



Town of Marana Transportation

Fausto Burruel, Public Works Director
March 15, 2023

History of Marana TMP

- Previous Transportation Master Plan (TMP) completed in 2001
- Previous plan covered a 25-year period from 2001 – 2025
- Current TMP will have a 2045 horizon year

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 **TRANSPORTATION** 
MASTER PLAN

Why do a Transportation Master Plan?

- Evaluates existing transportation system
- Identifies future transportation system, guided by General Plan
- Helps Town know where to invest in transportation
- Assists with CIP programming

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What Is a Transportation Master Plan?

As our town continues to grow and evolve, now is the time to review our current transportation system and develop a plan to ensure an efficient, accessible, safe, and well-connected network for all users. The Marana Transportation Master Plan will develop a 20-year vision for the Town's multimodal transportation network and will consider the needs of people who walk, bike, use a mobility device, use public transportation, drive, and deliver goods and services throughout Marana. Ultimately, the Transportation Master Plan will develop a prioritized list of transportation improvements and policies that will drive future funding decisions.

Marana Yesterday and Today

- How has Marana grown and changed?
- How have travel patterns changed?
- How well is the transportation system serving the Town?
- How safe are the streets?
- What are current policies, practices and resources?

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WHAT DOES THE TRANSPORTATION MASTER PLAN INCLUDE?

The development of the Transportation Master Plan starts with reviewing the current transportation system and developing a vision for what the Town's transportation system should look like in the future. The Transportation Master Plan reviews best practices and considers emerging trends to identify gaps in the system and future travel needs. As part of this planning process we will:

Explore how to develop transportation networks for all users – drivers, transit riders, freight drivers, trail users, walkers, and bicyclists.

Predict how well the transportation system will work in the future and suggest improvements.

Examine and rethink the design of our streets to prioritize moving people and goods more efficiently and safely.

Establish goals and policies to guide decision-making.

Develop a prioritized list of transportation projects.

Marana Tomorrow

- Evaluate future needs
- Project future growth
- Identify transportation gaps
- Create Action Plan for
 - Short-term (5 years)
 - Mid-term (10 year)
 - Long-Term (20 years)



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TRANSPORTATION
MASTER PLAN

Information we've provided.

Speed limits (GIS format)

Regional model request for PAG

Traffic Signal Timing for all signals

Turning movement counts for signalized intersections from MioVision and from TIAs
(and from Streetlightdata.com when I get to it)

Numerous TIA, including:

Gladden Farms

Marana Center

Southern Arizona Logistics

Ranch House (draft)

Stonegate (draft)

Mandaraina

UpTown (draft)

Uptown (final from previous)

Villages of Tortolita (the old one from EPS Group)

Crossroads

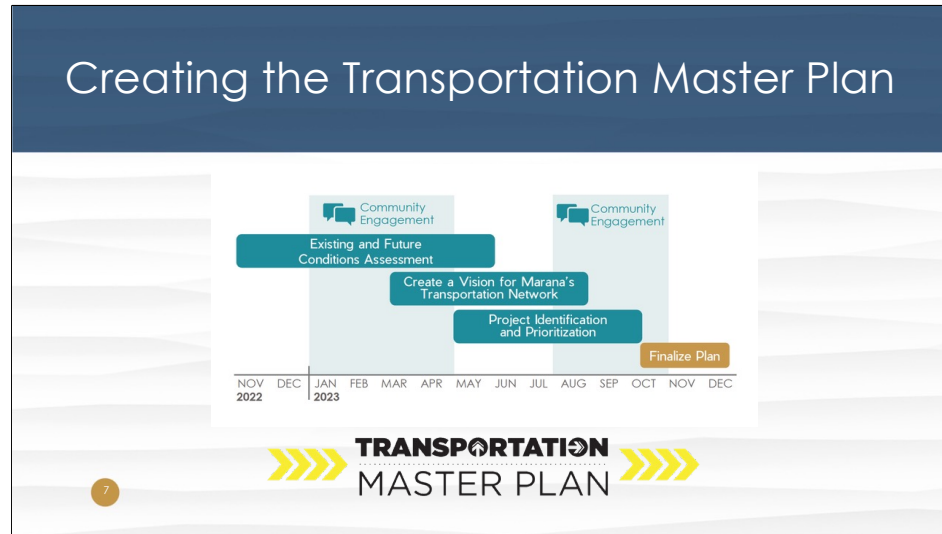
They were able to collect a lot of data themselves from the TOM website.

