1st Avenue: River Road to Grant Road

1st Avenue Citizens' Task Force Meeting

3/26/26

CITY OF TUCSON | RTA | PAG

Approval of January 22, 2026 Meeting Minutes

CITY OF TUCSON | RTA | PAG

Call to the Audience

CITY OF TUCSON | RTA | PAG

RTA Next, What it Means for 1st Avenue

CITY OF TUCSON | RTA | PAG

Public Outreach Summary and DCR Open Discussion

CITY OF TUCSON | RTA | PAG

Intersection Right-Turn Alternatives

CITY OF TUCSON | RTA | PAG

When to Implement a Right Turn Lane

When turning vehicles start affecting operations or safety at an intersection or driveway

Higher right-turn volume & through traffic volume

Higher operating speeds

Long queues/ delay length

Higher truck traffic

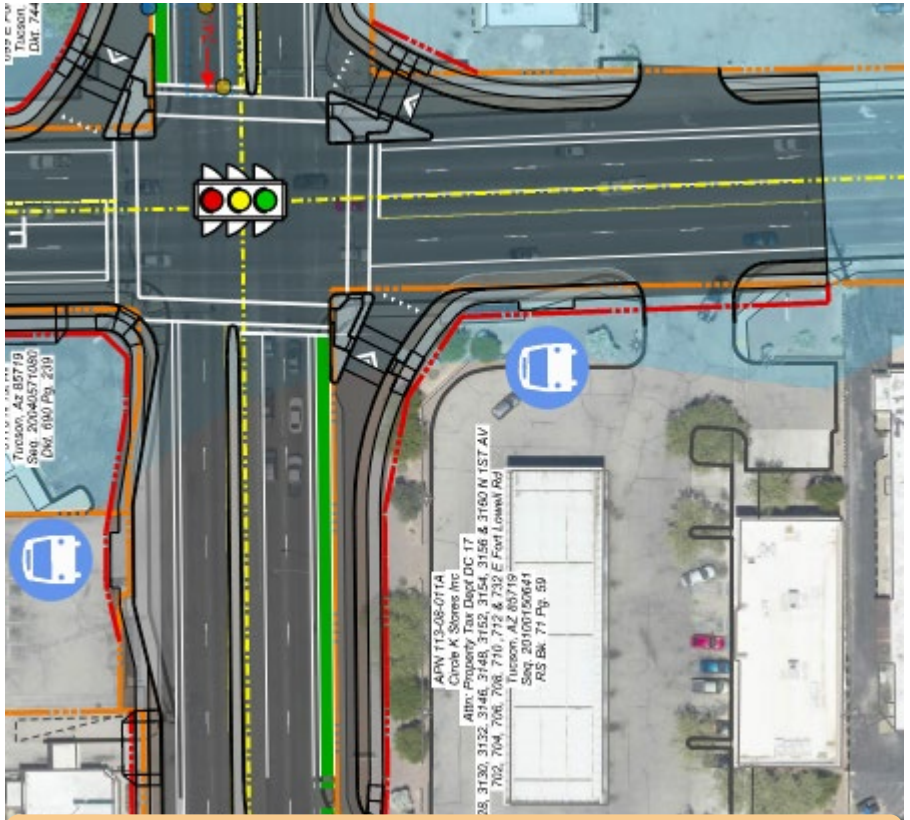
Right-Turn Lanes for 1st Avenue

A right-turn lane warrant analysis was conducted to assess the necessity of right-turn lanes at different locations along the corridor

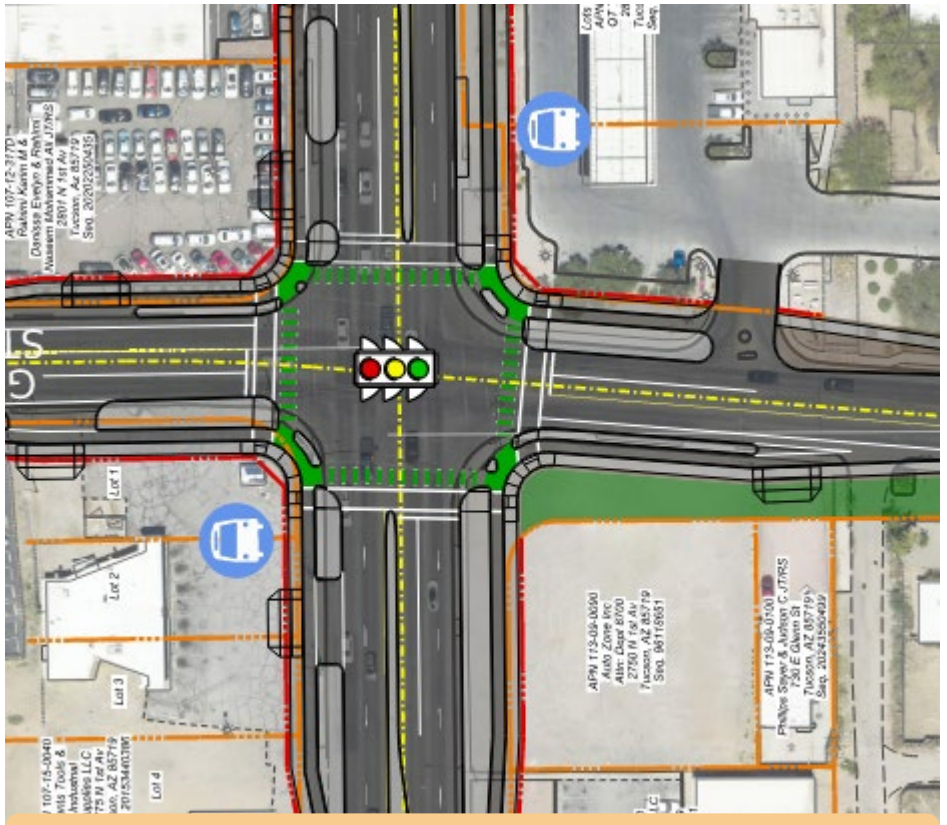
Factors Considered

- Future Traffic Volumes (Right Turn and Through Movements)
- Posted Speed
- Road Capacity
- Multimodal Operations
- Crash history and near-miss assessment

Results: Right turn lanes are proposed only at select key locations along the 1st Ave corridor



1st Avenue & Fort Lowell Road



1st Avenue & Glenn Street

Evaluation Criteria	Fort Lowell Road	Glenn Street
• City of Tucson Guidelines for volume & turning movement threshold • Roadway Capacity • Multimodal Operations and Safety Considerations	✓	N/A

