

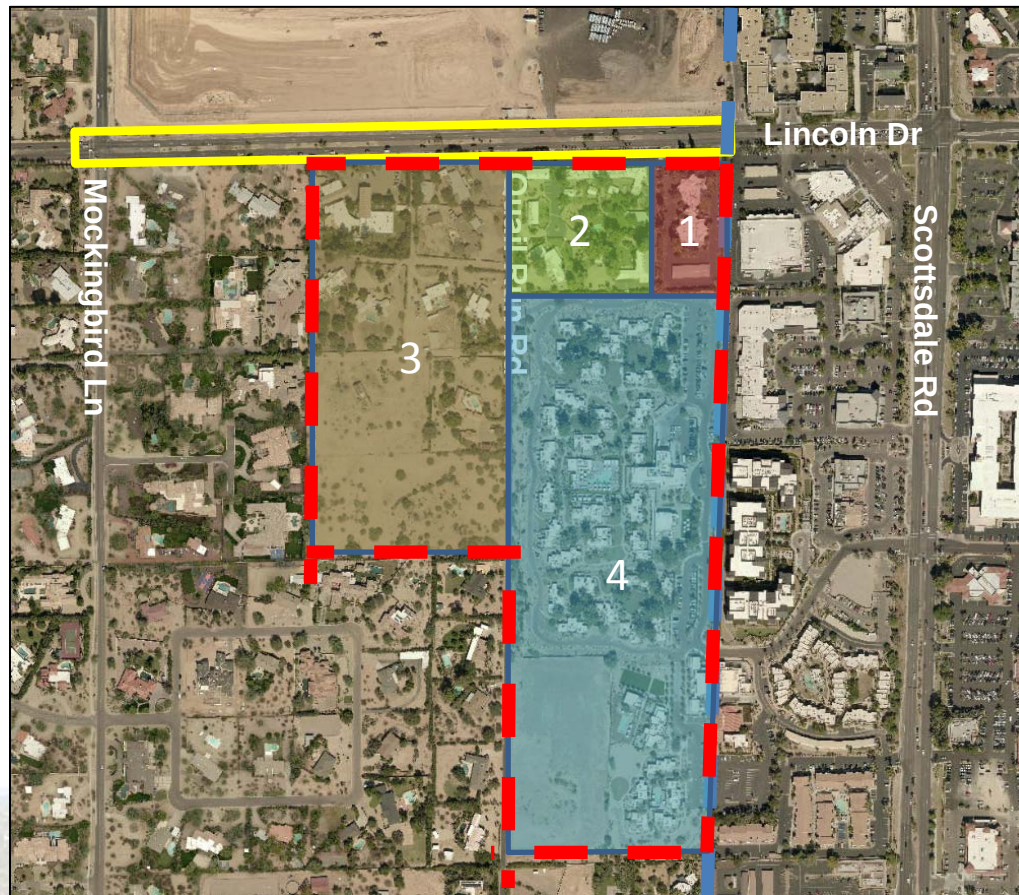
TOWN OF PARADISE VALLEY

Lincoln Drive Median Improvements

December 6, 2018



PROJECT LIMITS



Town Limits



Project Limits



**South Lincoln
Development Area**



1	Lincoln Medical Plaza
2	Smoke Tree Resort
3	South Lincoln Development
4	Andaz Resort



December 6, 2018

PROJECT SCOPE

- **Reconstruct Lincoln Drive between Mockingbird Lane and Town Limits**
- **Improvement include:**
 - Landscaped Medians
 - Traffic Signal at Quail Run
 - Sewer Line Extension
 - Meandering Sidewalks
 - Landscaping
 - Drainage Structures

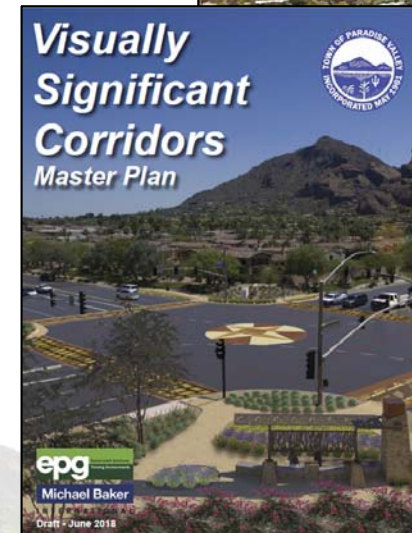
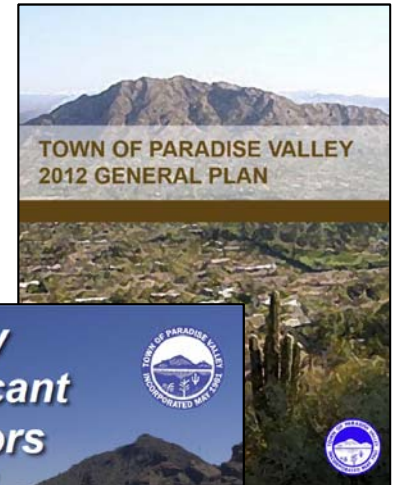


