

TRAFFIC IMPACT ANALYSIS SUMMARY
Ina Levine Jewish Community Campus
12701 N. Scottsdale Road
Scottsdale, AZ 85254
11-ZN-2020

Summary Prepared by David R. Smith & Amy Zhang, COS Traffic Engineering

Summary Updated by P. Murphy 5/24/21

Traffic Impact Study Prepared by Marina Stender, Lōkahi LLC Dated: 8/3/2020

Traffic Impact Study Status: Accepted

Existing Conditions:

Site Location – Southeast corner of Scottsdale Road and Sweetwater Avenue (Address: 12701 N. Scottsdale Road)

Existing Development – This overall site is currently occupied by a community center and private school. The southeastern portion of the site was previously approved for a private school with 150 students. The site is currently zoned Single Family Residential (R1-35).

Street Classifications –

- Sweetwater Avenue is classified as a minor collector.
- Scottsdale Road is classified as a major arterial.
- Thunderbird Road is classified as a major collector east of Miller Road, and as a minor collector west of Miller Road. It runs parallel and north to Sweetwater Avenue.
- Cactus Road is classified as a major collector.
- Hayden Road is classified as a major arterial south of Shea Boulevard, and as a minor arterial north of Shea Boulevard.

Existing Street Conditions –

- The Scottsdale Road and Thunderbird Road intersection is signalized.
- The Scottsdale Road and Sweetwater Avenue intersection is signalized
- The Scottsdale Road and Cactus Road intersection is signalized
- The Hayden Road and Sweetwater Avenue T-intersection is signalized
- The Hayden Road and Cactus Road intersection is signalized.
- Driveways A and B on Scottsdale Road operate as a one-way stop-controlled T-intersection, with the stop control on the minor approach.
- Driveway C and School Driveways 1 and 2 on Sweetwater Avenue operate as a one-way stop-controlled T-intersection, with the stop control on the minor approach.

Existing Volumes –

- There are 4,500 vehicles per day on Sweetwater Avenue between Scottsdale Road and Hayden Road
- There are 45,100 vehicles per day on Scottsdale Road north of Sweetwater Avenue, and 44,600 vehicles per day on Scottsdale Road south of Sweetwater Avenue
- There are 20,900 vehicles per day on Thunderbird Road between Scottsdale Road and Miller Road.
- There are 20,900 vehicles per day on Hayden Road north of Sweetwater Avenue, and 23,100 vpd on Hayden Road south of Sweetwater Avenue
- There are 39,200 vehicles per day on Cactus Road between Scottsdale Road and Hayden Road

Existing Speed Limits –

- Sweetwater Avenue has a posted speed limit of 30 mph west of Scottsdale Road and 25 mph east of Scottsdale Road
- Scottsdale Road has a posted speed limit of 45 mph
- Thunderbird Road has a posted speed limit of 40 mph

- Hayden Road has a posted speed limit of 45 mph
- Cactus Road has a posted speed limit of 45 mph

Collision Information –

INTERSECTION COLLISION TABLE:

Streets	Total Collisions	Severity Distribution					
		5	4	3	2	1	99
Scottsdale Rd. and Thunderbird Rd.	39	0	0	5	8	23	3
Scottsdale Rd. and Sweetwater Ave.	17	0	0	3	2	12	0
Scottsdale Rd. and Cactus Rd.	62	0	0	3	8	47	4
Hayden Rd. and Sweetwater Ave.	3	0	0	0	1	2	0
Hayden Rd. and Cactus Rd.	49	0	0	4	9	34	2

*Collision History is obtained for the 3-year period between January 1, 2017 through December 31, 2019.

