



VGT
NORTH LAS VEGAS AIRPORT




AIRPORT MASTER PLAN



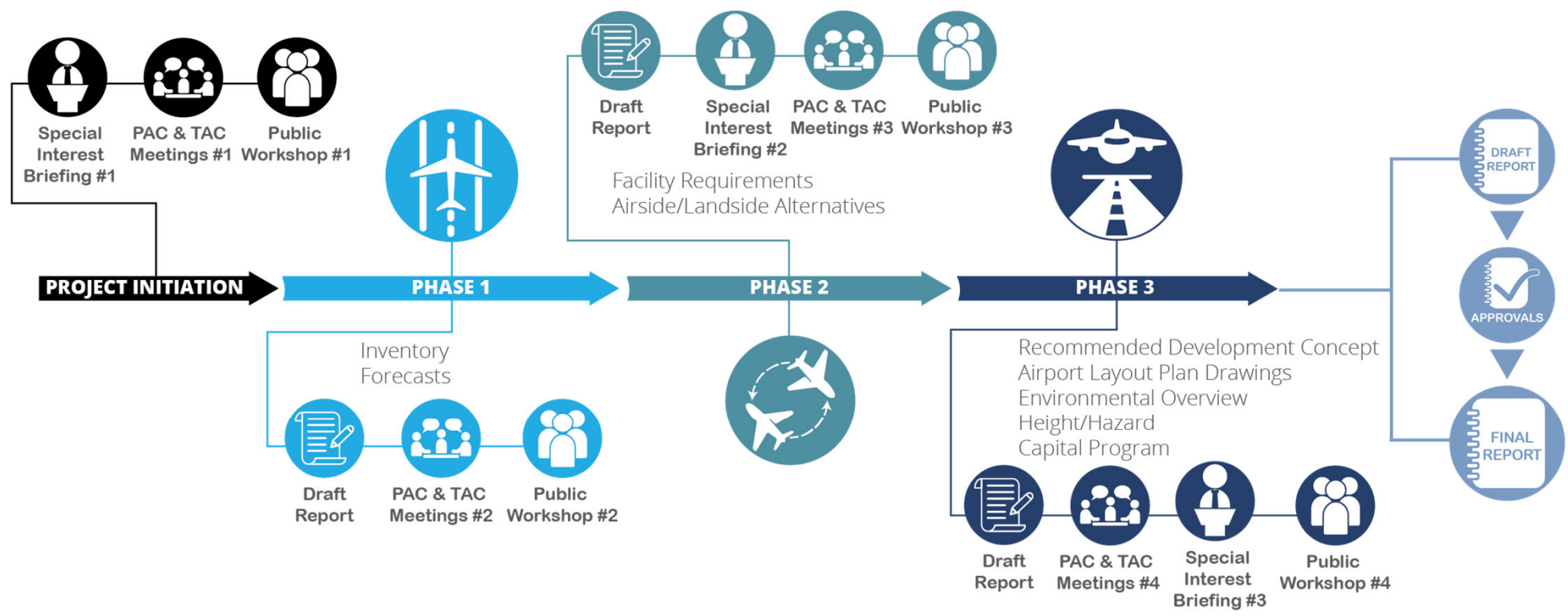
————— **AGENDA** —————

PAC/TAC Meeting #3 – March 28, 2024

1. Welcome/Introductions
2. Master Plan Process Review
3. Discussion of Draft Working Papers
 - Demand/Facility Requirements
 - Alternatives
4. Next Steps
5. Open Discussion/Questions







AIRPORT	NARRATIVE	ROLE	USERS
<div style="border: 2px solid red; padding: 5px;">  <p style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; color: red; font-size: 2em;">FLAGSHIP AIRPORT</p> <p style="text-align: center; font-weight: bold; font-size: 1.5em;">SNSA</p> </div>	<p>North Campus Terminals 1 & 2 is on the main campus and critical part of the economic engine for the State of Nevada and regional economy.</p> <p>South Campus Terminal 3 would be located between Jean and Primm - Nevada, with a connection to south multimodal center.</p>	<ul style="list-style-type: none"> - Part 139 (Class 1) Commercial Air Service - Federal ATCT - CCDOA ACC - Jet A Fuel 	<ul style="list-style-type: none"> - Large Hub Commercial Carriers - Integrated Logistics Carriers - Fixed Base Operators - Helicopter Operations (Strip Tours) - Concessionaires - Multimodal Centers
	<p>Henderson serves as the premier General Aviation airport to support corporate and private aircraft operations.</p>	<ul style="list-style-type: none"> - Non-hub Primary General Aviation - Contracted ATCT - Jet A/100LL Fuel 	<ul style="list-style-type: none"> - Business Jets - Fixed Base Operations (Air Elite) - Helicopter Operations (Regional Tours) - Restaurant Services - Rental Car Services - Exclusive Limo Service
	<p>North Las Vegas serves as a General Aviation Reliever for flight schools, some corporate clients, aviation enthusiasts, and recreational use.</p>	<ul style="list-style-type: none"> - Formerly, Part 139 (Class 3) Air Service - Federal ATCT - Reliever for LAS and Henderson Executive Airport - Jet A/100LL Fuel 	<ul style="list-style-type: none"> - Fixed Base Operations (Air Elite) - Helicopter Operations (Strip Tours) - Restaurant Services - Rental Car Services - Flight Schools
<p style="color: blue; font-weight: bold;">Overton Perkins Field</p>	<p>Overton at Perkins Field serves as a small rural and recreational airfield.</p>	<ul style="list-style-type: none"> - Small Aircraft General Aviation - Jet A/100LL Fuel 	<ul style="list-style-type: none"> - Flight School - General Aviation Users - Potential Drone Integration Site - Recreational (Parachute/Skydiving)
<p style="color: purple; font-weight: bold;">JEAN AIRPORT</p>	<p>Serves as a recreational airfield for aviation enthusiasts.</p>	<ul style="list-style-type: none"> - Small Aircraft General Aviation - Jet A/100LL Fuel 	<ul style="list-style-type: none"> - Flight School - Recreational (Parachute/Skydiving)
<p style="font-weight: bold;">HELIPORT</p>	<p>A strategic land use for DOA and connected action to the FAA MOU.</p>	<ul style="list-style-type: none"> - Aviation Commercial Service - Jet A/100LL Fuel 	<ul style="list-style-type: none"> - Future heliport if/when needed.

Master Plan Process and Elements



AIRPORT DEMAND AND FACILITY REQUIREMENTS

Forecast Summary

YEAR	 Based Aircraft	 Annual Operations	 Peak Month Operations	 Design Day Operations	 Design Hour Operations	 Peak Hour Operations
2023	511	164,781	18,059	735	60	122
2028	584	198,342	22,253	815	67	135
2033	638	213,575	24,518	904	74	150
2038	696	230,485	27,059	1,003	82	167
2043	758	249,711	29,965	1,113	91	185
CAGR (2023-2043)	2.0%	2.1%	2.6%	2.1%	2.1%	2.1%

Source: FAA OPSNET; Traffic Flow Management System Count
Coffman Associates

Note: CAGR = compound annual growth rate

2023 total operations are represented by the last 12 months of data collected ending July of 2023.

Table 2.6: Historical Market Share of Based Aircraft

Year	NUMBER OF BASED AIRCRAFT							% North Las Vegas Airport
	North Las Vegas Airport	Henderson Executive Airport	Jean Airport	Boulder City Municipal Airport	Perkins Field Airport	Harry Reid International Airport	Total	
2013	489	254	36	234	15	126	1,154	42.4%
2014	536	254	36	226	13	125	1,190	45.0%
2015	530	252	20	227	11	133	1,173	45.2%
2016	582	243	35	239	12	132	1,243	46.8%
2017	574	243	34	240	12	180	1,283	44.7%
2018	586	244	35	240	12	180	1,297	45.2%
2019	594	266	35	240	12	180	1,327	44.8%
2020	538	247	21	240	1	176	1,223	44.0%
2021	548	262	20	240	1	176	1,247	43.9%
2022	557	263	21	240	1	188	1,270	43.9%
2023	511	254	10	256	19	188	1,238	41.3%
CAGR 2013-2023	0.44%	0.00%	-12.02%	0.90%	2.39%	4.08%	0.71%	-

Notes:

CAGR = compound annual growth rate

Data for years 2013-2019 were obtained from the 2022 *Henderson Executive Airport Master Plan*. 2023 based aircraft figures for North Las Vegas, Henderson, Jean, and Perkins Field airports were obtained from the FAA National Based Aircraft Inventory Program; 2020-2022 utilized the FAA TAF; 2023 counts for Boulder City and Harry Reid airports were obtained from FAA Form 5010, *Airport Master Records*.