September 13th, 2018



DESIGN CONSIDERATIONS

- What drives design?
 - General Plan, specifically Mobility Element
 - Five Star Development Agreement
 - Engineering Standards (AASHTO, CoS, MCDOT)
 - Visually Significant Corridors Master Plan



December 6th, 2018



GENERAL PLAN

- Classifies Lincoln Drive as a Major Arterial

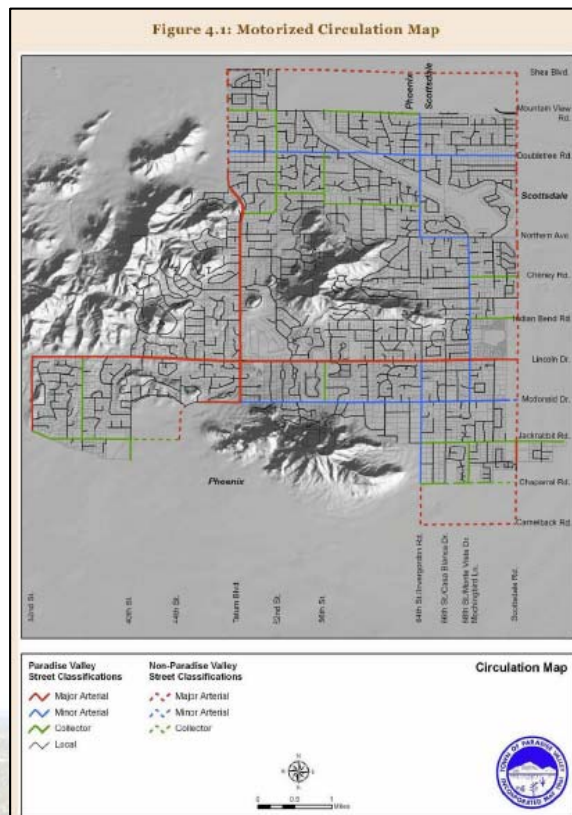
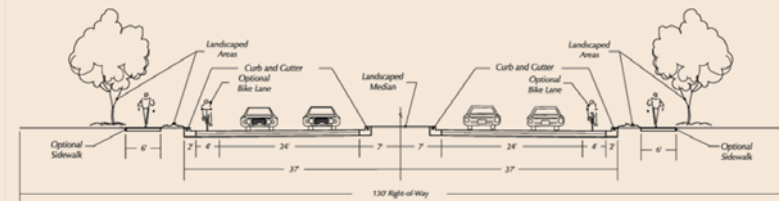


Table 4.1: Circulation Map Classifications and Standards

Classification	Function	Design Character (also see Cross-Sections)
Major Arterial	To provide regional unity and continuity.	- Channelized intersections, limited access, crossings, and stops - Parking on rights-of-way prohibited - Landscaped medians and rights of way - Optional sidewalks on both sides, set back a minimum of 5 feet from traffic lanes - Bike lanes only where necessary to interconnect bikeway system 4 through lanes - Full curbs and gutters 130-foot right-of-way

Figure 4.2: Typical Major Arterial Cross-Section



December 6th, 2018



GENERAL PLAN

- **Policies include:**

M 4.4.1.3 Access onto Major Arterials. The Town shall require design of new developments to avoid direct access onto major arterial roadways where possible.

M 4.4.2.9 Rights-of-Way Extents. The Town shall ensure that all new public roadway projects and major reconstruction projects provide appropriate and adequate rights-of-way for all users including bicyclists, pedestrians, and motorists except where pedestrians or bicyclists are discouraged.

M 4.4.3.2 Visually Significant Corridor Treatment. Town rights-of-way along Visually Significant Corridors shall have attractive, experientially rewarding, and cohesive design elements, including signage, landscaping, medians, interchanges and sidewalks while permitting a reasonable range of treatments of individual properties. Elements that create visual clutter such as unnecessary signage or utility boxes will be eliminated, or their visibility reduced.



