 |
| 1839 | 151 | 457 | 227 | 563 | 1,705 | 355 |
| 1847 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1834 | 2 | 9 | 66 | 2 | 7 | 15 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1826 | 451 | 1,335 | 0 | 468 | 1,387 | 128 |
| 1861 | 412 | 1,318 | 288 | 396 | 1,267 | 15 |
| 1829 | 1,189 | 3,700 | 1,426 | 676 | 2,102 | 144 |
| 1814 | 239 | 937 | 1,701 | 209 | 821 | 610 |

## Travel Demand Modeling

The base Wasatch Front Regional Council/ Mountainland Association of Governments Travel Demand Model was updated to more accurately reflect existing conditions. The model was developed for a 2009 base year and was necessary to update to year 2014. The existing model network accurately reflected the current road network, but the 2009 socio-economic inputs required updating. Eagle Mountain staff provided revised population, households, and employment information for each Traffic Analysis Zone (TAZ) in Eagle Mountain. The table below is a detailed summary table of the changes made to account for the growth the area has seen in the last five years. Additionally, a delta correction was applied to the forecasted 2040 volumes. The delta correction was generated by calculating the difference between the observed volume and the modeled base year volume for a road segment. This value was then applied to the 2040 projected volume, and acts to offset any inherent tendencies of the model to over or under assign trips to a given road segment.

| TAZ ID | 2009 Base Model Inputs | | | 2014 Adjusted Values | | |
|---|---|---|---|---|---|---|
| | Households | Population | Employment | Households | Population | Employment |
| 1820 | 465 | 1994 | 1 | 640 | 2714 | 13 |
| 1821 | 557 | 1892 | 122 | 806 | 3344 | 114 |
| 1828 | 0 | 0 | 0 | 50 | 213 | 0 |
| 1815 | 527 | 2352 | 18 | 670 | 2396 | 127 |
| 1824 | 305 | 1361 | 25 | 541 | 2255 | 13 |
| 1825 | 5 | 16 | 0 | 2 | 7 | 88 |
| 1822 | 371 | 1261 | 57 | 408 | 1656 | 136 |
| 1827 | 17 | 62 | 0 | 24 | 80 | 0 |
| 1866 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1838 | 2 | 6 | 0 | 2 | 8 | 0 |
| 1852 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1837 | 124 | 455 | 0 | 183 | 861 | 94 |
| 1843 | 3 | 13 | 0 | 8 | 36 | 0 |
| 1841 | 4 | 16 | 0 | 0 | 0 | 0 |
| 1816 | 265 | 1182 | 37 | 517 | 1996 | 132 |
| 1833 | 271 | 990 | 1 | 298 | 1261 | 2 |
| 1817 | 318 | 1421 | 2 | 267 | 1009 | 92 |
| 1813 | 217 | 1082 | 0 | 213 | 917 | 3 |
| 1830 | 437 | 1607 | 74 | 593 | 2657 | 102 |
| 1836 | 135 | 497 | 0 | 207 | 759 | 30 |
| 1835 | 239 | 870 | 0 | 271 | 1136 | 16 |
| 1860 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1862 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1811 | 2 | 9 | 0 | 0 | 0 | 8 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1823 | 341 | 1158 | 39 | 368 | 1640 | 56 |
| 1832 | 245 | 891 | 1 | 263 | 1150 | 9 |
| 1831 | 118 | 434 | 148 | 172 | 736 | 190 |
| 1812 | 115 | 575 | 0 | 188 | 936 | 25 |
| 1854 | 195 | 807 | 0 | 226 | 963 | 0 |
| 1853 | 2 | 6 | 0 | 1 | 2 | 0 |
| 1846 | 0 | 0 | 26 | 0 | 0 | 0 |
| 1842 | 0 | 0 | 0 | 0 | 0 | 28 |
| 1844 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1840 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1839 | 2 | 6 | 86 | 0 | 0 | 80 |
| 1847 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1834 | 0 | 0 | 0 | 2 | 8 | 0 |
| 1826 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1861 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1829 | 0 | 0 | 0 | 50 | 213 | 200 |
| 1814 | 118 | 525 | 23 | 127 | 530 | 11 |