Transportation Master Plan Update

- Kicked off late October 2022
- Presentation to Mayor and Council January 17, 2023
- Technical Advisory Committee met January 17, 2023
- Study network identified
- Public input survey launched
- Data collection and analysis is ongoing
- Study branding established

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Here's what we sent Kittelson:

- Speed limits (GIS format)
- Regional model request for PAG
- Traffic Signal Timing for all signals
- Turning movement counts for signalized intersections from MioVision and from TIAs (and from Streetlightdata.com when I get to it)
- Numerous TIA, including:
 - Gladden Farms
 - Marana Center
 - Southern Arizona Logistics
 - Ranch House (draft)
 - Stonegate (draft)
 - Mandaraina
 - UpTown (draft)
 - Uptown (final from previous)
 - Villages of Tortolita (the old one from EPS Group)
 - Crossroads

They were able to collect a lot of data themselves from the TOM website.

Public Outreach

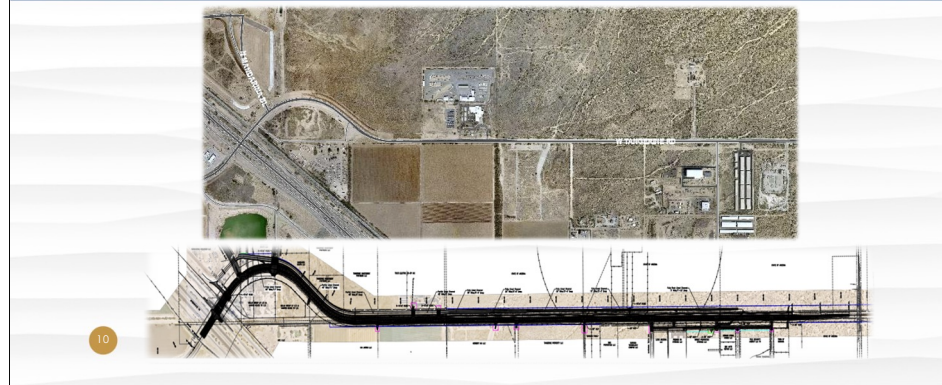
- Public survey
- Facebook
- Stakeholder outreach



Major Roadway CIP Update

- Tangerine Road Phase 2A
- Twin Peaks/Rattlesnake Pass
- Tangerine Farms Extension

Tangerine Road Widening, Phase IIA



Limits from I-10 East to Marana Tech Drive

Tangerine - Project Overview



Partnership between the RTA and the Town of Marana

4 lane divided roadway with drainage improvements, sidewalks, ADA facilities, and a multi-use path.

Right-of-Way acquisition

Utility Relocations

Install a Town of Marana waterline

This waterline is designed and will be constructed by Borderland Construction Company

Conduct sewer modifications and other necessary infrastructure improvements.

Tangerine - Project Funding

Source	Amount
Regional Transportation Authority	\$12,000,000
Town of Marana	\$10,000,000
Pima Association of Governments	\$9,000,000
State of Arizona	\$5,000,000
Total	\$37,000,000

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Tangerine - Project Status

- Design
 - Engineer - PSOMAS Inc.
 - 60% design now, 90% due in May 2023
- Construction
 - CMAR - Borderland Construction Company
 - Begin in the Summer 2023.
- Note – Project includes 16" Town of Marana water line
 - Location - Mandarinina Blvd to Marana Tech Drive.

