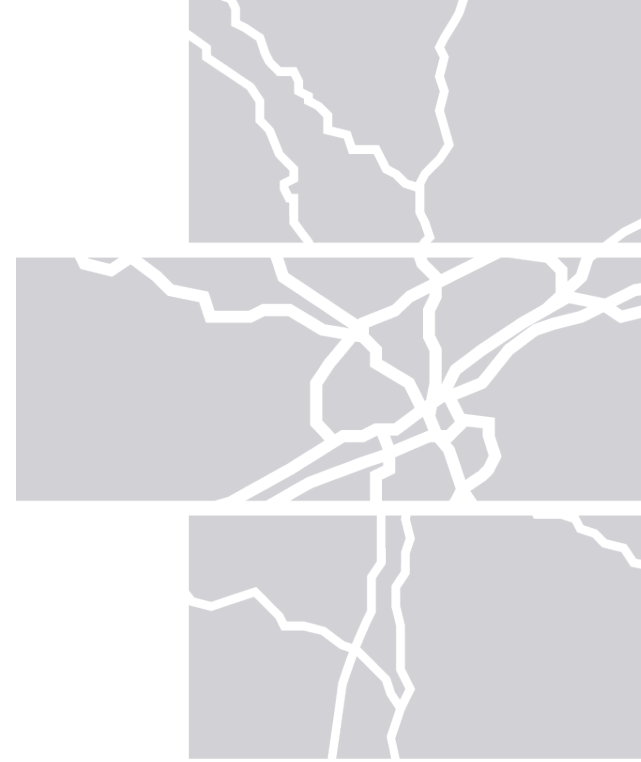


Item 7

Overview of Alcoa Motor Mile Corridor Study

PRESENTERS: ANDREW SONNER & ANNE WALLACE, WSP



Purpose of the Corridor Study

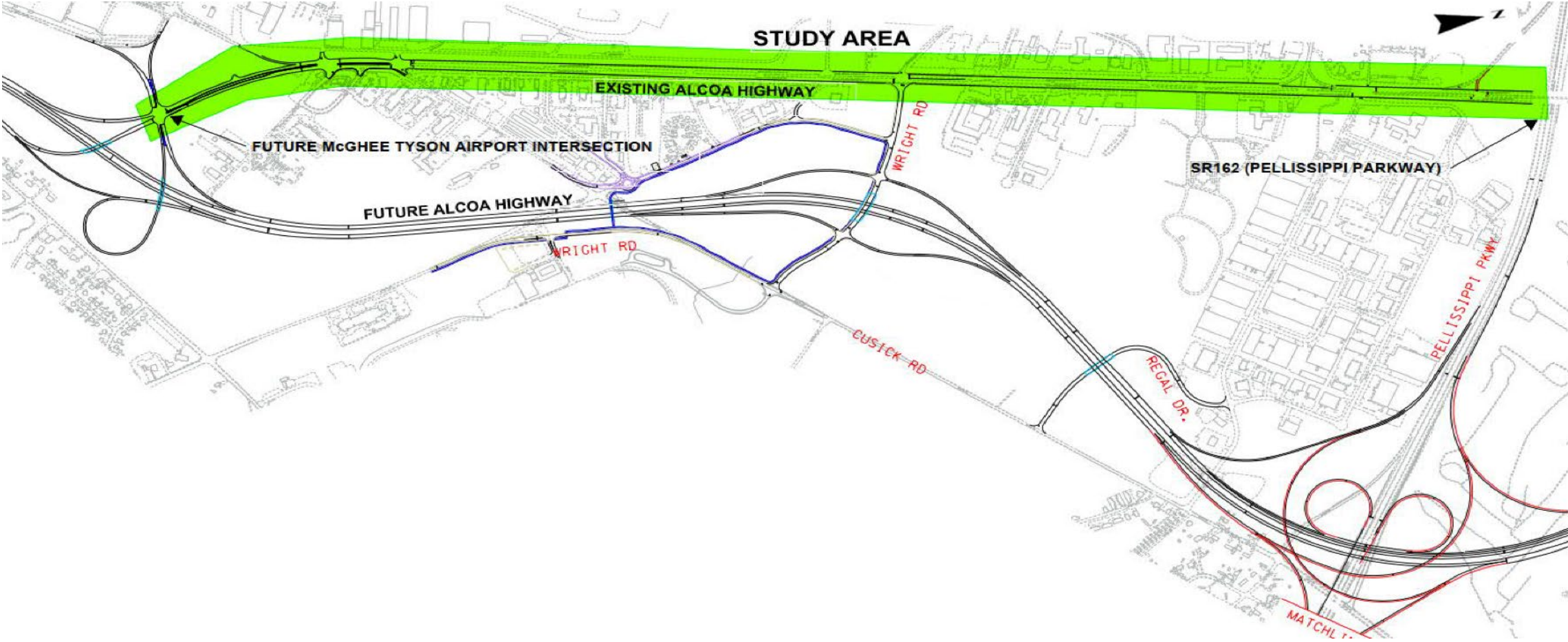
The Corridor Study:

- *Conduct a planning study of the existing alignment of Alcoa Highway (US 129/SR 115) between the future Alcoa Highway intersection at McGhee Tyson Airport and Pellissippi Parkway*

Purpose:

