

*Transportation Planning*

**International Drive Pedestrian  
Overpass Intersection Analysis  
and Overpass Conceptual  
Design Study**

**BCC Work Session**

**September 26, 2023**



# Project Overview



## **BCC Work Session**

### **General Project Overview**

- **Inspiration**
- **Configurations Considered**
- **Preliminary Bridge Concepts**
- **Concept Alternatives – Recommended Alternative**
- **Summary of Findings – Next Steps**



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# Inspiration



## **BCC Work Session** **Inspiration**



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# Inspiration

## District Goals

Stakeholder input was used to develop the District goals listed below.

**Connected** - celebrate pedestrians by improving walkability, activating streets, and offering ample multimodal options.

**Complete** - enable a complete community by ensuring that a diversity of uses, including residential, can be accommodated in the District.

**Authentic** - reinforce community identity and authenticity by providing civic and gathering spaces featuring public art.

**Prosperous** - foster economic development by promoting and facilitating infill and redevelopment opportunities within the District.

**Sustainable** - promote efficient use of natural resources by incorporating green building practices and capitalizing on local assets.

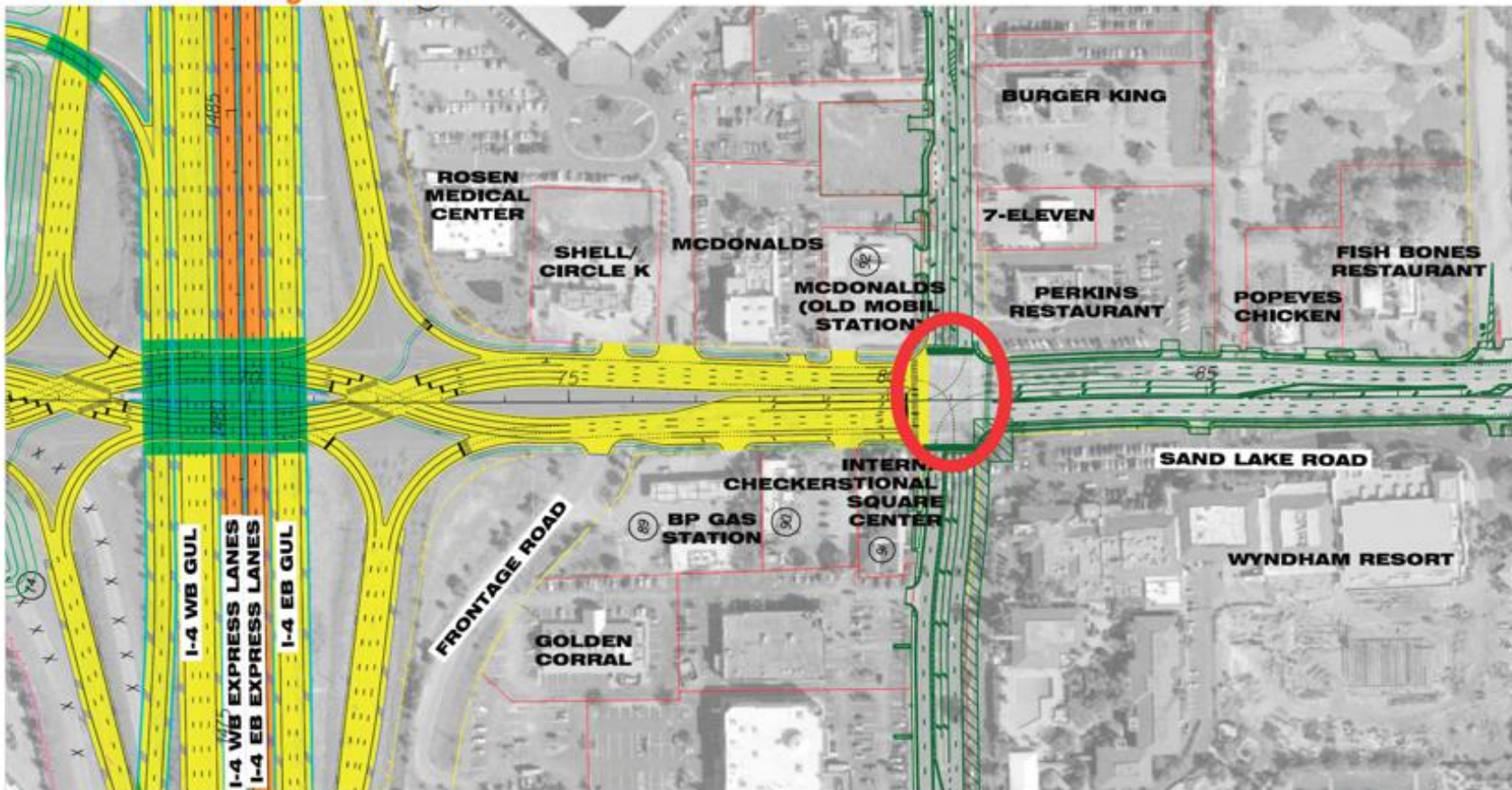






# Inspiration

## Pedestrian Bridge Location





# Inspiration

## Project Goals

1. **Iconic** Gateway to I-Drive Entertainment and Convention Center District
2. Provide pedestrians **safe** crossing to all four intersection corners
3. Improve Vehicular capacity at the intersection
4. Minimize impact on adjacent property owners
5. Minimize need to relocate existing utilities
6. Enhance **pedestrian** nature of the district
7. Provide ADA **accessibility** at bridge connections
8. Make the **experience** of using the bridge a positive, memorable, and Instagram-able
9. Utilize **lighting** to enhance the experience and safety of the bridge at night