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This waterline is designed and will be constructed by Borderland Construction Company

Project Challenges



- Crossing the UPRR
 - 3 for 1
 - Road widening = New crossing
 - Train Signal Work

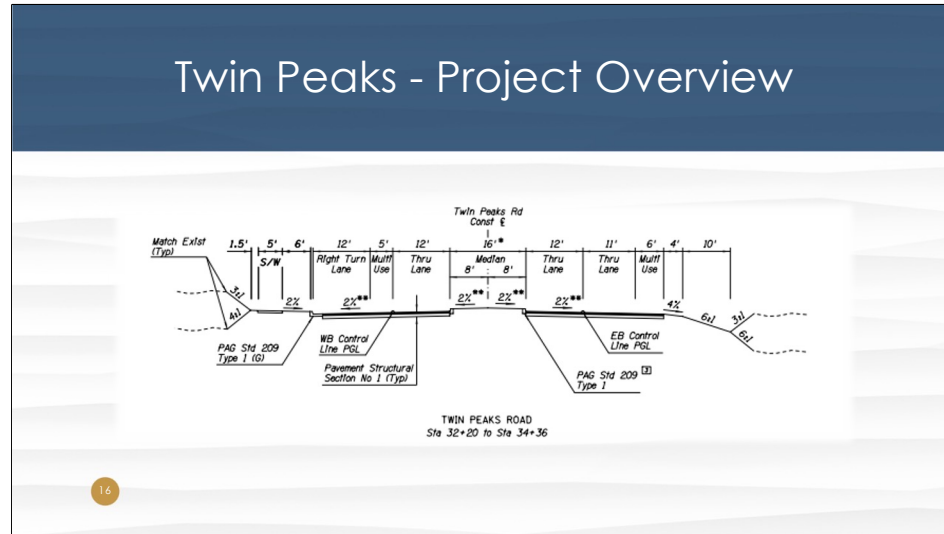
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Twin Peaks Rd, Rattlesnake Pass Widening



Quarry Road to the intersection of Twin Peaks Road and Silverbell road.

Twin Peaks - Project Overview



4-lane divided roadway.

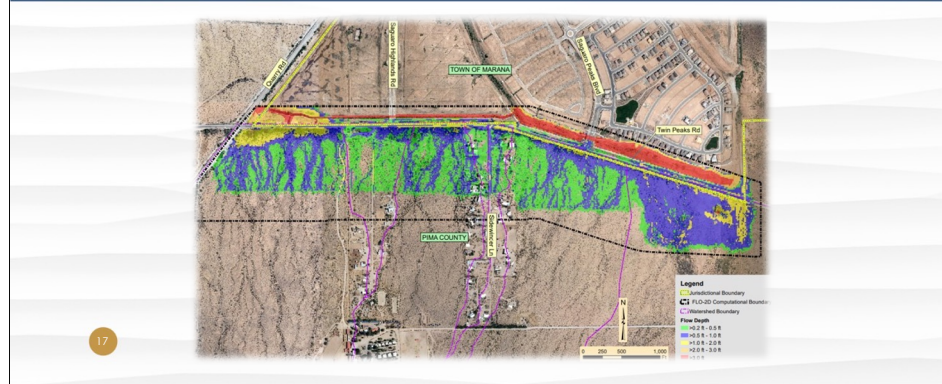
drainage improvements

Sidewalks

multiuse path.

Landscaping

Twin Peaks - Drainage



Twin Peaks - Project Funding

- Partnership between the Town of Marana and the Developer of the Saguaro Bloom Neighborhood (DR Horton).
- Developer is responsible for:
 - full cost of the design of the project
 - half the cost of the road along Saguaro Bloom frontage.
- Estimated Project Cost - \$30M
- Estimated Town portion of the project - \$18M

Twin Peaks - Project Update

- Design
 - Engineer – SCE Engineering
 - 90% now, 100% due May 2023
- Construction
 - CMAR – Hunter Contracting
 - Start 2024– After property acquisitions complete

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Tangerine Farms - Project Overview



- Location: Tangerine Farms Rd, from Barnett Road to the Marana Road/
I-10 Intersection.
- Scope:
 - 4 lane divided roadway.
 - drainage improvements
 - Sidewalks
 - Landscaping
 - street lighting.
- Look: same style and quality of the existing Tangerine Farms Road .