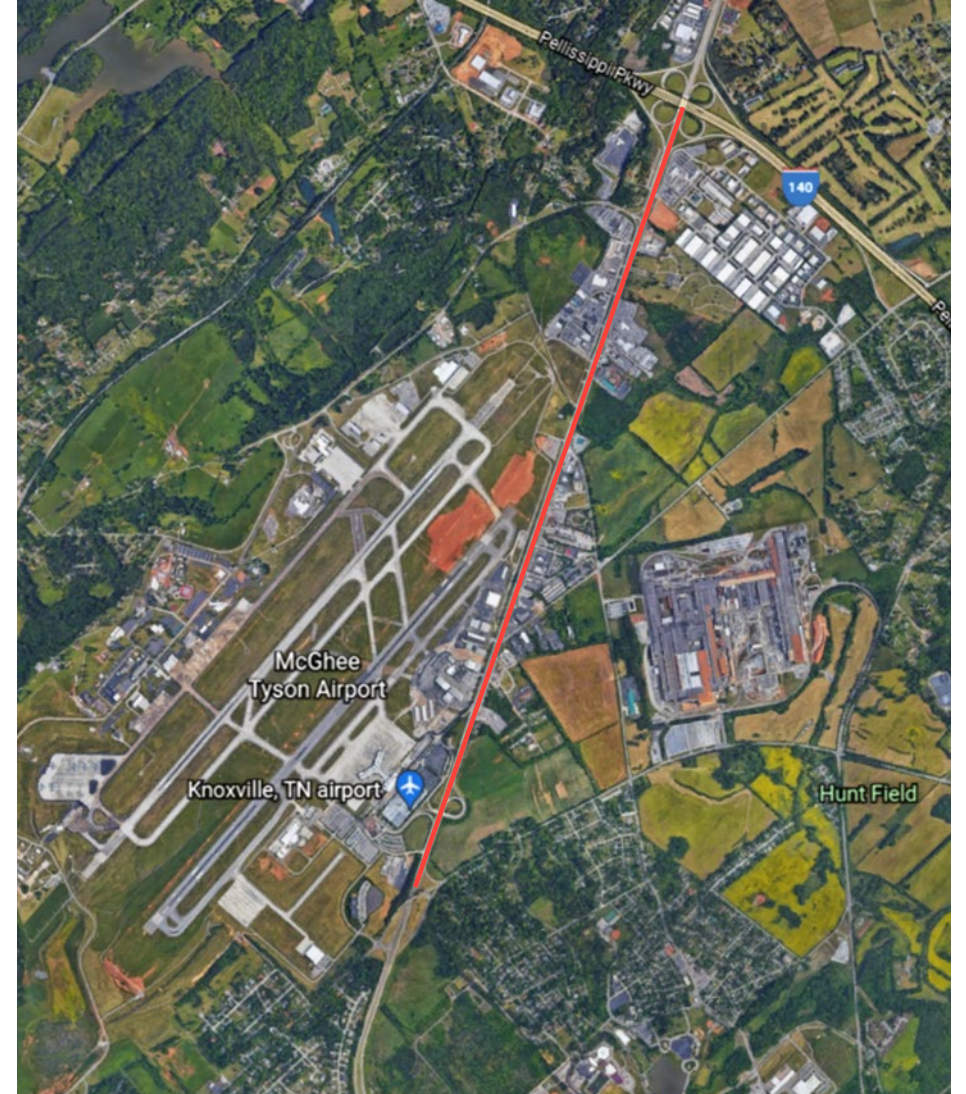
- *Preparation of a road corridor development plan focused on the development of an urban corridor*
- *Develop recommendations that create a more urban and multimodal environment for all users while minimizing future long-term maintenance*

Alignment Study Purpose & Area



Alcoa Highway Existing Alignment

- Approximately 2.5 miles
- 4-lane divided highway with grassy median
- Frontage roads
- 50 and 40 mph posted speed limit
- No signalized intersections
- Current Average Annual Daily Traffic (AADT) ~ 60,000



Alignment Planning Study of Alcoa Highway (US 129/SR 115)

Study Tasks/Scope

Task 1. Existing and Future Conditions Analysis

- Analyze land use patterns, development conditions, traffic and predicted traffic
- Review with Stakeholders

Task 2. Needs & Deficiencies

- Summarize needs and deficiencies
- Provide case studies of up to 3 successful conversions

Task 3. Stakeholder and Public Involvement

- Kickoff Meeting
- Stakeholder Meeting
- Public Meeting
- Final Presentation

Task 4. Design Guidelines/Potential Solutions Analysis

- Develop up to two design alternatives
- Refine Preferred Alternative

Task 5. Recommendations and Final Report

- Summary of findings
- Proposed recommendations with planning level cost estimate

Corridor Characteristics

Future Growth

- Population is growing and expected to grow
- Need for additional housing

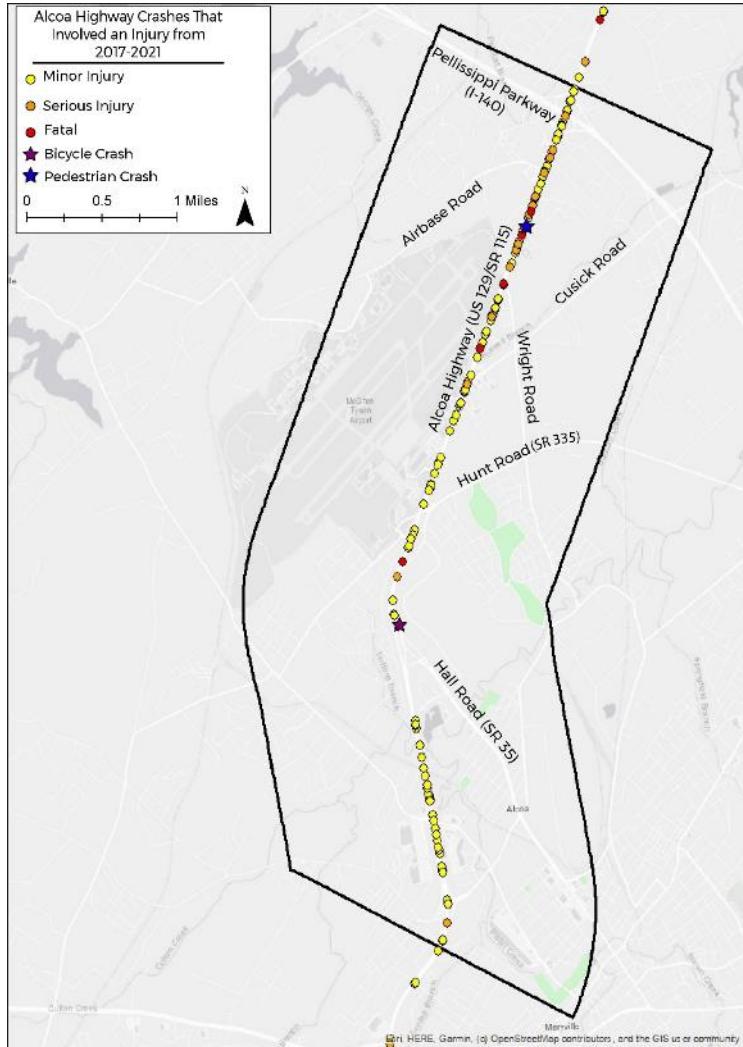
Land Use & Zoning

- East side almost exclusively commercial, adjacent to Alcoa Hwy.
- West side predominately the airport, commercial and residential
- Institutional uses, industrial uses and agricultural uses