Table 2.11: Historical Market Share of General Aviation Operations

Year	NUMBER OF ANNUAL GENERAL AVIATION AIRCRAFT OPERATIONS							% North Las Vegas Airport
	North Las Vegas Airport	Henderson Executive Airport	Jean Airport	Boulder City Municipal Airport	Perkins Field Airport	Harry Reid International Airport	Total	
2013	120,697	64,537	20,000	20,000	5,200	47,153	277,587	43.5%
2014	118,920	65,052	20,000	20,000	5,200	52,669	281,841	42.2%
2015	128,877	59,997	20,000	33,970	5,200	44,706	292,750	44.0%
2016	140,031	54,377	20,000	33,970	5,200	42,617	296,195	47.3%
2017	149,869	52,063	20,000	25,210	5,200	42,891	295,233	50.8%
2018	145,286	48,604	14,400	25,210	7,200	43,128	283,828	51.2%
2019	172,257	47,742	14,400	14,260	7,200	41,726	297,585	57.9%
2020	160,041	47,546	14,400	14,260	7,200	26,551	269,998	59.3%
2021	152,498	66,132	14,400	14,260	7,200	43,406	297,896	51.2%
2022	169,862	69,321	14,400	14,260	7,200	43,717	318,760	53.3%
2023	150,478	64,589	14,400	14,260	7,200	40,081	291,008	51.7%
CAGR 2013-2023	2.23%	0.01%	-3.23%	-3.33%	3.31%	-1.61%	0.47%	-

Notes:

North Las Vegas, Henderson, and Harry Reid 2013-2022 operations data are from FAA OPSNET. 2023 data are the last 12 months of OPSNET operations, ending July 2023. Boulder City, Jean, and Perkins operations data are from FAA TAF records.

Existing and Future Design Aircraft Characteristics

Aircraft	2023 Operations	2024 Operations	2043 Operations	ARC	Taxiway Design Group	Wingspan (feet)	Tail Height (feet)	Approach Speed (knots)	Typical Seats
Phenom 300 (Existing)	553	103	1,877	B-II	1A	52.2	16.8	116	6
King Air 350 (Existing)	173	26	587	B-II	2A	58	14	107	6
Gulfstream G650 (Ultimate)	30	16	468	D-III	2B	100	26	145	18

Sources:
 FAA Traffic Flow Management System Count Database
 FAA Aircraft Characteristics Database

Notes:
 ARC = Airport Reference Code
 2024 Operations data through February

Phenom 300



King Air 350



Gulfstream G650



Airfield Capacity

Hourly Capacity

maximum number of aircraft operations the airfield can safely accommodate under continuous demand in a one-hour period.

Annual Service Volume

maximum number of operations the airfield can accommodate in a one-year period.

Airfield Capacity

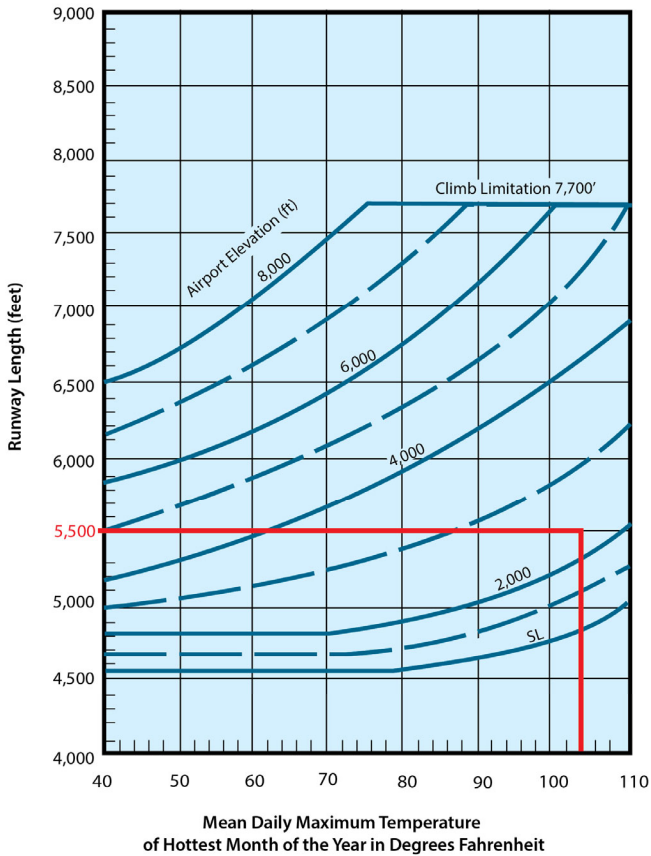
TABLE 3.1 | Airfield Capacity Summary

Year	VFR Hourly Capacity	IFR Hourly Capacity	ASV	VGT Annual Ops	% ASV
2023	166	130	221,700	164,781	74%
2028	181	149	265,300	198,342	75%
2033	183	151	256,900	213,575	83%
2038	186	154	256,500	230,485	90%
2043	188	155	252,700	249,711	99%

Source: ACRP Project 3-17; Coffman Associates

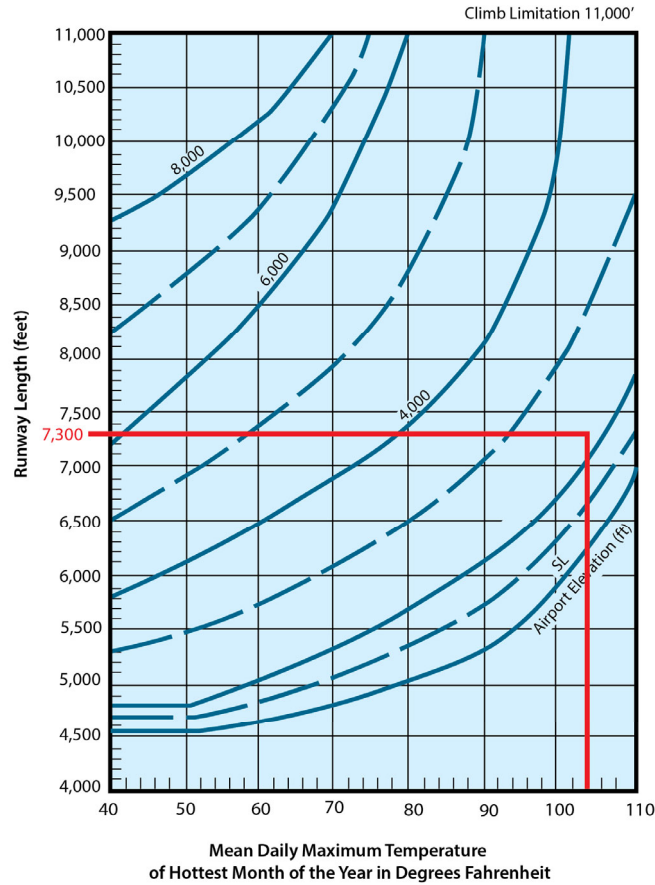
Figure 3.3: Business Jet Runway Length Charts

75 Percent of Fleet at 60 Percent Useful Load



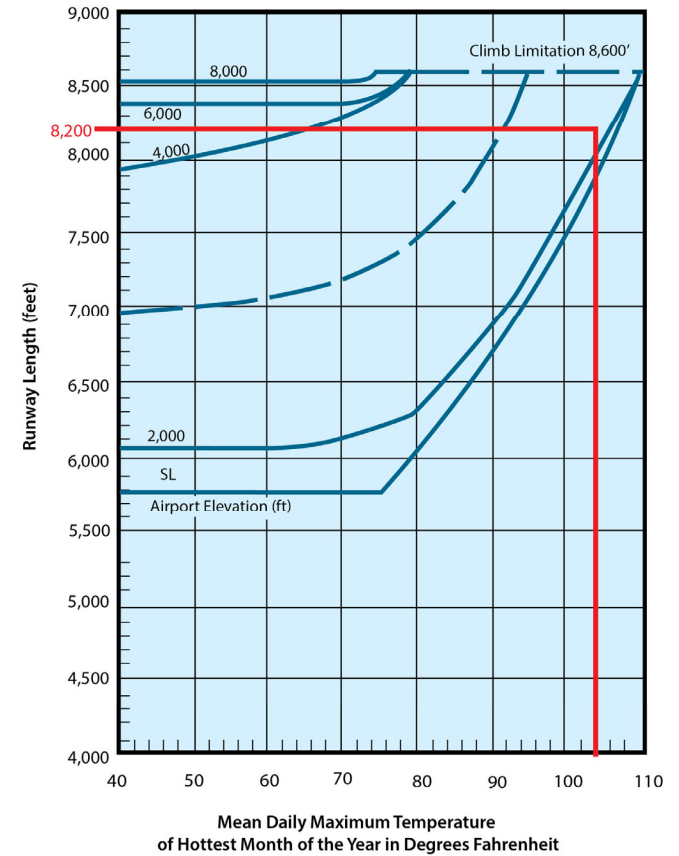
Source: FAA AC 150/5325-4B, Runway Length Requirements for Airport Design. Reproduced by Coffman Associates

100 Percent of Fleet at 60 Percent Useful Load



Source: FAA AC 150/5325-4B, Runway Length Requirements for Airport Design. Reproduced by Coffman Associates

75 Percent of Fleet at 90 Percent Useful Load



Source: FAA AC 150/5325-4B, Runway Length Requirements for Airport Design. Reproduced by Coffman Associates