Tangerine Farms - Project Update

- Cost Estimate: \$23,000,000.
- A Request for Qualifications (RFQ) for Design Concept Report (DCR)
 - This month
- Marana TI will be evaluated as part of the DCR.
- Schedule:
 - DCR and Design - 2.5 years.
 - Construction – 1.5 years

- The Town has published a Request for Qualifications and anticipates retaining a Design Firm in the near future to perform a design concept report (DCR).
- The Marana TI will be part of the of the DCR.
 - The intent is to build the Marana TI along with the Tangerine Farms Extension, similar to Tangerine TI and Tangerine Phase 2A.
 - It will be a separate project but built together.
 - The Marana TI will be discussed in later slides

The slide features a dark blue central rectangle with the text "I-10 Traffic Interchanges" in white. The background consists of light gray, wavy horizontal bands. On the left side, there is a vertical pattern of white, rounded rectangular shapes. In the bottom left corner, the number "23" and the date "3/28/23" are displayed. In the bottom right corner, there is a small orange circle containing the number "23".

I-10 Traffic Interchanges

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3/28/23

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Cortaro Rd I-10 Traffic Interchange



Cortaro Rd – Current Conditions



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Cortaro TI - Project Overview

- The project will include:
 - construction of a grade separated interchange over Interstate-10 and UPRR
 - entrance and exit ramps, access roads, culverts, pedestrian walkways and related infrastructure
 - installation of traffic signals and safety systems
 - purchase of additional right of way and businesses.
- This project will be a partnership with the Town of Marana, the Arizona Department of Transportation, and possibly the RTA.

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Abutment lanes constructed 2006.

Previously there were 2 WB thru lanes and 1 EB thru lane under the mainline (a second EB lane opened up immediately after passing through the mainline)

Abutment lanes initially provided for:

(WB): 2 WB lanes + a WB shared thru/left + a WB left

(EB): 2 EB lanes + an EB left

The Town of Marana and ADOT restriped in 2021 to make the WB shared thru/left an exclusive left-turn lane

Now there are two WB thru lanes + dual WB left turns

EB remained unchanged with 2 EB thru lanes + and EB Left Turn

Twin Peaks TI opened November 19, 2010

Traffic on Cortaro before Twin Peaks opened up was 33,760 vpd

Traffic on Cortaro after Twin Peaks opened was 24,220 a difference of 9,540 vpd

The RTA project that widened Cortaro Farms Road from 2 lanes to 4-lane divided occurred between 2006-2007

The Interstate 10 Corridor Study (Tangerine Rd to Ina Rd) Final Design Concept Report was prepared February 2014

Includes adding two travel lanes on I-10 in both directions between Tangerine Rd and Ina Rd in phases to ultimately produce a 10-lane freeway with a closed concrete median barrier

Notes that an 8-lane freeway is consistent with the Ina Road project

Lowering the I-10 at Avra Valley Rd and Cortaro Rd

Continuous two-lane, one-way frontage roads

Reconstructing the TI at Avra Valley Rd and Cortaro Rd to pass over I-10

The Cortaro TI

Cortaro TI to pass over the UPRR

Cortaro Road widened to three lanes in each direction

Cortaro Rd alignment shifted approximately 100 ft east of the existing alignment

Dual left turn lanes would be provided for each left-turn movement onto I-10

Reconstruction of the Cortaro Rd TI is included within Phase 1 of the proposed implementation plan
Phase 1 also includes reconstructing the mainline at the lower profile
Phase 1 constructs an 8-lane freeway. Phase III widens it to 10 lanes.
Phase 1 includes reconstructing frontage roads, too
Cortaro Rd TI Total Project Cost is \$162,499,070.

Cortaro TI - Project Need

- Cortaro and Cortaro Farms Road see substantial delays during the morning and afternoon rush hours.
- The at-grade crossing with UPRR further impacts the traveling public.
- The need for a reconstructed Cortaro TI was identified in the ADOT Final DCR I-10 Corridor Study, Tangerine Road to Ina Road.

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The ADOT Final DCR I-10 Corridor Study, Tangerine Road to Ina Road stated “The Cortaro Road TI is currently operating at an unacceptable LOS ‘E’.”