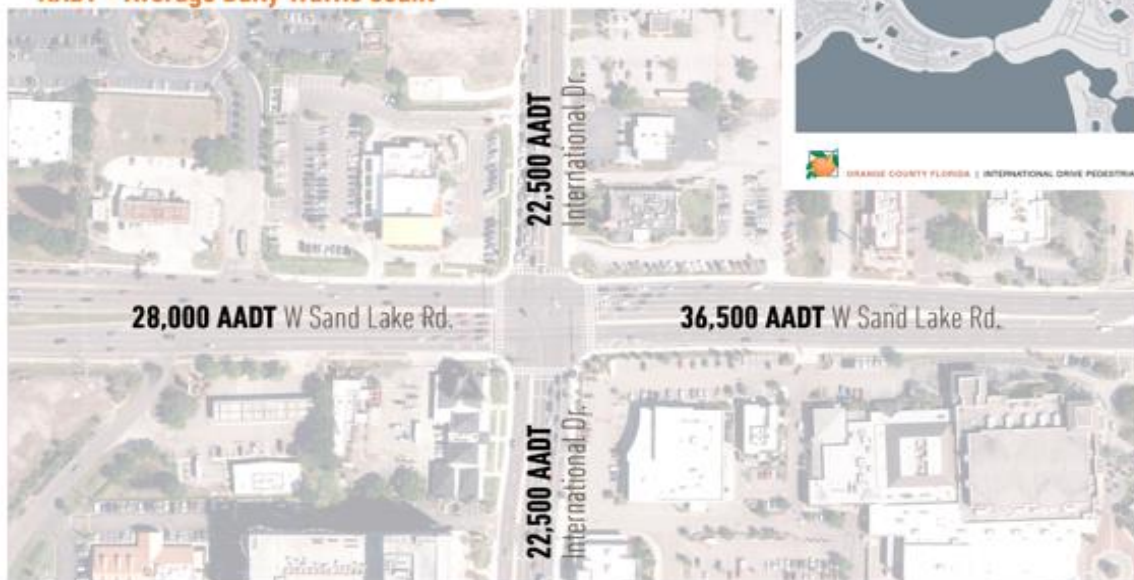




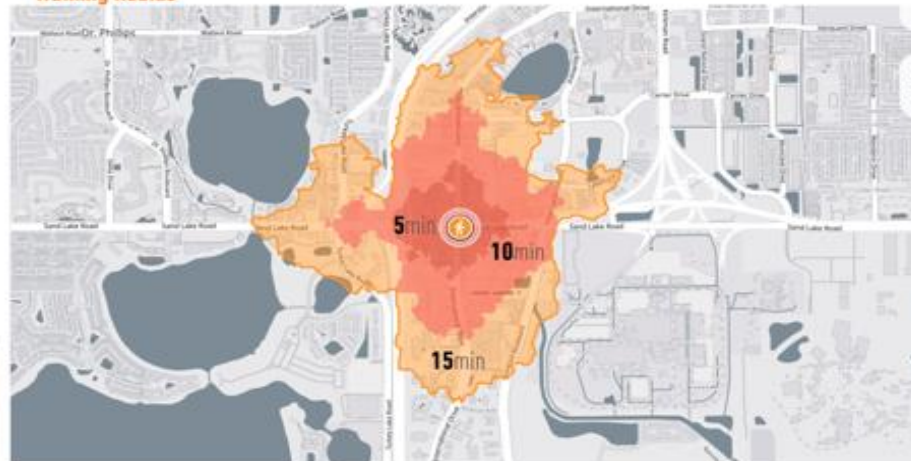
# Inspiration

Average Annual Daily Traffic Counts for the roadway sections leading to the Sand Lake Road-International Drive intersection range from 22,500 vehicles per day to 36,500 vehicles per day.

## AADT - Average Daily Traffic Count



## Walking Radius



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Distances pedestrians can walk from this intersection in 5 minutes / 10 minutes / 15 minutes. The overpass will impact visitors and businesses for a significant distance from the bridge itself.



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# Inspiration

MOVING THROUGH TRAFFIC IN CROSSWALK



TRAFFIC INTERACTIONS



BIKE CROSSING WITH DOWNWALK



UNLIGHTED SINGLE TURN







# Inspiration



REFERENCE IMAGE - ALTERNATIVE STRUCTURAL SYSTEMS

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# Public Outreach



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**Project Advisory Group / Public Outreach**



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# Public Outreach

## Project Advisory Group

- **I-Drive Businesses and Attractions**
- **I-Drive Business District**
- **I-Drive Chamber of Commerce**
- **Orange County Convention Center**
- **Florida Department of Transportation**
- **Orange County Sheriff and Emergency Services**
- **Orange County Planning Division**

### Meeting Number One

Introduction of Participants  
General Overview of Project  
Initial Comments from Group Members

### Meeting Number Two

Presentation on Findings of Existing Conditions  
Discussion of General Bridge Features; Ramps, Stairs  
Elevators, etc.  
Discussion of Right-of-Way and Access impacts  
Discussion of Utility Impacts  
Comments from Group Members

### Meeting Number Three

Presentation of Preliminary Bridge Concepts  
Comparison of Aesthetics for Each Concept  
Comments from Group Members

### Meeting Number Four

Presentation of Two Preferred Bridge Concepts  
Discussion of Refined Aesthetics  
Final Comments from Group Members  
Discuss Rankings and Determination of Preferred  
Alternative







# Public Outreach

## Public Meetings

### Public Meeting #1

- **Wednesday February 22, 2023, Lake Buena Vista High School**
- Presentation of Findings of Existing Conditions
- Discussion of General Bridge Features; Ramps, Stairs Elevators, etc.
- Presentation of Preliminary Bridge Concepts

### Public Meeting #2

- **Wednesday, August 2, 2023, Embassy Duties International Drive**
- Presentation of Two Preferred Bridge Concepts
- Discussion of Refined Aesthetics
- Presentation of the Recommended Alternative

**Project Web Page:** <https://www.idriveoverpass.com/>





# Configurations Considered



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**Configurations Considered**



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# Configurations Considered

## Bridge Configurations



**Option 1**  
Square Configuration

This configuration utilizes straight perpendicular bridge sections. Each bridge spans either north or south to the main destination. If the destination is diagonal, you will have to travel two segments of the bridge.



**Option 2**  
'X' Configuration

This 'X' configuration utilizes perpendicular bridge sections and includes a diagonal bridge longer than Option 1. This design allows approximately the same distance to any destination. This design is a middle ground from a straight span to a diamond.

Vertical  
Circulation Tower  
Elevated Bridge



**Option 3**  
Circle Configuration

This configuration utilizes perpendicular bridge sections and includes a circular bridge section to the South destination. This circular bridge section is longer than the square bridge section. This design allows the same distance to any destination as the square bridge section. This configuration can be extended from the proposed bridge sections.



**Option 4**  
'C' Configuration

This 'C' configuration utilizes perpendicular bridge sections and includes a circular bridge section to the West destination. This circular bridge section is longer than the square bridge section. This design allows the same distance to any destination as the square bridge section. This configuration can be extended from the proposed bridge sections.

Vertical  
Circulation Tower  
Elevated Bridge



**Option 5**  
Channel Loop Configuration

Optionally similar to the 'X' configuration, this bridge consists of two straight bridge sections that form a loop in the middle. When designed with the 'X' configuration, this configuration eliminates long straight spans and can accommodate a pedestrian walk in the center of the intersection. This configuration can be extended from the proposed bridge sections.



**Option 6**  
'T' Configuration

This 'T' configuration utilizes perpendicular bridge sections and includes a straight bridge section to the South destination. This straight bridge section is longer than the square bridge section. This design allows the same distance to any destination as the square bridge section. This configuration can be extended from the proposed bridge sections.