Right Turn Lane Options

Standard Right Turn Lanes

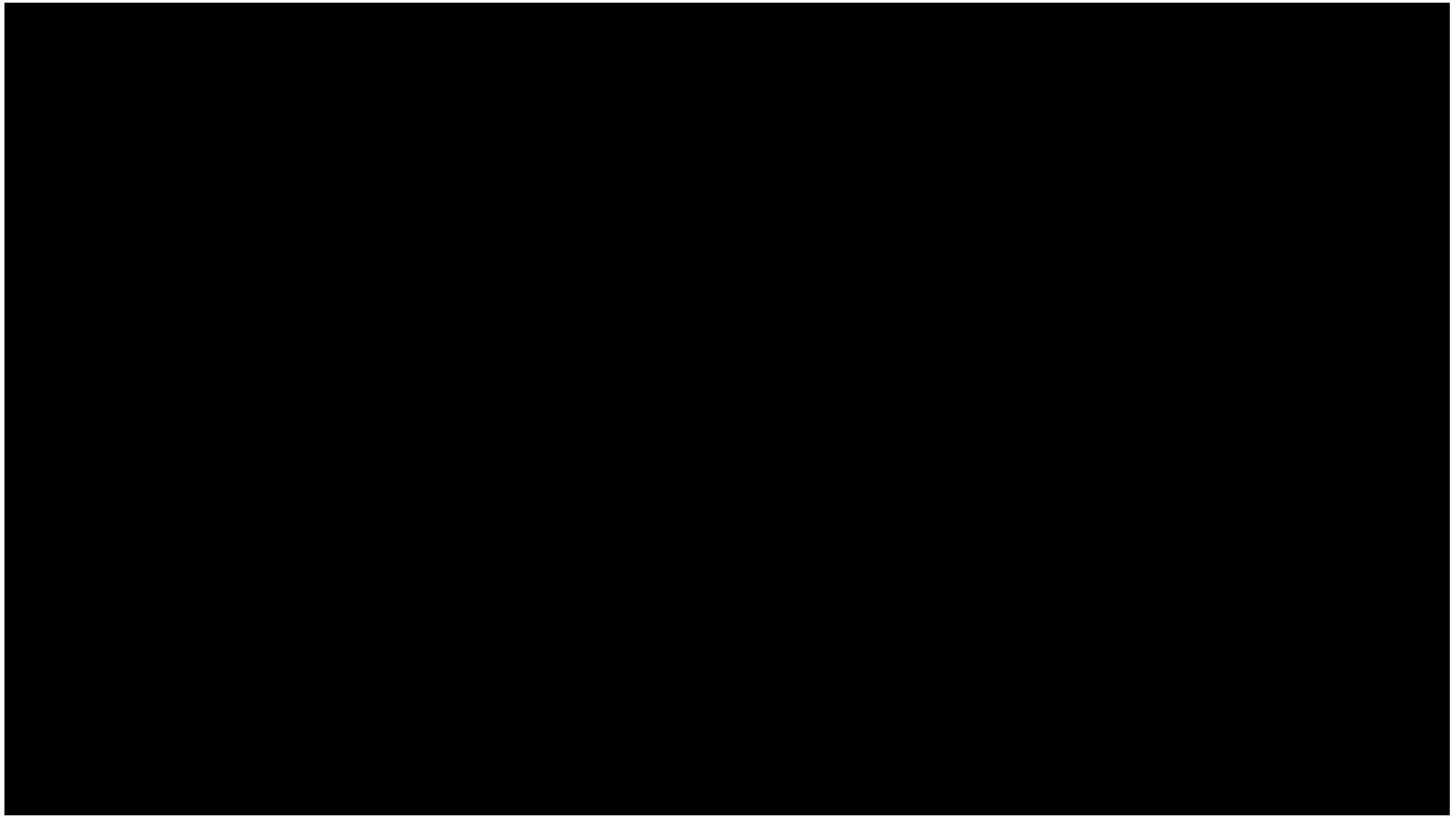
- A dedicated lane for right-turns
- Separated from through lanes **by pav**
- Drivers must wait for a **gap in both p** before completing the turn
- **No physical separation** between the crossing path

Channelized Right Turn (CRT) Lanes

- A dedicated lane for right-turns
- Separated from through traffic by **a ra**
- Drivers wait for a **gap in pedestrian**
- **Physical separation** between the tur path, creating **a two-stage pedestria** turn lane first, wait on the island, then

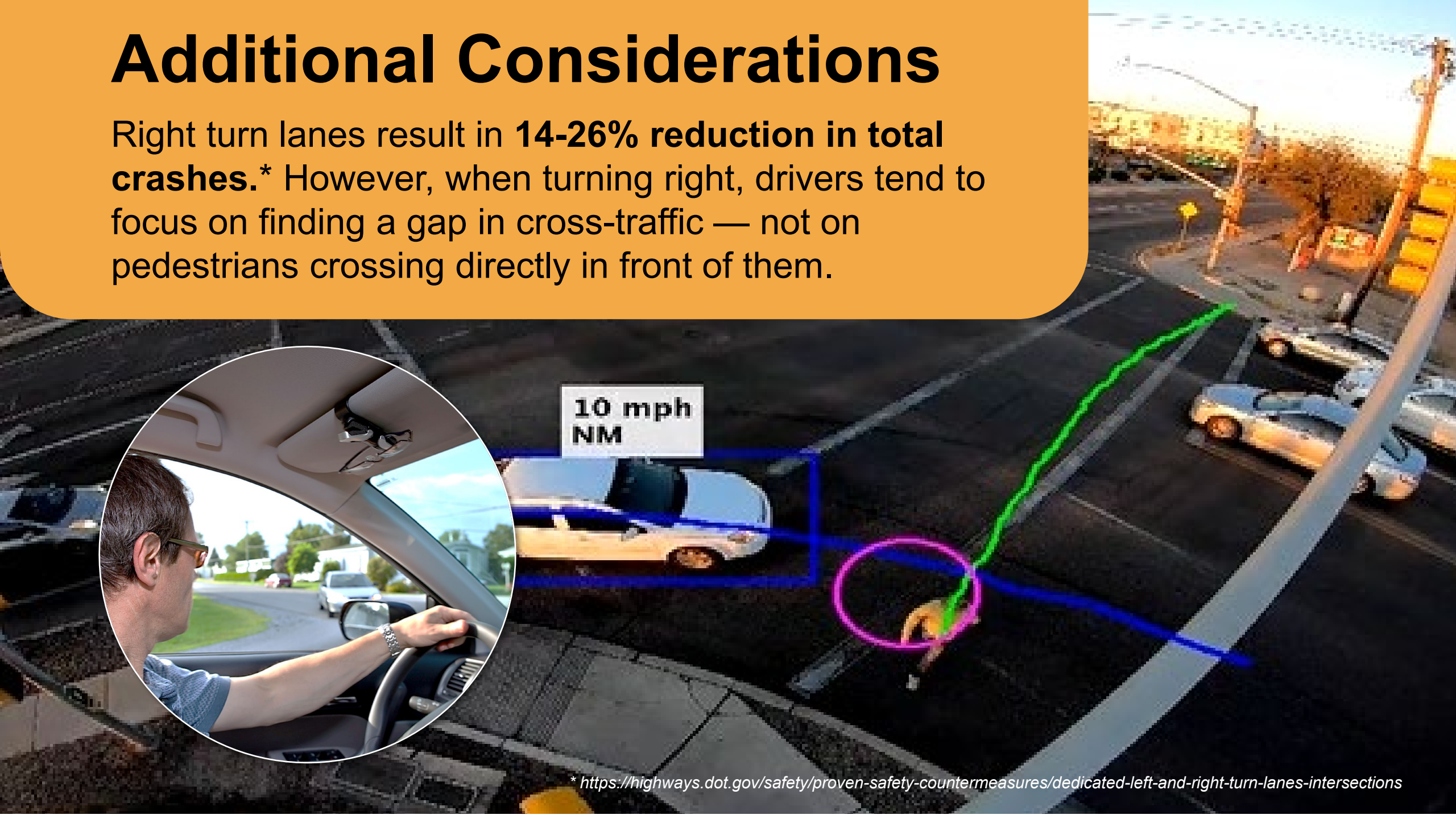
Both options aim to improve traffic flow; however, CRTs provide additional opportunities for multimodal safety—especially given the high near-miss analysis results—and therefore merited further evaluation.

The Right-Turn Challenge



Additional Considerations

Right turn lanes result in **14-26% reduction in total crashes.*** However, when turning right, drivers tend to focus on finding a gap in cross-traffic — not on pedestrians crossing directly in front of them.



* https://highways.dot.gov/safety/proven-safety-countermeasures/dedicated-left-and-right-turn-lanes-intersections

Project Goals

1. **Improve Safety** for all users of 1st Avenue, particularly for the most vulnerable road users, such as pedestrians, bicyclists, people with disabilities, motorcyclists, and others.

2. **Increase transportation options** and reduce barriers on 1st Avenue by improving comfort, convenience, and accessibility for people walking, biking, and using public transportation.

3. Improve the condition of **existing infrastructure** to ensure that 1st Avenue meets community needs now and into the future.

4. **Support mobility** along the corridor through the efficient movement of traffic, including transit, personal, and commercial vehicles.

5. **Minimize the impacts** of 1st Avenue improvements on adjacent residents and businesses.