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ENGINEERING DESIGN STANDARDS

- Driveway Location Guidelines**

Description of Criteria	Design Requirements	Code Section
Number of Driveways	Each parcel – one two-way driveway or pair of one-way driveways. Where a property has access to more than one road, access may be limited to the lowest volume road where the impacts of a new access will be minimized. Access on higher volume roads may be denied.	MCDOT 7.8
	For sites that have frontage on two streets, primary access should be onto the minor street frontage. A maximum of two driveway openings is permitted to a site or parcel from the abutting street(s).	COS 5-3.201
Driveway Spacing	360 ft minimum	MCDOT 7.9.2
	330 ft standard (minor arterial) 250 ft minimum (minor arterial)	COS 5-3.201
Joint Access	Joint access required for two adjacent developments where a proposed new access will not meet spacing requirements.	MCDOT 7.9.3
	Where development adjoins other similarly zoned property or compatible land uses, a cross access easement may be required to permit vehicular movement between the parcels or to reduce the number of access points required onto the adjacent public street. Combining driveways reduces the number of conflict points for pedestrians, bicyclists, and other vehicles.	COS 5-3.201



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ENGINEERING DESIGN STANDARDS

Spacing and Location of Median Openings COS 5-3.123 F

If a street has a raised median, it is not possible to provide an opening in the median for every street intersection or driveway location. Full median openings should occur at not less than 1/4-mile intervals (1320 feet) on TRANSPORTATION CHAPTER 5 Design Standards & Policies Manual Page 309 City of Scottsdale - 2018 major arterial streets. Partial median openings, which allow only left turns off the major street, are acceptable at 1/8 mile spacing (660 feet). On minor arterials, full median breaks should be no closer than 1/8-mile intervals with preferable 1/4 mile spacing. In built up areas, where reasonable alternate access is not available, median openings may be provided at smaller intervals with the approval of the Transportation Department.



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ENGINEERING DESIGN STANDARDS