TABLE 3.10 | Supplemental Business Aircraft Takeoff Length Requirements

Aircraft	MTOW	Takeoff Length Requirements (feet)				
		Useful Load				
		60%	70%	80%	90%	100%
Challenger 300	38,850	5,876	6,449	7,041	7,719	8,516
Challenger 605	48,200	6,370	7,046	7,826	8,651	9,482
Citation 560 XLS	20,200	4,592	4,999	5,463	6,036	C/L
Citation CJ3	13,870	3,833	4,170	4,641	5,156	5,775
Citation II (550)	13,300	4,237	4,734	5,273	5,854	6,477
Citation Sovereign	30,300	3,906	4,245	4,622	5,063	5,627
Citation X	35,700	6,285	6,895	C/L	C/L	C/L
Falcon 2000	35,800	6,663	7,267	7,929	8,855	C/L
Falcon 50EX	41,000	5,618	6,249	C/L	C/L	C/L
Falcon 7X	70,000	5,570	6,252	7,067	7,929	C/L
Falcon 900EX	49,200	5,510	6,270	7,050	7,790	8,420
Global 5000	92,500	5,375	5,994	6,645	7,326	C/L
Global Express	98,000	5,885	6,612	7,378	C/L	C/L
Gulfstream G280	39,600	5,481	6,128	6,908	7,798	8,760
Gulfstream G450	74,600	5,615	6,207	6,881	7,604	8,427
Gulfstream G550	91,000	5,874	6,608	7,702	8,956	FLL
Gulfstream G650	99,600	5,886	6,545	7,276	8,212	C/L
Hawker 4000	39,500	5,332	5,858	6,578	7,414	8,326
Hawker 800XP	28,000	5,526	C/L	C/L	C/L	C/L
Hawker 900 XP	28,000	5,132	5,658	6,236	C/L	C/L
King Air 350	15,000	4,485	4,691	4,888	5,267	5,695
King Air C90B	10,100	3,384	3,633	3,882	4,160	4,470
Lear 40	21,000	6,051	7,080	8,328	FLL	FLL
Lear 55	21,500	7,010	FLL	FLL	FLL	FLL
Lear 60	23,500	6,917	7,620	8,534	9,702	FLL
Phenom 300	18,551	2,700	3,042	3,500	4,700	6,715
Pilatus PC-12	9,921	2,569	2,794	3,031	3,281	3,543

Notes:
 Red figures are greater than 5,000 feet (length of the primary runway at VGT).
 Runway length calculation assumptions: 2,205' MSL field elevation; 104.3°F ambient temperature; 0.84% runway grade
 C/L = climb limited: aircraft cannot maintain required climb gradient
 FLL = field length limited: field length is too short; takeoff is rejected at V1
 MTOW = maximum takeoff weight
Phenom 300 = existing critical aircraft
Gulfstream G650 = ultimate critical aircraft

Source: UltraNav software

TABLE 3.11 | Supplemental Business Aircraft Landing Length Requirements

Aircraft Name	MLW	LANDING LENGTH REQUIREMENTS (feet)					
		Dry Runway Condition			Wet Runway Condition		
		Part 25	80% Rule	60% Rule	Part 25	80% Rule	60% Rule
Citation II (550)	12,700	2,753	3,441	4,588	6,654	8,318	11,090
Citation 560 XLS	18,700	3,917	4,896	6,528	6,198	7,748	10,330
Citation X	31,800	4,628	5,785	7,713	6,700	8,375	11,167
Citation Sovereign	27,100	3,349	4,186	5,582	4,400	5,500	7,333
Citation CJ3	12,750	3,539	4,424	5,898	4,859	6,074	8,098
Challenger 300	33,750	2,727	3,409	4,545	5,228	6,535	8,713
Challenger 605	38,000	2,948	3,685	4,913	4,708	5,885	7,847
Falcon 7X	62,400	3,063	3,829	5,105	3,523	4,404	5,872
Falcon 900EX	44,500	3,841	4,801	6,402	4,417	5,521	7,362
Falcon 2000	33,000	3,270	4,088	5,450	3,760	4,700	6,267
Falcon 50 EX	35,715	3,062	3,828	5,103	3,522	4,403	5,870
Gulfstream G280	32,700	3,401	4,251	5,668	3,912	4,890	6,520
Gulfstream G450	66,000	3,411	4,264	5,685	6,392	7,990	10,653
Gulfstream G550	75,300	2,901	3,626	4,835	5,713	7,141	9,522
Gulfstream G650	83,500	4,348	5,435	7,247	5,702	7,128	9,503
Global 5000	78,600	2,776	3,470	4,627	3,192	3,990	5,320
Global Express	78,600	2,776	3,470	4,627	3,192	3,990	5,320
Hawker 800XP	23,350	2,785	3,481	4,642	4,345	5,431	7,242
Hawker 900 XP	23,350	2,785	3,481	4,642	4,337	5,421	7,228
Hawker 4000	33,500	3,621	4,526	6,035	4,164	5,205	6,940
King Air 350	15,000	2,742	3,428	4,570	No Data	No Data	No Data
King Air C90B	9,600	1,351	1,689	2,252	No Data	No Data	No Data
Lear 40	19,200	3,086	3,858	5,143	4,027	5,034	6,712
Lear 55	18,000	3,603	4,504	6,005	5,765	7,206	9,608
Lear 60	19,500	3,898	4,873	6,497	5,357	6,696	8,928
Phenom 300	17,273	2,800	3,500	4,667	3,220	4,025	5,367
Pilatus PC-12	9,921	2,088	2,610	3,480	No Data	No Data	No Data

Notes:

Red figures are greater than 5,000 feet (length of the primary runway at VGT).

Runway length calculation assumptions: 2,205' MSL field elevation; 104.3°F ambient temperature; 0.84% runway grade

MLW = maximum landing weight

No Data = turboprop aircraft landing lengths are not adjusted for wet runway conditions

Phenom 300 = existing critical aircraft

Gulfstream G650 = ultimate critical aircraft

Source: UltraNav software

Runway Length Summary

Existing runway length at VGT limits the potential for large business jet operations, particularly during the summer months.

Lengths of 6,000'+ should be considered to safely accommodate Gulfstream G650, and similar aircraft.

