

TRAFFIC IMPACT ANALYSIS SUMMARY
Optima McDowell Mountain Village
South of Loop 101 Pima Freeway and east of Scottsdale Road
20-ZN-2002#4

Summary Prepared by Avery Askren, COS Traffic Engineering Intern
Traffic Impact Study Prepared by Michael E. Mathieu, CivTech
Traffic Impact Study Status: ACCEPTED WITH COMMENTS
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Existing Conditions:

Site Location – South of Loop 101 Pima Freeway and east of Scottsdale Road

Existing Development – Site is currently undeveloped, zoned C-4 PCD

Street Classifications –

- Scottsdale Road is classified as a Major Arterial
- Mayo Boulevard east of Scottsdale Road is classified as a Major Collector.
- Mayo Boulevard and Princess Boulevard west of Scottsdale Road, and 68th Street, is within the City of Phoenix
- Hayden Road north of Mayo Boulevard is classified as a Major Arterial.
- Hayden Road south of Mayo Boulevard is classified as a Minor Arterial.
- Mayo Boulevard east of Hayden Road is classified as a Major Collector.
- Princess Boulevard east of Scottsdale Road is classified as a Major Collector.

Existing Street Conditions –

- The intersection of Scottsdale Road and Thompson Peak Parkway is a signalized T intersection. Westbound traffic makes use of dual left-turn lanes and a right-turn lane. The northbound approach to the intersection provides two through lanes and a right-turn lane while southbound vehicles are offered a left-turn lane and two through lanes. Protected only left-turn phasing.
- The Scottsdale Road and Legacy Boulevard intersection is a signalized T intersection. Westbound vehicles are offered dual left-turn lanes and a right-turn lane. Northbound traffic makes use of two through lanes and a right-turn lane. The southbound approach to the intersection provides a left-turn lane and two through lanes. Protected only left-turn phasing.
- The Scottsdale Road and Arizona State Route Loop 101 intersections make up a diamond interchange with two signalized intersections. The eastbound and westbound off-ramps offer dual left-turn lanes, a shared through/right-turn lane, and a right-turn lane. The northbound and southbound approaches to the intersection provide dual left-turn lanes, three through lanes, and a right-turn lane.
- The intersection of 68th Street and Mayo Boulevard is a four-leg signalized intersection within the City of Phoenix. Eastbound vehicles are provided a left-turn lane, three through lanes, and a right-turn lane. Westbound traffic makes use of a left-turn lane, two through lanes, and a right-turn lane. The northbound approach to the intersection offers a left-turn lane, a through lane, and a right-turn lane while southbound traffic utilizes a left-turn lane, a through lane, and a shared through/right-turn lane.

- The intersection of Allied Way and Mayo Boulevard is a four-leg signalized intersection within the City of Phoenix. Eastbound vehicles are provided a left-turn lane, three through lanes, and a right-turn lane. Westbound traffic makes use of a left-turn lane, two through lanes, and a right-turn lane. The northbound approach to the intersection offers a left-turn lane, a through lane, and a right-turn lane while southbound traffic utilizes a left-turn lane, a through lane, and a shared through/right-turn lane.
- The Scottsdale Road and Mayo Boulevard intersection is a four-leg signalized intersection. Eastbound vehicles entering from the City of Phoenix are offered dual left-turn lanes, three through lanes, and a right-turn lane. The westbound leg has a configuration of dual left-turn lanes, a through lane, and a shared/through right-lane. The northbound and southbound approaches along Scottsdale Road each offer dual left-turn lanes, three through lanes, and a right-turn lane.
- The Lexus Driveway/Mayo Boulevard intersection is a four-leg unsignalized intersection with northbound/southbound STOP control. Free-flow traffic for eastbound and westbound Mayo Boulevard are each provided a left-turn lane, two through lanes, and a right-turn lane. The northbound and southbound driveway accommodate single lane, shared left-turn/through/right-turn movements.
- The Hayden Road and Arizona State Route Loop 101 intersections make up a diamond interchange with two signalized intersections. The eastbound off-ramp approach provides a left-turn lane, a shared left-turn/through/right-turn lane, and a right-turn lane. and westbound off-ramp offers a left-turn lane, a shared left-turn/through lane, a shared through/right-turn lane, and a right-turn lane. The northbound leg has a configuration of one left-turn lane, two through lanes, and a right-turn lane while the southbound approaches to the intersection provide dual left-turn lanes, two through lanes, and a right-turn lane.
- The intersection of Hayden Road and Mayo Boulevard (Axon Way) is currently a un-signalized T intersection. Eastbound, STOP controlled, vehicles are offered a left-turn lane and a right-turn lane. Northbound traffic makes use of a left-turn lane and two through lanes while the southbound approach provides two through lanes and a right-turn lane.
- The Scottsdale Road and Chauncey Lane intersection is a four-leg signalized intersection. The eastbound and westbound approaches both provide a left-turn lane, two through lanes, and a right-turn lane. Northbound and southbound vehicles make use of a left-turn lane, three through lanes, and a right-turn lane. Permitted only left-turn phasing – signal heads are still bagged that would allow protected/permitted phasing.
- The 73rd Place and Chauncy Lane intersection is a three-leg, single lane roundabout.