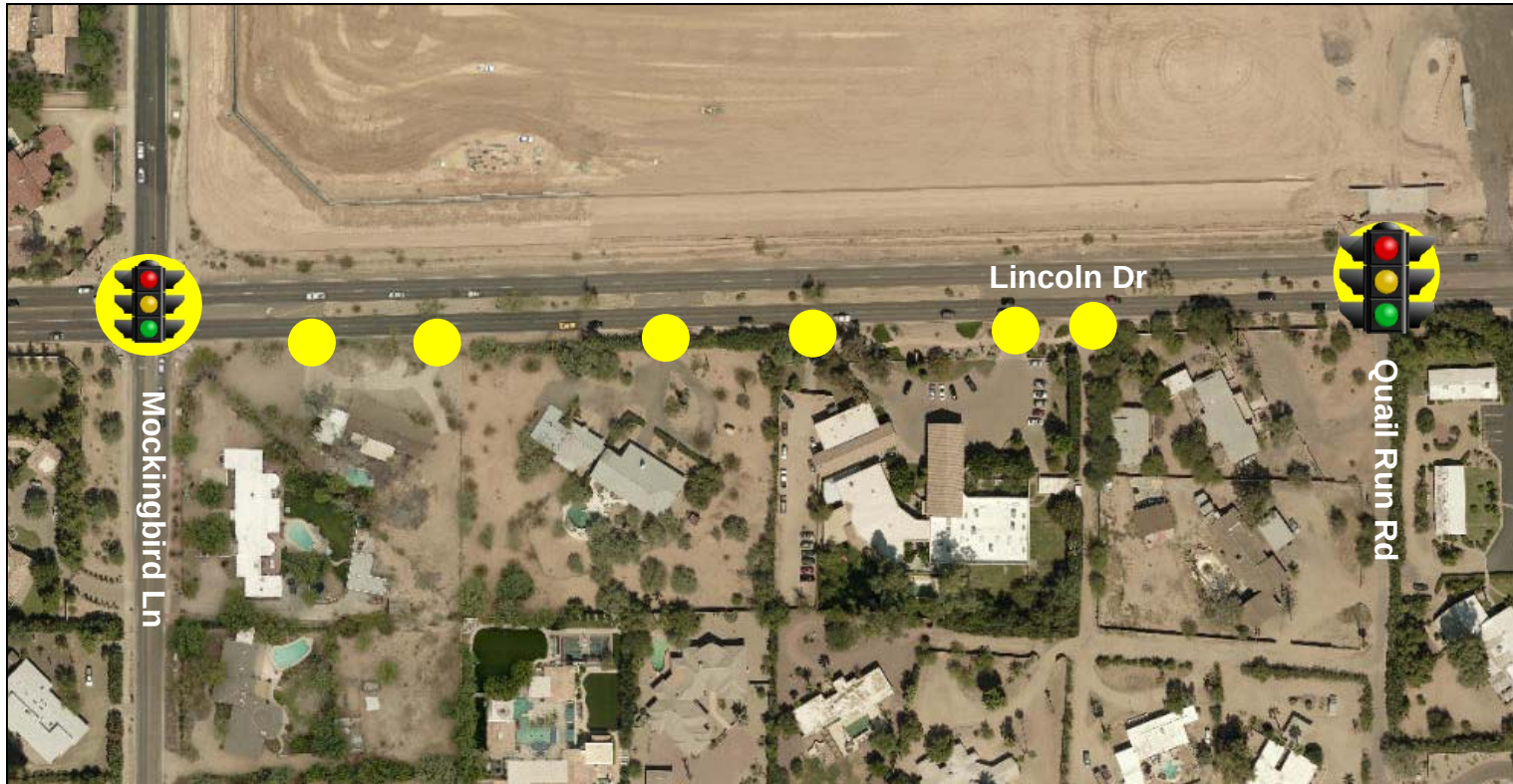
- Left Turn Storage and Taper Lengths**

Description of Criteria	Design Requirements	Code Section
Minimum Storage	At unsignalized intersections, the minimum storage length should be determined by an intersection traffic analysis based on the number of turning vehicles likely to arrive in an average 2 minute period within the peak hour. Storage for at least 2 passenger cars shall be provided (approx. 50 ft) Storage Length Calculation: $L \text{ or } Q = (V * s * k) / N$	AASHTO 9.7.2 TRB Access Control Manual