Cortaro TI - Project Funding

- Priority:
 - Town's highest priority among interchanges to be reconstructed
 - Cortaro TI is the Town's highest priority request for RTA Next
- Construction cost:
 - \$162.5M (Final Design Concept Report, I-10 Corridor Study ADOT)
 - Places the TI at or above \$200M in today's dollars

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Below is the information that was shared with Representative Jones regarding our ask for Cortaro Rd/I-10:

I-10 / Cortaro Rd Interchange

Congestion issues at the interchange of Interstate 10 and Cortaro Rd is one of the top complaints the Town receives from residents. In order to improve traffic flow at this interchange a grade separated traffic interchange that goes over the railroad tracks at Cortaro Rd and Interstate 10 is required. This project has been included on the list for “potential” RTA Next projects. The approximate cost of the total improvements is \$90-\$100M. The Town is requesting \$10M to start the process now (design phase). Doing so would assist in bumping up/prioritizing the project once RTA Next funding begins in 2026 (if it passes).

[HB2543](#): (*Appropriations; greater Arizona transportation projects*) includes this project and was approved by the House as proper for consideration on March 6, 2023. However, there may be some changes to the bill since ADOT has addressed concerns with earmarking projects. I'll keep you posted if there are any updates prior to Monday.

Cortaro TI - Project Details

- Schedule:
 - Design will take approximately 2 years
 - Construction will take about 2 ½ years
- Scope
 - Alignment shifts approximately 100 feet to the east of existing I-10
 - pass over I-10 and the UPRR
 - widened to six travel lanes with auxiliary lanes
 - The interchange would be similar in design to Twin Peaks and Ina TI's

Tangerine Rd I-10 Traffic Interchange



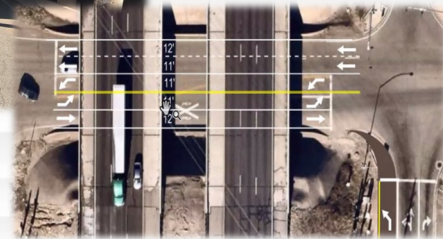
Tangerine Rd TI – Project Overview

- Tangerine Road Traffic Interchange (TI) will have two phases.
 - Initial
 - Striping Changes on Tangerine under I-10
 - Interim

Tangerine Rd TI – Project Overview

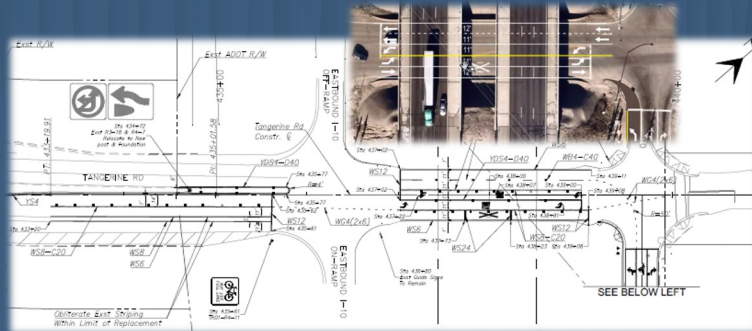


- Initial Improvements



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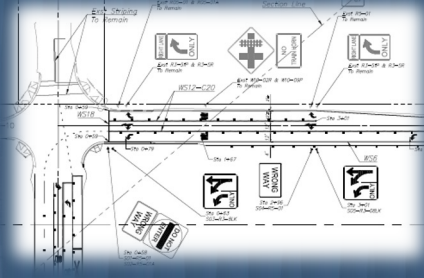
Tangerine TI - Project Overview



- Initial Improvements

Tangerine TI - Project Overview

- Initial Improvements



Tangerine TI - Project Overview

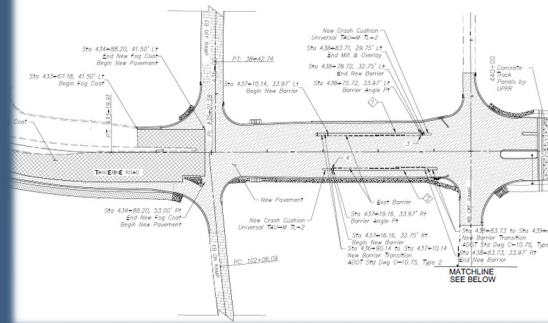
- Interim Improvements



Improvements at the Tangerine Road and I-10 Traffic Interchange will be similar to the Traffic Interchange improvements that were done at the Cortaro Road and I-10 Traffic Interchange. Two abutment lanes will be constructed, allowing two lanes of travel in each direction.