Development Patterns

- Both local traffic and regional traffic
- Relocated Alcoa will provide alternate route to the airport
- New potential developments include airport growth, commercial, light industrial

Corridor Characteristics – Crash Data



Year	Crashes	Fatal Crashes	Serious Injury Crashes	Minor Injury Crashes
2017	249	1	2	43
2018	268	1	4	38
2019	288	3	4	52
2020	162	0	3	24
2021	215	2	6	31



Corridor Characteristics –Traffic Volume Assumptions

- Used Alcoa Highway traffic volume diagrams prepared by the Tennessee Department of Transportation (TDOT) for the Relocated Alcoa Highway Project
- An annual growth rate of 2.2% was used based on the TDOT diagrams.
- Estimated 2029 opening year for relocated Alcoa Highway and a future design year of 2049
- Assumes 20% - 25% of current projected traffic remains on existing alignment while the remaining 75% to 80% of traffic uses Relocated Alcoa Highway.

Corridor Characteristics – Traffic Analysis

- Traffic volume and Level of Service (LOS) was analyzed for a 3-lane and a 4-lane reduced width section for existing Alcoa Highway once Relocated Alcoa Highway is opened.
- The study corridor is expected to have up to four (4) new signals installed along the alignment. Therefore, affecting traffic flow.
- Annual Average Daily Traffic (AADT) reaching **greater than** 20,000 vehicles per day on 3-lane roads lead to greater traffic congestion to the point of motorist diverting to alternative routes.

Corridor Characteristics – Future Traffic Volumes – 20% Split

Year	Ex. Alcoa Hwy S. of Airport Entrance	Ex. Alcoa Hwy: btw Airport Entrance and Wright Rd.	Ex. Alcoa Hwy btw N. Wright Rd. and Northpark Blvd.	Ex. Alcoa Hwy btw Northpark Blvd and Pellissippi Pky.
			14,708	16,094
			15,032	16,449
			15,363	16,812
			15,702	17,182
			16,048	17,561
			16,401	17,947
			16,763	18,343
			17,132	18,747
			17,509	19,160
			17,895	19,582
			18,290	20,014
			18,693	20,455
			19,104	20,905
			19,525	21,366
			19,956	21,837
			20,395	22,318
			20,845	22,810
			21,304	23,312
2047	15,426	16,630	21,773	23,826
2048	15,766	16,996	22,253	24,351
2049	16,113	17,370	22,743	24,887

- N. Wright Rd. to Northpark Blvd.
>20,000 AADT in year 2044 (15 years after opening new section)
- Northpark Blvd. to Pellissippi Pky.
>20,000 AADT starting at year 2039 (10 years after opening new section)



Corridor Characteristics – Future Traffic Volumes – 25% Split

Year	Ex. Alcoa Hwy S. of Airport Entrance	Ex. Alcoa Hwy: btw Airport Entrance and N. Wright Rd.	Ex. Alcoa Hwy btw N. Wright Rd. and Northpark Blvd.	Ex. Alcoa Hwy btw Northpark Blvd and Pellissippi Pky.
<ul style="list-style-type: none"> – Alcoa Hwy South of Future Airport Ent. > 20,000 AADT in 2049 – Future Airport Ent. To N. Wright Rd. > 20,000 AADT in 2046 (17 years after opening) – N. Wright Rd. to Northpark Blvd. > 20,000 AADT in year 2033 (5 years after opening) – Northpark Blvd. to Pellissippi Pky. > 20,000 AADT starting at year 2029 (opening year) 			18,385	20,118
			18,790	20,561
			19,204	21,014
			19,627	21,477
			20,060	21,951
			20,502	22,434
			20,953	22,929
			21,415	23,434
			21,887	23,950
			22,369	24,478
			22,862	25,017
			23,366	25,568
			23,880	26,132
			24,407	26,708
			24,944	27,296
		25,494	27,897	
		26,056	28,512	
2046	18,867	20,339	26,630	29,140
2047	19,283	20,787	27,217	29,782
2048	19,708	21,245	27,816	30,439
2049	20,142	21,713	28,429	31,109



Approach Level of Service (LOS) – 20% Split

Year	Northbound				Southbound			
	South -Airport Entrance	South - Wright Rd	South - Northpark Blvd	South - Pellissippi Pky	North - Pellissippi Pky	North - Northpark Blvd	North - Wright Rd	North - Airport Entrance
3-lane Section								
2029 AM	A	C	A	A	A	A	C	A
2029 PM	A	C	B	A	A	A	C	A
2049 AM	A	D	B	B	A	A	D	A
2049 PM	A	C	C	B	B	D	C	A
4-lane Section								
2029 AM	A	A	B	A	A	A	B	A
2029 PM	A	A	B	A	A	A	B	A
2049 AM	A	A	B	A	A	A	B	A
2049 PM	A	A	B	B	B	A	B	A