Vertical  
Circulation Tower  
Elevated Bridge

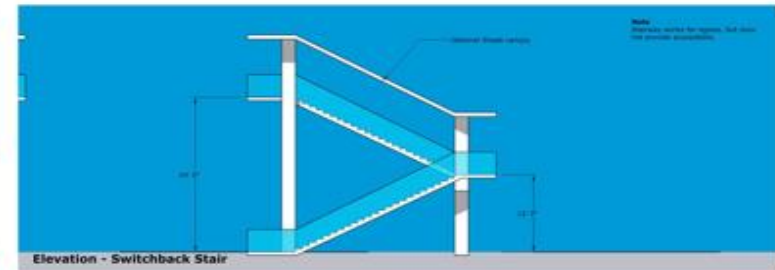
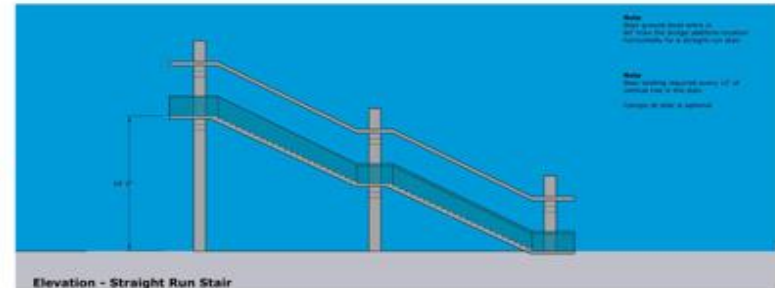
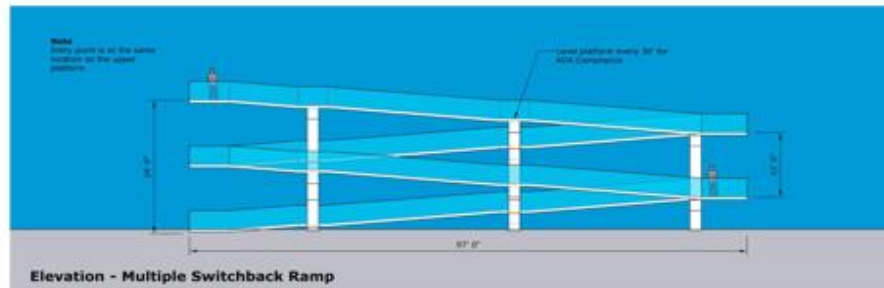
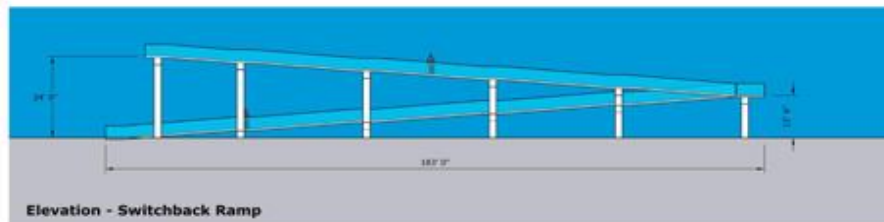






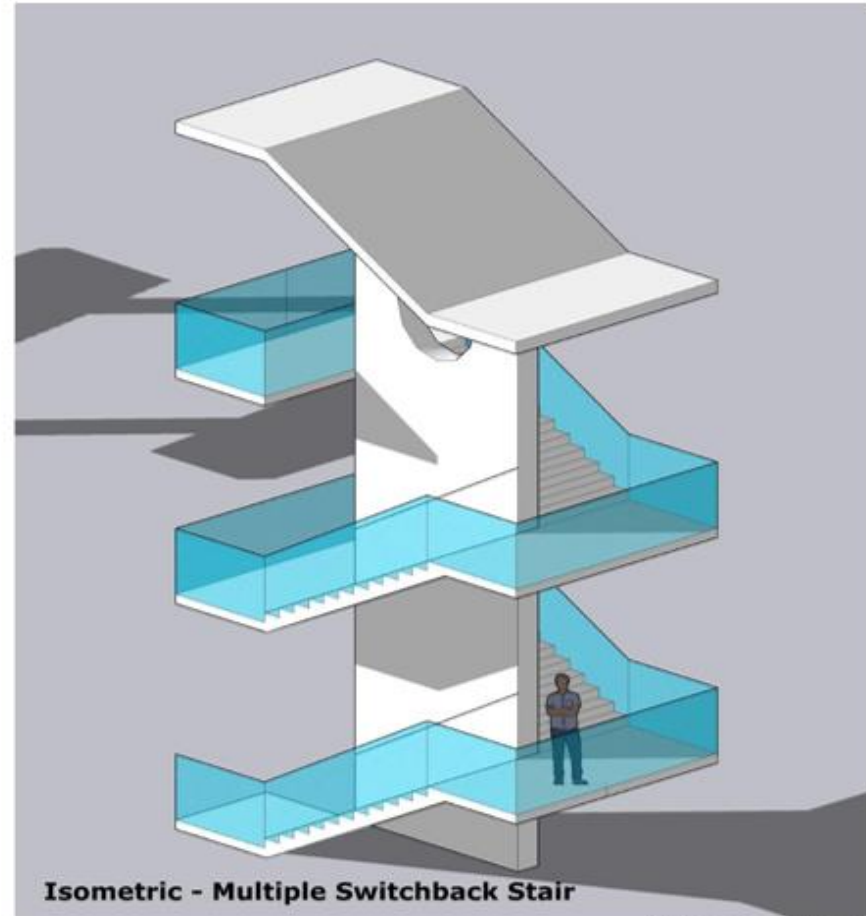
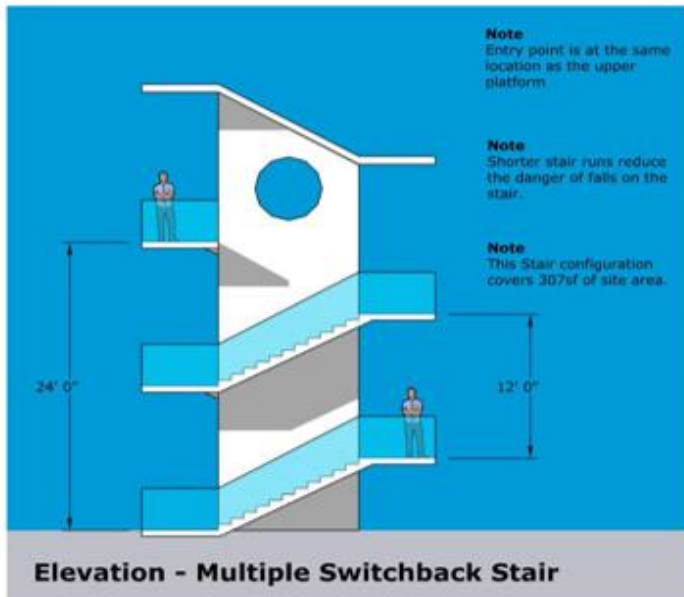
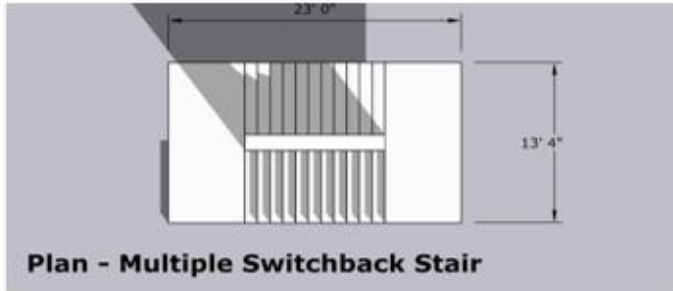
# Configurations Considered