Taper Length	Taper Rate may be 8:1 up to 30 mph and 15:1 for 50 mph and up For 12 ft turn lane 8:1 taper length = 96 ft and 15:1 taper length = 180 ft Shorter tapers may be used in urban areas COS Median Nose & Reverse Curve Detail shows 90 ft taper for 40 to 50 mph	AASHTO 9.7.2 COS Detail 2225



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DESIGN CHALLENGES



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DESIGN CHALLENGES



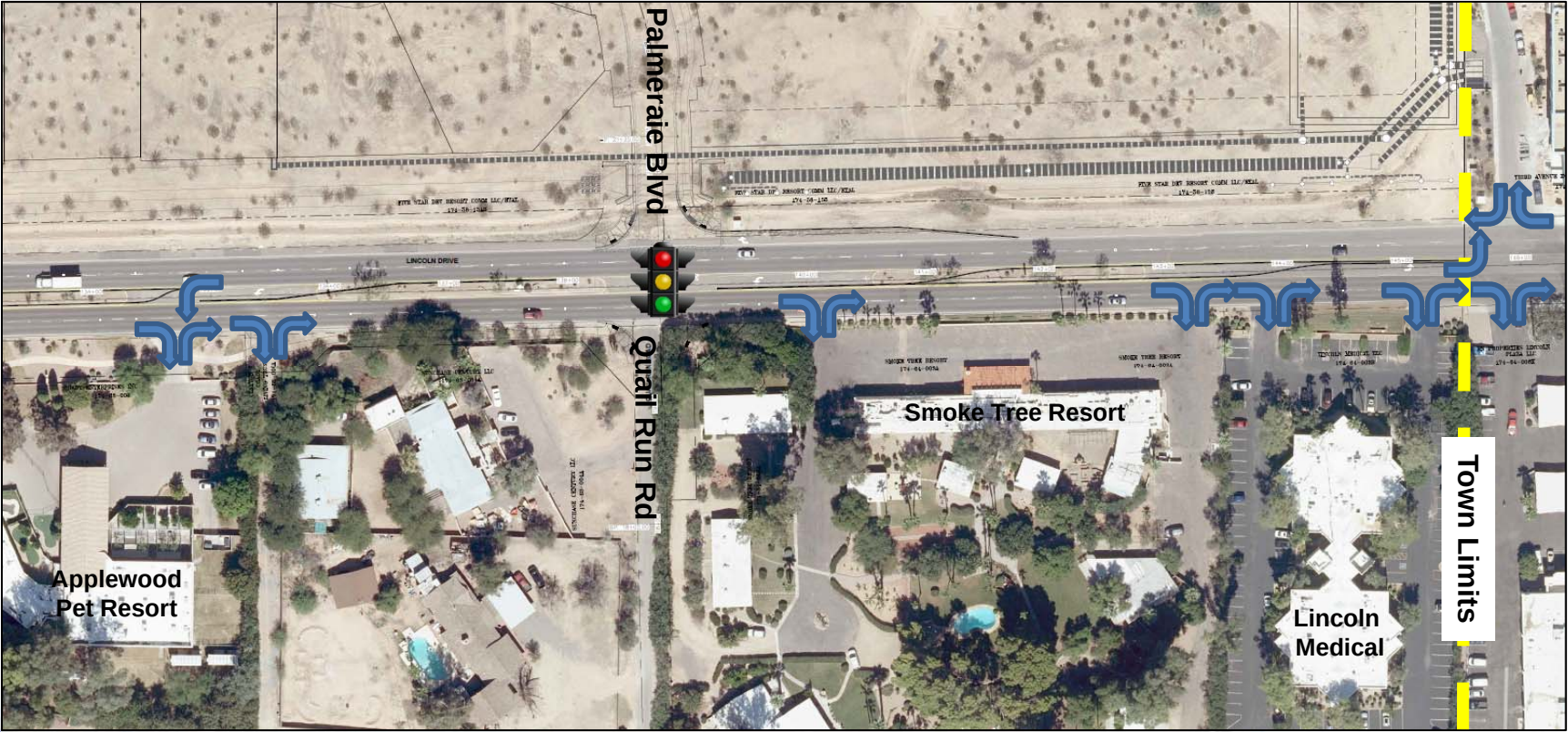
December 6th, 2018

30% DESIGN



December 6th, 2018

30% DESIGN



December 6th, 2018

STATEMENT OF DIRECTION

Smoke Tree Resort & Lincoln Medical Statement Of Direction (SOD):

