# Q4-2019 Airport Construction Impact Report

## U.S. Core 30+ Airports 3-Year Construction Outlook

System Operations Services - Performance Analysis FAA National Headquarters, Washington, DC 20591

October 1, 2019 Compiled by: AJR-G5

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Disclaimer: Not for operational use. This report contains active and planned airport construction projects, which may impact airport capacity and delays. Due to the nature of airport construction, this information is constantly changing and may be postponed or canceled at any time. This report will be updated quarterly.



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Western Service Area	<u>55</u>
DEN—Denver International Airport	<u>56</u>
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#### Construction Impact Key

No Capacity Effect – Departures taxi delays and/or Arrivals airborne holding delays are 15 minutes or less

Reduced Capacity and Delay Impact – Departures taxi delays and/or Arrivals airborne holding delays of 16 to 45 minutes

Reduced Capacity and Greater Delay Impact – Departures taxi delays and/or Arrivals airborne holding delays greater than 45 minutes

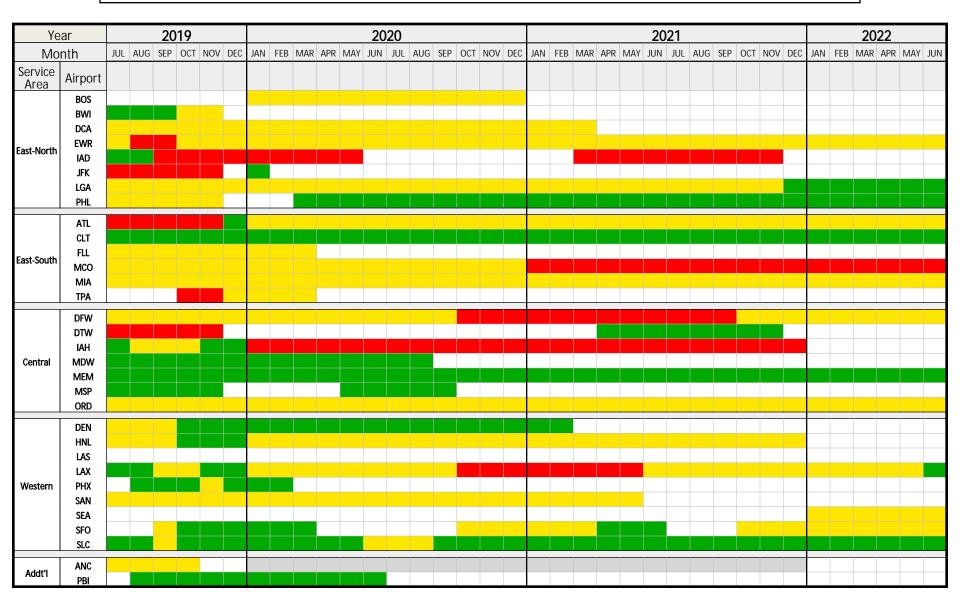
#### IATA Airport-Level Designations

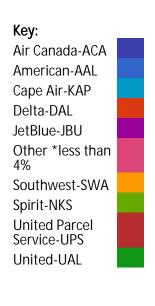
Level 1 - Airport infrastructure capacity is generally adequate to meet the demands of airport users at all times

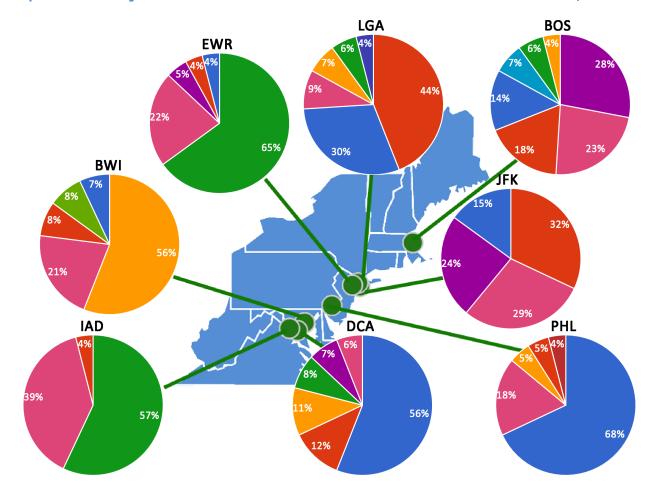
Level 2 – Airports where potential for congestion exists during some periods that can be resolved by schedule adjustments mutually agreed between the airlines and facilitator

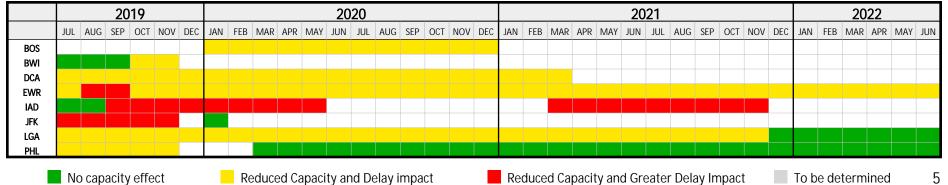
**Level 3** – Airports with full slot controls where demand for airport infrastructure significantly exceeds the capacity during certain periods and expansion of infrastructure to meet demand is not possible in the short term

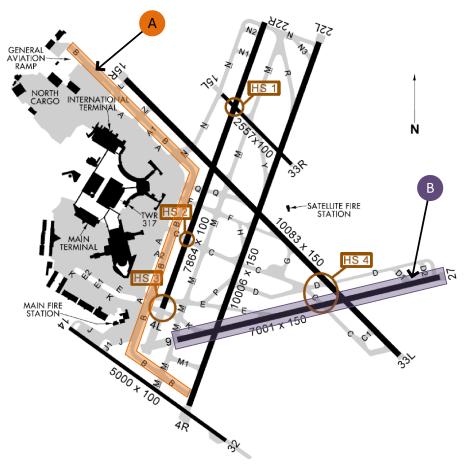
The below figure provides a broad overview of all construction with the potential to impact the NAS at the Core 30 Airports. Expanded details for each of the specific airports can be found on the following pages.