## Bridge Configurations Access





# Configurations Considered

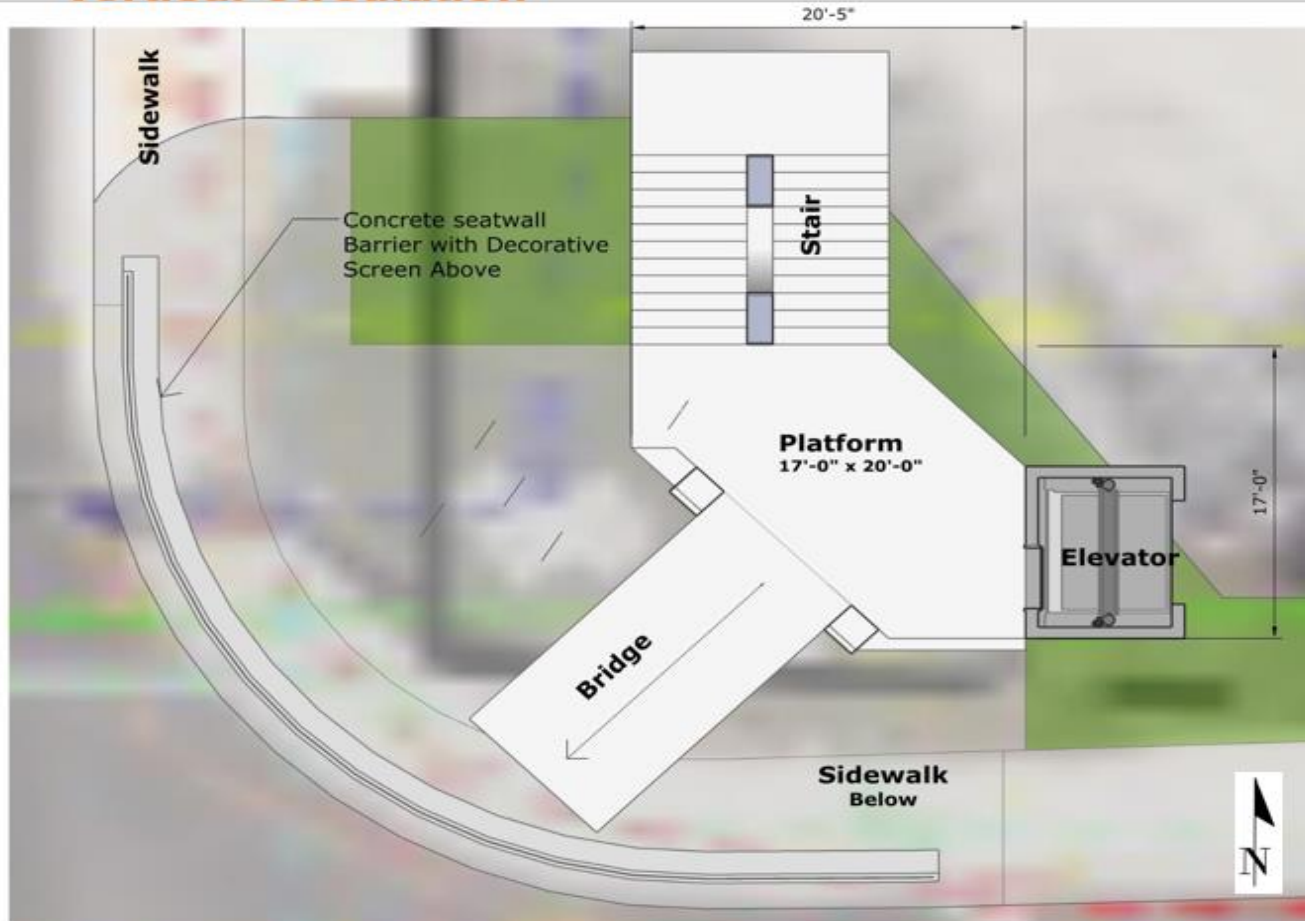


Vertical Circulation



# Configurations Considered

## Vertical Circulation



### Bridge Tower Option 2

#### Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 40'

Crosswalks have been removed.

#### Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	531sf
Bridge Width	10'-0"



Vertical Circulation – Selected Bridge Tower Option

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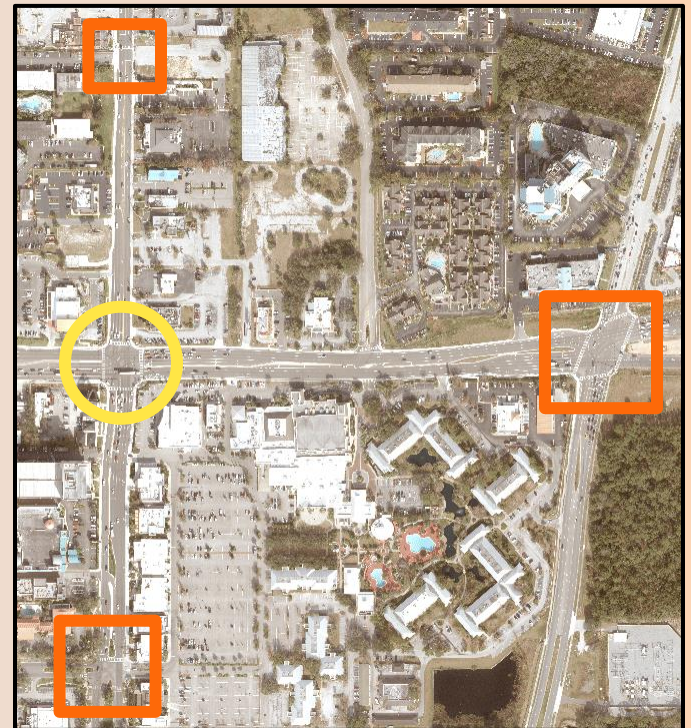


# Configurations Considered

## Elevators

**Sized to accommodate emergency response team and will utilize a site-specific response plan**

- If one elevator is inoperable responders can:
  - Unlock doors at the top to allow access to the other elevators
  - Use assistance tools to go down the stairs
  - Use elevator company quick response to bring the car down
- If elevators are inoperable responders can access the structure from an emergency access to be included in design
- Crosswalks are located to the north and at signalized intersections south and west of the bridge