Approach Level of Service (LOS) – 25% Split

Year	Northbound				Southbound			
	South -Airport Entrance	South – N. Wright Rd	South - Northpark Blvd	South - Pellissippi Pky	North - Pellissippi Pky	North - Northpark Blvd	North - N. Wright Rd	North - Airport Entrance
3-lane Section								
2029 AM	A	C	A	A	A	A	C	A
2029 PM	A	C	B	A	B	B	C	A
2049 AM	B	E	D	B	A	B	E	A
2049 PM	B	D	C	D	D	E	D	A
4-lane Section								
2029 AM	A	B	B	A	A	B	B	A
2029 PM	A	B	B	A	B	B	B	A
2049 AM	A	A	B	B	B	A	C	A
2049 PM	A	B	B	B	B	B	C	A



Speed – Level of Service (LOS) – 20% Split

Scenario	3-Lane Section		4-Lane Section	
	Northbound <i>mph (LOS)</i>	Southbound <i>mph (LOS)</i>	Northbound <i>mph (LOS)</i>	Southbound <i>mph (LOS)</i>
2029 AM	32 (B)	34 (B)	38 (B)	41 (A)
2029 PM	32 (B)	32 (B)	37 (B)	37 (B)
2049 AM	28 (C)	31 (B)	38 (B)	40 (A)
2049 PM	28 (C)	24 (C)	38 (B)	38 (B)

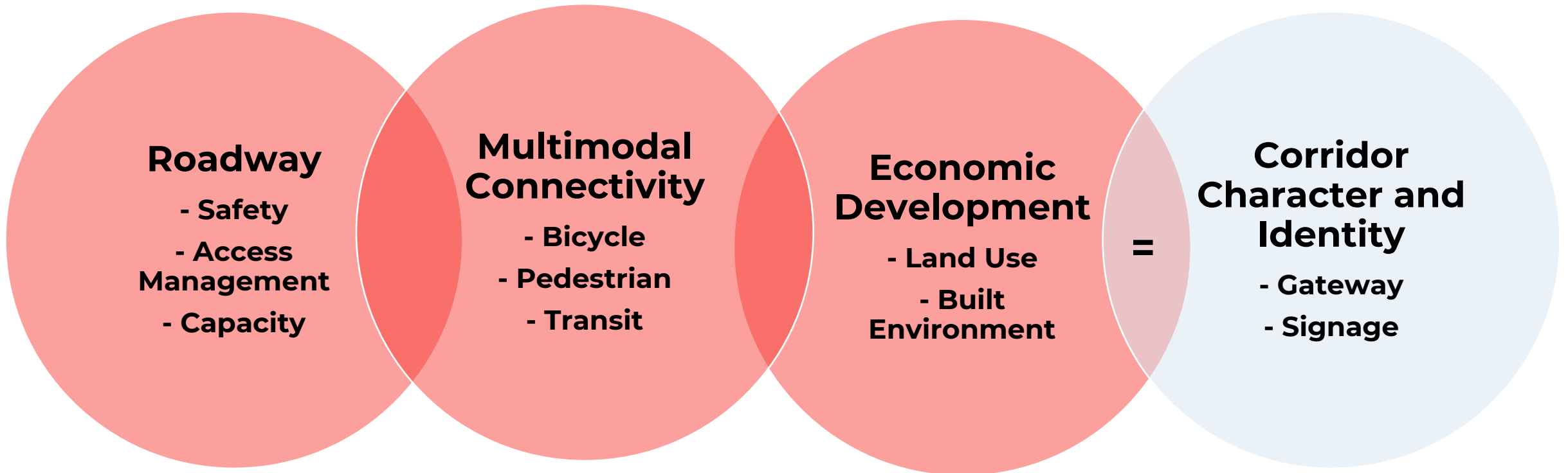


Speed – Level of Service (LOS) – 25% Split

Scenario	3-Lane Section		4-Lane Section	
	Northbound <i>mph (LOS)</i>	Southbound <i>mph (LOS)</i>	Northbound <i>mph (LOS)</i>	Southbound <i>mph (LOS)</i>
2029 AM	32 (B)	33 (B)	37 (B)	40 (A)
2029 PM	31 (B)	31 (B)	36 (B)	37 (B)
2049 AM	23 (C)	29 (C)	36 (B)	39 (A)
2049 PM	21 (D)	18 (D)	37 (B)	36 (B)



Corridor Needs – Stakeholder Feedback



Roadway

- 3-Lane vs. 4-Lane:
 - *Concern over volume and capacity of roadway*
 - *Decision made to use a reduced width 4-lane section*
- Safety
 - *Signalized Intersections will reduce severity of crashes and reduce speed due to interrupted flow of traffic*
- Access Management/Frontage Roads
 - *Reduce the number of access points and median cuts*
 - *Define right-in/right-out access to existing Alcoa Highway*
 - *Intent to revert to private ownership, but maintain access*

Multimodal Connectivity



Overarching goal is for the street to be “user friendly”



Bicycles

Recommended separated bike facility with greenspace next to traffic



Pedestrians

Connect existing greenway trails to hotels
Provide a 10' wide multi-use trail
Tie to existing greenways

Economic Development



MANDELA PARKWAY – OAKLAND, CA

Land Use

- Desire more shopping variety
- Want more park facilities

Built Environment

- Grow commercial area that is aesthetically pleasing
- Connect to Springbrook Farm Development
- Additional land may be available from Arconic after new section of Alcoa Highway is built

Corridor Character & Identity



Preference was for a “softer”/urban four-lane configuration



Appearance

Be cohesive with Springbrook Farm

Consistent lighting, consider removing overhead utilities

Similar look to Hall Road (SR35)



Gateways

Make this a destination highway, instead of a cut through Boulevard leading to Alcoa, Smokies, etc.