Figure 3.4: Existing Safety Areas

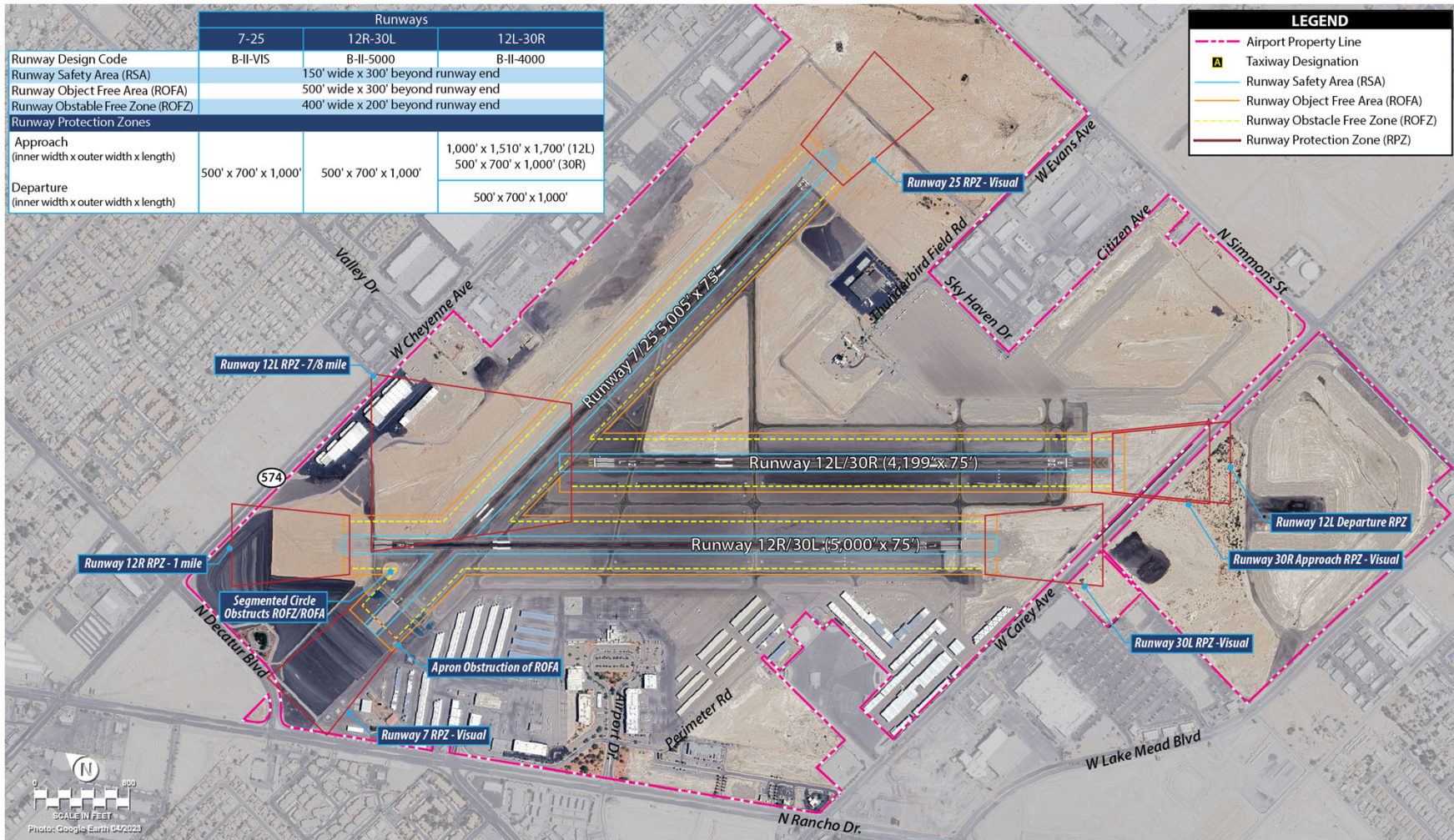
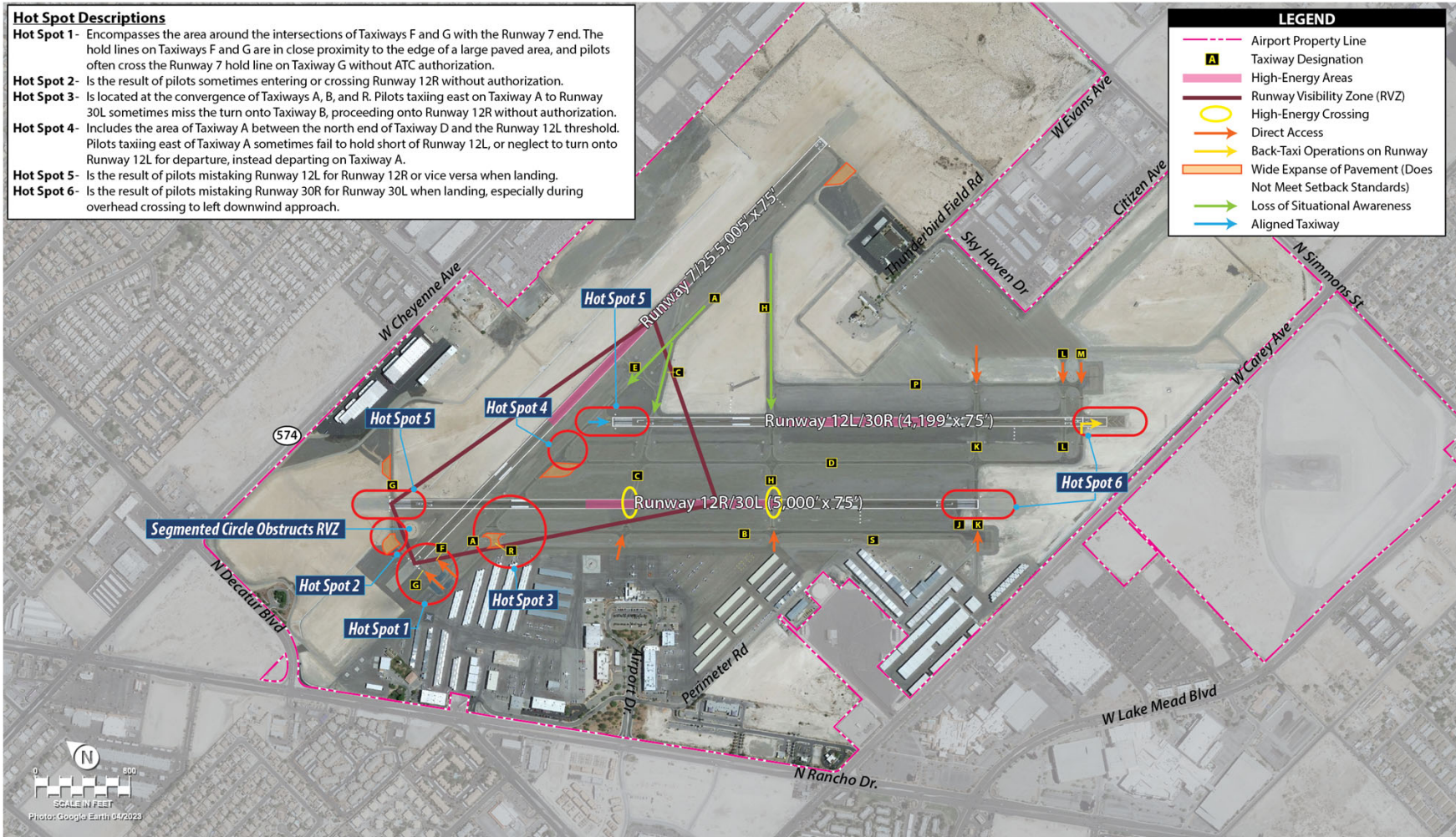



Figure 3.6: Airfield Geometry Review



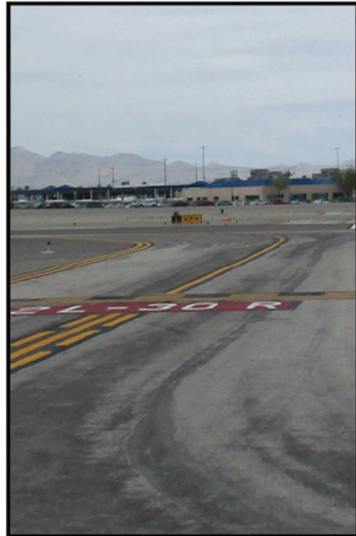
Runway Design Code (RDC)



CURRENT	ULTIMATE CONDITION
Runway 12R-30L	
RDC B-II-5000 5,000' x 75'	Consider RDC D-III Consider extension to 6,000'+ and widen to 100'
Runway 12L-30R	
RDC B-II-4000 4,199' x 75'	Consider RDC D-III Consider extension to 4,300'+ and widen to 100'
Runway 7-25	
RDC B-II-VIS 5,005' x 75'	RDC B-II-VIS Maintain

KEY RDC - Runway Design Code
VIS - Visual

Taxiways



CURRENT	ULTIMATE CONDITION
ADG II and TDG 2A for all taxiways	Improve to TDG 2B standards
All taxiways at least 35' wide	Maintain
Parallel taxiways available for each runway; minimum 240' separation from runway centerline	Consider adding north parallel taxiway for 7-25; increase separation to 400' for D-III runway
2 exit taxiways per runway in target areas	Consider additional exits to enhance airfield capacity
Hot Spots 1-6	Implement corrective measures
8 direct access points	Implement corrective measures
2 high-energy runway crossings	Implement corrective measures
5 wide expansive pavement areas	Implement corrective measures
1 aligned taxiway	Implement corrective measures
5 run up aprons; 3 do not meet TOFA standards	Improve/expand run up aprons and consider new run up aprons to compliment runway expansions

KEY	<p>ADG - Airplane Design Group TDG - Taxiway Design Group TOFA - Taxiway Object Free Area</p>
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Safety Areas



CURRENT	ULTIMATE CONDITION
B-II RSA standards met on all runways	Meet D-III RSA standards
B-II ROFA - Segmented circle and apron pavement obstruct the 7-25 ROFA	Meet D-III ROFA standards
ROFZ - Segmented circle obstructs 12R-30L & 7-25 ROFZ	Relocated segmented circle
RPZs - public roads and buildings in existing RPZs	Meet D-III-4000 RPZ standards

KEY

- ROFA - Runway Object Free Area
- ROFZ - Runway Obstacle Free Zone
- RPZ - Runway Protection Zone
- RSA - Runway Safety Area

Lighting, Marking, and Signage

CURRENT	ULTIMATE CONDITION
Precision markings - Runway 12L	Maintain
Non-precision markings - Runways 12R, 30L	Maintain
Basic markings - Runways 7, 25, 30RMIRL - all runways	Maintain
MITL - all taxiways	Consider gradual replacement with LED fixtures
MITL - all taxiways	Consider gradual replacement with LED fixtures
Holding position markings - 200' from all runway centerlines	Increase separation to 272 feet for D-III runway



KEY	<p>MIRL/HIRL - Medium/High Intensity Runway Lighting</p> <p>MITL - Medium Intensity Taxiway Lighting</p>
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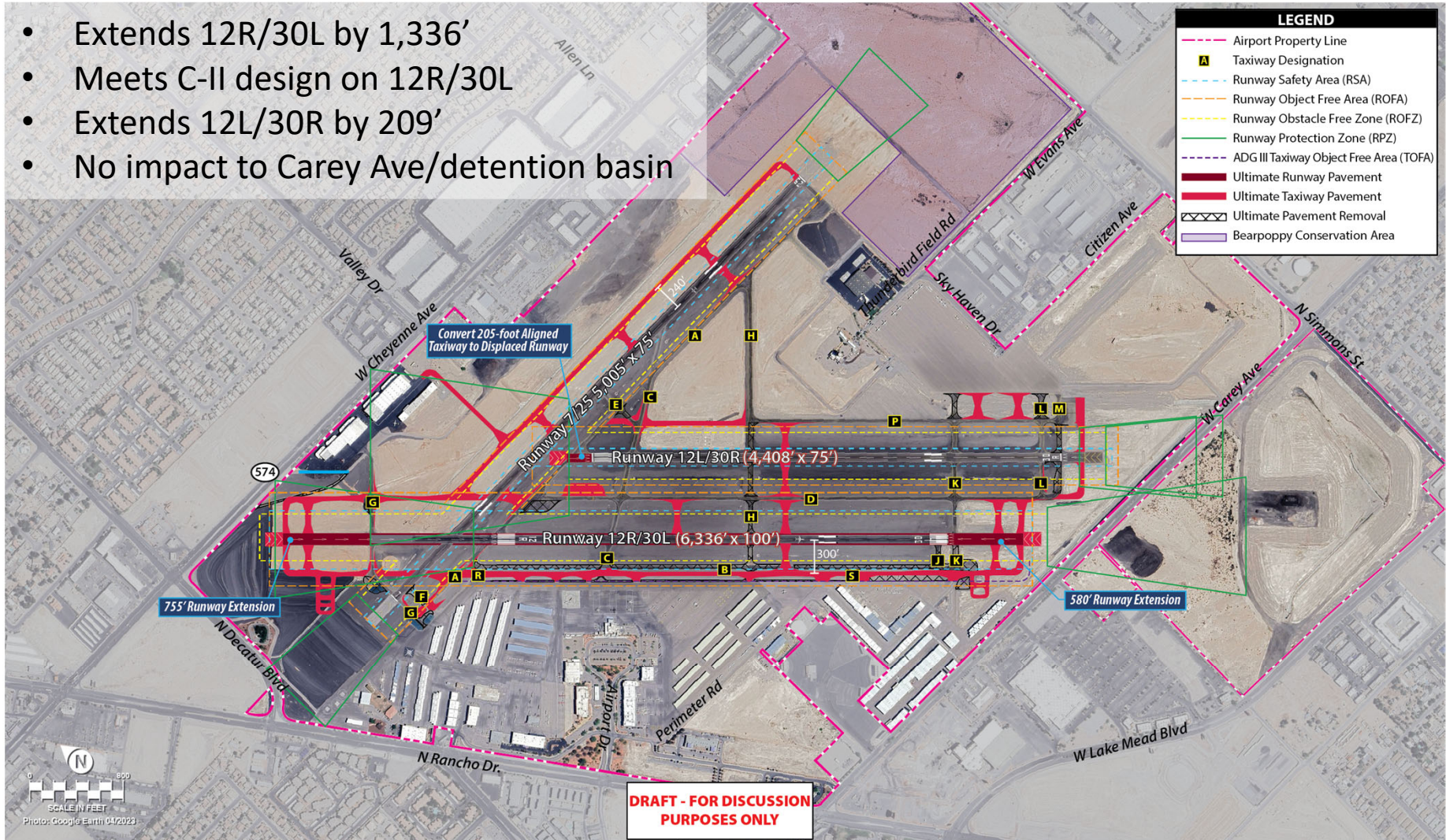
Hangar & Apron