# Roadway Cost Estimates (In 2014 Dollars)

| 206' Parkway | | | | |
|---|---|---|---|---|
| ITEM | COST | UNIT | Quantity | COST |
| Roadway Excavation (28" depth) | $0.29 | $ft^3$ | 61 x 1 x 2.3 = 140.3 $ft^3$ | $40.22 |
| Clearing and Grubbing | $1,036.00 | Acres | (206 x 1)/43,560 = 0.0047 $ft^2$ | $4.87 |
| Subgrade Finishing | $0.18 | $ft^2$ | 61 x 1 = 61 $ft^2$ | $10.98 |
| Untreated Base Course (16" thick) | $0.79 | $ft^3$ | 61 x 1 x 1.33 = 81.13 $ft^3$ | $64.39 |
| Bituminous Surface Course (12" thick)* | $4.72 | $ft^3$ | 61 x 1 x 1 = 61 $ft^3$ | $287.81 |
| Concrete Curb and Gutter Type B1 | $6.23 | ft | 2.5 ft | $15.58 |
| Pavement Marking Paint | $1.83 | ft | 2 ft | $3.66 |
| Parkstrip | $6.00 | $ft^2$ | 120 ft | $720.00 |
| Clearing and Grubbing for Sidewalk | $0.22 | $ft^2$ | 20 ft | $4.39 |
| Excavation | $0.29 | $ft^3$ | 20 x 1 x 0.67 = 6.7 $ft^3$ | $3.84 |
| Concrete Base Course, 4" inch thick. | $2.06 | $ft^2$ | 20 ft | $41.13 |
| 10' Concrete Sidewalk, 4" Thick | $4.47 | $ft^2$ | 20 ft | $89.40 |
| | | | | |
| | | | Subtotal | $1,286.28 |
| Signage | calculated @ 5% of subtotal | | | $64.31 |
| Drainage (Inc. Structures) | calculated @ 15% of subtotal | | | $192.94 |
| Environmental & Design | calculated @ 20% of subtotal | | | $257.26 |
| | | | | |
| | | | Subtotal | $1,800.79 |
| Mobilization and Traffic Control | calculated @ 10% of subtotal | | | $180.08 |
| Contingency | calculated @ 20% of subtotal | | | $360.16 |
| | | | | |
| | | | Subtotal | $2,341.02 |
| Contingency for Price Increases | calculated @ 20% of subtotal | | | $468.20 |
| TOTAL COST / FOOT | | | | $2,809.23 |

* Assumes UDOT Bid of $69.90 per ton and in place density of 135 lbs per $ft^3$

| 152' Major Arterial (5-Lanes) | | | | |
|---|---|---|---|---|
| ITEM | COST | UNIT | Quantity | COST |
| Roadway Excavation (28" depth) | $0.29 | $ft^3$ | 87 x 1 x 2.3 = 200.1 $ft^3$ | $57.36 |
| Clearing and Grubbing | $1,036.00 | Acres | (152 x 1)/43,560 = 0.0035 $ft^2$ | $3.63 |
| Subgrade Finishing | $0.18 | $ft^2$ | 87 x 1 = 87 $ft^2$ | $15.66 |
| Untreated Base Course (16" thick) | $0.79 | $ft^3$ | 87 x 1 x 1.33 = 115.71 $ft^3$ | $91.84 |
| Bituminous Surface Course (12" thick)* | $4.72 | $ft^3$ | 87 x 1 x 1 = 87 $ft^3$ | $410.49 |
| Concrete Curb and Gutter Type B1 | $6.23 | ft | 2.5 ft | $15.58 |
| Pavement Marking Paint | $1.83 | ft | 2 ft | $3.66 |
| Parkstrip | $6.00 | $ft^2$ | 40 ft | $240.00 |
| Clearing and Grubbing for Sidewalk | $0.22 | $ft^2$ | 20 ft | $4.39 |
| Excavation | $0.29 | $ft^3$ | 20 x 1 x 0.67 = 6.7 $ft^3$ | $3.84 |
| Concrete Base Course, 4" inch thick. | $2.06 | $ft^2$ | 20 ft | $41.13 |
| 10' Concrete Sidewalk, 4" Thick | $4.47 | $ft^2$ | 20 ft | $89.40 |
| | | | | |
| | | | Subtotal | $976.98 |
| Signage | calculated @ 5% of subtotal | | | $48.85 |
| Drainage (Inc. Structures) | calculated @ 15% of subtotal | | | $146.55 |
| Environmental & Design | calculated @ 20% of subtotal | | | $195.40 |
| | | | | |
| | | | Subtotal | $1,367.77 |
| Mobilization and Traffic Control | calculated @ 10% of subtotal | | | $136.78 |
| Contingency | calculated @ 20% of subtotal | | | $273.55 |
| | | | | |
| | | | Subtotal | $1,778.10 |
| Contingency for Price Increases | calculated @ 20% of subtotal | | | $355.62 |
| TOTAL COST / FOOT | | | | $2,133.72 |