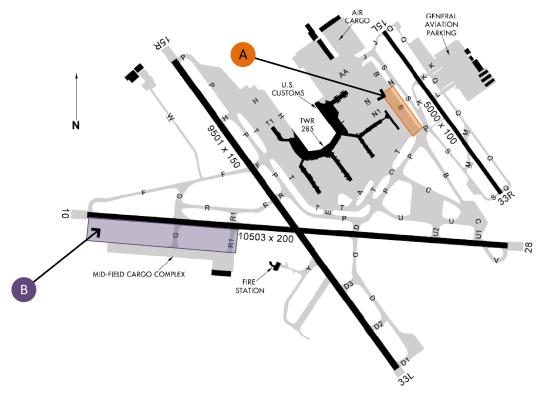






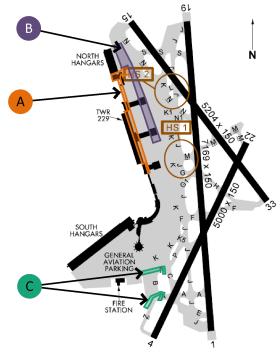
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Α	TWY B Lighting																																
В	RWY 9/27																																

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	TWY B Lighting	Taxiway B centerline lights replacement	2020 TBD	Upcoming		Expecting ramp and taxiway congestion.
В	RWY 9/27	RWY 9/27 closed for rehabilitation.  Milling and repaving.	2020 TBD	Upcoming		Pending start/end dates and duration.



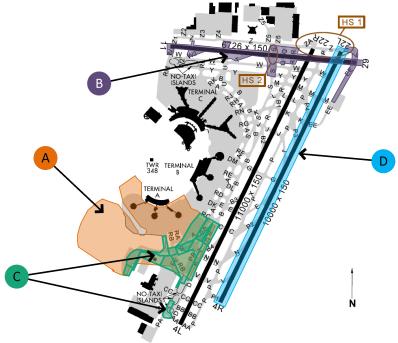
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Α	TWY B																																						
В	RWY 10/28 & TXL Z																																						

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	TWY B	TWY B closed for resurfacing between TWYs N & P.	06/06/2019 to 11/01/2019	In Progress		No impact is expected.
В		RWY 10/28 and TXL Z tie-in for midfield cargo facility improvements. RWY 28 shortened 2000 ft. 7/22/19 to 8/22/19. RWY 28 ILS not available RWY 10 glideslope not available. TWY G closed between RWY 10/28 and cargo ramp.	10/01/2019 to 11/15/2019	Upcoming	_	RWY 10 arrivals are not allowed during project. Delays possible during East IFR operations and weather events, otherwise, outage should have little to no impact.  New taxiway connection to RWY 10 is needed to allow adequate access to Runway 10/28 or other parts of the airfield during the times that aircraft are active on the existing taxilane between Taxiways G and R1.



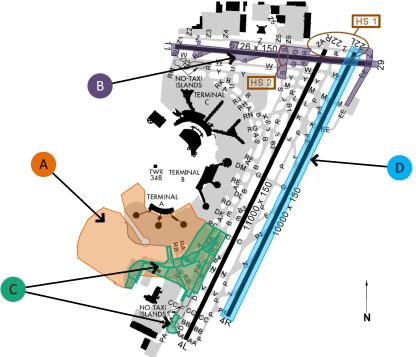
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Α	North Concourse																																		
В	Ramp Configuration																																		
С	Multiple TWYs (South End)																																		

I		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	Α	North Concourse	New regional concourse gates replacing surface gates.	04/19/2017 to 03/19/2021	In Progress		Safety Risk Assessment determined medium risk due to controller workload increase. New 14 regional Jet (RJ) gates with jet bridges will allow handling of larger aircraft with 76-seats, versus current restriction of smaller aircraft with 50-seats.
I	В	Ramp Configuration	New ramp configuration for AAL commuters.	04/06/2019 to 2020 TBD	In Progress		May have some impact on DCA operations. No end date at this time.
	С	Multiple TWYs (South End)	TWY B and adjoining TWYs closed for rehabilitation. TWY P closed between TWYs C & B, RWY 4 Hold Bay closed. TWY Z CLSD 8/5/19 to 10/7/19.	04/15/2019 to 11/01/2019	In Progress		Extensive rehabilitation with no option for recall. During severe weather, possible departure and arrival delays of up to +30 minutes.



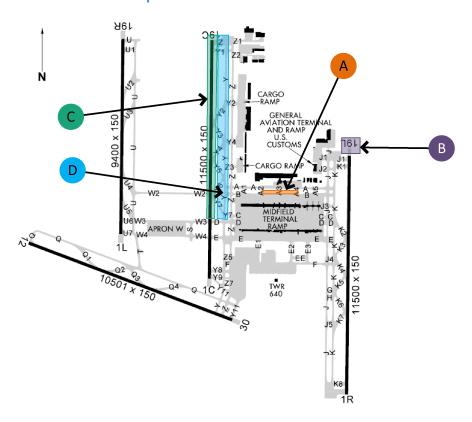
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Α	Terminal One																																											
В	RWY 11/29 & TWYs																																											

Γ		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	Α	Terminal One	Terminal One redevelopment program. Demolition of existing Terminal A complex and construction of new Terminal One complex. Includes infrastructure required to support a 33 gate terminal complex.	01/01/2018 to 06/20/2022 TBD	In Progress		Multi-phased project. Expect taxiing delays in/out due to ramp congestion.  Partial Terminal Opening, Q3-2021 (21 Gates) Full Terminal Opening, Q3-2022 (33 Gates)
			Project 1 - RWY 11/29 rehabilitation.	05/01/2019 to 08/15/2019	Complete		
ı			TWY Z and EE closed for rehabilitation.	08/19/2019 to 09/09/2019	Complete		RWY 11 or RWY 29 will be available to accommodate
ı	В	RWY 11/29 & TWYs	Project 2 - RWY 11/29 closed continuous for rehabilitation. Includes milling and paving.	08/19/2019 to 09/10/2019	Complete		increased arrival demand during peak arrival hours, as a secondary arrival runway. TMI's necessary during adverse weather conditions.
			Project 3 - RWY 11/29 rehabilitation.  Continuous 9-hour nightly closures (2200L-0700L).	09/09/2019 to 11/23/2019	In Progress		