6. Enhance the **visual character** of 1st Avenue to support economic and community vitality.

FHWA Safe System Design Hierarchy

Tier 1: Remove Severe Conflicts

- Eliminate specific high-risk conditions by separating road users moving at different speeds or in different directions to minimize conflicts.
- Safe System Approach: Safe Roads and Safe Road Users

Tier 2: Reduce Vehicle Speeds

- To reduce the kinetic energy involved in a crash, implement design features and speed management strategies to reduce vehicle speeds effectively.
- Safe System Approach: Safe Speeds, Safe Roads, and Safe Road Users

Tier 3: Manage Conflicts in Time

- Assume that users need to occupy the same physical space on the road, but can be separated in time with traffic control devices to minimize conflicts.
- Safe System Approach: Safe Speeds, Safe Roads, and Safe Road Users

Tier 4: Increase Attentiveness and Awareness

- Alert roadway users to certain types of conflicts to encourage appropriate actions.
- Safe System Approach: Safe Speeds, Safe Roads, and Safe Road Users

Evaluating Right Turn Lane Options: CRT Benefits

Conceptual Illustration of Channelized Right Turn Lanes

- Simplifies the turning movement, allowing drivers to focus on pedestrians ahead.
  - One conflict at a time at crosswalks
- Separates right-turning vehicles from through traffic, reducing conflict points at the intersection
- Accommodates larger vehicles such as trucks with a more defined turning radius

Safe System Design Hierarchy Treatment

Tier 1

Tier 4

Source: National Academies of Sciences, Engineering, and Medicine (2014). Design Guidance for Channelized Right-Turn Lanes.

Existing CRTs in Tucson

Cambell & Grant Road

1st Avenue and Wetmore Road

Evaluating Right Turn Lane Options: CRT Challenges and Considerations

Increased vehicle speeds and visibility conflicts for pedestrians and bicyclists

Usually caused by high-speed geometry and lane design

Multimodal Conflicts

Varied interactions between vehicles, pedestrians, and bicyclists

Pedestrian Crossing Concerns

Pedestrians rely on driver visibility and yielding, not traffic signals, and may be subject to longer crossing distances

Inconsistent yielding behavior

Drivers may treat the turn as free-flow if not designed properly

Evaluating Right Turn Lane Options: CRT Challenges and Considerations

Increased Pedestrian Crossing Distance and Conflict Exposure

CRT lane design may increase the crossing distance, but reduce right-turn conflict exposure

CRT

1. 12ft CRT lane
2. 5 through lanes (12ft each)
3. 12ft CRT lane

= 84 ft crossing

Longest distance between refuge area = 60 ft

RTL

1. 5 through lanes & 1 right turn lanes (12ft each)

= 72 ft crossing

Channelized Right Turn Lane

Right-Turn Lane

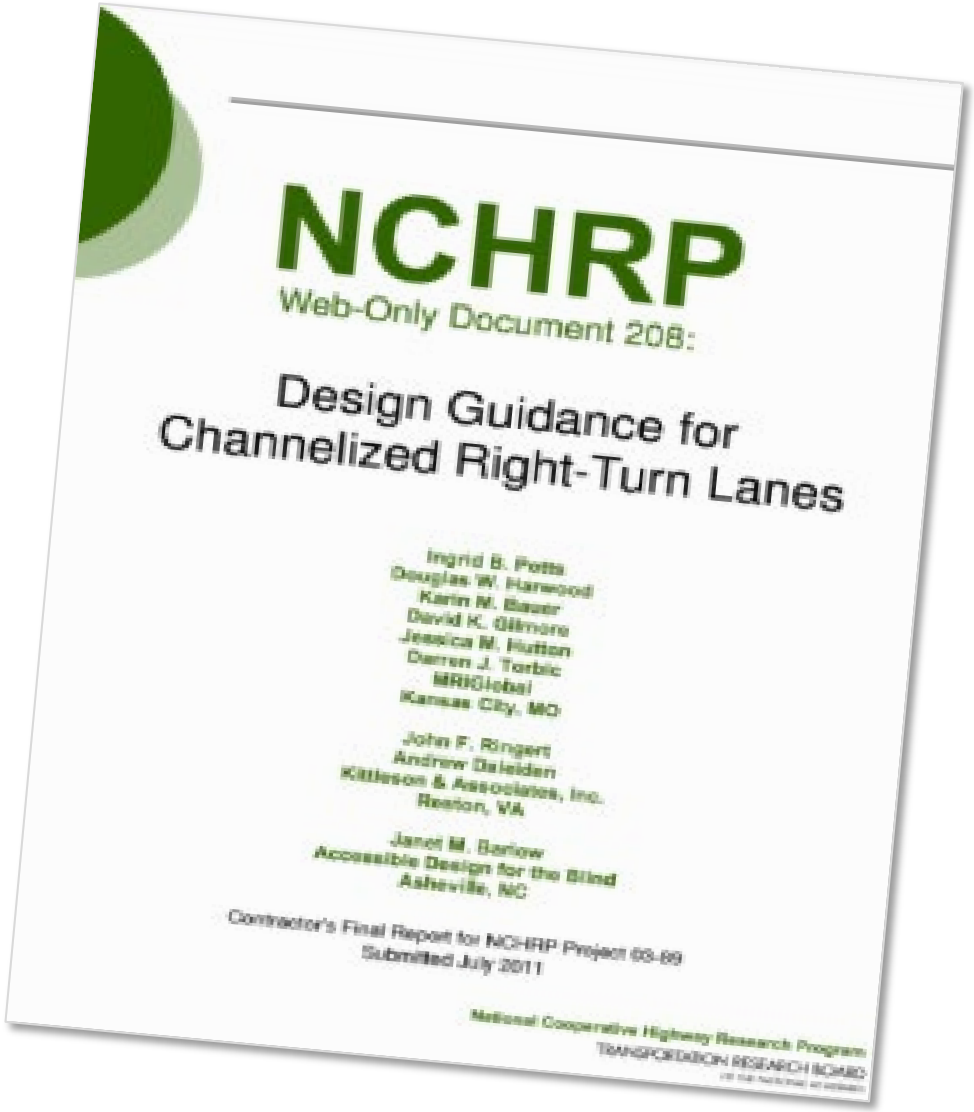
Evaluating Right Turn Lane Options: CRT Research Findings

Motor Vehicle Safety Performance

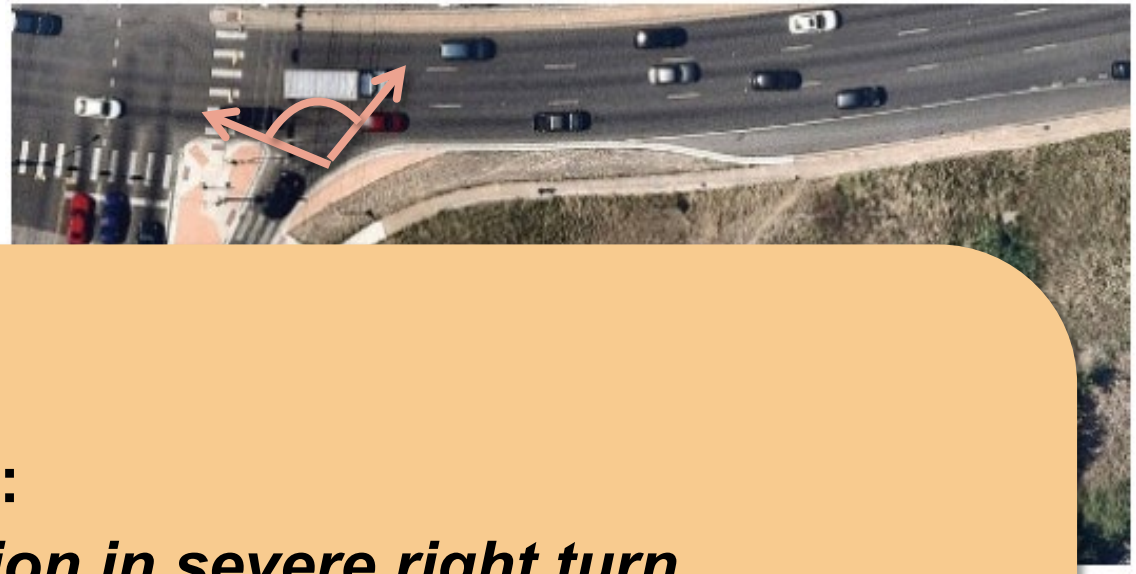
- Similar safety performance as Shared Through-Right Lane (STR)
- CRT is safer than Right Turn Lane (RTL)
- No strong evidence that CRT increases crashes