Welcoming area for those arriving via the airport

Future Relocated Alcoa Highway Alignment - 2029



McGEE TYSON AIRPORT
(KNOXVILLE AIRPORT)

TIE TO EXISTING
ALCOA HIGHWAY

ALCOA HIGHWAY/
N. WRIGHT ROAD
INTERSECTION

SOUTH BOUND
PELLISSIPPI PKWY
OFF RAMP
INTERSECTION

McGEE TYSON/ALCOA
HIGHWAY INTERSECTION



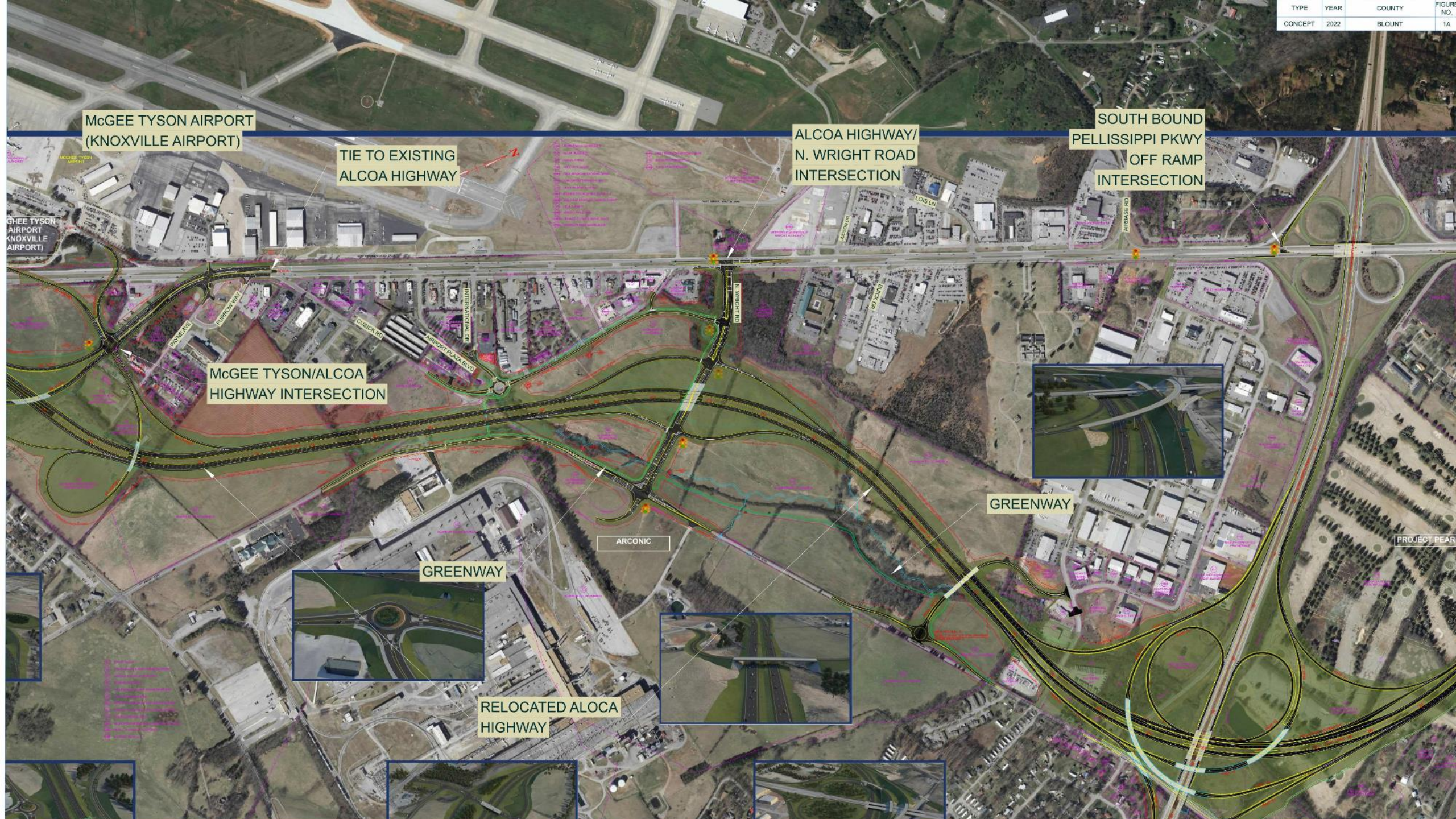
GREENWAY

GREENWAY

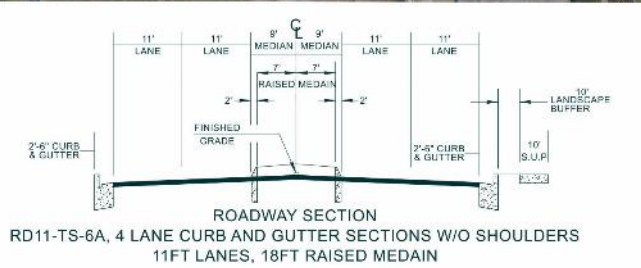