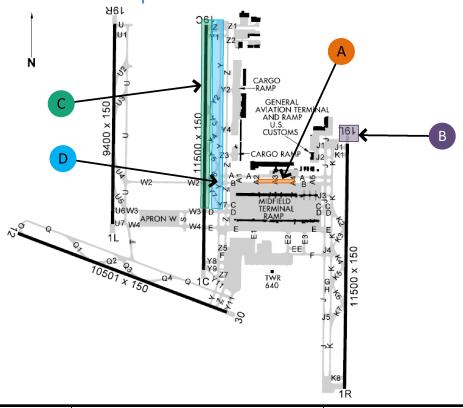
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С	South TWYs & Ramp Area																																	
D	RWY 4R/22L																																	

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
С		Rehabilitation and paving of South TWYs and ramp areas. Stage 1-4 complete Stage 5 - 9/24/19 to 11/15/19 Stage 6A - 11/15/19 to 12/31/19 &11/15/20 to 6/30/2021 Stage 6B, 6C, 6D, 7, 8 - 11/15/19 to 11/15/20 Stage 9, 10 - 11/15/20 to 6/30/21	June 2019 to June 2021	In Progress		Expecting ramp and taxiway congestion.
D	RWY 4R/22L	RWY 4R/22L closed for reconstruction. Includes milling and paving runway, high-speed turn-offs, and crossing taxiways. Will shift the RWY centerline slightly.  Continuous full runway closure - 180 Days (Includes 21-day RWY 11/29 closure)	March 2021 to November 2021	Upcoming		Project includes lighting systems upgrades.



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Α	Taxilane B (Middle)																																		
В	RWY 19L ALSF-2																																		

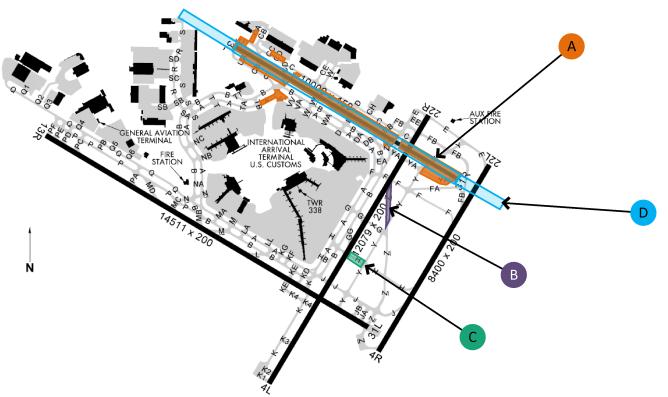
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	Taxilane B (Middle)	Reconstruction and widening between Taxilane A2 and A4.	04/22/2019 to 12/10/2019	In Progress		Increased taxi distance/time for group IV and larger aircraft. Mitigation by providing approach control with list of flights that need to enter from the east or west. When feasible they are assigned the runway closer to entrance.
В	RWY 19L ALSF-2	Update RWY19L Approach Lighting System with Sequence Flashing Lights (ALSF-2).  Open trench work at the approach end of RWY 19L.	09/28/2019 to 05/22/2020	In Progress		RWY1R/19L operational impacts due to work inside the RSA. Possible three-week closure at night to complete project. Possible displaced threshold. AT notified of project by Tech Ops. Current mitigation for the least amount of disruption to users.



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С	RWY 1C/19C																															
D	TWYs Y, Y2, Y3, Y4, & Y5																															

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
С	RWY 1C/19C	Reconstruction of the North section of RWY 1C/19C & High Speed TWYs Y2, Y3, Y4 & Y5, inside the Runway Safety Area (RSA).	03/01/2021 to 11/30/2021	Upcoming		Crossing TWYs W2, W3 and W4 will remain open for aircraft arriving or departing RWY 1L/19R. Project will start Q1 2021.
D	TWYs Y, Y2, Y3, Y4, & Y5	Reconstruction & widening of TWYs Y, Y3, & Y4, outside the RSA. Reconstruction of TWYs Y2, Y3, Y4 & Y5, outside the RSA.	03/01/2021 to Nov 2021 TBD	Upcoming	_	Project will coincide with RWY 1C/19C construction.  Loss of capacity on RWYS 1C and 19C due to closure of first 2 high-speed exits for RWY 19C and the closure of last 2 high-speed exits for RWY 1C.  Greater in-trail spacing will be required due to increased aircraft runway occupancy time.  Project will start Q1 2021.

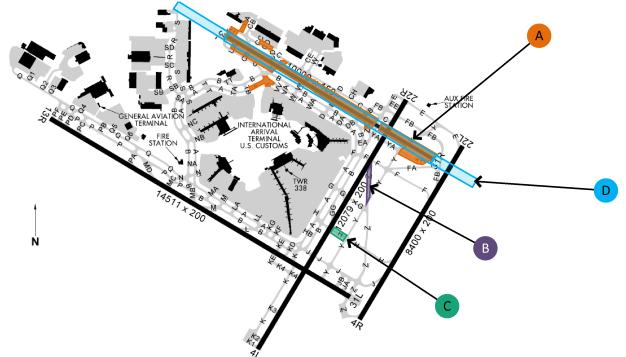




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Α	RWY 13L/31R & TWYs																																	
В	TWY Z																																	

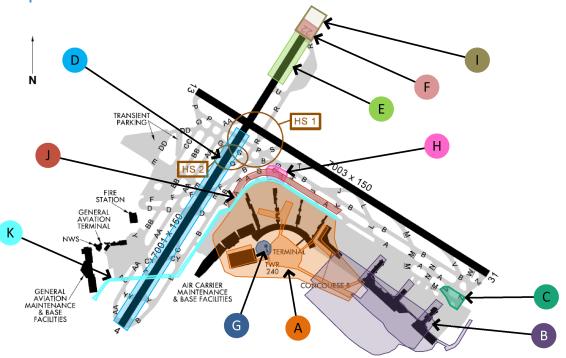
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	RWY 13L/31R & TWYs	RWY 13L/31R and crossing TWYs closed for reconstruction and widening to 200 ft. New high-speed Taxiway. Rehabilitation and realignment of TWY U and TWY intersection (U/V/B) for A380 operations. Reconstruction of TWY YA stub for future realignment. Drainage system upgrades.	04/01/2019 to 11/16/2019	In Progress		Available TWY/RWY crossings for RWY 22R departures: 8/25/19-11/15/19 - TWYs Y, E, D, DB, W, and V or U or U/C.
В	TWY Z	TWY Z closed for construction between RWY 4L/22R and TWY Y.	07/29/2019 to 10/30/2019	In Progress		Alternate TWYs available.