Pedestrian Safety

- RTL had 70–80% more pedestrian crashes compared to CRTs
- CRT & STR show similar safety performance



Case Study: Smart Right Turn at Lamar Boulevard/ Parmer Lane Intersection, Austin, TX



Before Condit

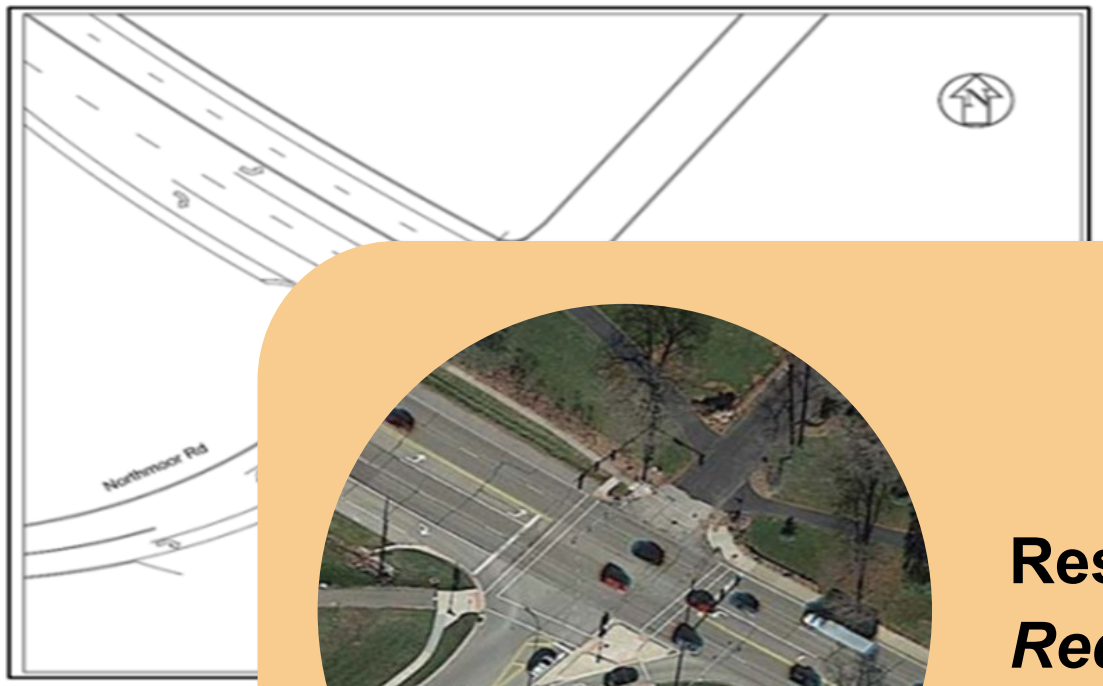
on

Results:

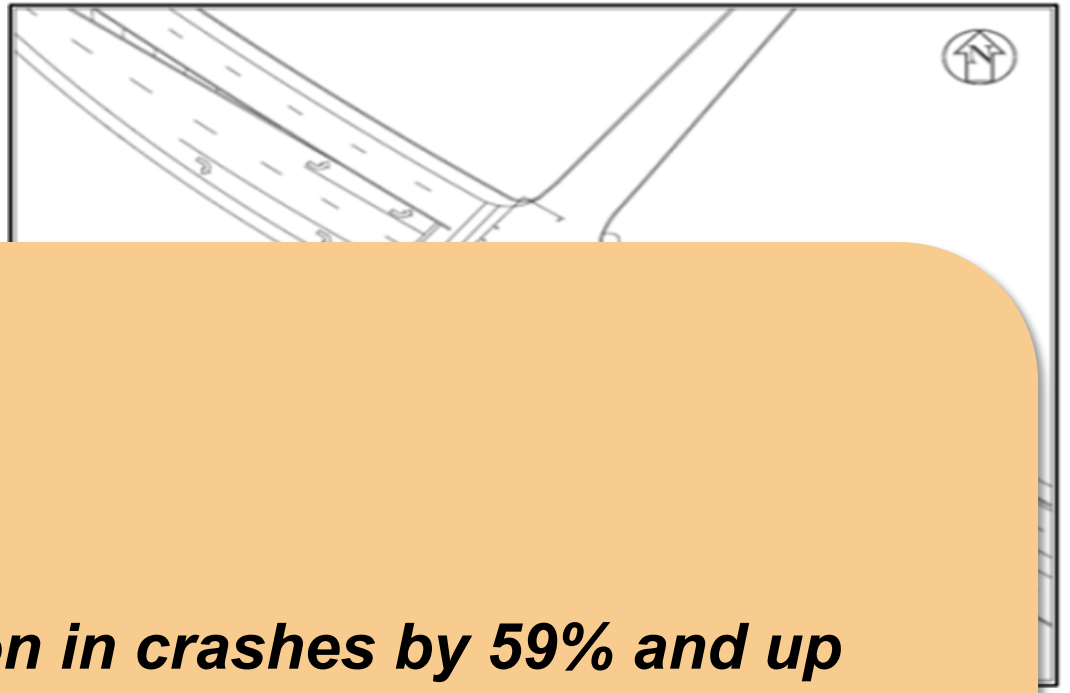
Reduction in severe right turn crashes by 40% and reduction in total crashes by 47%

https://www.proquest.
origsite=gscholar&cbl

Case Study: Smart Right Turn at Northmoor Road and Knoxville Avenue (IL-40), Peoria, IL



Before Condit



on

Results:

Reduction in crashes by 59% and up to 70% reduction for older drivers

CRT Options and Configurations

Standard Right Turn

Traditional CRT or Slip Lane

Smart Channel

Comparing CRT Options

FEATURE	STANDARD RIGHT TURN	TRADITIONAL CRT	SLIP LANE	SMART CHANNEL
Refuge Island	No	Yes	Yes	Yes
Vehicle Speed	Signal controlled	Varies	Higher	Lower
Conflicts Reduction	Low	Depends on design	Often weaker	Designed stronger
Focus	Car-focused	Mixed	Mobility-focused	Safety-focused
Signal Timing	Longer cycle length	Slight cycle reduction	Shorter cycle length	Slight cycle reduction

Smart Channels: Addressing CRT Safety Concerns

Improved vehicle speeds

Refined geometry and lane design, including tighter turning radii, slows vehicles before entering the turn

Reduced Conflicts

Design organizes vehicle and pedestrian paths more clearly

Safer Crossing

Refuge islands and better crosswalk alignment provide more protection and increased visibility

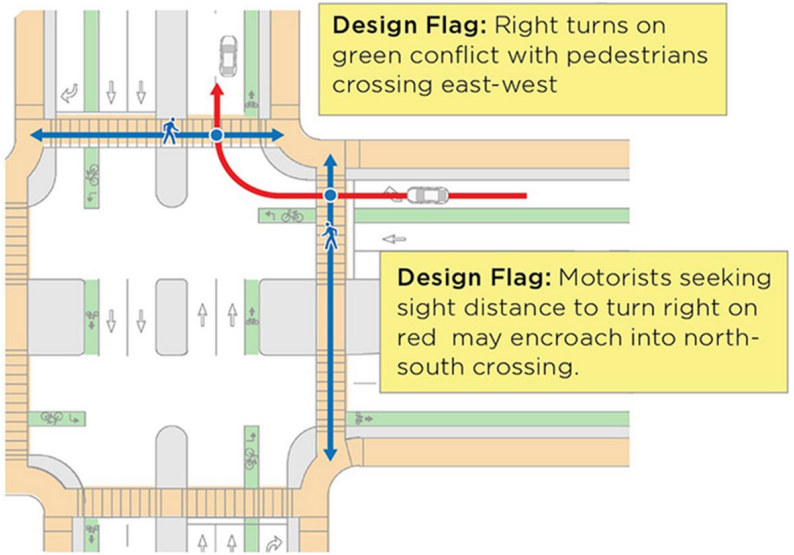
Stronger yielding compliance

Markings and signage encourage drivers to yield (RRFB / PHB)