- The intersection of Scottsdale Road and Princess Boulevard (Princess Drive) is a four-leg signalized intersection. The eastbound approach offers a left-turn lane, a through lane, and a shared through/right-turn lane. Westbound vehicles make use of a left-turn lane, two through lanes, and a right-turn lane. Northbound and southbound traffic each utilize a left-turn lane, three through lanes, and a right-turn lane.

Existing Volumes –

- There are 32,300 daily vehicles on Scottsdale Road from Thompson Peak Parkway to the 101 Freeway (1.01 V/C)
- There are 39,400 daily vehicles on Scottsdale Road from the 101 Freeway to Mayo Boulevard (0.82 V/C)
- There are 43,800 daily vehicles on Scottsdale Road from Princess Drive to Mayo Boulevard (0.91 V/C)
- There are 15,100 daily vehicles on Hayden Road from the 101 Freeway to Princess Drive (0.44 V/C)

Existing Speed Limits –

- Scottsdale Road has a 45-MPH speed limit within the study area
- Mayo Boulevard has a 45-MPH speed limit within the study area
- Hayden Road has a 40-MPH speed limit within the study area

Collision Information –

- The intersection of Scottsdale Road and Mayo Boulevard has had 19 reported collisions from 2019 to 2020 for a 0.55 collision rate (0.54 citywide intersection average)
- The intersection of Scottsdale Road and Princess Drive has had 30 reported collisions from 2019 to 2020 for a 0.81 collision rate (0.54 citywide intersection average)
- The intersection of Scottsdale Road and the 101 Freeway has had 69 reported collisions from 2019 to 2020 for a 1.56 collision rate (0.54 citywide intersection average)
- The intersection of Scottsdale Road and Thompson Peak Parkway has had 5 reported collisions from 2019 to 2020 for a 0.14 collision rate (0.54 citywide intersection average)
- The intersection of Hayden Road and the 101 Freeway has had 18 reported collisions from 2019 to 2020 for a 0.74 collision rate (0.54 citywide intersection average)

Proposed Development:

Description - The proposed development plan consists of luxury multi-family residences with up to 1,500 dwelling units in six individual buildings that also consists of some retail on the ground floor, second floor, and lower courtyard area.

Site Access – The applicant is proposing to have two access points on the north side of Mayo Boulevard, east of Scottsdale Road as well as a secondary entrance only driveway on the east side of Scottsdale Road, north of Mayo Boulevard.

Access A will be located approximately 500 feet east of Scottsdale Road, slightly further east than the existing curb cut opposite the existing Lexus Driveway, and will provide right-in/right-out access for commercial, public, and guest parking.

Access B will be located as the north leg of the proposed roundabout at the 73rd Place and Mayo Boulevard intersection and will be the resident access.

Access C will be located approximately 285 feet north of Mayo Boulevard, and provide right-in only access for commercial, public, and guest parking.