Traffic, Parking, Access, and Circulation. The proposed density and location within a heavily-traveled and mixed-use density area near the City of Scottsdale creates a heightened need for ensuring the proposed redevelopment does not have a negative impact on traffic safety, parking, and circulation.

- Number of access points in/out of the sites
- Coordination with Town improvements along Lincoln, i.e. the entry/exit and roadway medians
- Deceleration turn lane for eastbound traffic entering the sites
- Emergency Access to the sites
- Full build-out of The Ritz-Carlton Resort Special Use Permit
- Any cross-access easement(s) between the properties and with AJs to the east and Andaz to the south



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CIVTECH MEDIAN ACCESS OPTIONS

CivTech was retained by the Smoke Tree Resort and Lincoln Medical Plaza and provided the following three access options after meeting with Town staff:

- Option 1*: full median access for Smoke Tree Resort and Lincoln Medical Plaza
- Option 2*: shared full median access for Smoke Tree Resort and Lincoln Medical Plaza
- Option 3*: right in/right out only access for Smoke Tree Resort and Lincoln Medical Plaza

*All access options include full median access for the Applewood Pet Resort at their western driveway.



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KIMLEY-HORN MEDIAN ACCESS REVIEW

The Town hired Kimley-Horn to provide a 3rd party traffic engineering review of the access options including:

- Traffic volume calculations
- Left turn lane storage lengths
- Left turn lane taper lengths
- The need for exclusive right turn lanes
- Field observations
- U-turn analysis



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KIMLEY-HORN FIELD OBSERVATIONS

Kimley-Horn conducted field observations on Tuesday October 30th during the morning (7:30am to 8:30am) and evening from (4:30pm to 5:45pm). Key observations:

- Eastbound traffic backed up past both Lincoln Medical Plaza entrances and the eastern Smoke Tree Resort entrance.
- Three of these events were observed in the AM peak hour and five were observed in the PM peak hour.
- Traffic backup occurred in inner most eastbound lane.
- Outside lane was free flowing.
- Eastbound traffic that was backed up provided gaps for left turning vehicles which caused “near miss collisions”.



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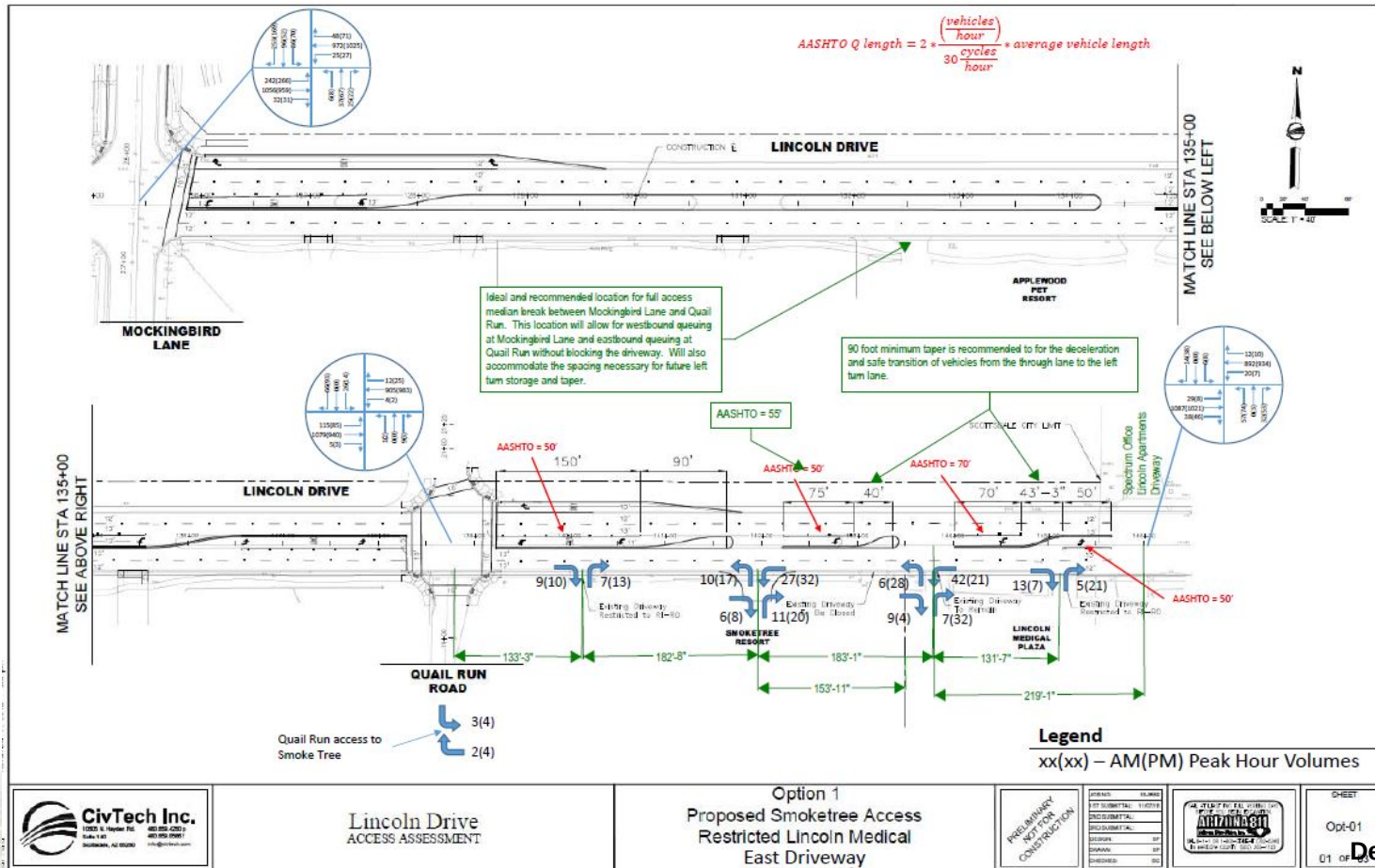
KIMLEY-HORN FIELD OBSERVATIONS