* Assumes UDOT Bid of $69.90 per ton and in place density of 135 lbs per $ft^3$

| 122' Minor Arterial | | | | |
|---|---|---|---|---|
| ITEM | COST | UNIT | Quantity | COST |
| Roadway Excavation (28" depth) | $0.29 | $ft^3$ | 77 x 1 x 2.3 = 177.1 $ft^3$ | $50.77 |
| Clearing and Grubbing | $1,036.00 | Acres | (122 x 1)/43,560 = 0.0028 $ft^2$ | $2.90 |
| Subgrade Finishing | $0.18 | $ft^2$ | 77 x 1 = 77 $ft^2$ | $13.86 |
| Untreated Base Course (16" thick) | $0.79 | $ft^3$ | 77 x 1 x 1.33 = 102.41 $ft^3$ | $81.28 |
| Bituminous Surface Course (12" thick)* | $4.72 | $ft^3$ | 77 x 1 x 1 = 46 $ft^3$ | $363.31 |
| Concrete Curb and Gutter Type B1 | $6.23 | ft | 2.5 ft | $15.58 |
| Pavement Marking Paint | $1.83 | ft | 2 ft | $3.66 |
| Parkstrip | $6.00 | $ft^2$ | 20 ft | $120.00 |
| Clearing and Grubbing for Sidewalk | $0.22 | $ft^2$ | 20 ft | $4.39 |
| Excavation | $0.29 | $ft^3$ | 20 x 1 x 0.67 = 6.7 $ft^3$ | $3.84 |
| Concrete Base Course, 4" inch thick. | $2.06 | $ft^2$ | 20 ft | $41.13 |
| 10' Concrete Sidewalk, 4" Thick | $4.47 | $ft^2$ | 20 ft | $89.40 |
| | | | | |
| | | | Subtotal | $790.12 |
| Signage | calculated @ 5% of subtotal | | | $39.51 |
| Drainage (Inc. Structures) | calculated @ 15% of subtotal | | | $118.52 |
| Environmental & Design | calculated @ 20% of subtotal | | | $158.02 |
| | | | | |
| | | | Subtotal | $1,106.17 |
| Mobilization and Traffic Control | calculated @ 10% of subtotal | | | $110.62 |
| Contingency | calculated @ 20% of subtotal | | | $221.23 |
| | | | | |
| | | | Subtotal | $1,438.02 |
| Contingency for Price Increases | calculated @ 20% of subtotal | | | $287.60 |
| TOTAL COST / FOOT | | | | $1,725.62 |