# Preliminary Bridge Concepts



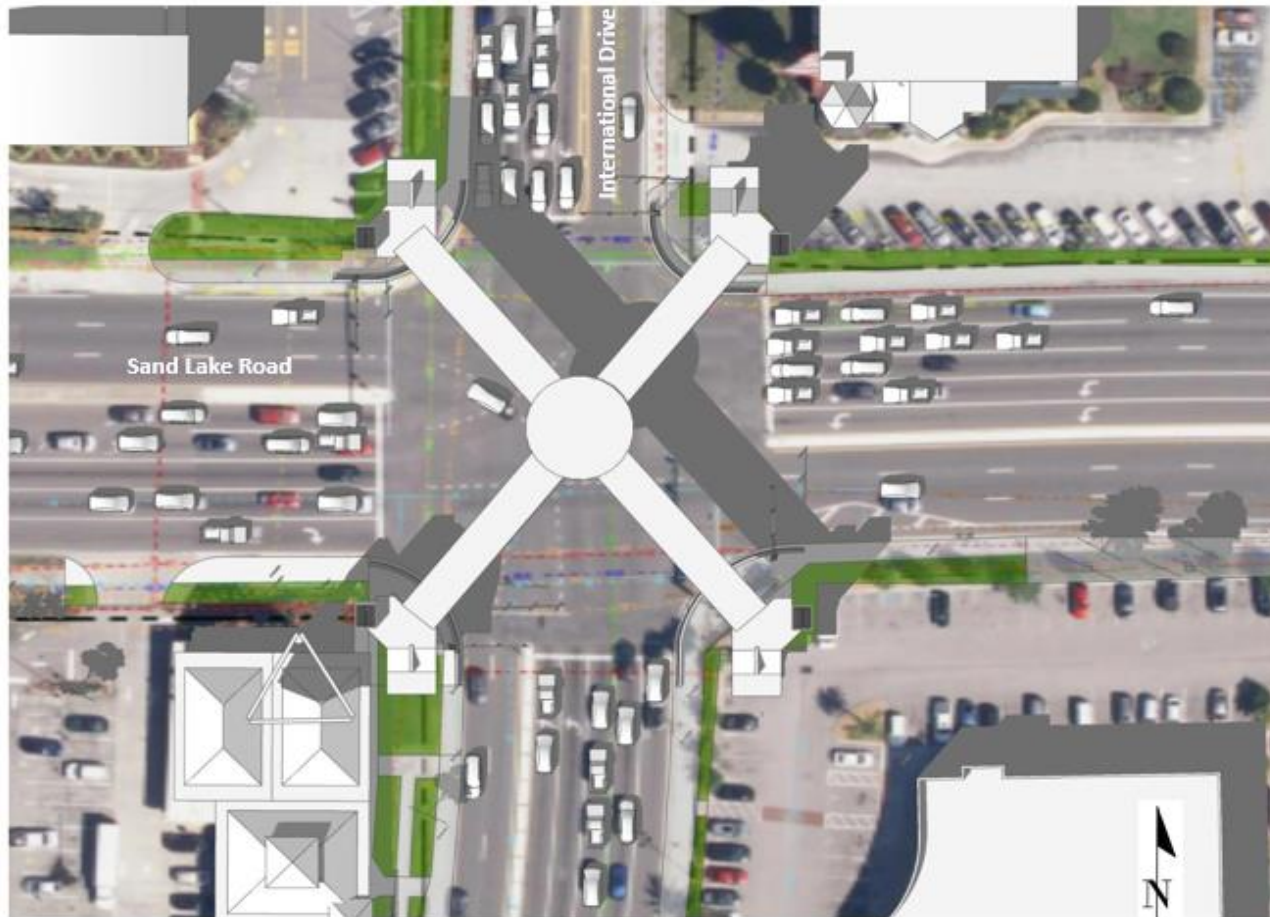
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**Preliminary Bridge Concepts**



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# Preliminary Bridge Concepts



## Bridge Configuration "X" Option

### Description

The "X" configuration consists of two straight bridge runs intersecting in the middle of the intersection.

The overall length of the bridge in the "X" configuration is the third shortest of all options at 420' of length and has the third shortest average travel distances of the options considered.

One benefit of this configuration is that the travel distance to every other intersection is exactly the same. The negative of this configuration is that the shorter distances across International Drive are actually longer in this design.

There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

The straight bridge sections create a less desirable experience and users have to make a turn at the center section unless they are traveling diagonally across the intersection.

### Summary

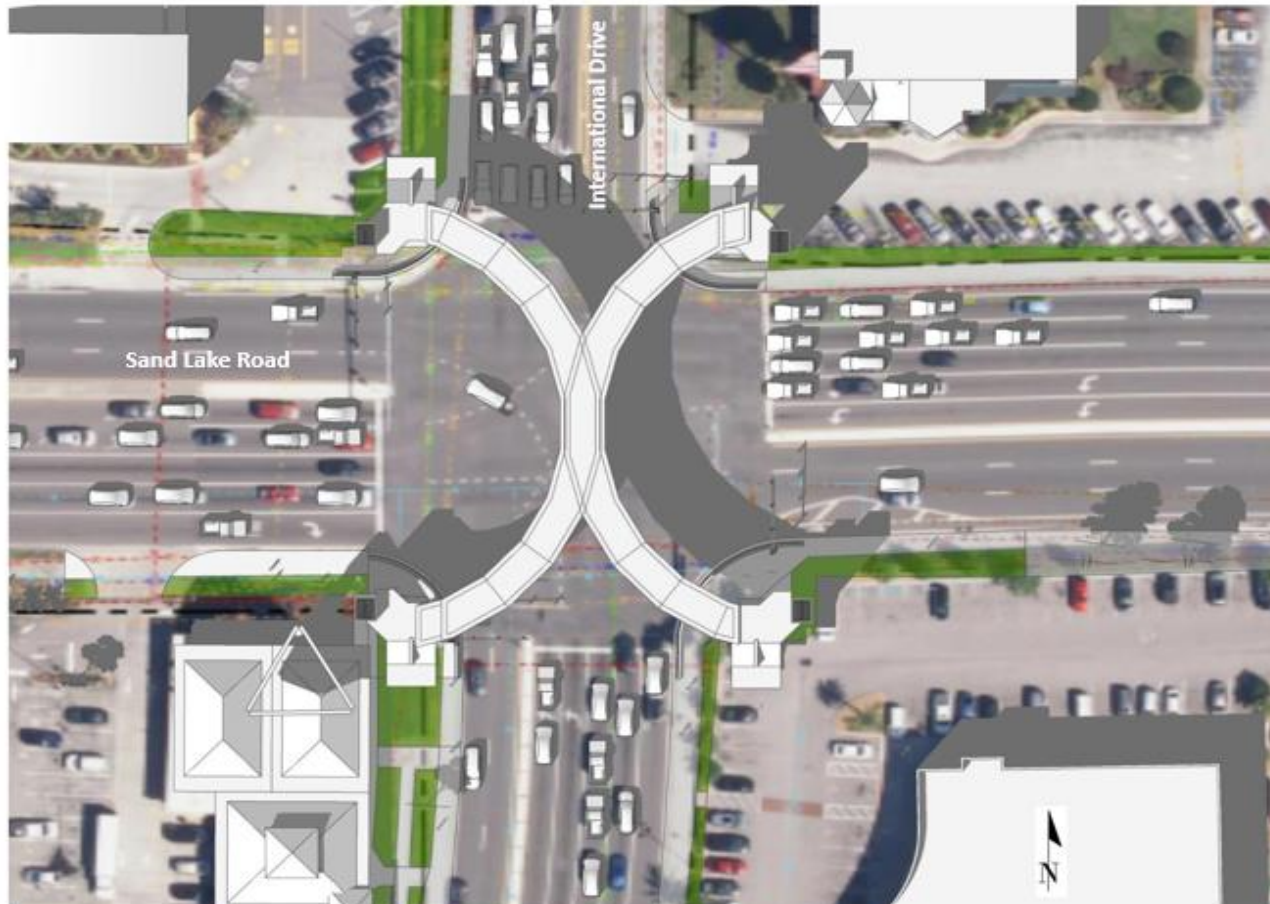
Average Travel Distance	210'
Bridge Length	420'
Bridge Width	12'-0"