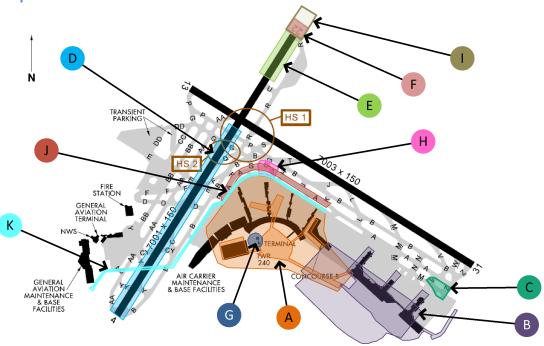
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С	TWY H																																			
D	RWY 13L/31R Lighting																																			

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
C	TWY H	TWY H closed for construction between RWY 4L/22R and TWY Y.	08/10/2019 to 11/30/2019	In Progress		Alternate TWYs available.
	RWY 13L/31R Lighting	Replace RWY 31R Visual Approach Slope Indicator (VASI) lights with Precision Approach Indicator (PAPI) lights. Replace RWY 31R Medium intensity Approach Lighting System (MASLR) and 13L Approach Lighting System (ALSF-2). Additional lighting systems upgrade/replacement and airfield signage.	09/09/2019 to 11/15/2019	In Progress		No outage expected for this project, just cutover.  31R PAPI needs 13L/31R and 4L/22R shortening or closure during portions of work due to its location.
		RWY 13L & 31R Lead-in Lights (LDIN) replacement (Lefferts).	09/23/2019 to 11/15/2019	In Progress		Design phase complete. Outage and replacement planned during shutdown of RWY 13L/31R.
		RWY 13L and 31R Lead-in Lights (LDIN) replacement (Old Mill).	January 2020	Upcoming		Outage being coordinated with N90.



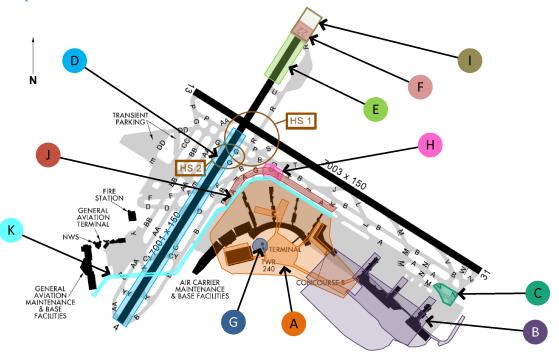
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Α	Terminal B																															
В	Terminals C & D																															
С	TWYs M & Z																															

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	Terminal B	Terminal B redevelopment of the Central Terminal Building (CTB). Construction expected to include the demolition of the existing terminal and associated infrastructure.  Construction is for a new 35 gate terminal.	08/04/2015 to 11/07/2021	In Progress		The ZA ramp area is not available for use during phase 1. ZA is now decommissioned. New deicing areas have been relocated in front of the American hangars.
В	Terminals C & D	Terminals C & D redevelopment. Construction includes demolition of the existing terminals and reconstruction. Construction is for a 37 gate terminal.	08/01/2017 to 01/12/2027	In Progress		Construction includes new main terminal. Terminal C & D is approx. 38% of LGA passenger traffic (275 daily departures). Concourse G is planned to open Oct 2019.
С	TWYs M & Z	New construction of terminal C. A portion of TWY M will be permanently closed in Sep 2019, the remainder of TWY M will become a non-movement area and renamed Taxilane M.	06/11/2018 to 01/01/2020 TBD	In Progress		In support of Terminal C redevelopment.



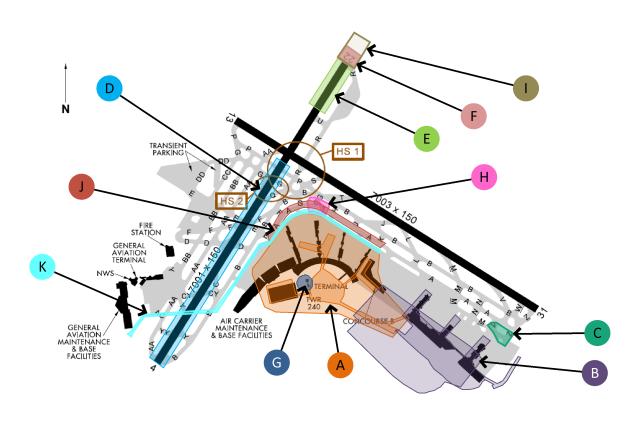
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D	RWY 4/22																																		
Е	RWY 4/22																																		
F	RWY 22 LDA Antenna																																		

ľ		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	D		RWY 4/22 closed for rehabilitation. Mill and overlay of runway deck wearing course, and concrete panel replacement. Includes lighting upgrades. Resurfacing RWY 4/22 from the approach end of RWY 4 to the RWY intersection. Includes all RWY crossings and exits. Full RWY grooving expected Oct 2019.	04/14/2019 to November 2019	In Progress		Multi-phased project. The majority will be completed during weekend closures. The RWY closures required for this project will be scheduled during nighttime, and during scheduled weekend closures to minimize impacts. Associated TWY work will continue thru November 2020.
	Е	RWY 4/22	Runway 4/22 rehabilitation. Continuation of the resurfacing of the NE 1000' of RWY 4/22.	06/14/2019 to 07/06/2019	Complete		The resurfacing of Runway 4/22 will be completed using night and weekend closures to minimize the effect on capacity. Weekend work only.
	F		RWY 22 - Localizer Directional Aid (LDA) upgrade to MK20A Antenna.	07/13/2019 TBD to 08/09/2019 TBD	Complete		RWY 22 localizer antenna replacement.