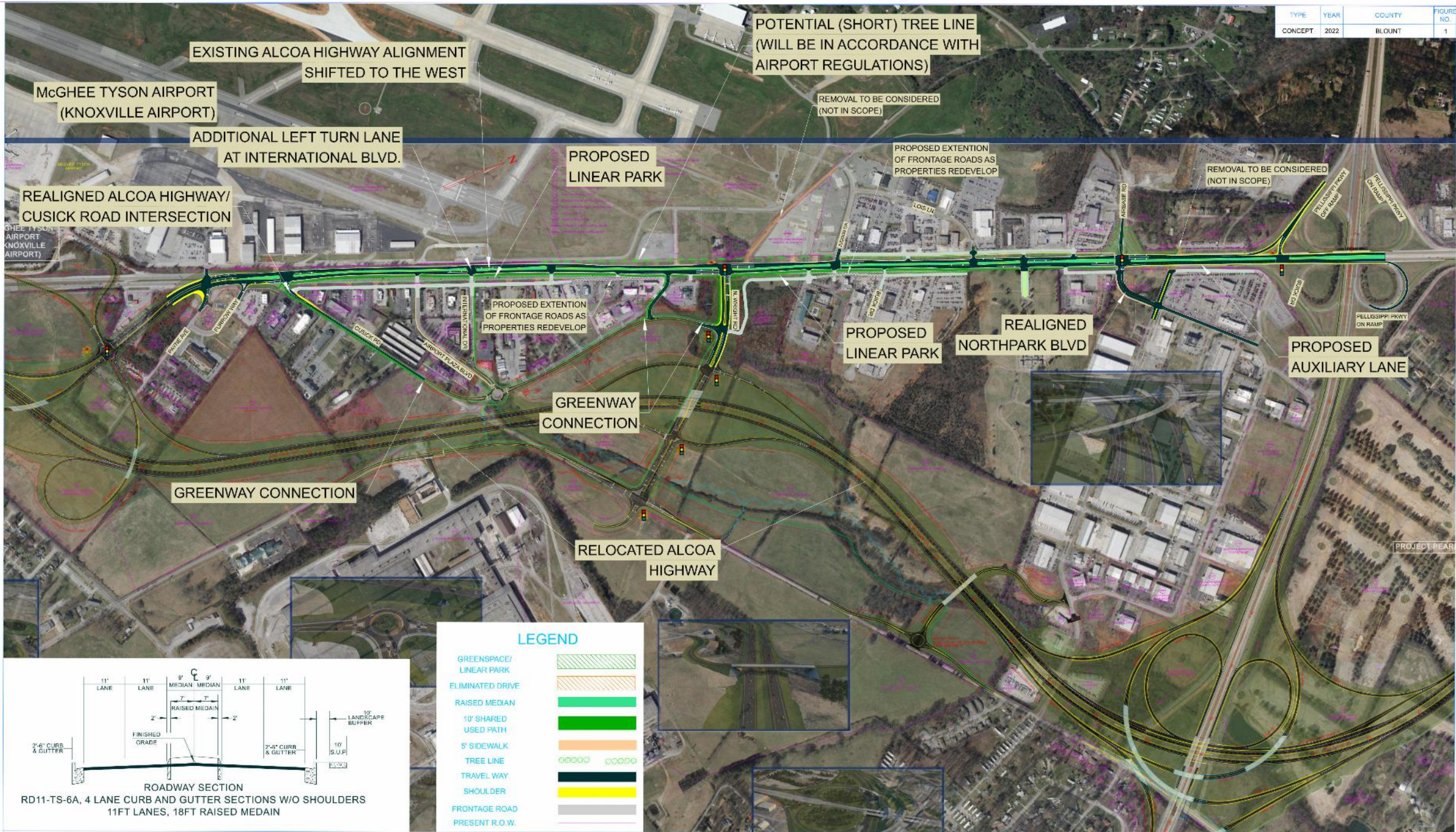
ARCONIC

RELOCATED ALOCA
HIGHWAY

PROJECT PEAR



TYPE	YEAR	COUNTY	FIGURE NO.
CONCEPT	2022	BLOUNT	1



LEGEND

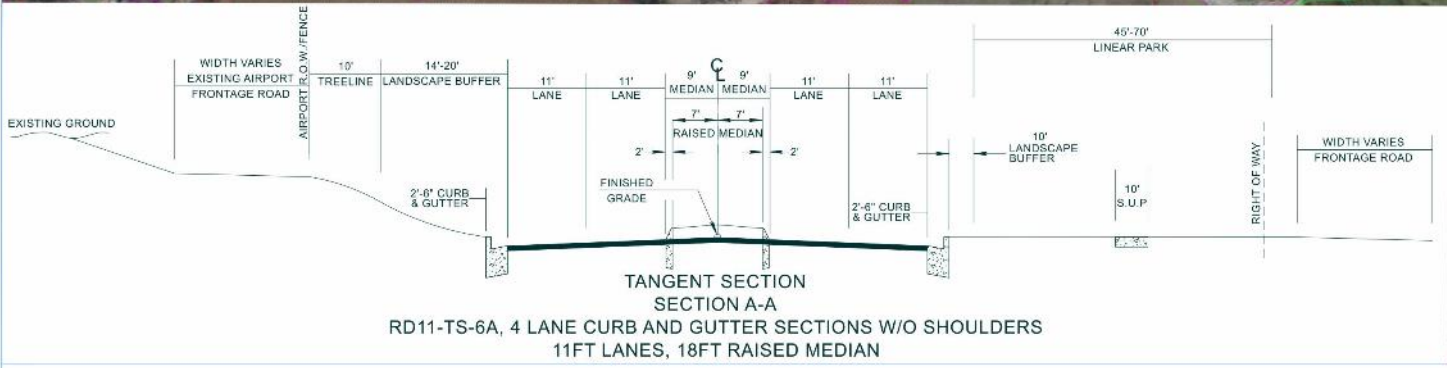
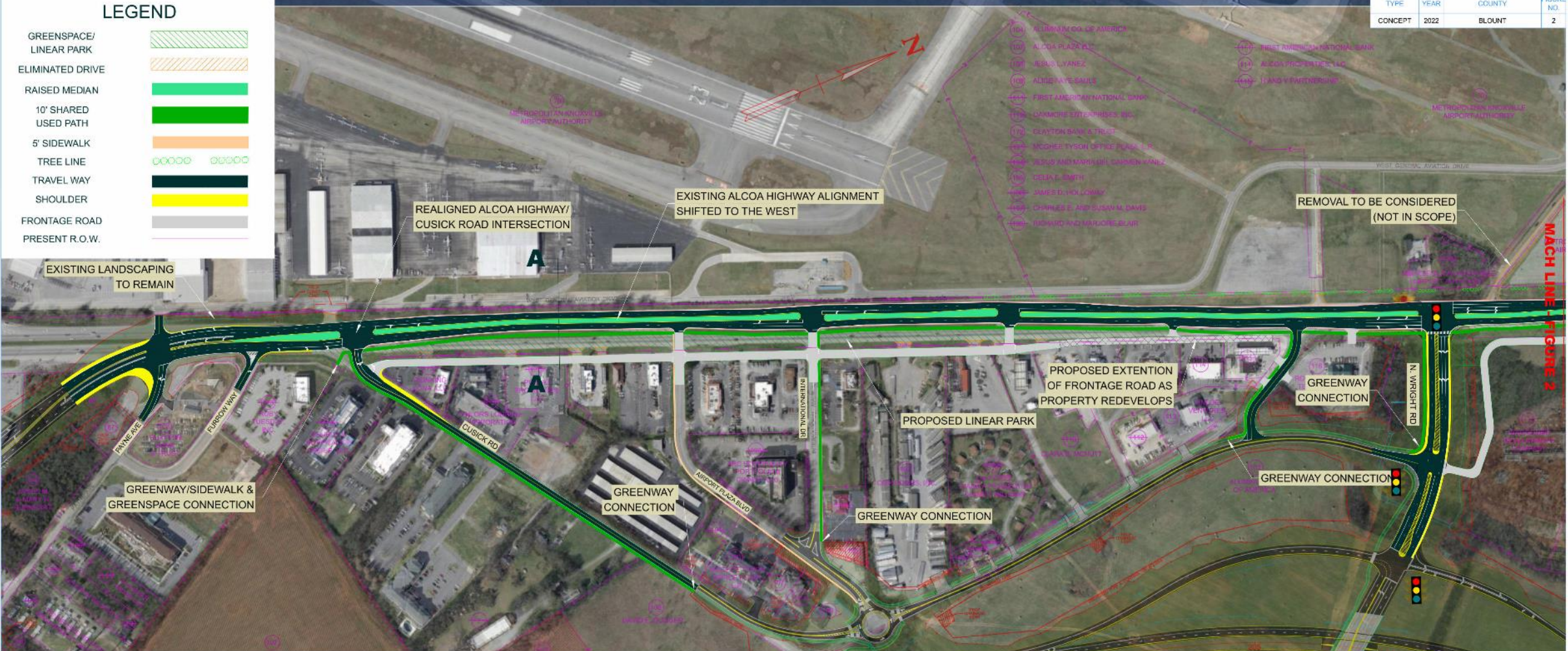
- GREENSPACE/
LINEAR PARK
- ELIMINATED DRIVE
- RAISED MEDIAN
- 10' SHARED
USED PATH
- 5' SIDEWALK
- TREE LINE
- TRAVEL WAY
- SHOULDER
- FRONTAGE ROAD
- PRESENT R.O.W.