King George Blvd & 64 Ave, Surrey, BC, Canada

Refining CRT Elements with the TDOT 20 Flag Framework

Example evaluation (Right Turn)



- Scores intersections across 20 design conditions known to increase risk for pedestrians and cyclists.
- Each condition is flagged **red** (high concern) or **yellow** (moderate concern)
- Identifies design elements affecting multimodal safety

TDOT 20 Flag Framework

Motor Vehicle Turning Flag (Motor Vehicle Right Turns / Crossing Yield or Uncontrolled Vehicle Paths)

- Corner radii → higher turning speeds
- Travel path width
- Crossweb location
- Traffic control measures

Key Mitigations:

- Reduce vehicle speed
- Install raised crosswalk
- Implement signal or stop control
- Locate crosswalk to separate conflicts

As design advances, the framework will be used to evaluate new safety enhancements and mitigate challenges

Key Intersection Design Elements

Raised Crosswalk

Further slows vehicles, increases pedestrian visibility

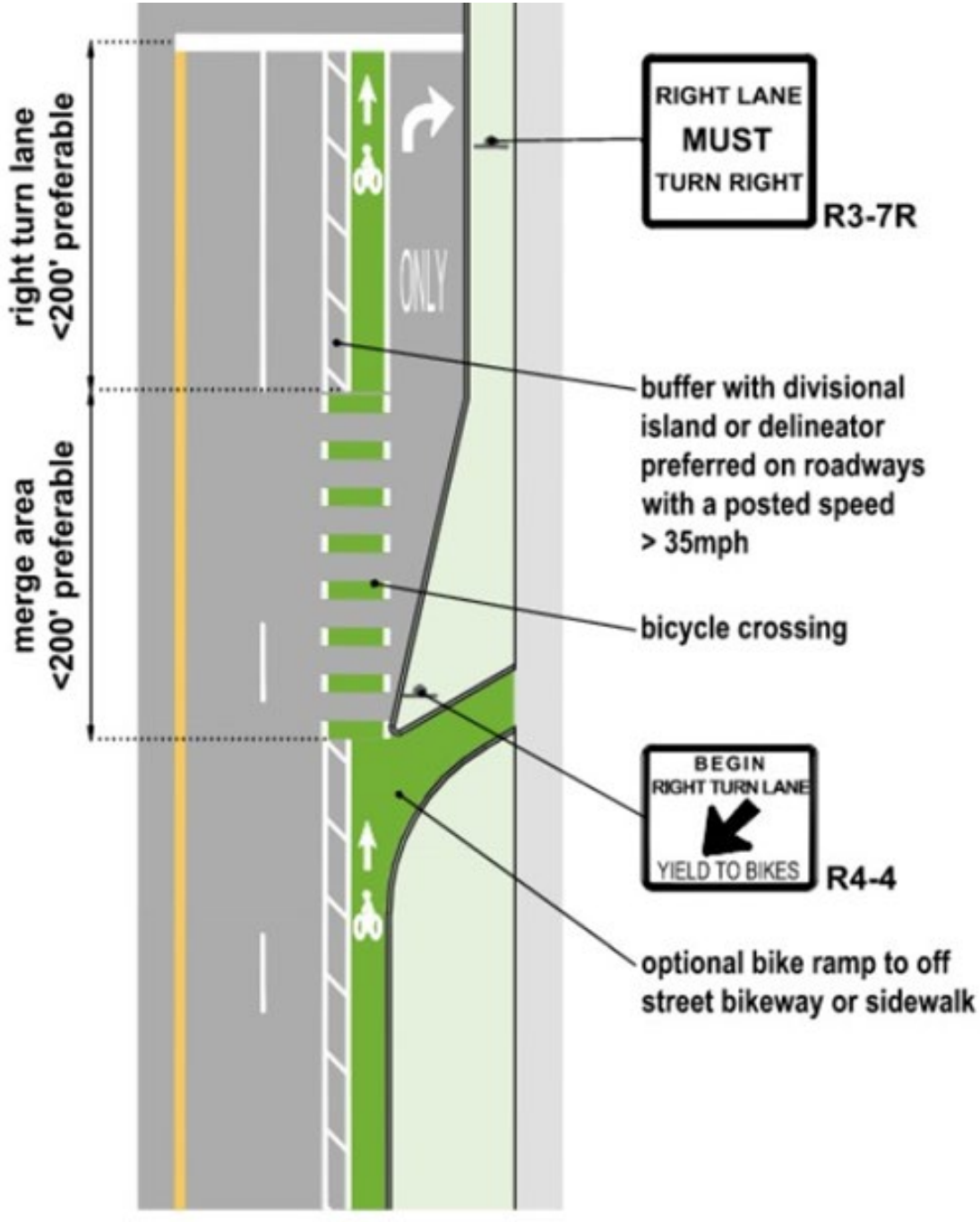
Truck Aprons

Keeps lane narrow for passenger cars, slowing driver speed, while allowing large vehicles to turn

Bike Lane Departure Ramp

Gives cyclists a choice before the intersection:

- stay on the road, or
- exit to a shared-use path



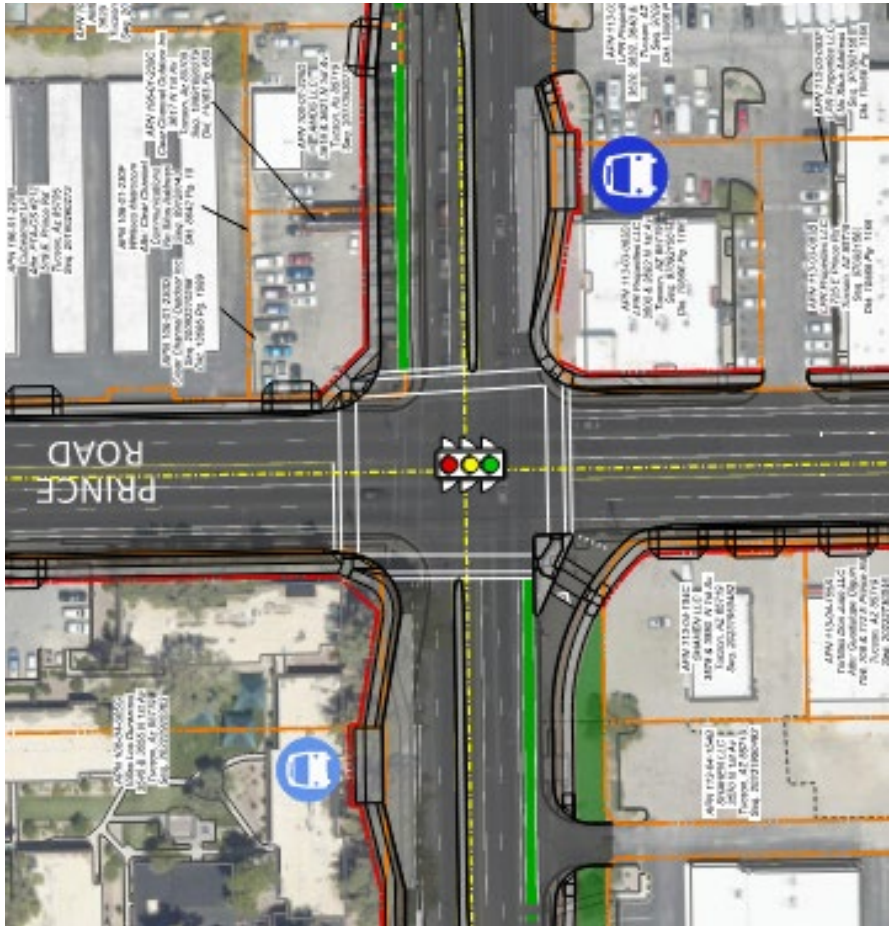
Source: https://www.txdot.gov/manuals/des/rdw/chapter-18-bicycle-facilities-/18-5-intersections-and-crossings.html
Figure 18-37: Bicycle Lane with Constricted Motorist Entry Point