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G	Control Tower ASDE Antenna																																				
Н	TWY A Drainage																																				
- 1	RWY 4 Localizer																																				

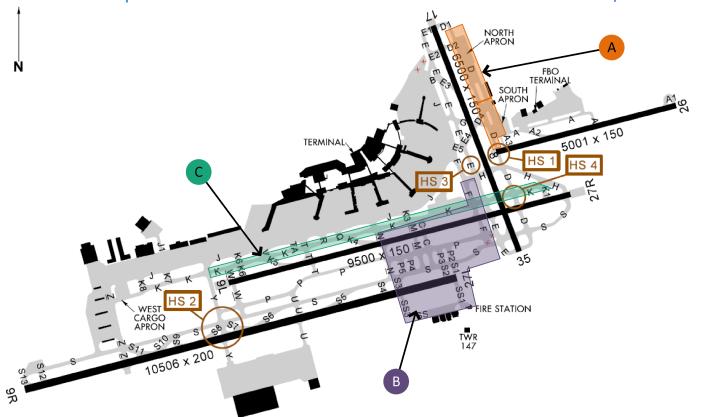
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
G	Control Tower ASDE Antenna	Remove and replace ASDE antenna on top of tower cab. A crane will be positioned at tower to lift the Antennas.	09/08/2019 to 09/08/2019	Complete		
Н	TWY A Drainage	Taxiway A closed for installation of new 72' drain line across TWY A to the Central Terminal Building (CTB) concourse C. Full TWY closure - 8 weeks.	09/14/2019 to 11/09/2019	In Progress	_	TWY A closed from TWY G to TWY H, TWY GG closed for same duration. No temporary "bypass" during project.
1		Construction of an extension of the runway deck platform.	2020 TBD	Upcoming		Proposal to relocate the RWY 04 localizer to support a more stable localizer signal. The relocation from a pier over the water to an extension of the runway deck platform to eliminate signal reflection issues with the tide changes.



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J	TWY A																																			
K	Hydrant Fueling Line																																			

I		Project	Description of Work	Estimated Dates		Impact	Notes
	J	TWY A	TWY A closed for rehabilitation. Resurfacing TWY A between TWY E and TWY K.	Apr 2020 TBD to Sep 2020 TBD	Upcoming		Project expected to bid in Dec 2019 and construction in Spring/Summer 2020.
	K	Hydrant Fueling Line	Installation of fuel hydrants line.	Fall 2020 TBD to Winter 2021 TBD	Upcoming		Dates are tentative.

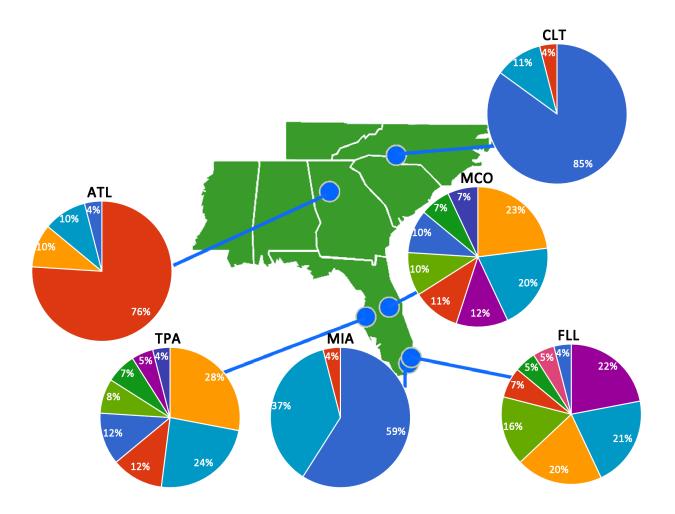
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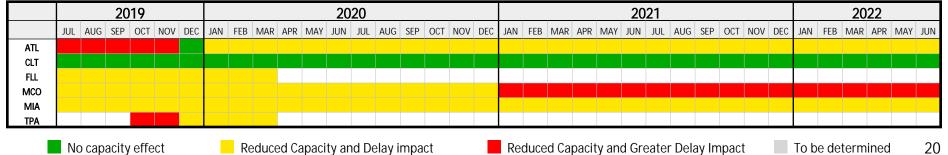


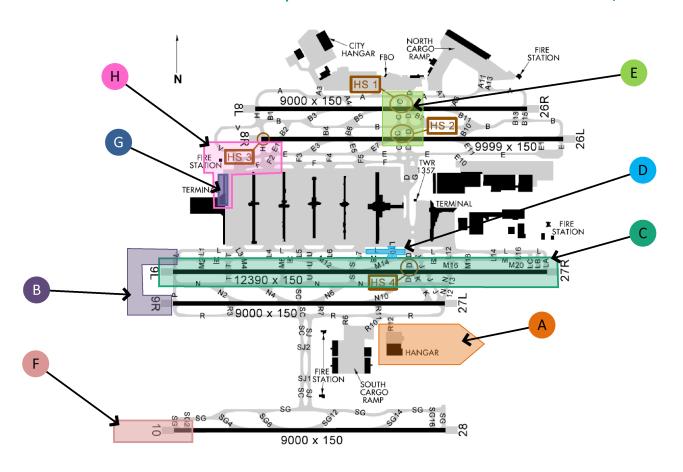
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Α	Airfield North Apron																																			
В	TWYs S, E, F, K, & P																																			
С	TWY K																																			

I		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	Α		Reconstruction and rehabilitation of the North Apron, TWY D, and South Apron areas.	03/05/2019 to 11/15/2019	In Progress		Phased closures on TWY D.
I	В		Associated with RWY 27L extension. Reconstruction and rehabilitation of TWYs.	04/08/2019 to 07/01/2019	Complete		Final phase of the RWY 9R/27L extension.
	С		Reconstruction of TWY K. Construction includes demolition, paving, lighting, marking, and grading.	03/15/2020 to 08/31/2024	Upcoming		Potential for limited impact to adjacent TWYs.