Eastbound Lincoln Drive traffic backup past Smoke Tree Resort eastern entrance.



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OPTION #1 (FULL ACCESS)



OPTION #1 (FULL ACCESS)

Lincoln Medical Plaza

- The eastern driveway is right in/right out only and is in its current location.
- The western driveway has a median break for full access and is in its current location.
- The western driveway minimum left turn taper length is 90'. Only 43'-3" is provided.
- The western driveway minimum left turn storage requirement is 70'. A storage length of 70' is provided and is adequate.
- Driveway spacing is approximately 132' and does not meet the minimum requirement of 250'.



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OPTION #1 (FULL ACCESS)

Smoke Tree Resort

- The western driveway is right in/right out only and is in its current location.
- The eastern driveway has a median break for full access and is moved to a new location approximately 183' from the Lincoln Medical Plaza western driveway (approximately 154 feet from the eastern property line).
- The eastern driveway minimum left turn taper length is 90'. Only 40' is provided.
- The eastern driveway minimum left turn storage requirement is 55'. A storage length of 75' is provided and is adequate.
- The driveway spacing does not meet the minimum requirements of 250' from Quail Run Rd. or adjacent driveway.



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OPTION #1 (FULL ACCESS)

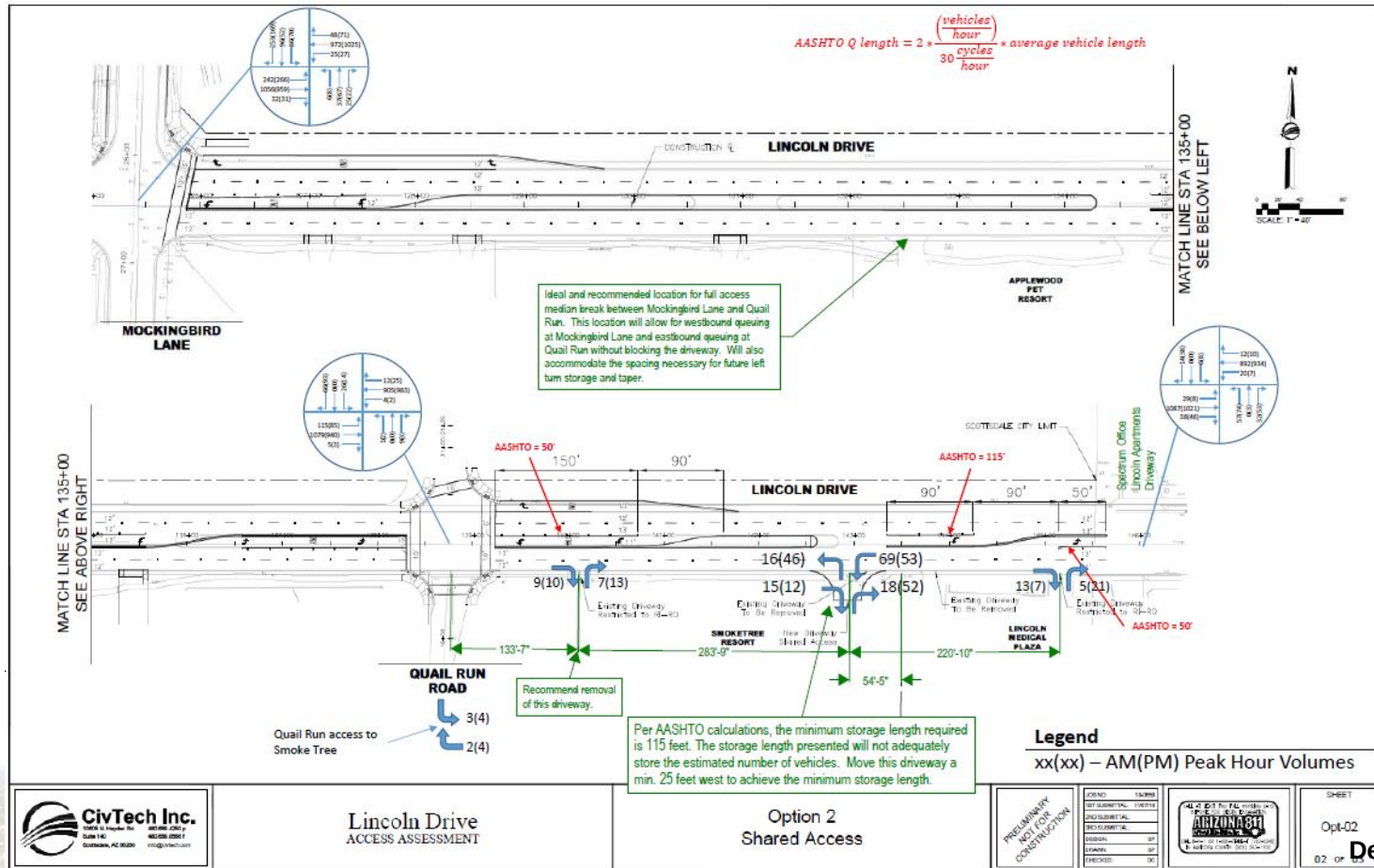
Staff Comments

Staff does not recommend full access for both properties as shown since driveway spacing is not met and left turn taper lengths do not meet the minimum standards necessary to safely transition vehicles from the Lincoln Drive through lane into the left turn lanes. Kimley-Horn's traffic observations also show that eastbound traffic will back up in front of the Lincoln Medical Plaza's driveways.



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OPTION #2 (SHARED FULL ACCESS)



OPTION #2 (SHARED FULL ACCESS)

Lincoln Medical Plaza & Smoke Tree Resort

- The Lincoln Medical Plaza eastern driveway is right in/right out only and is in its current location.
- The Lincoln Medical Plaza western driveway has been removed.
- The Smoke Tree Resort western driveway is right in/right out only and is approximately 134' east of Quail Run Rd.
- The shared access driveway is shown at a location approximately 54' west of the joint property line.
- The shared access driveway minimum left turn storage length on Lincoln Drive is 115'. Only 90' is of storage is provided.
- The shared access minimum left turn taper length is 90'. A left turn taper length of 90' is shown and is adequate.



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OPTION #2 (SHARED FULL ACCESS)