Other Design Considerations

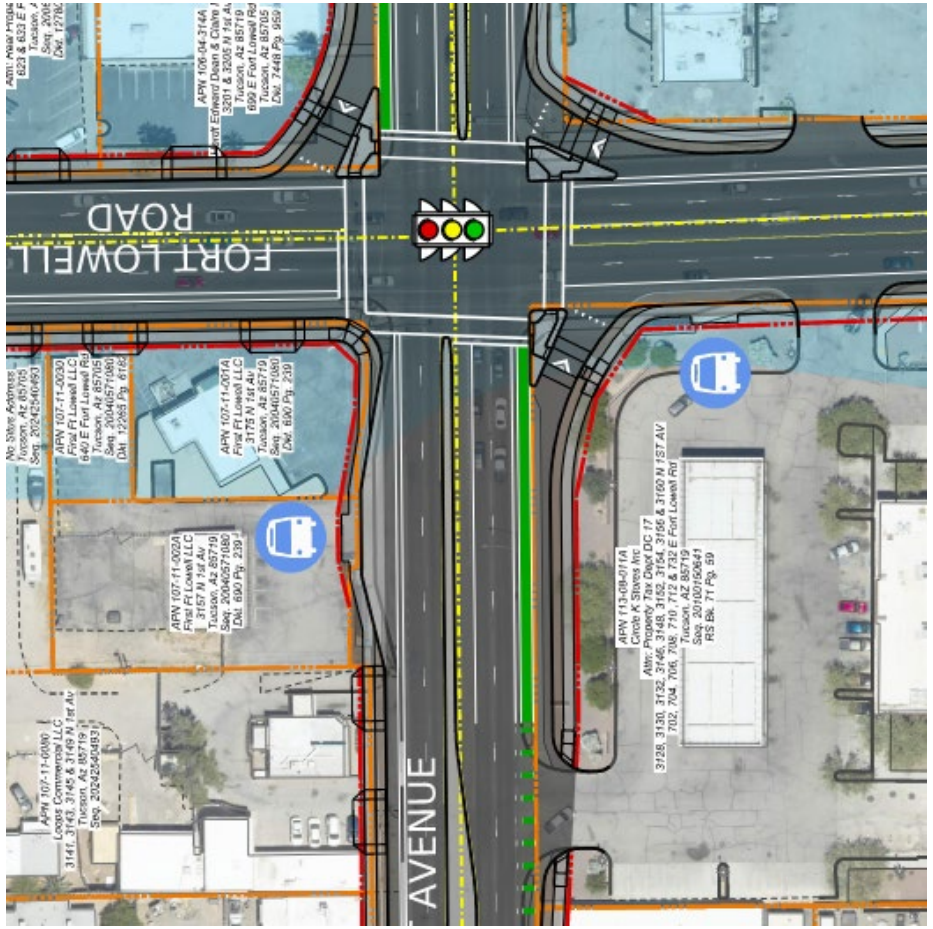
Design is currently at 15% completion; the following design considerations will be addressed through standard design and coordination processes as the project advances:

- Right-of-way
- Drainage
- Utilities
- Accessibility
  - Pedestrian refuge areas designed with **visually impaired folks** in mind
  - ADA-compliant curb ramps
  - Lighting and signage