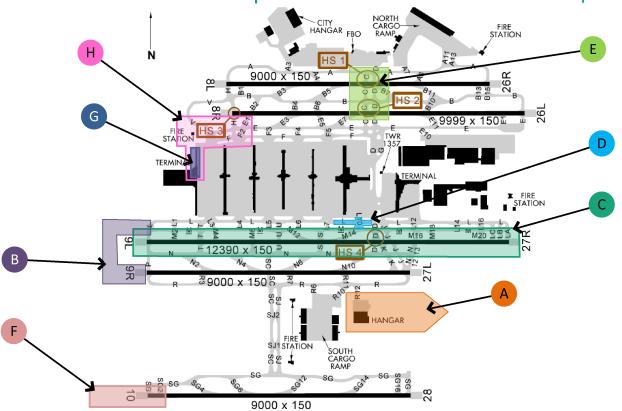


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P	South Cargo Expansion																																			
E	RWY 9L End-Around TWY																																			
	Proiect				D	escrip	otion (	of W	/ork					Est	imat	ed D	ates	<u> </u>		9	Statu	ıs	lm	pact						No	tes					

ı		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	Α		Air cargo facilities (Building E) will be moved to this area of the complex.	06/01/2017 to 2019 TBD	In Progress		Development of Cargo Building E and supporting ramp to provide for additional cargo facility capacity for all-cargo/freighter carriers.
l	В	RWY 9L End-Around TWY	Construction of an EAT at RWY 9L to provide more efficient capacity and reduce delays.	04/01/2018 to 11/30/2022	In Progress		Multi-phase project. Phase 1 will coincide with runway rehabilitation/reconstruction.

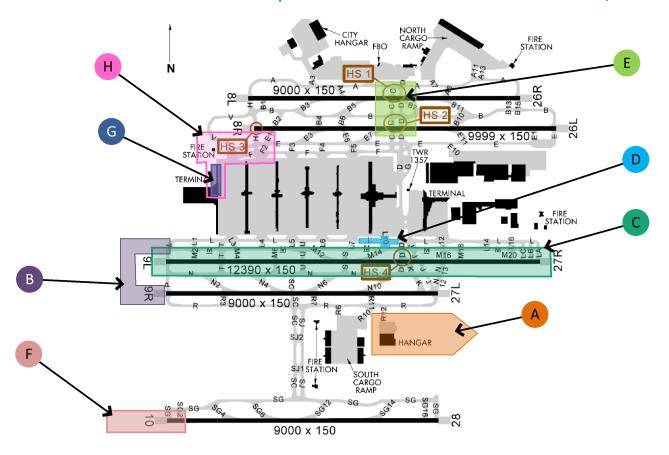
## ATL (2 of 4)—Hartsfield-Jackson Atlanta International Airport

#### Q4-2019 Airport Construction Outlook



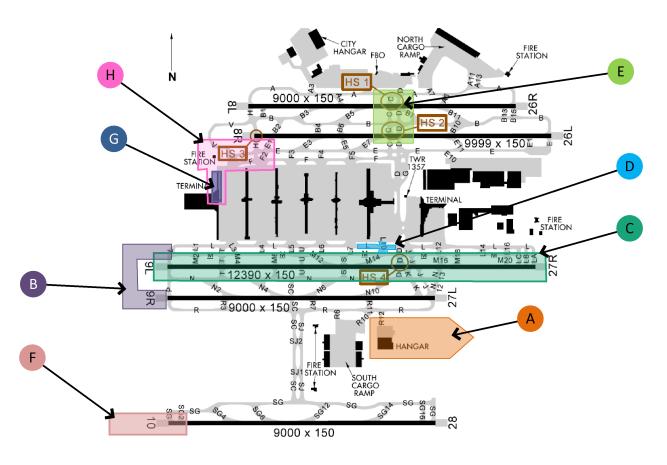
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С	RWY 9L/27R																																				
D	TWYL																																				

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
С	RWY 9L/27R	RWY 9L/27R closed for pavement replacement. Full runway closure for 3-weeks, along with temporary threshold displacement.	09/16/2018 to 11/01/2019	In Progress		This project will enable RWY 9L End-Around-TWY (EAT). East/West operations-TBFM delays due to lower AAR. Enroute arrival delays could approach 30 minutes. Departure delays are expected to remain under 15 minutes.
D	TWY L	TWY L closed between ramp 5 (South) and Taxilane Dixie for rehabilitation.	08/18/2019 to 09/08/2019	Complete		West Operation: increased meter times due to increase spacing on 27L and non-standard taxi routes which may result in increased taxi times. East Operation: non-standard taxi routes which may result in increased taxi times.  More impacts to larger B747-800 and A380 aircraft.



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Е	Hot Spot 1 & Hot Spot 2																																	
F	RWY 10 Glideslope																																	

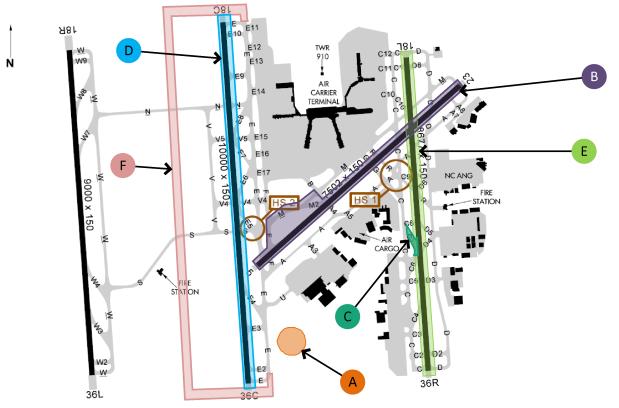
I		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	Ш		RWY Incursion Mitigation Program: RWY 8L/26R, HS1, TWY C, D, B intersections; RWY 8R/26L, HS2, TWY C, D intersections.	2020 TBD	Upcoming		RWY Incursion Mitigation Program (RIM) of HS1 and HS2. requires shifting of portions of TWYs C and D that intersect RWYs 8L/26R and 8R/26L at midfield. Phased project planned to minimize costs and airfield impacts.
I	F		Safety area improvements on north complex and grading of RWY 10 glideslope reflective plane.	2020 TBD	Upcoming		Will reduce capacity during Instrument operations.