PSP 03651DDT OCT - ALCOA HWY - US 129 SR 1154. DESIGN GUIDELINES_POTENTIAL SOLUTIONS/CADD/ALCOA HIGHWAY - CONCEPT DRAWINGS/CONCEPT DRAWINGS.DGN

TYPE	YEAR	COUNTY	FIGURE NO.
CONCEPT	2022	BLOUNT	2

LEGEND

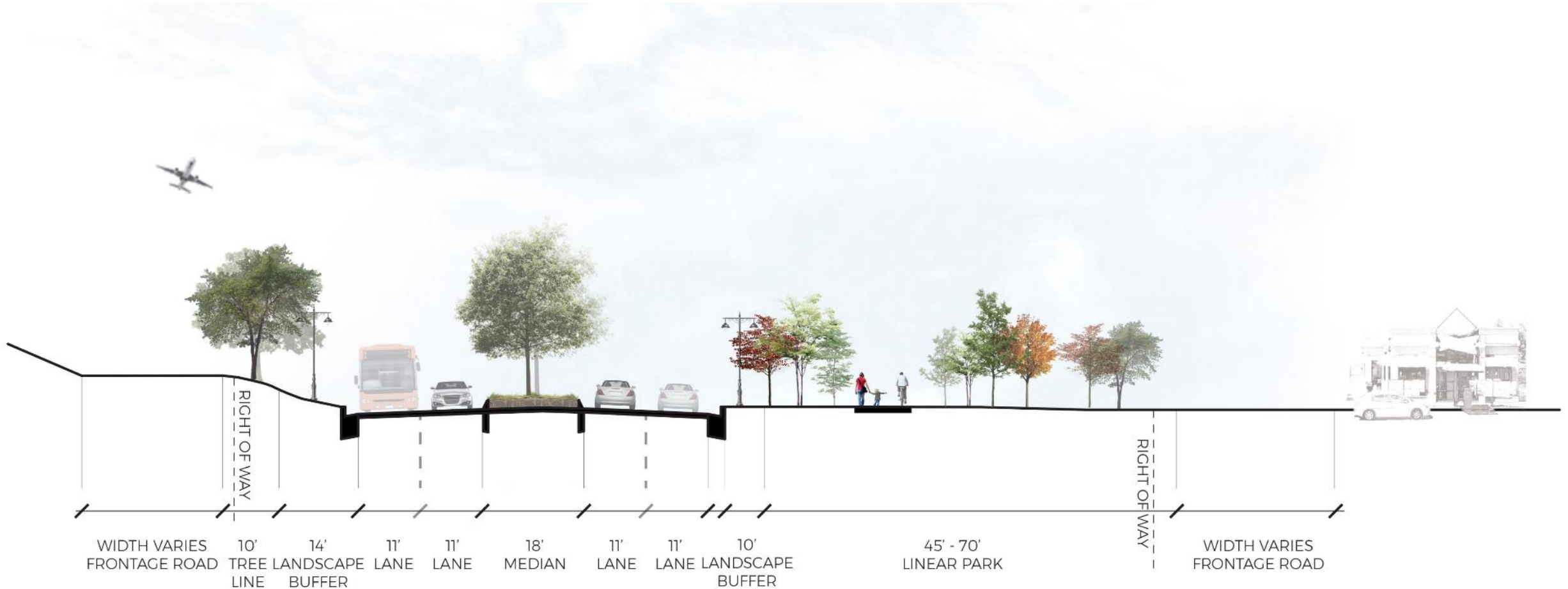
- GREENSPACE/
LINEAR PARK 
- ELIMINATED DRIVE 
- RAISED MEDIAN 
- 10' SHARED
USED PATH 
- 5' SIDEWALK 
- TREE LINE 
- TRAVEL WAY 
- SHOULDER 
- FRONTAGE ROAD 
- PRESENT R.O.W. 