# Preliminary Bridge Concepts



## Bridge Configuration Intersecting "C" Option

### Description

The interlocking "C" Shaped bridge configuration evolved from the "I" configuration. This bridge configuration provides a similar travel distance to all intersections served.

The overall length of the bridge in the Interlocking "C" configuration is the shortest of all options at 395' of length and has one of the shortest average travel distances of the options considered.

In addition the curved sections add to the crossing experience by limiting the long view across the bridge and maximizing the views to surrounding businesses while the users traverse the bridge.

There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

This configuration creates a unique gateway for automobiles from all directions. The effect is different for vehicles on International Drive and Sand Lake Rd.

### Summary

Average Travel Distance	205'
Bridge Length	395'
Bridge Width	12'-0"





# Preliminary Bridge Concepts

## Summary

- Elimination of the crosswalks will increase pedestrian safety and reduce traffic congestion.
- Corner wrapping seat wall/barriers will be required to prevent people from attempting to cross the intersection on grade.
- Bridge configuration has little impact on space required at intersection corners.
- Bridge Configuration Evaluation Matrix shows the “Intersecting C” configuration to be the highest rated option (lowest score).
- The PAG favored configuration “X” (second highest rating) which would equally meet the operational, aesthetic, budget, and iconic gateway criteria.





# Recommended Concept



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### **Concept Alternatives – Recommended Concept**

- **The Wave Concept**
- **The Drone Concept**



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# Concept Alternative

## The Wave Concept



"The Wave" Concept

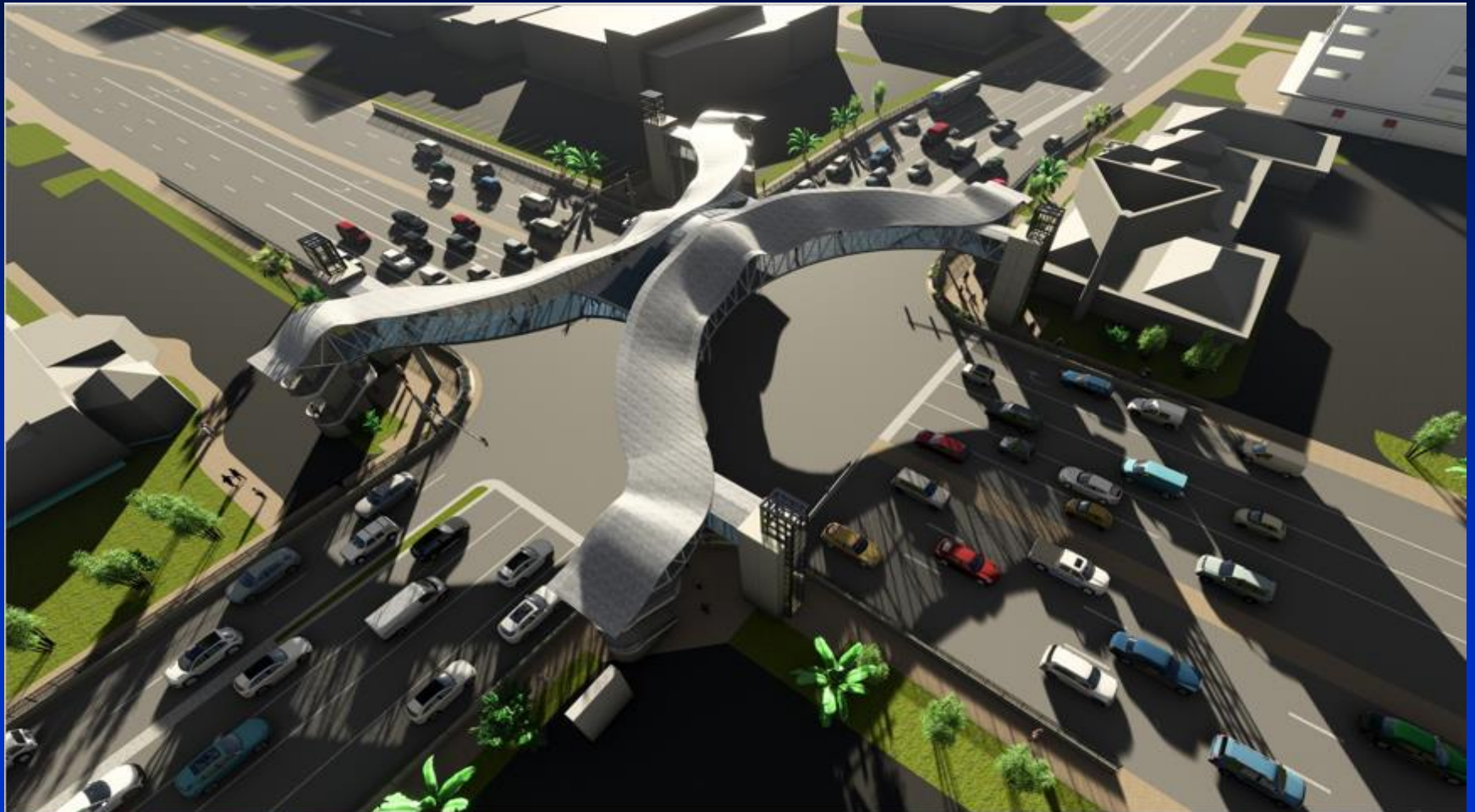
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# Recommended Concept



"The Wave" Concept – Aerial View from SE

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# Concept Alternative



Project Advisory Group Meeting #4 | "The Wave" Concept – View looking East on Sand Lake Rd.