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G	Concourse T																																			
Н	Taxiway V																																			

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
G	Concourse T	North extension; modify parking, apron areas, and construct 6 new gates to accommodate up to Aircraft Design Group (ADG) III.	09/01/2020 to Winter 2023	Upcoming		Concourse T will be extended. Construction will add 6 new gates.
Н	Taxiway V	TWY V realignment and redesign, for TWYs E, F, H, E1 and F2.	09/01/2020 to 10/31/2020	Upcoming		Preliminary work to support the construction of, and use of Concourse T expansion. 4 Phases to minimize the impact to operations.

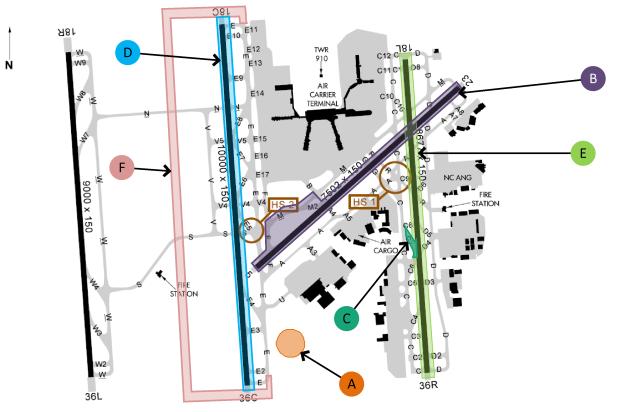




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Α	Control Tower																																	
В	RWY 5/23 & TWY's																																	
С	TWY C7																																	

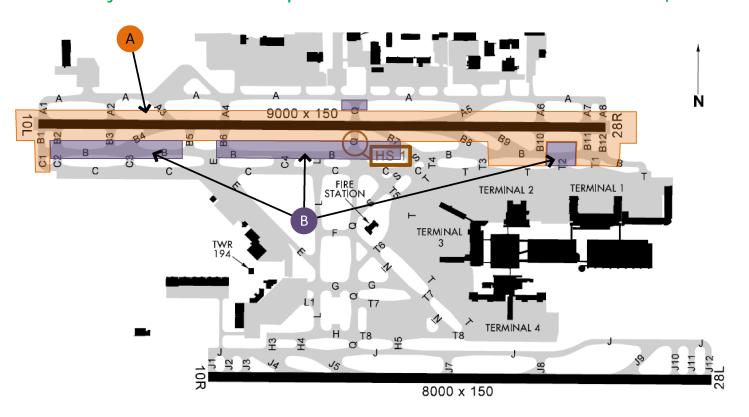
		Project	Description of Work	Estimated Dates	Status	Impact	Notes
P		Control Tower	New FAA Control Tower.	06/02/2017 to 06/21/2020	In Progress		Tower should be commissioned and operational in early-2020.
E	3	RWY 5/23 & TWY's	RWY 5/23 closed to support construction.  TWY F, M, and M2 closed north of runway 5/23 for	04/12/2019 to 11/22/2019	In Progress		During project, RWY 5/23 will be closed to arriving and departing aircraft.
(			rehabilitation.  Permanent Demolition of TWY C7.	09/01/2019 to 12/20/2019	In Progress		Runway will be used for taxiing aircraft.  No operational impact.





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D	RWY 18C/36C																																						
E	RWY18L/36R																																						
F	New 4th Parallel RWY																																						

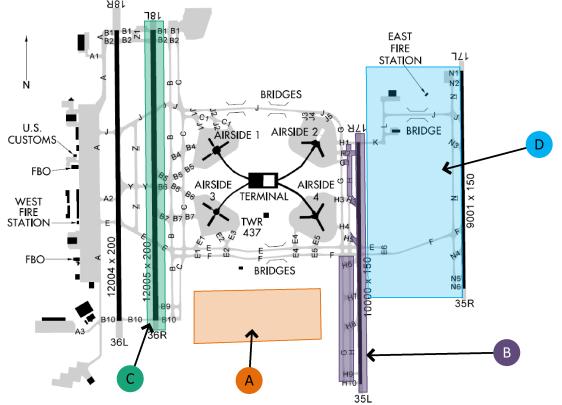
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
D		RWY 18C/36C closed for joint seal replacement. Nightly closures.	April 2020 to June 2020	Upcoming		This project expecting during overnight hours, between 2315-0600L daily.
E	RWY18L/36R	RWY 18L/36R closed for rehabilitation.	05/01/2020 to 10/31/2020	Upcoming		This project takes place nightly between 2315L-0715L.
F	New 4th Parallel RWY	Build new runway to add capacity, 12,000 ft. x 200 ft., plus end-around TWYs.	August 2020 to September 2024	Upcoming		Multi-phased project. Design phase 2018. Possible service interruptions due to infrastructure system tie-ins. Possible arrival/departure impacts due to equipment, and construction cranes.



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		Project	JUL	AUG	SEP	OCT	NOV	DEC .	IAN F	FEB MA	R APR N	MAY JU	JUI	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR I	MAY .	JUN J	UL A	NUG SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY JUN
	Α	RWY 10L/28R and TWYs																																
	В	TWYs B & Q																																

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	RWY 10L/28R and TWYs	Phase 3 (120 days) – RWY and EMAS rehabilitation.	06/03/2019 to 09/30/2019	Complete		Single runway operation, expect reduced capacity and delays.
В	TWYs B & Q	Phase 4 (159 days) - TWY B and Q rehabilitation.  TWY rehabilitation, includes milling and paving. New surface markings and signage.  RWY 10L/28R closed nightly 0001L to 0600L in order to complete construction.	06/03/2019 to 03/19/2020	In Progress		Expected end of construction: Sat 3/19/2020.