* Assumes UDOT Bid of $69.90 per ton and in place density of 135 lbs per $ft^3$

| 94' Major Collector | | | | |
|---|---|---|---|---|
| ITEM | COST | UNIT | Quantity | COST |
| Roadway Excavation (18" depth) | $0.15 | $ft^3$ | 53 x 1 x 1.5 = 79.5 $ft^3$ | $11.93 |
| Clearing and Grubbing | $1,036.00 | Acres | (94 x 1)/43,560 = 0.0022 $ft^2$ | $2.28 |
| Subgrade Finishing | $0.18 | $ft^2$ | 53 x 1 = 53 $ft^2$ | $9.54 |
| Untreated Base Course (10" thick) | $0.79 | $ft^3$ | 53 x 1 x 0.83 = 43.99 $ft^3$ | $34.92 |
| Bituminous Surface Course (8" thick)* | $4.72 | $ft^3$ | 53 x 1 x 0.67 = 35.51 $ft^3$ | $167.55 |
| Concrete Curb and Gutter Type B1 | $6.23 | ft | 2.5 ft | $15.58 |
| Pavement Marking Paint | $1.83 | ft | 2 ft | $3.66 |
| Parkstrip | $6.00 | $ft^2$ | 20 ft | $120.00 |
| Clearing and Grubbing for Sidewalk | $0.22 | $ft^2$ | 16 ft | $3.51 |
| Excavation | $0.29 | $ft^3$ | 16 x 1 x 0.67 = 10.72 $ft^3$ | $3.07 |
| Concrete Base Course, 4" inch thick. | $2.06 | $ft^2$ | 16 ft | $32.91 |
| 8' Concrete Sidewalk, 4" Thick | $4.47 | $ft^2$ | 16 ft | $71.52 |
| | | | | |
| | | | Subtotal | $476.45 |
| Signage | calculated @ 5% of subtotal | | | $23.82 |
| Drainage (Inc. Structures) | calculated @ 15% of subtotal | | | $71.47 |
| Environmental & Design | calculated @ 20% of subtotal | | | $95.29 |
| | | | | |
| | | | Subtotal | $667.03 |
| Mobilization and Traffic Control | calculated @ 10% of subtotal | | | $66.70 |
| Contingency | calculated @ 20% of subtotal | | | $133.41 |
| | | | | |
| | | | Subtotal | $867.14 |
| Contingency for Price Increases | calculated @ 20% of subtotal | | | $173.43 |
| TOTAL COST / FOOT | | | | $1,040.57 |

* Assumes UDOT Bid of $69.90 per ton and in place density of 135 lbs per $ft^3$

| 77' Minor Collector | | | | |
|---|---|---|---|---|
| ITEM | COST | UNIT | Quantity | COST |
| Roadway Excavation (18" depth) | $0.15 | $ft^3$ | 40 x 1 x 1.5 = 60 $ft^3$ | $9.00 |
| Clearing and Grubbing | $1,036.00 | Acres | (77 x 1)/43,560 = 0.0018 $ft^2$ | $1.86 |
| Subgrade Finishing | $0.18 | $ft^2$ | 40 x 1 = 40 $ft^2$ | $7.20 |
| Untreated Base Course (10" thick) | $0.79 | $ft^3$ | 40 x 1 x 0.83 = 33.20 $ft^3$ | $26.35 |
| Bituminous Surface Course (8" thick)* | $4.72 | $ft^3$ | 40 x 1 x 0.67 = 26.8 $ft^3$ | $126.45 |
| Concrete Curb and Gutter Type B1 | $6.23 | ft | 2.5 ft | $15.58 |
| Pavement Marking Paint | $1.83 | ft | 2 ft | $3.66 |
| Parkstrip | $6.00 | $ft^2$ | 16 ft | $96.00 |
| Clearing and Grubbing for Sidewalk | $0.22 | $ft^2$ | 16 ft | $3.51 |
| Excavation | $0.29 | $ft^3$ | 16 x 1 x 0.67 = 10.72 $ft^3$ | $3.07 |
| Concrete Base Course, 4" inch thick. | $2.06 | $ft^2$ | 16 ft | $32.91 |
| 8' Concrete Sidewalk, 4" Thick | $4.47 | $ft^2$ | 16 ft | $71.52 |
| | | | | |
| | | | Subtotal | $397.11 |
| Signage | calculated @ 5% of subtotal | | | $19.86 |
| Drainage (Inc. Structures) | calculated @ 15% of subtotal | | | $59.57 |
| Environmental & Design | calculated @ 20% of subtotal | | | $79.42 |
| | | | | |
| | | | Subtotal | $555.96 |
| Mobilization and Traffic Control | calculated @ 10% of subtotal | | | $55.60 |
| Contingency | calculated @ 20% of subtotal | | | $111.19 |
| | | | | |
| | | | Subtotal | $722.75 |
| Contingency for Price Increases | calculated @ 20% of subtotal | | | $144.55 |
| TOTAL COST / FOOT | | | | $867.30 |

* Assumes UDOT Bid of $69.90 per ton and in place density of 135 lbs per $ft^3$