15% Design Concept

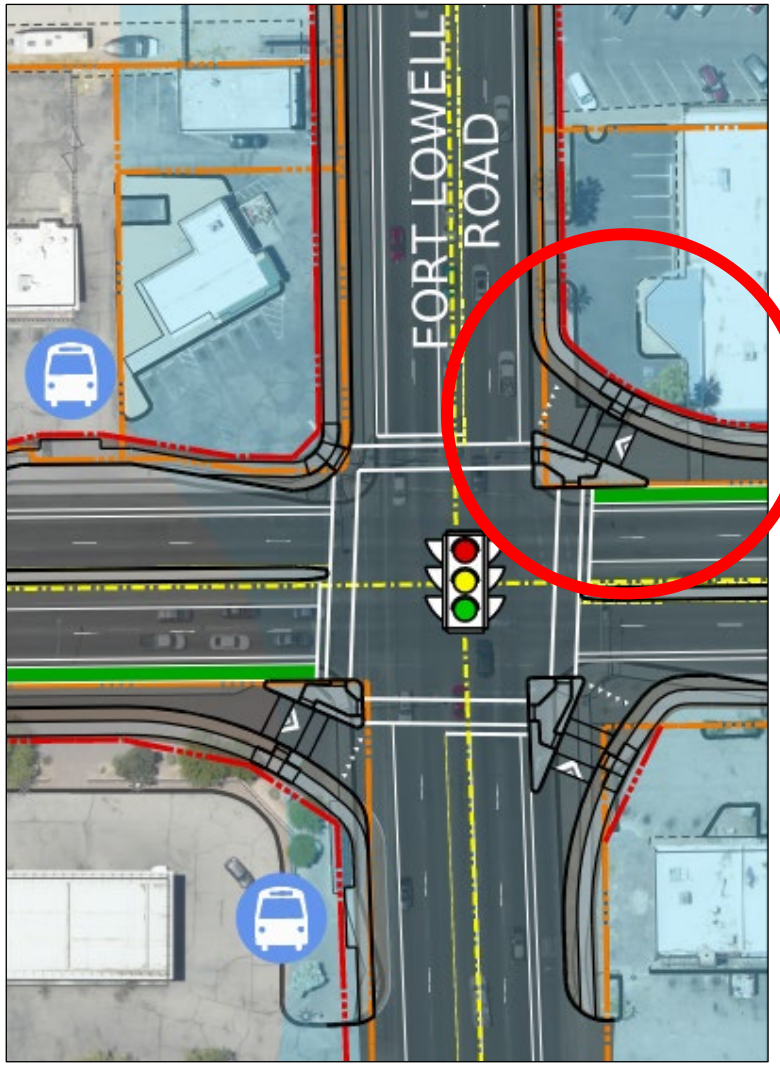


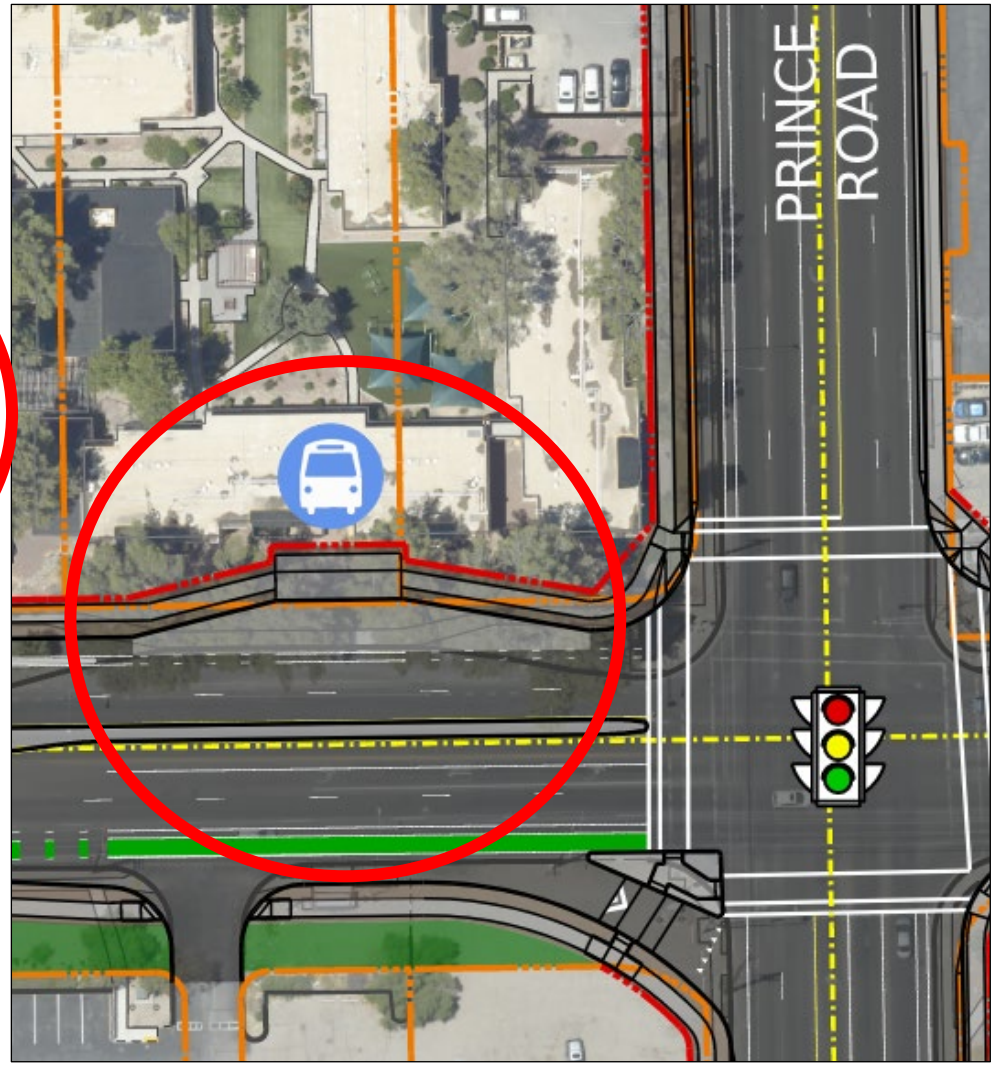
1st Avenue & Prince Road



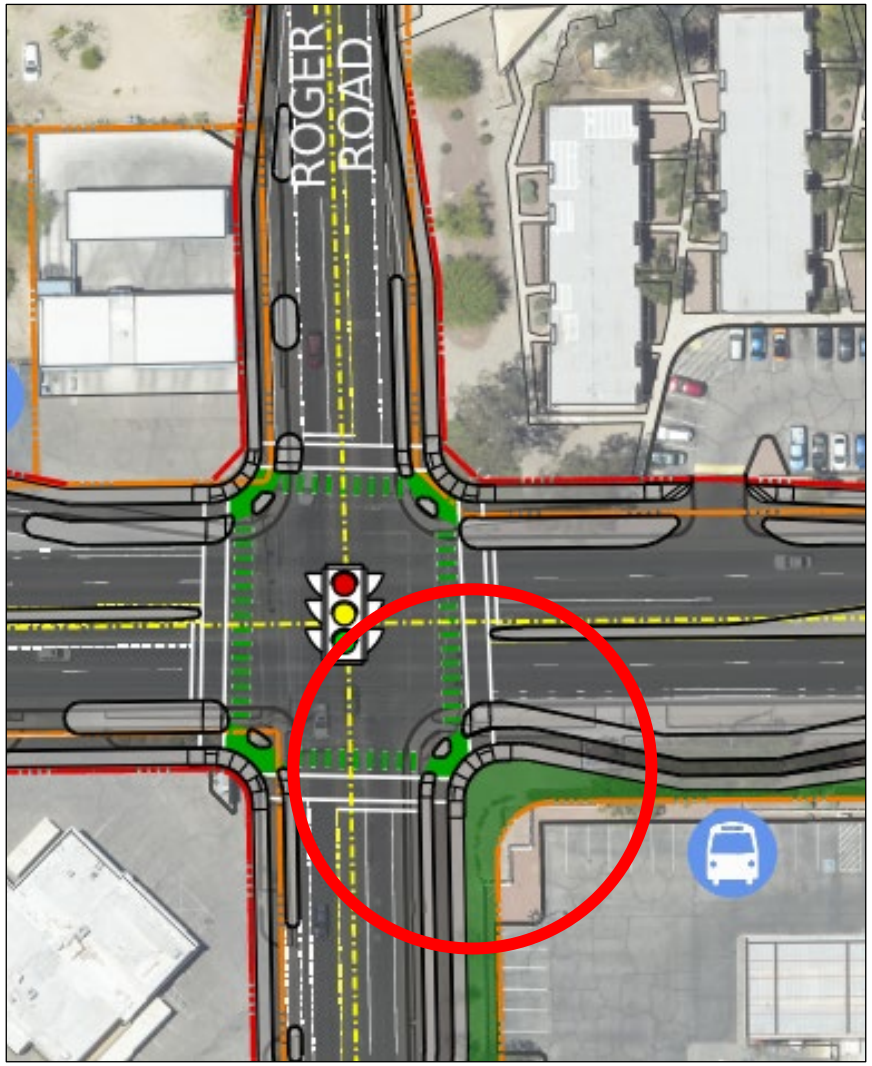
1st Avenue & Fort Lowell

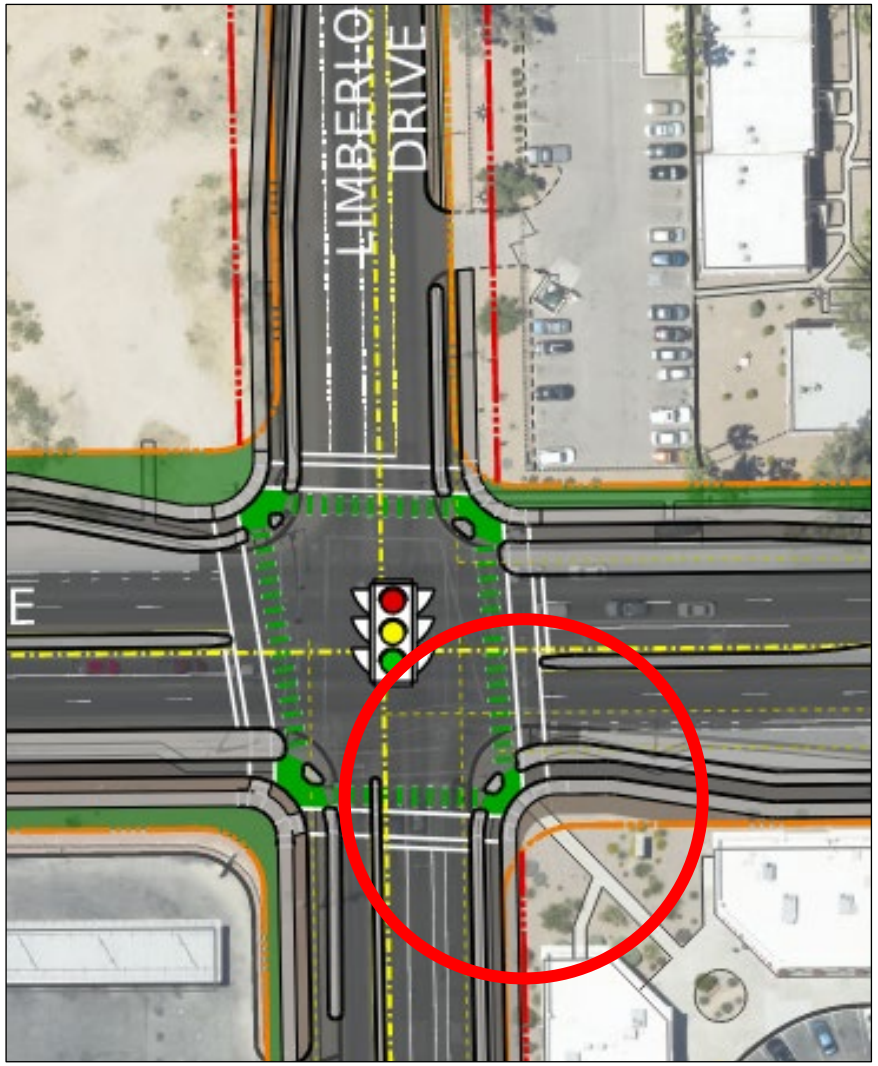
- Right Turn Lane Configuration
- Bus Stop Location and Configuration