CURRENT	ULTIMATE CONDITION
1,153,000 sf of storage hangar capacity 275,800 sy of apron	Increase capacity to 1,608,500 sf Increase capacity to 357,200 sy

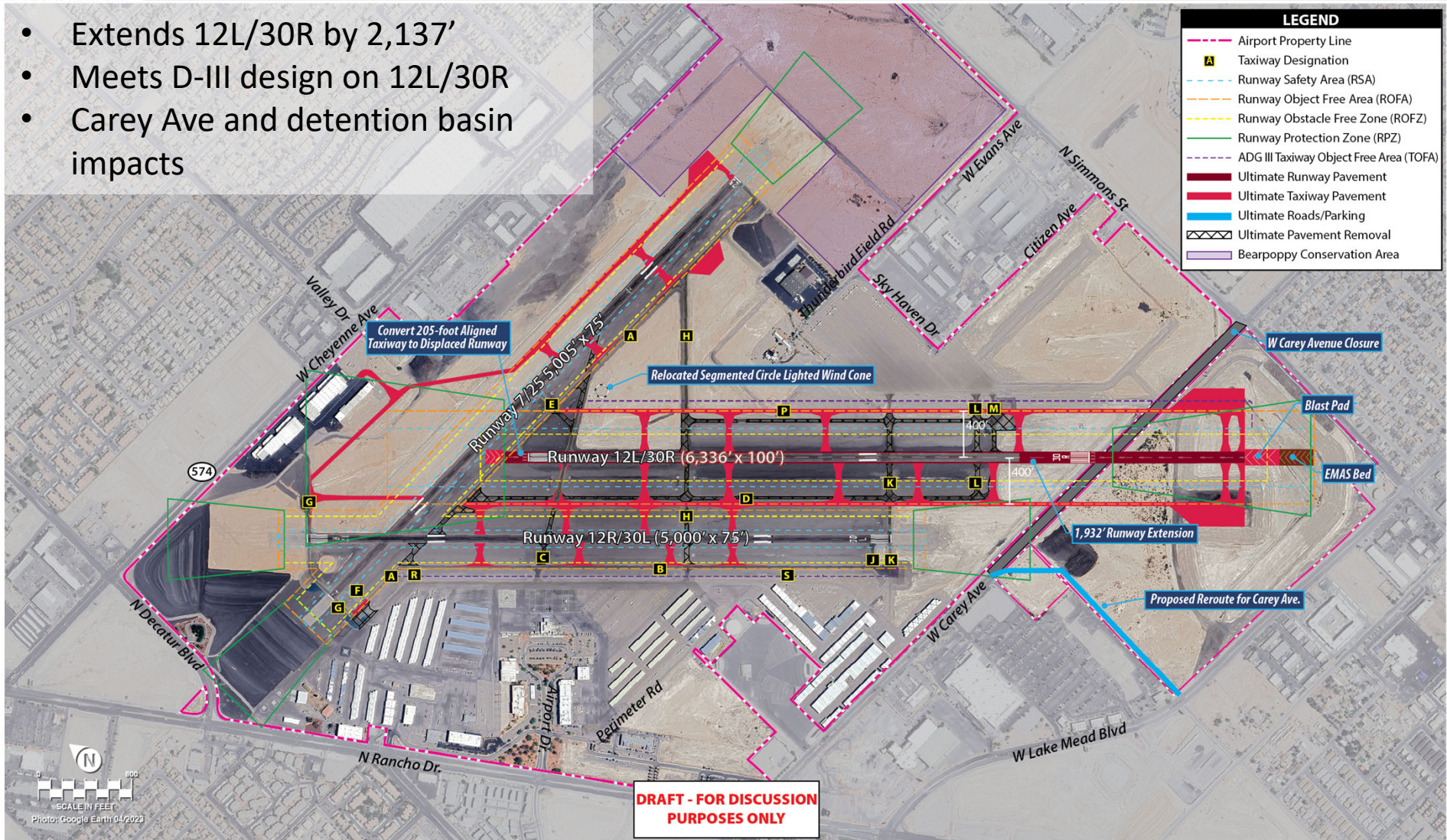
AIRPORT DEVELOPMENT ALTERNATIVES

- Extends 12R/30L by 1,336'
- Meets C-II design on 12R/30L
- Extends 12L/30R by 209'
- No impact to Carey Ave/detention basin