PM IP 03851DOT OCT -ALCOA HWY -US 129 SR 1154- DESIGN GUIDELINES, POTENTIAL SOLUTIONS/CADD/ALCOA HIGHWAY - CONCEPT DRAWINGS/CONCEPT DRAWINGS.DGN

MACH LINE - FIGURE 2

Proposed Four Lane Cross Section – Near Airport, looking North

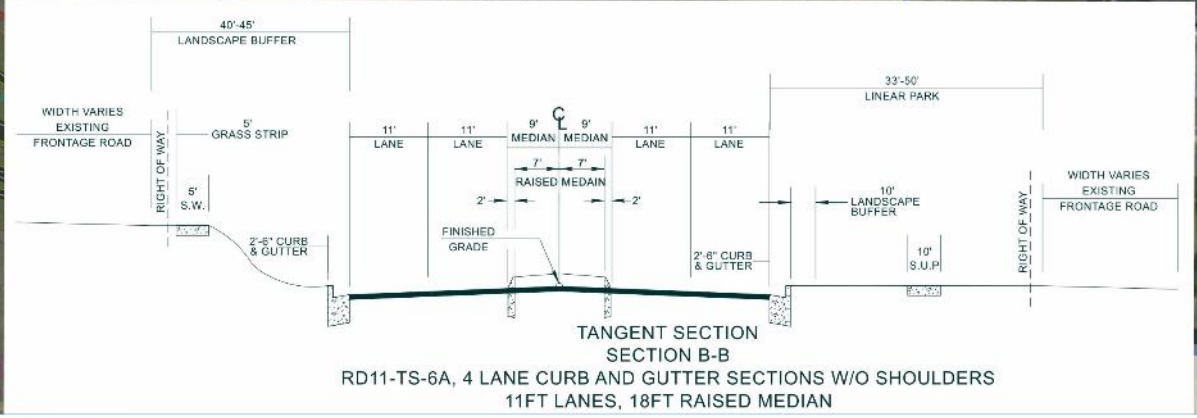


SECTION A-A'
NEAR AIRPORT



TYPE	YEAR	COUNTY	FIGURE NO.
CONCEPT	2022	BLOUNT	3

MACH LINE - FIGURE 2

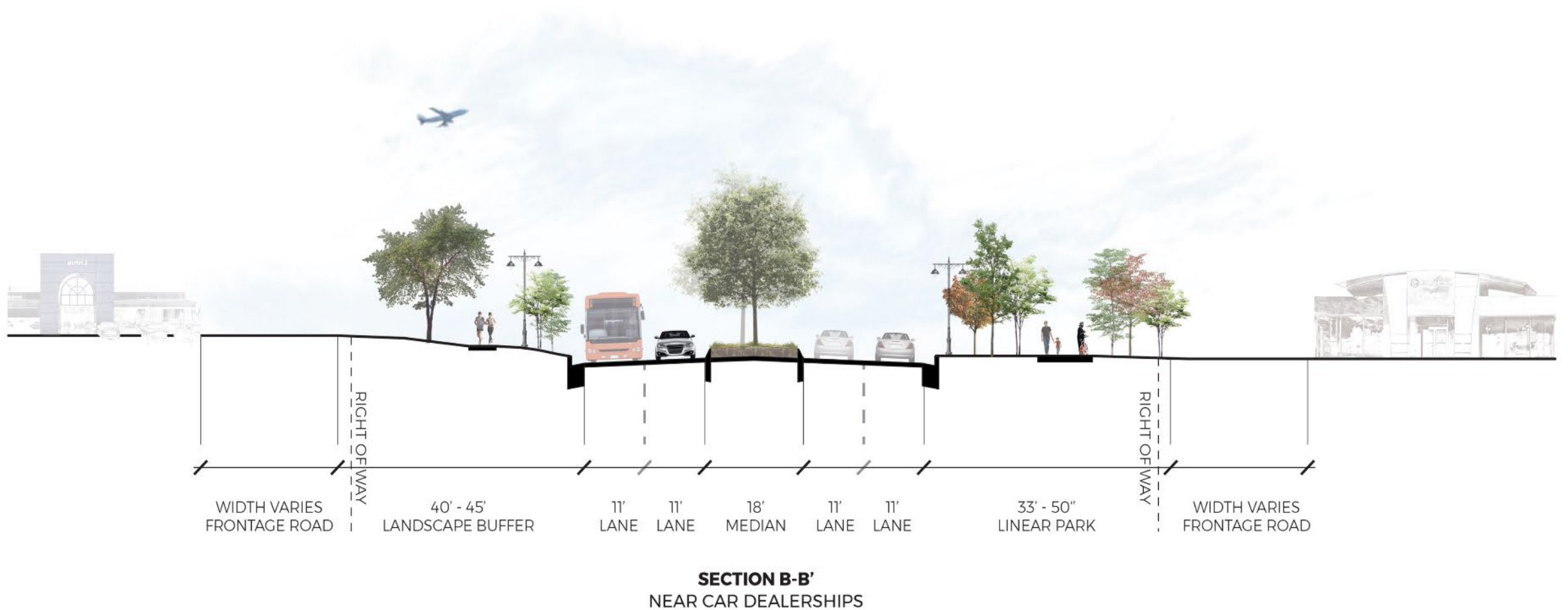


LEGEND

- GREENSPACE/
LINEAR PARK
- ELIMINATED DRIVE
- RAISED MEDIAN
- 10' SHARED
USED PATH
- 5' SIDEWALK
- TREE LINE
- TRAVEL WAY
- SHOULDER
- FRONTAGE ROAD
- PRESENT R.O.W.

PM IP 03851TDOT OCT -ALCOA HWY -US 129 SR 1154- DESIGN GUIDELINES, POTENTIAL SOLUTIONS/CADD/ALCOA HIGHWAY - CONCEPT DRAWINGS/CONCEPT DRAWINGS.DGN

Proposed Four Lane Cross Section – Near Dealerships, looking North



Questions & Answers