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# Concept Alternative



"The Wave" Concept – Section

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# Recommended Concept

## The Drone Concept Recommended Alternative



The Drone™ Concept

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# Recommended Concept



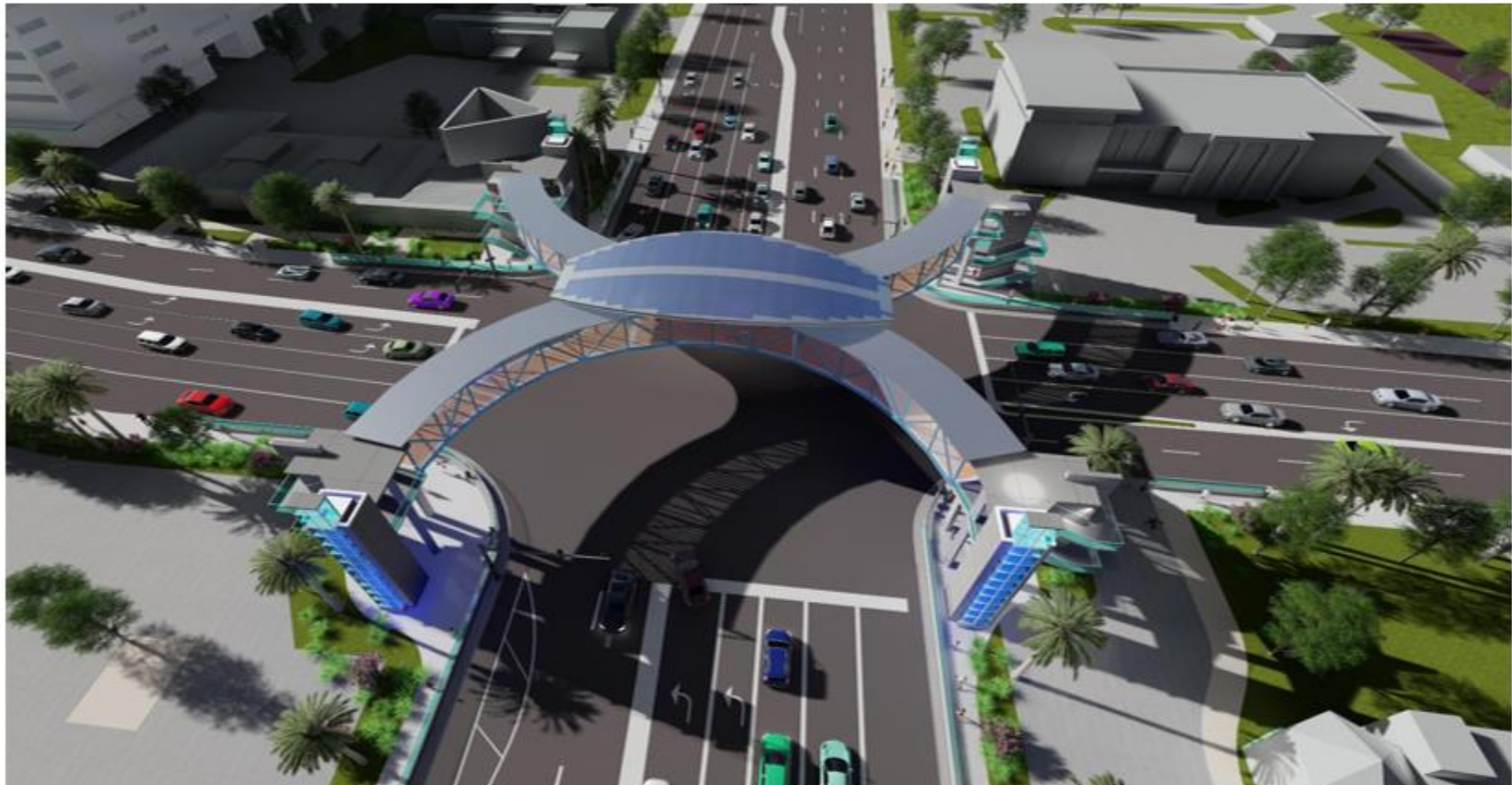
"The Drone" Concept – Aerial View

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# Recommended Concept



The Drone™ Concept – Aerial View looking West

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# Recommended Concept



The Drone™ Concept – Looking East on Sand Lake Rd

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# Recommended Concept



The Drone™ Concept – Looking East on Sand Lake Rd

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# Recommended Concept



"The Drone" Concept – Looking West on Sand Lake Rd

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# Recommended Concept



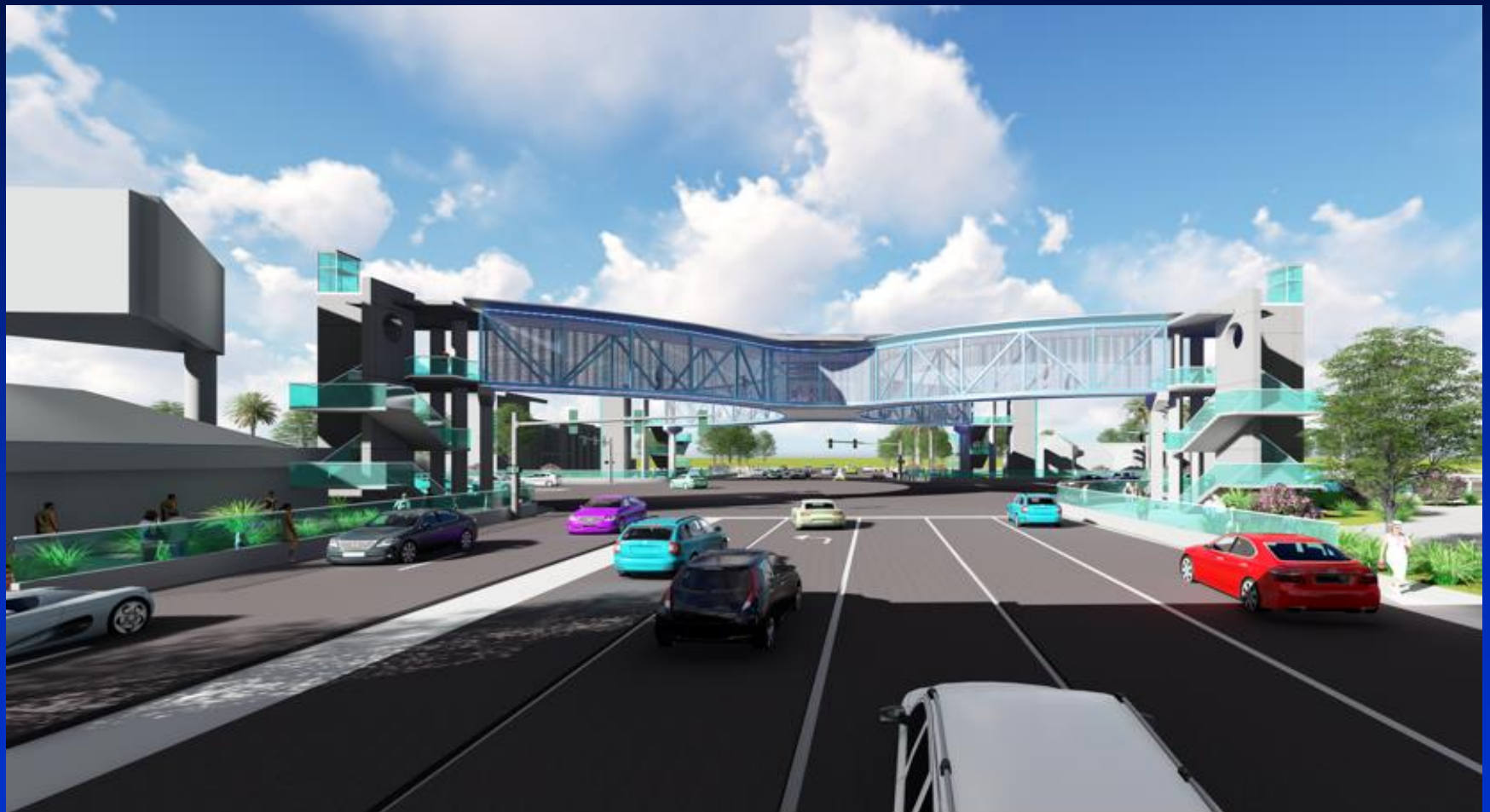
"The Drone" Concept – Looking South on International Drive