Staff Comments

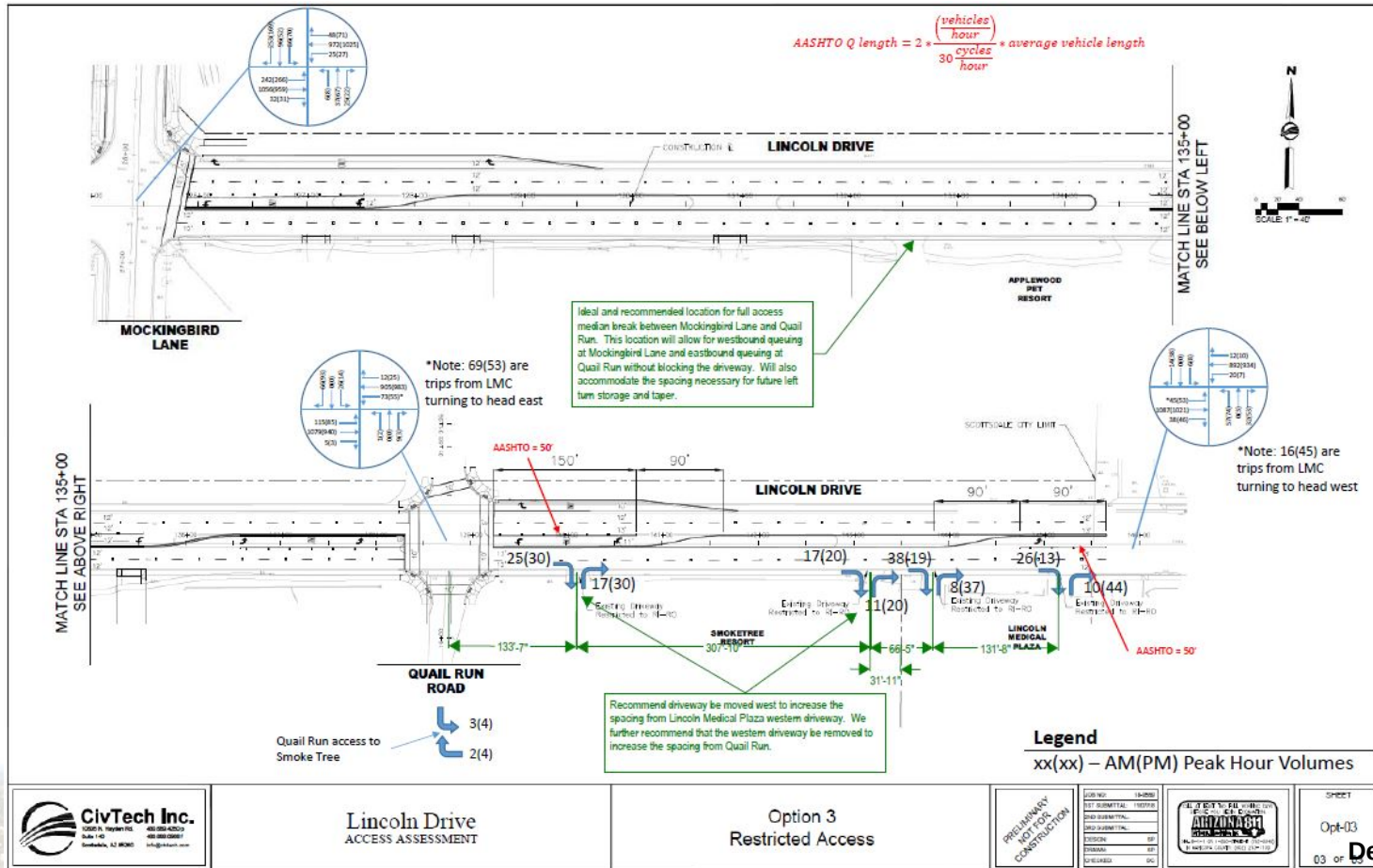
Staff recommends that that left in/left out shared access can be provided so long as the minimum left turn storage length on Lincoln Drive is extended from 90' to 115'. The Smoke Tree Resort western driveway shall be removed since it cannot meet the minimum spacing requirement of 250' from both Quail Run Rd. and the shared access driveway. A dedicated right turn deceleration lane (minimum 100' storage and 90' taper) is also recommended for the shared access driveway.

Additionally, a non-vehicular access easement (NVAE) shall be placed along the eastern and southern property lines of the Lincoln Medical Plaza parcel to prevent future access from the AJs Shopping Complex and Andaz Resort.



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OPTION #3 (RIGHT IN/RIGHT OUT ACCESS) 27



OPTION #3 (RIGHT IN/RIGHT OUT ACCESS)

Lincoln Medical Plaza & Smoke Tree Resort

- The Lincoln Medical Plaza eastern and western driveways are right in/right out only and in their current locations.
- The Smoke Tree Resort western driveway is right in/right out only and is in its current location approximately 134' east of Quail Run Rd.
- The Smoke Tree Resort eastern driveway is right in/right out only and is approximately 66' west of the Lincoln Medical Plaza western driveway (32 feet west of the property line).



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OPTION #3 (RIGHT IN/RIGHT OUT ACCESS)

Staff Comments

Staff recommends that right in/right out access can be provided so long the Smoke Tree Resort driveways and Lincoln Medical Plaza driveways are consolidated into one driveway for each property. The driveways should be located to maximize spacing and each driveway shall have a dedicated right turn deceleration lane (minimum 100' storage and 90' taper). The right in/right out turning movements are the safest turning movements but may result in motorists trying to make U-turns on Lincoln Drive that is not wide enough.



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STAFF RECOMMENDATION

Staff Recommendation: Option #2 (modified Shared Full Access)

- Shared full access for Smoke Tree Resort and Lincoln Medical Plaza located approximately 80 ft west of shared property line
- Extend left turn storage to 115 ft
- Add dedicated right turn deceleration lane
- Eliminate western Smoke Tree Resort driveway
- Eliminate western Lincoln Medical Plaza driveway
- Provide shared access easement between Smoke Tree Resort and Lincoln Medical Plaza
- Provide non-vehicular access easement along Lincoln Medical Plaza eastern and southern property lines
- Provide full median access at Applewood Pet Resort western driveway



December 6, 2018

QUESTIONS?



December 6th, 2018