- Right Turn Lane and Protected Intersection Configuration

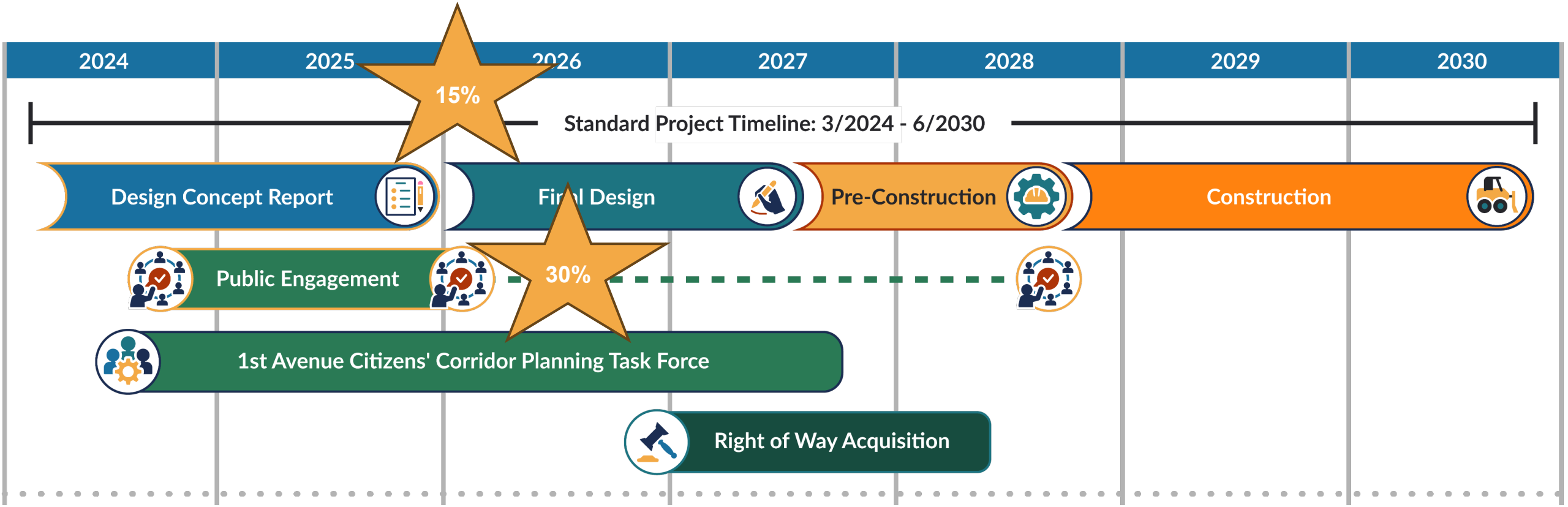




Schedule Update

CITY OF TUCSON | RTA | PAG

Project Overview



1st Ave Corridor Map – January 2026

Design Refinements

- Adress DTM Staff Comments
- Respond to Public Engagement Comments
- Balancing Safety, Mobility and R/W Impacts
- Bus Stop Locations and Details

Detailed Design

- Bridge Substructure Design
- Bridge Superstructure Design
- Storm Drain System Design
- Street Lighting System Design
- Traffic Signal Design
- Property Access Design
- **Project Phasing and Delivery**

Future Agenda Items

CITY OF TUCSON | RTA | PAG

Adjournment

CITY OF TUCSON | RTA | PAG


2026 NCAA® DIVISION I MEN'S BASKETBALL CHAMPIONSHIP
FIRST ROUND 3/19-3/20
SECOND ROUND 3/21-3/22
SWEET 16® 3/26-3/27
ELITE EIGHT® 3/28-3/29
FINAL FOUR® 4/4
FIRST FOUR®
DAYTON 3/17-3/18
16 UMBC (24-8) 83
16 Howard (23-10) 86
11 Texas (18-14) 68
11 NC State (20-13) 66
67 (18-17) Prairie View A&M 16
55 (18-16) Lehigh 16
89 (31-1) Miami (Ohio) 11
79 (20-13) SMU 11
EAST
1 Duke (32-2) 71
16 Siena (23-11) 65
8 Ohio St. (21-12) 64
9 TCU (22-11) 66
5 St. John's (28-6) 79
12 Northern Iowa (23-12) 53
4 Kansas (23-10) 68
13 Cal Baptist (25-8) 60
6 Louisville (23-10) 83
11 South Florida (25-8) 79
3 Michigan St. (25-7) 92
14 North Dakota St. (27-7) 67
7 UCLA (23-11) 75
10 UCF (21-11) 71
2 UConn (29-5) 82
15 Furman (22-12) 71
1 DUKE 81
9 TCU 58
5 STJOHN'S 67
4 KANSAS 65
6 LOUIS 69
3 MSU 77
7 UCLA 57
2 UCONN 73
1 DUKE
5 STJOHN'S
3 MSU
2 UCONN
SOUTH
1 Florida (26-7) 114
16 Prairie View A&M (19-17) 55
8 Clemson (24-10) 61
9 Iowa (21-12) 67
5 Vanderbilt (28-8) 78
12 McNeese (28-5) 68
4 Nebraska (26-6) 76
13 Troy (22-11) 47
6 North Carolina (24-8) 78
11 VCU (27-7) 82
3 Illinois (24-8) 105
14 Penn (18-11) 70
7 Saint Mary's (27-5) 50
10 Texas A&M (21-11) 63
2 Houston (28-8) 78
15 Idaho (21-14) 47
1 FLA 72
9 IOWA 73
5 VANDY 72
4 NEB 74
11 VCU 55
3 ILL 76
10 TX A&M 57
2 HOU 88
9 IOWA
4 NEB
3 ILL
2 HOU
#MARCH MADNESS
#MFINALFOUR
2026 MEN'S FINAL FOUR INDIANAPOLIS
NATIONAL CHAMPIONSHIP
SEMIFINALS
SEMIFINALS
Watch the tournament on these networks or at NCAA.COM/MarchMadness
MARCH MADNESS
CBS truTV
All Times Eastern
WEST
78 NA 92
66 9 UT ST 76
88 12 HPU 82
4 ARK 94
4 ARK 97
74 11 TEXAS 71
11 TEXAS 68
3 GONZ 73
69 7 MIAMI 80
2 PUR 79
2 PUR 104
1 Arizona (32-2)
16 Long Island (24-10)
8 Villanova (24-8)
9 Utah St. (28-6)
5 Wisconsin (24-10)
12 High Point (30-4)
4 Arkansas (26-8)
13 Hawaii (24-8)
6 BYU (23-11)
11 Texas (19-14)
3 Gonzaga (30-3)
14 Kennesaw St. (21-13)
7 Miami (FL) (25-8)
10 Missouri (20-12)
2 Purdue (27-8)
15 Queens (N.C.) (21-13)
MIDWEST
95 1 MICH 101
1 MICH 72 9 SLU 77
65 6 TTU 91
4 BAMA 90 4 BAMA 90
79 6 TENN 78
6 TENN 72 3 UVA 82
63 7 UK 89
2 IA ST 82 2 IA ST 108
1 Michigan (31-3)
16 Howard (24-10)
8 Georgia (22-10)
9 Saint Louis (28-5)
6 Texas Tech (22-10)
12 Akron (29-5)
4 Alabama (23-9)
13 Hofstra (24-10)
6 Tennessee (22-11)
11 Miami (Ohio) (32-1)
3 Virginia (29-5)
14 Wright St. (23-11)
7 Kentucky (21-13)
10 Santa Clara (26-8)
2 Iowa St. (27-7)
15 Tennessee St. (23-9)
*On March 15, the NCAA Division I Men's Basketball Committee will select eight teams to play in the First Four. Those games are scheduled for March 17 and 18 in Dayton. The four winning teams will advance to first-round sites to be determined by the committee during selection weekend. First-/second-round and regional sites will be placed in the bracket by the committee on March 16.
March 19 and 21 first-/second-round sites: Buffalo, NY; Greenville, SC; Oklahoma City, OK; Portland, OR.
March 20 and 22 first-/second-round sites: Tampa, FL; Philadelphia, PA; San Diego, CA; St. Louis, MO.
March 26 and 28 regional sites: Houston, TX (South); San Jose, CA (West).
March 27 and 29 regional sites: Chicago, IL (Midwest); Washington, D.C. (East).
NCAA.com