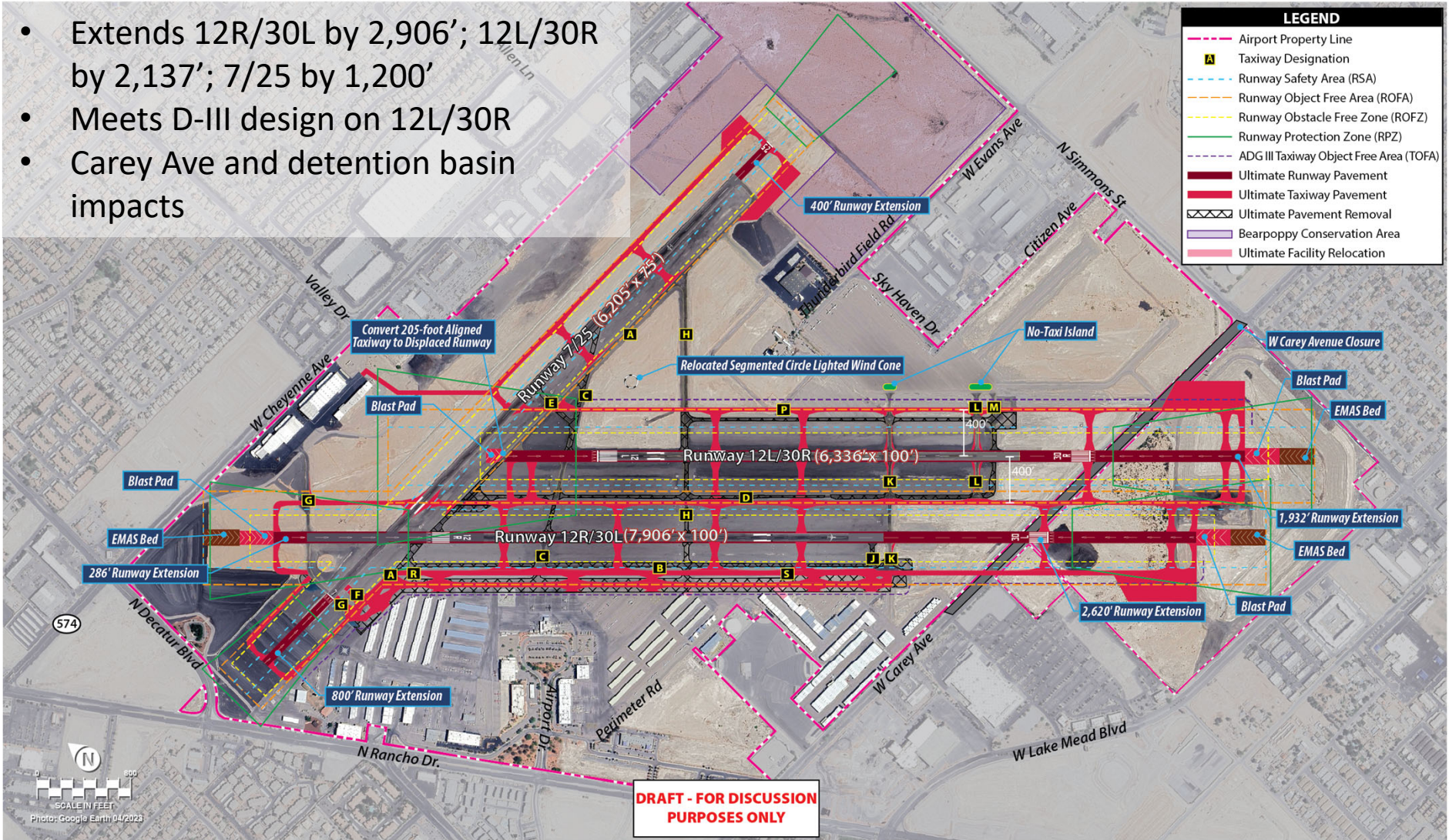


Runway Configuration Alternative 2

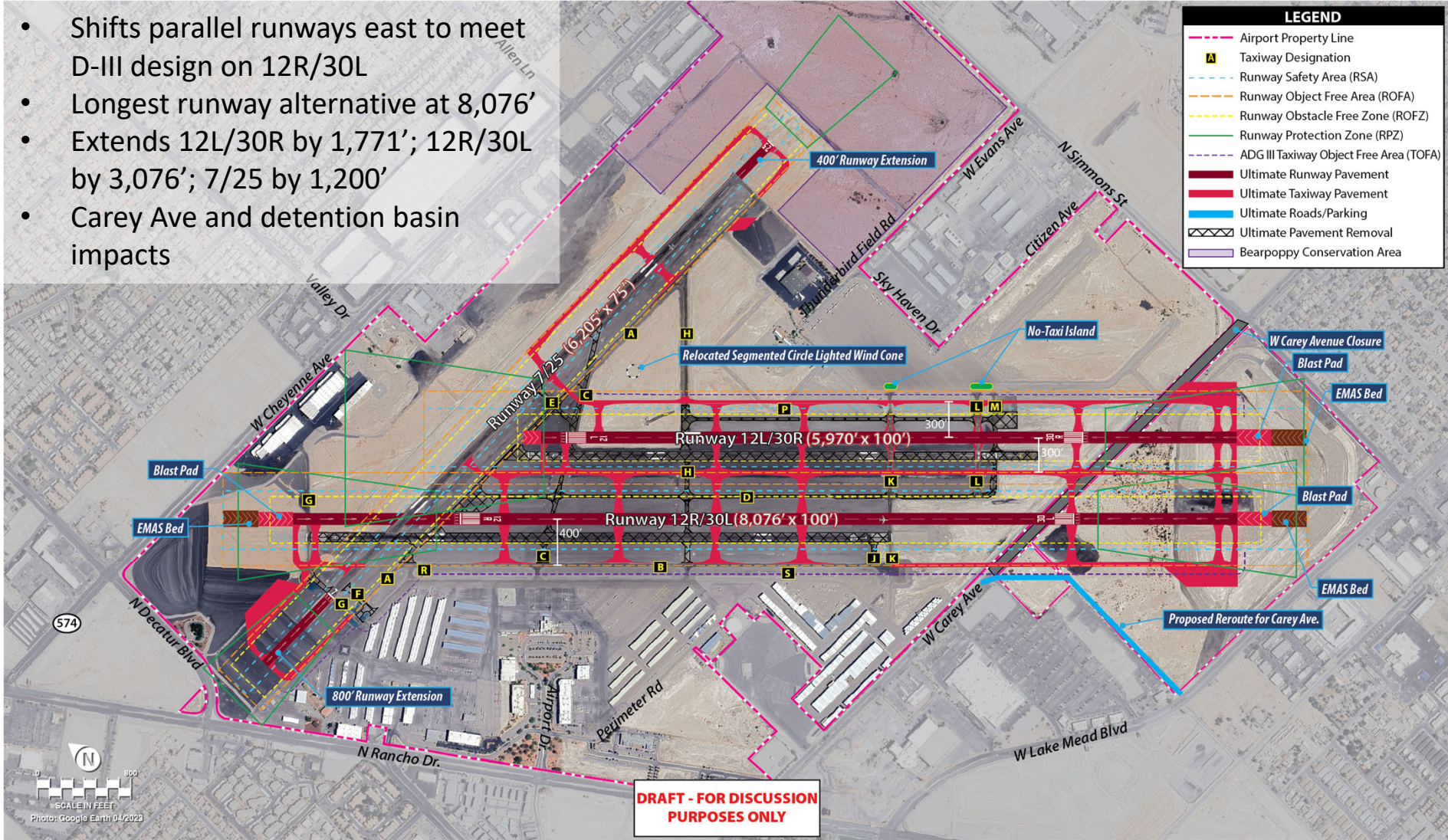
- Extends 12L/30R by 2,137'
- Meets D-III design on 12L/30R
- Carey Ave and detention basin impacts



- Extends 12R/30L by 2,906'; 12L/30R by 2,137'; 7/25 by 1,200'
- Meets D-III design on 12L/30R
- Carey Ave and detention basin impacts

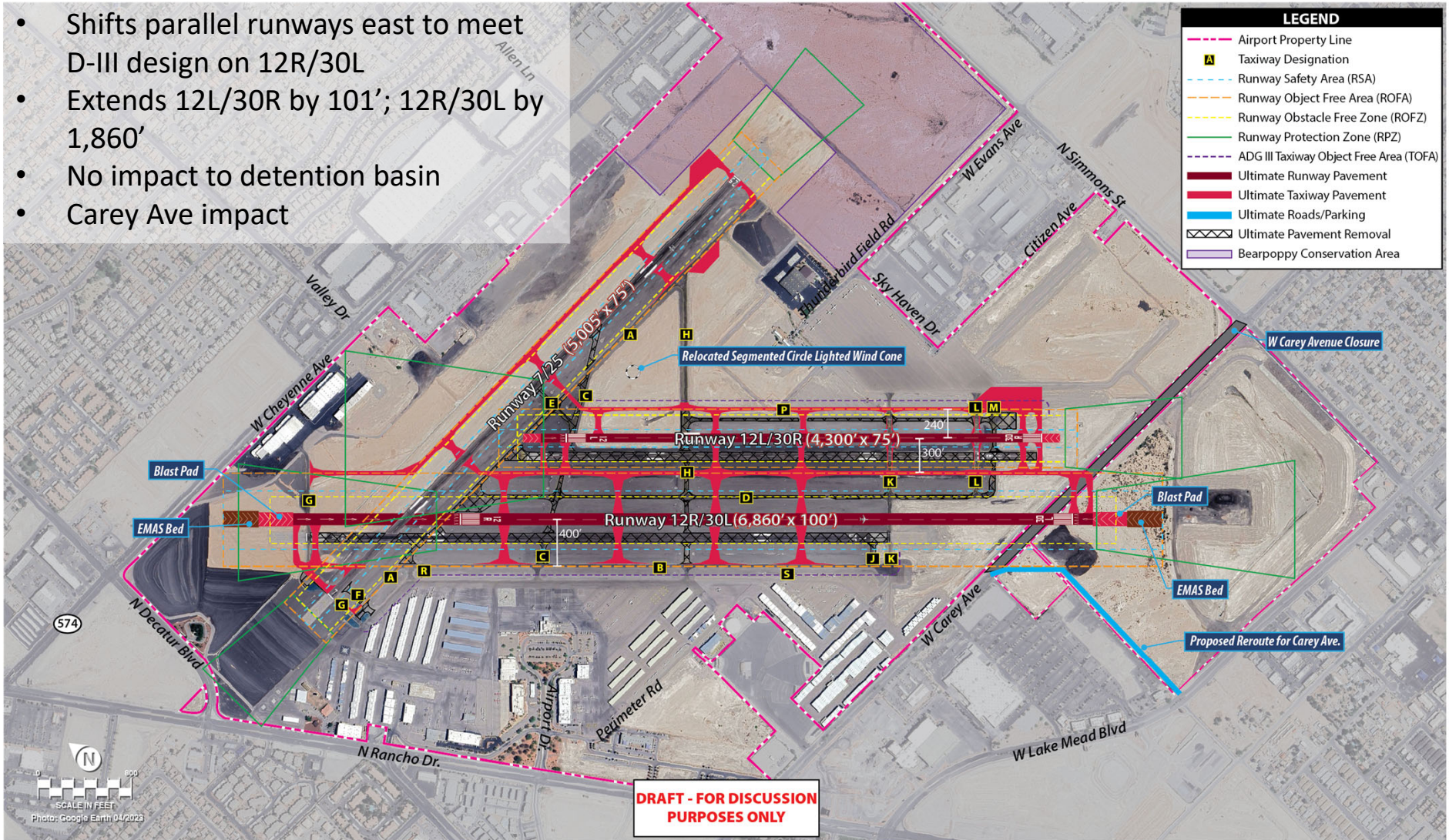


- Shifts parallel runways east to meet D-III design on 12R/30L
- Longest runway alternative at 8,076'
- Extends 12L/30R by 1,771'; 12R/30L by 3,076'; 7/25 by 1,200'
- Carey Ave and detention basin impacts