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# Recommended Concept



The Drone™ Concept – Looking North on International Drive

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# Recommended Concept



[The Drone] – Looking South on International Drive

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# Recommended Concept



The Drone™ Concept – View Crossing Bridge

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# Recommended Concept



The Drone™ Concept – View Crossing Bridge

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# Recommended Concept





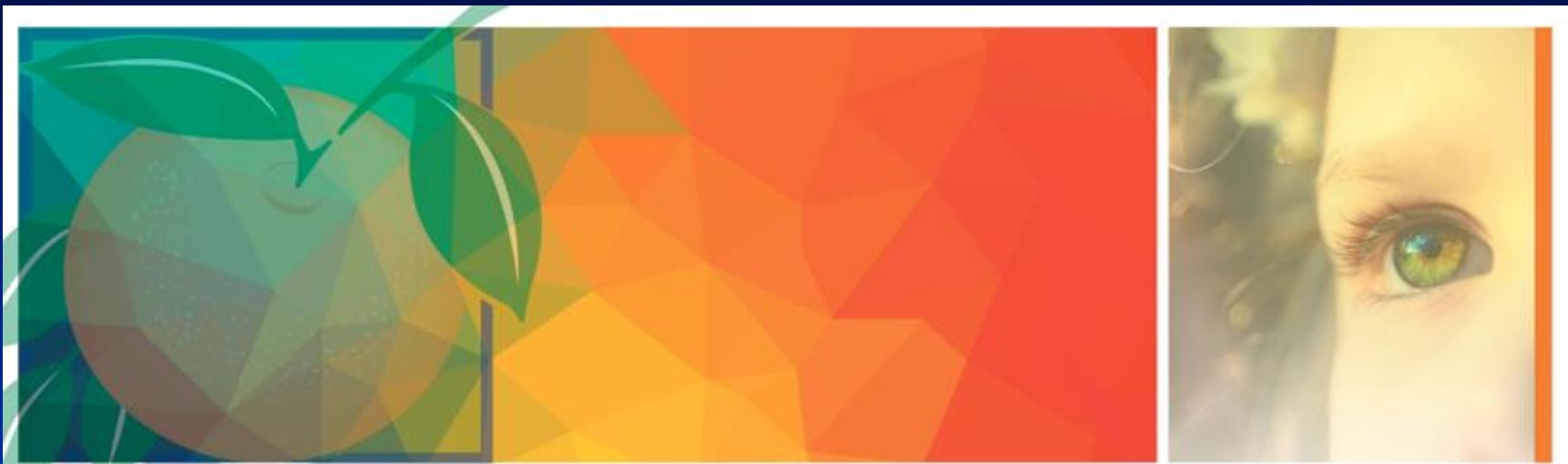
# Recommended Concept

## INTERNATIONAL DRIVE PEDESTRIAN OVERPASS

Evaluation Criteria	No-Build Alternative	Preferred Alternative	2nd Alternative
		The Drone	The Wave
<b>Adjacent Property Impacts</b>			
Easements Required	None	4 - one on each corner	4 - one on each corner
Physical Impacts	None	Approx. 6 parking spaces lost (Adjacent properties)	Approx. 6 parking spaces lost (Adjacent properties)
Agreements	None	1 - Comcast Billboard / 4 easement agreements / bridge air rights agreement	1 - Comcast Billboard / 4 easement agreements / bridge air rights agreement
<b>Social, Natural and Physical Impacts</b>			
Social and Neighborhood	None	Improved connectivity	Improved connectivity
Environmental	None	Improved Air Quality due to less car idling	Improved Air Quality due to less car idling
Stormwater / Floodplain	None	None	None
Contamination Sites	None	None	None
Physical Impacts	None	Improved Safety	Improved Safety
<b>Estimated Costs (present day)</b>			
Bridge Construction Cost	No Cost	\$26,530,500.00	\$27,623,000.00
Design, Adm Cost (17.5% of Construction)	No Cost	\$4,643,000	\$4,834,000.00
CEI (15% of Construction)	No Cost	\$3,980,000	\$4,143,500.00
Right-of-way Costs	No Cost	\$0.00	\$0.00
Environmental Mitigation	No Cost	None	None
Utility Relocation	No Cost	\$200,000	\$200,000.00
<b>Total Estimated Cost</b>		<b>\$35,353,500</b>	<b>\$36,800,500</b>



# Summary – Next Steps



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**Summary of Findings – Next Steps**



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# Summary

## Summary

- Based on Project Advisory Group input we focused on schemes related to the “X” and “Intersecting C” configurations. Both concepts share similar advantages.
- Both schemes share the same vertical circulation elements as determined by analysis of the PAG.
- The resulting designs are both Iconic as they have a unique configuration in plan and unique expressions of form and structure.
- The Drone Scheme was identified as the approved direction to meet the operational, aesthetic, budget, and iconic gateway criteria.







# Next Steps

## Next Steps

- Finalize negotiations with impacted property owners
- Enter into agreements with adjacent property owners.
- Coordination with FDOT on items impacting bridge
- Complete International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study
- Present Bridge Concept to Orange County Board of County Commissioners for approval.





# Recommended Concept



"The Drone" Concept – Looking West on Sand Lake Rd

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