TRIP GENERATION COMPARISON TABLE:

	Daily Total	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Proposed - LUC 221, Multifamily Mid-Rise 466 DU	2,854	54	178	232	150	96	246
Proposed - LUC 222, Multifamily High-Rise 984 DU	3,454	70	135	205	137	106	243
Proposed - LUC 822, Strip Retail Plaza 36,000 SF	1,748	40	27	67	97	96	193
TOTAL PROPOSED	8,056	164	340	504	384	298	682

Traffic Analysis:

Intersection Level of Service – Using a 2030 horizon year with traffic generated by the build out of the proposed development –

Scottsdale Road and Thompson Peak Parkway is expected to operate at an overall LOS B in the AM and an inadequate LOS F in the PM. Eastbound LOS is at E in AM and D in the PM. Westbound is expected to operate at a LOS F.

Scottsdale Road and westbound/eastbound Loop 101 Ramps are expected to operate at an overall inadequate LOS F. Eastbound Ramps at the northbound approach and westbound Ramps at the southbound approach are expected to operate at LOS D.

Scottsdale Road and Mayo Boulevard are expected to operate at an overall inadequate LOS E. The northbound approach is expected to operate at an LOS C in the AM and LOS E in the PM, southbound is expected to operate at LOS F, eastbound LOS at E, and the westbound approach is expected to operate at an LOS D.

Hayden Road and westbound Loop 101 Ramps are expected to operate at an overall inadequate LOS E in the AM and F in the PM. Northbound LOS at F, southbound LOS at D in the AM and E in the PM, and westbound LOS at C in the AM and D in the PM.

Hayden Road and eastbound Loop 101 Ramps are expected to operate at an overall LOS E for AM and LOS F for PM. Northbound is expected to operate at an LOS C in the AM and E in the PM, southbound is expected to operate at an LOS F, and eastbound LOS of E for AM and D for PM.

Scottsdale Road and Princess Drive are expected to operate at an overall LOS D in the AM and E in the PM. Northbound LOS at C in the AM and E in the PM, southbound LOS at D in the AM and E in the PM, eastbound LOS at E, and westbound LOS D in the AM and E in the PM.

All of the remaining study intersections in the vicinity of the site operate a level of service C or better for both peak hours. Hayden Road and Mayo Boulevard is proposed to have a signalized intersection by 2030.

Additional Traffic Volumes – According to the 2020 Traffic Volume and Collision Report:

- The project will add approximately 1,047 vpd to Scottsdale Road from the 101 Freeway to Thompson Peak.
 - The V/C ratio would be expected to increase from 1.01 to approximately 1.04.
- The project will add approximately 3,222 vpd to Scottsdale Road from the 101 Freeway to Mayo Boulevard.
 - The V/C ratio would be expected to increase from 0.82 to approximately 0.89.
- The project will add approximately 1,208 vpd to Scottsdale Road from Princess Drive to Mayo Boulevard.
 - The V/C ratio would be expected to increase from 0.91 to approximately 0.94.
- The project will add approximately 725 vpd to Hayden Road from the 101 Freeway to Princess Drive.
 - The V/C ratio would be expected to increase from 0.44 to approximately 0.47.

Observations:

Traffic Engineering staff did not make additional observations of traffic on the streets in the vicinity of the site during peak traffic periods.

Additional Information:

The study recommends the following:

- Dedicated NB right turn lane at Access C (along Scottsdale Road) – it is already existing and will not need to be constructed. This will be an enter only driveway (right-in from NB Scottsdale Road)
- Dedicated WB right turn lanes are recommended for construction along Mayo Boulevard at Access A and B
- A new westbound right-turn lane will be required at the signalized intersection of Scottsdale Road/Mayo Boulevard
- The median break at Access A/Lexus Driveway will be reconstructed to a left-in/left-out median for the Lexus Driveway. Access A serving the Optima site will be restricted to right-in/right-out.

Summary:

A Traffic Impact and Mitigation Analysis (“TIMA”) was submitted for the project. The TIMA was **accepted with comments**, primarily due to incorrect lane configuration in future years. The approval of the zoning district change for the proposed multi-family residency will result in an estimated 8,056 trips generated per day to and from the project site. The development is estimated to generate 504 a.m. peak hour trips, and 682 p.m. peak hour trips.

The additional traffic is anticipated to cause excessive delays at several of the study intersections.

Traffic Engineering staff have the following comments/concerns:

- Future study year lane configurations are shown incorrectly. Visualization of the recommendations is important for general understanding and to avoid complication in future review.