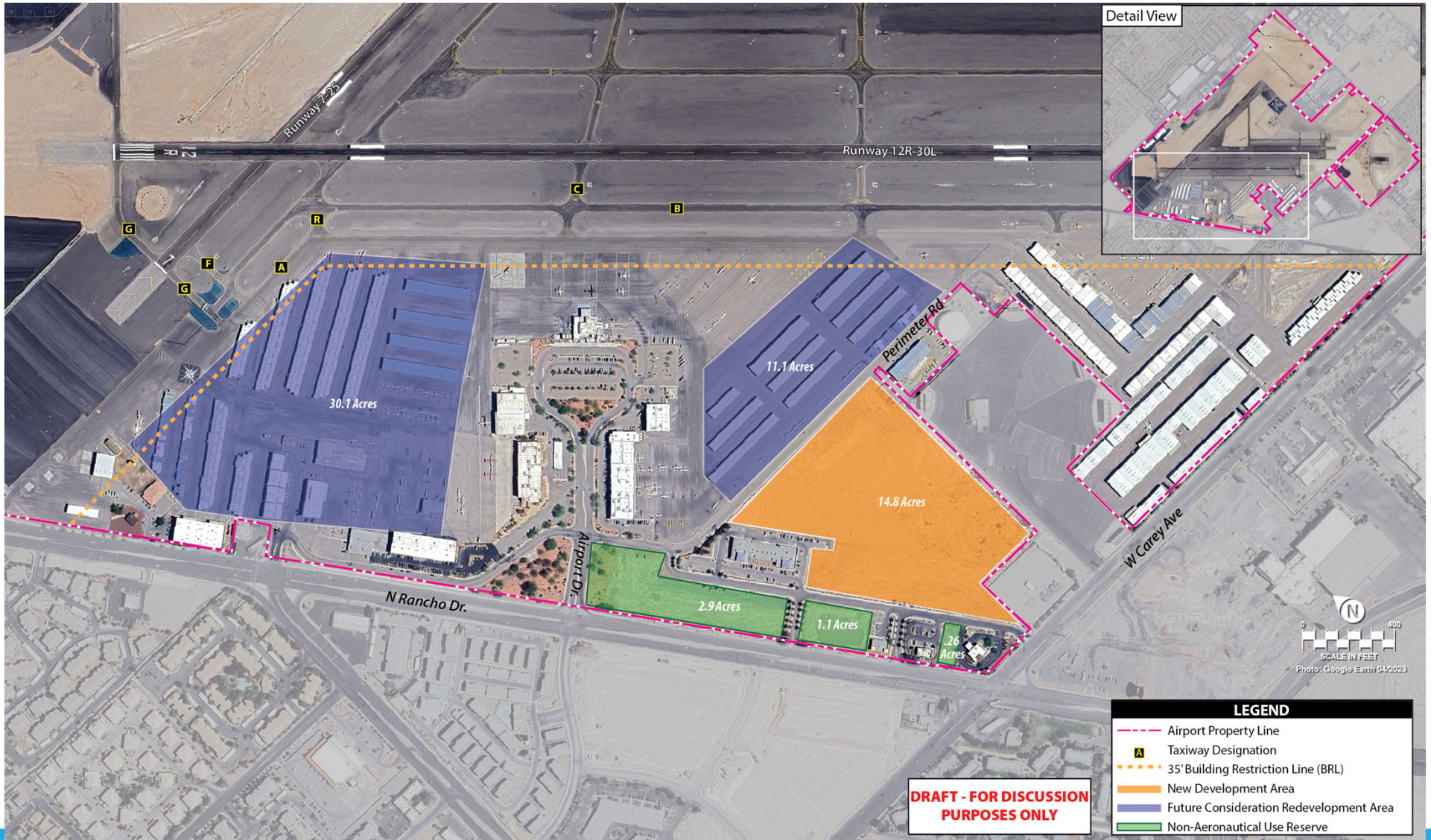
**DRAFT - FOR DISCUSSION
PURPOSES ONLY**

- Shifts parallel runways east to meet D-III design on 12R/30L
- Extends 12L/30R by 101'; 12R/30L by 1,860'
- No impact to detention basin
- Carey Ave impact



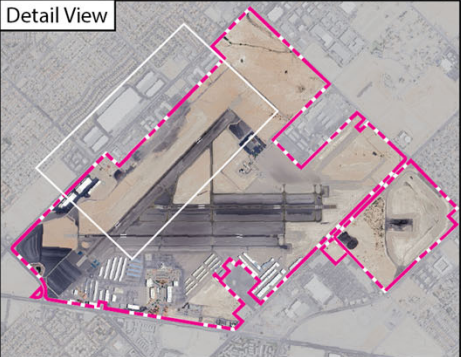
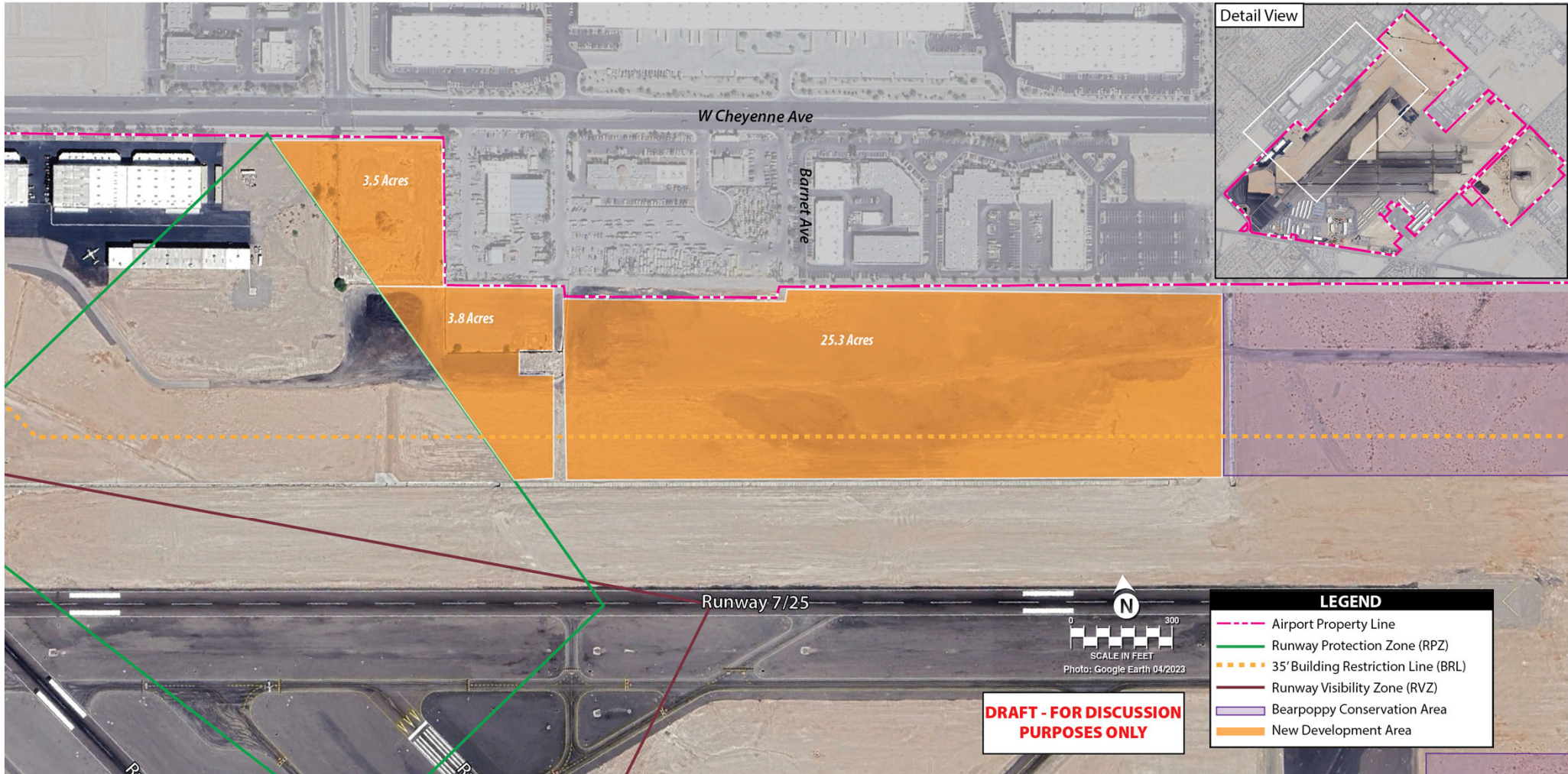
AIRFIELD ALTERNATIVES SUMMARY

	Alternatives				
	1	2	3	4	5
RDC	C-II	D-III	D-III	D-III	D-III
Primary Runway Length (ft)	6,336	6,336	7,906	8,076	6,860
Accelerate Stop Distance Available (ASDA) (ft.)	5,429	6,336	7,906	8,076	6,860
Landing Distance Available (LDA) (ft.)	4,849	6,131	6,641	6,676	6,660
Airfield Geometry	Mitigates most issues; maintains Taxiway A acute-angled intersections and high-energy intersections	Maintains Taxiway A acute-angle intersection; high-energy intersections offset	Mitigates non-standard conditions; requires removal of landside facilities to clear TOFA	Mitigates non-standard conditions; maintains high-energy intersections	Mitigates non-standard conditions; maintains high-energy intersections
RPZs	Cheyenne Ave and Carey Ave in RPZs	Cheyenne Ave and in 12L/12R RPZs; Cheyenne hangar complex impacted	No incompatibilities	Hangar within 12L RPZ; no other incompatibilities	No incompatibilities
Capacity	2/3 exits in target area	2/3 exits in target area	3 exits in target area	3 exits in target area	3 exits in target area
Other	No impact on vicinity roads or developments	Portion of Carey Ave closed; impacts detention basin; new connecting road between Carey Ave and Lake Mead Blvd	Portion of Carey Ave closed; impacts detention basin	Portion of Carey Ave closed; impacts detention basin; new connecting road between Carey Ave and Lake Mead Blvd	Portion of Carey Ave closed; new connecting road between Carey Ave and Lake Mead Blvd