Tangerine TI - Project Overview

• Interim Improvements



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- “Interim” improvements to be constructed by the Town as part of the RTA-funded Tangerine Rd widening project.
- Crossroads developer contributes \$2.6 million
- Includes “abutment lanes” for a total of four through lanes (two in each direction)
- Includes dual westbound left-turn lanes onto eastbound I-10
- Relocates the west traffic signal further west (for more storage for turning vehicles)
- Provides dual right-turn lanes for EB Tangerine Rd onto I-10
- Two-lane EB on-ramp onto I-10

Projected to put off the need for complete reconstruction through 2033

Abutment Lane Construction



Abutment Lane Construction



Project Details

- Will be constructed with Tangerine Phase 2A
- Funding will be a combination of Impact Fees, Construction Sales Tax, and from Development.
- Estimated total cost is \$6.5M for both phases

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Models show that the TI operates at acceptable levels today

Left turns from off ramps are LOS "D"

Crossroads at Gladden development causes the TI to fail at Opening Year

Assumed 1,086,00 SF of warehouse/distribution

"Initial" improvements (required before a CofO for more than 25,000 SF of structure):

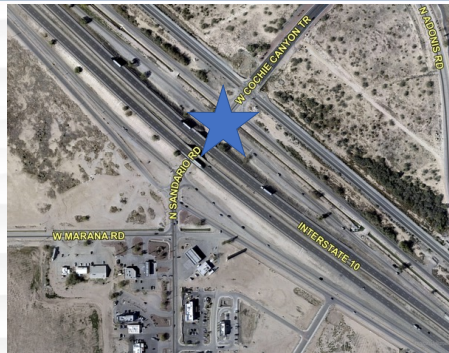
Adds an exclusive left-turn lane for the WB off ramp

Restripes under the mainline to add a lane for longer left-turn lanes

Maintains two through lanes EB and one through lane WB

Median modifications on the west side to increase length of storage for eastbound left turns to get out of through lanes

Marana and I-10 Traffic Interchange



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Marana TI – Project Overview



Marana TI – Project Overview



- Project Cost: \$6.75 M
 - Funding will be a combination of Impact Fees, Construction Sales Tax, and from Development
- Timing:
 - Project will be constructed with Tangerine Farms Extension

Improvements at the Marana Road I-10 Traffic Exit will be similar to the Traffic Interchange improvements that were done at the Cortaro Road and I-10 Traffic Interchange. Two abutment lanes will be constructed, allowing two lanes of travel in each direction.

This will be a partnership with the Town of Marana, and the Arizona Department of Public Safety, and xxxxxx, the developer of the xxxxxx neighborhood.

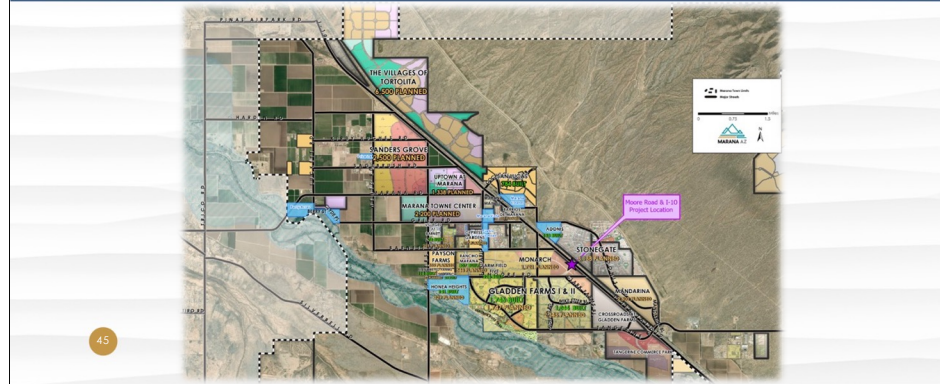
The estimated cost of this project will be approximately \$6,000,000. To be funded with a combination of Impact Fees, and Construction Sales Tax.