INTERSECTION COLLISION RATES TABLE:

Streets	Collision Rate	COS Average
Scottsdale Rd. and Thunderbird Rd.	0.72	0.58
Scottsdale Rd. and Sweetwater Ave.	0.64	
Scottsdale Rd. and Cactus Rd.	0.63	
Hayden Rd. and Sweetwater Ave.	0.28	
Hayden Rd. and Cactus Rd.	0.17	

*Collision rates are obtained from COS 2018 Traffic Volume and Collision Rate Data

SEGMENT COLLISION RATES TABLE:

Segment	From	To	Collision Rate	COS Average
Scottsdale	Sweetwater	Thunderbird	1.58	1.53
Scottsdale	Cactus	Sweetwater	1.35	
Sweetwater	Scottsdale	Hayden	1.22	
Cactus Road	Scottsdale	Hayden	0.91	
Hayden	Cactus	Sweetwater	0.47	

*Collision rates are obtained from COS 2018 Traffic Volume and Collision Rate Data

Proposed Development:

Description –

- The proposed development plan consists of 185-unit Residential Health Care Facility (both Minimal and Specialized)
- At this time, there are two possibilities proposed for the facility, therefore two trip generations for the two scenarios were calculated:
 - Residential Health Care Facility Scenario 1 - 70% Senior Adult Housing - Attached (ITE Land Use 252) and 30% Assisted Living (ITE Land Use 254)
 - Residential Health Care Facility Scenario 2 - 100% Senior Adult Housing - Attached (ITE Land Use 252)

Site Access – There are three existing access points to the current development. Driveways A and B are located on Scottsdale Road, approximately 660-feet and 950-feet south of Sweetwater Avenue, respectively. Driveway A allows all movements in and out of the site, while driveway B allows only right-in and right-out movements. Driveway C on Sweetwater Avenue is approximately 550-feet east of Scottsdale road and allows only right-in left-out movements.

TRIP GENERATION COMPARISON TABLE:

	Daily Total	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Proposed – Scenario 1 Residential Healthcare Facility 130 Units Senior Adult Housing + 55 Beds Assisted Living	624	15	21	36	24	24	48
Proposed – Scenario 2 Residential Healthcare Facility 185 Units Senior Adult Housing	718	13	24	37	26	21	47
Previously Approved - High School 150 Students	527	52	26	78	10	11	21
Increase/Decrease (Scenario 1)	+97 18%	-37 -71%	-5 -19%	-42 -54%	+14 140%	+13 118%	+27 129%
Increase/Decrease (Scenario 2)	+191 36%	-39 -75%	-2 -8%	-41 -53%	+16 160%	+10 91%	+26 124%

Traffic Analysis:

Intersection Level of Service – Using a 2023 horizon year with traffic generated by the build out of the proposed development, all the study intersections in the vicinity of the site operate a level of service D or better for both peak hours.

Observations:

Traffic Engineering staff made observations of traffic on the streets in the vicinity of the site during peak traffic periods. These traffic operational patterns and concerns were observed:

- The signal timing of surrounding intersections will be monitored and adjusted as future conditions and buildout may affect level of service.

Summary:

A Traffic Impact and Mitigation Analysis ("TIMA") was submitted for the project. The TIMA was accepted. The approval of the zoning district change to allow a proposed 185-Unit Residential Healthcare Facility will result in an estimated 718 trips generated per day to and from the project site. The development is estimated to generate 37 a.m. peak hour trips, and 47 p.m. peak hour trips. This represents an increase of 191 daily trips over the existing approved 150-student high school. With the addition of the proposed site generated traffic, operations at the intersections in the vicinity of the site will operate at LOS D or better.

Traffic Engineering staff have the following comments/concerns:

- Transportation staff will monitor and update signal timing of surrounding intersections as future and buildout conditions.
- The level-of-service at the Scottsdale Road and Thunderbird Road intersection will decrease from LOS D to LOS E with the addition of the site generated traffic. The level-of-service at the Scottsdale Road and Sweetwater Avenue intersection will decrease from LOS C to LOS D with the addition of the site generated traffic.
- Traffic Engineering recommended that pedestrian connections from the site buildings to the adjacent streets be improved.