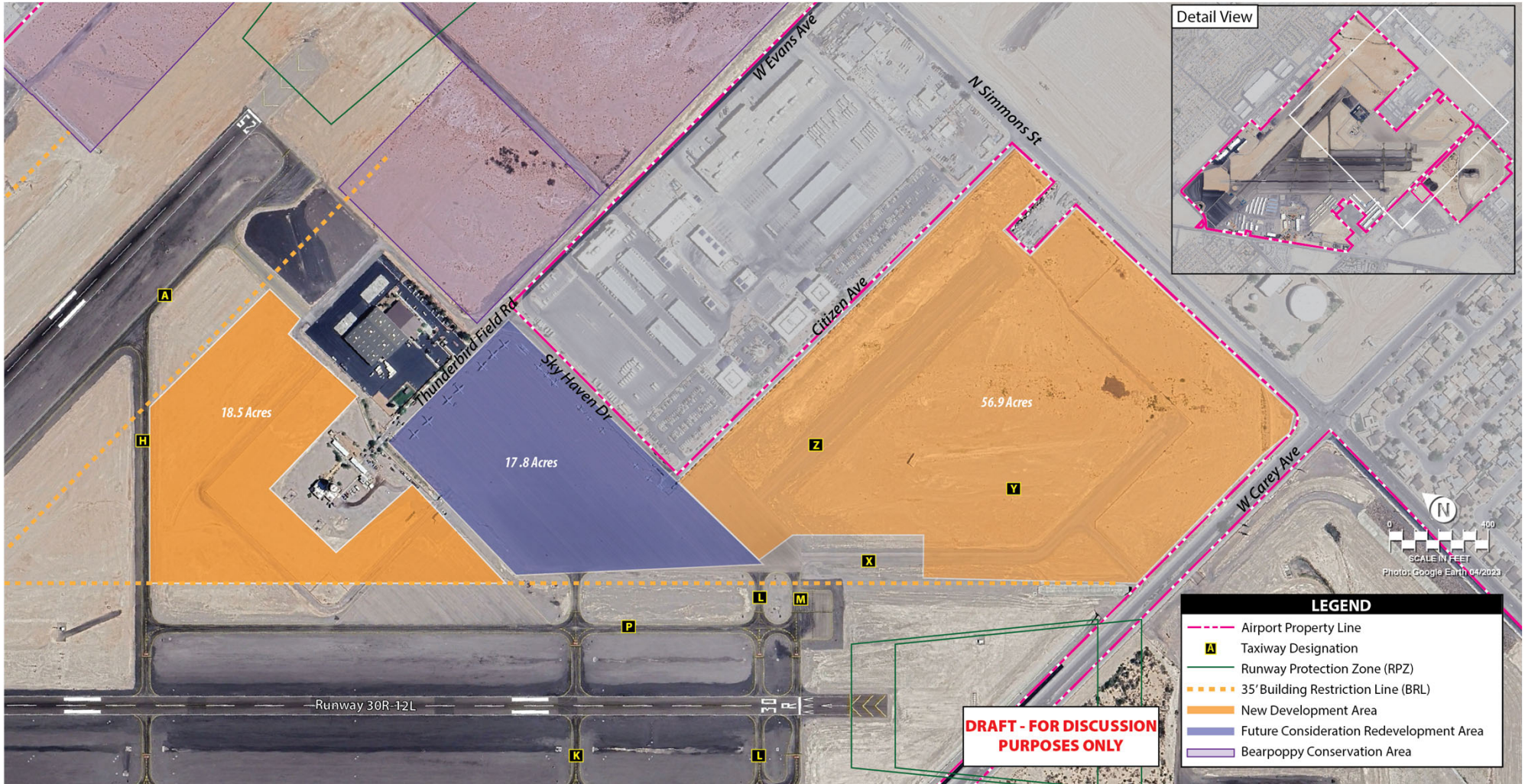
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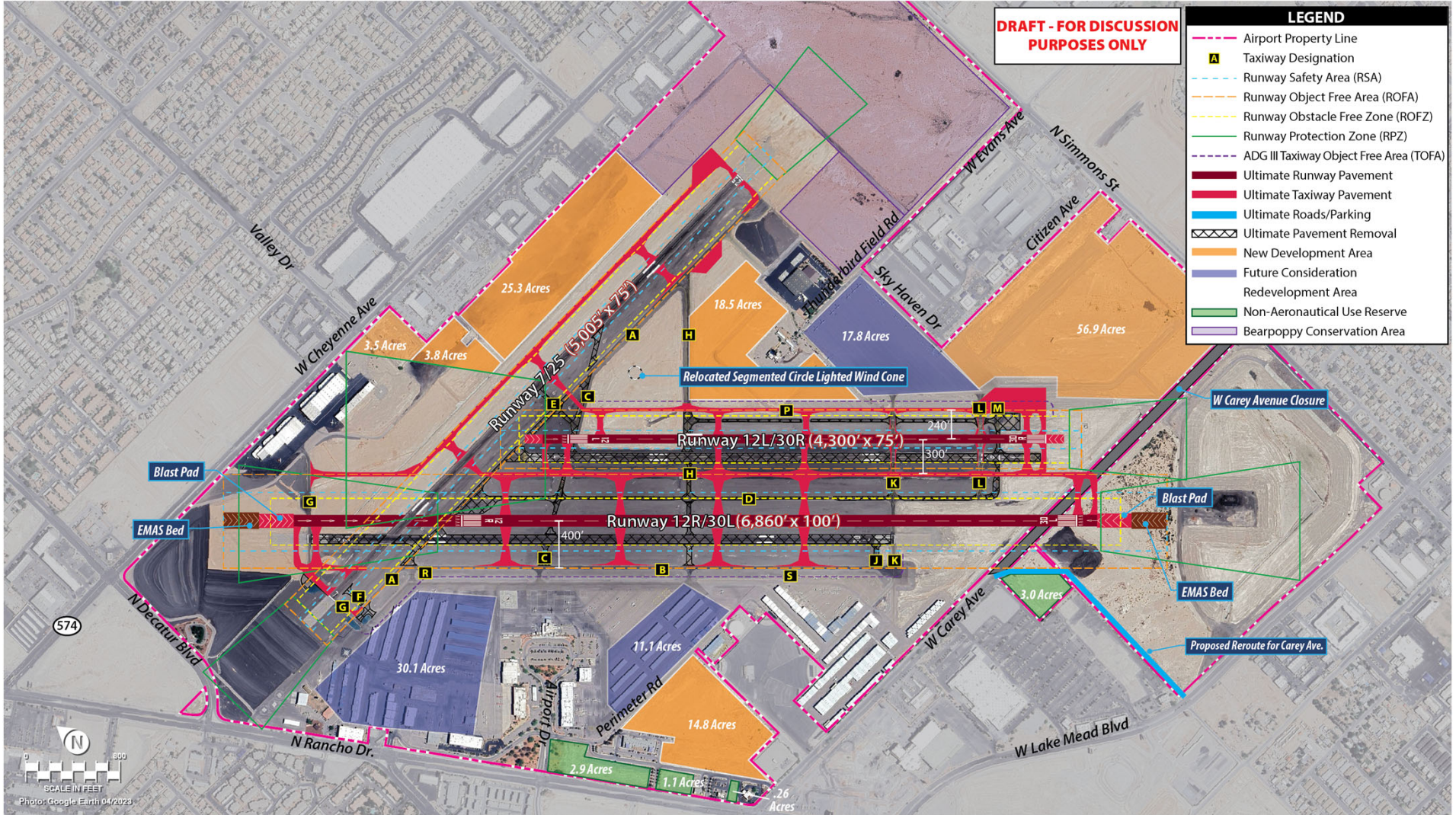
LEGEND	
	Airport Property Line
	Taxiway Designation
	35' Building Restriction Line (BRL)
	New Development Area
	Future Consideration Redevelopment Area
	Non-Aeronautical Use Reserve



LEGEND	
	Airport Property Line
	Runway Protection Zone (RPZ)
	35' Building Restriction Line (BRL)
	Runway Visibility Zone (RVZ)
	Bearpoppy Conservation Area
	New Development Area

DRAFT - FOR DISCUSSION PURPOSES ONLY





————— NEXT STEPS —————

- ▶ **Phase 3 Elements** – Recommended Concept & Environmental Considerations / Phasing Plan and Capital Improvement Program
- ▶ **PAC/TAC Meeting #4** – Summer 2024; draft documents available for review approximately one week prior to the meeting
- ▶ **Public Information Workshop #4** – Held same day as PAC/TAC meeting #4; we encourage you to invite your associates and members of the public
- ▶ **All materials are hosted on the study website: vgt.airportstudy.net**

QUESTIONS?

We want to hear from you!

Direct any questions or comments after this meeting to Eric Pfeifer with Coffman Associates at 816-524-3500 or epfeifer@coffmanassociates.com or visit the project website to submit comments online.

vgt.airportstudy.net