Moore Rd I-10 Traffic Interchange



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Moore Rd TI – Big Picture



First introduced as a proposed location for an interchange in ADOT's 2008 Interstate 10 Corridor Study, I-8 to Tangerine Rd

Current concept realigns Moore Rd approximately 1,500 feet to the north

Included as a circulation element of the General Plan

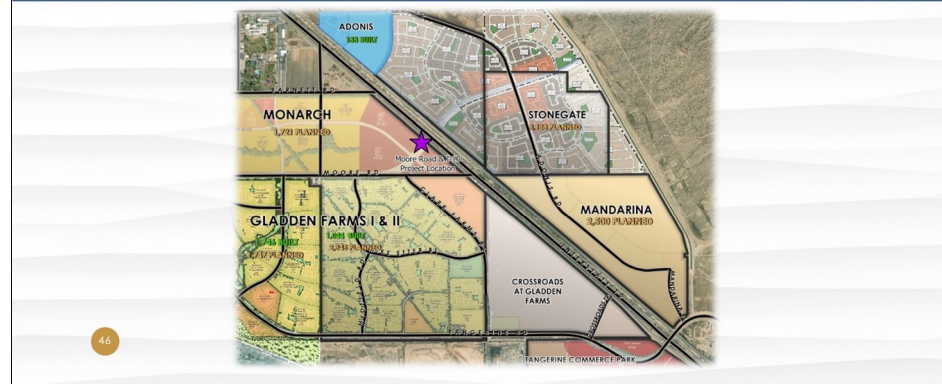
Estimated construction cost is about \$60 Million (includes about \$5 Million for design).

Less costly to build because there is no existing traffic flow to maintain

Would extend the time before both the Tangerine TI and Marana TI, will need to be reconstructed

Next step is to prepare a Design Concept Report (DCR)
Approx. 6-12 months to prepare a DCR, approx. 18
months for design and approx. 24 months to construct

Moore Rd TI – How does it fit



Adonis/Tangerine will operate at LOS F due to high volume of left-turns from Tangerine onto Adonis Rd. (They blame Stonegate, of course.) "This is more evidence that I-10/Moore Road TI needs to be constructed during the 2028-2033 time frame."

"The need to increase Adonis Road to 6-lane roadway is the direct result of the through traffic from the Stonegate development. It is recommended that Adonis Road be monitored as well as the number of homes being built and completed in the proposed Stone gate development, 80% of Stonegate's traffic is being routed south along Adonis Road through the Mandarin development because Adonis Road north of the proposed Stonegate does not have the capacity. The need for the I-10/Moore Road TI becomes very important in the 2028-2033 time frame."

They also indicate that the Mandarin access points will need to be signalized because of Stonegate volumes on Adonis Rd.

"As noted above, 80% of Stonegate's traffic is being routed south along Adonis Road through the Mandarin development and 20% is being routed north along Adonis Road to Cochie Canyon Road. This additional traffic will impact both the I-10 Tangerine Road TI and the I-10 Marana Road TI with capacity issues and delay issues. Due to these issues, it is expected that the need for the I-10 Moore Road TI becomes very important in the 2028-2033 time frame."

"With the addition of the Moore Road traffic interchange to the north of the proposed Mandarin

project, it is expected that 60% of the volume generated from Stonegate will use the new Moore Road traffic interchange. This results in only 40% of the full Build site generated traffic from Stonegate traveling south on Adonis Road through the Mandarin development.”

Moore Rd TI – Do we need it?

Where does it go?

Who will use it?

Why not use the funds for Marana or Tangerine TI?

What happens if we don't build it?



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“A new TI at Moore Road/I-10 will be critical for improving the roadway network connectivity in the area. ... There are no (other) reasonable efforts that can be made which will both resolve the inadequate delay at Adonis Road/Tangerine Road and the Tangerine Road TI while simultaneously providing enough space for the massive left turning queues without additional future access points in the area.”

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Moore Rd TI – Project Information

- Dialogue has been held with ADOT and they are supportive of the project – no funding availability.
- The Town has submitted for a Rebuilding American Infrastructure with Sustainability and Equity (RAISE) discretionary grant for Planning.
 - Design Concept Report
 - Design
 - Approximately \$7M
- Estimated total cost is \$60M

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Identified as a viable TI location in I-10 Corridor Study, Junction I-8 to Tangerine Road

Approval to construct the Moore Road interchange will require a separate DCR and environmental clearance process.