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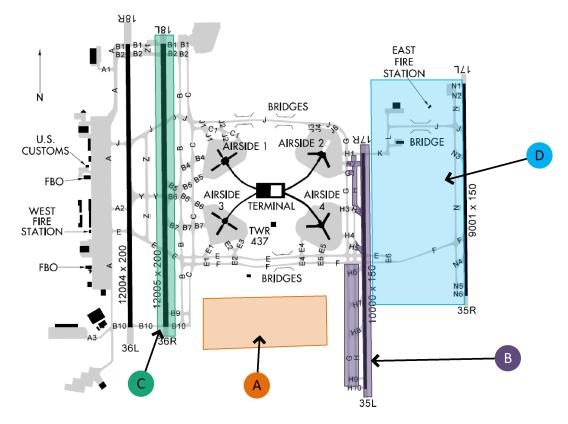


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Α	South Terminal Complex																																
В	RWY 17R/35L & TWYs																																

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	South Terminal Complex	Construction of a new South Terminal Complex and associated apron/taxiway. Limited RWY/TWY closures.	11/14/2017 to December 2021	In Progress		Expecting some system impacts when taxiway closures are required. Work on the parking garage and intermodal train station have begun. Construction cranes may affect some arrival minimums. Construction date for beginning the south terminal for aircraft operations is still TBD.
В	RWY 17R/35L & TWYs	RWY 17R/35L and associated TWYs closed for rehabilitation. Improvements to RWY geometry, markings, lighting, and signage.	03/11/2019 to 08/07/2019	Complete		There may be some delay impacts due to volume.  Dedicated Departure runway 18L/36R Dedicated Arrival runway 18R/36L Shared runway 17L/35R

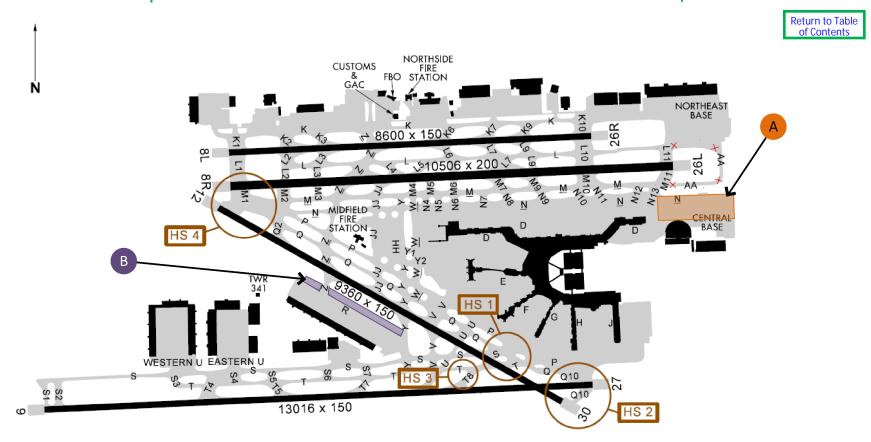
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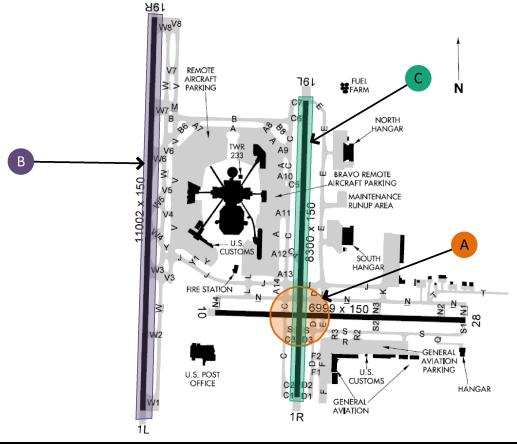
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С	RWY 18L/36R																																						
D	East-side Taxiways																																						

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
С	RWY 18L/36R	Rehabilitate pavement, includes mill and overlay, joint sealing and other repairs. Improvements for pavement geometry, runway shoulder pavement widening, blast pad enhancements, markings, lighting, and signage.	01/01/2020 to 08/15/2020	Upcoming		Some delay impacts expected. Loss of ILS RWY 36R could result in some delays during weather and require TMU initiatives. Advance coordination will be in place between TMU and users to help mitigate any issues. Funding has not yet been determined. Additional TWY closures expected at various phases.
D	East-side Taxiways	Rehabilitate pavement, lighting, painting and signage on all taxiways between RWYs 17L and 17R.	2021 TBD to 2022 TBD	Upcoming		Still in the design phase. If long term taxiway closures are encountered capacity could be reduced due to the fact we could not access RWY 17L/35R.



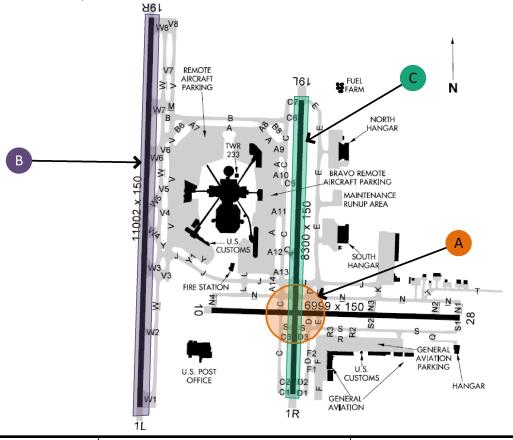
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Α	Central Base Ramp																																			
В	RWY 12/30 & TWY R																																			

ľ		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	Α	Central Base Ramp	Central Base (East side) ramp expansion and taxiway tie-in.	June 2019 to 2022 TBD	In Progress		Project will impact operations during taxiway tie-in work at the N-13 intersection.
I	В	RWY 12/30 & TWY R	TWY R closed for TWY upgrades	09/09/2019 to 01/15/2020	In Progress		Expecting increased taxi times due to closures. Expecting major construction work during mid-shift hours.



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Not Depicted	Airfield Runway Threshold Lighting																																					
Α	RWY 1R/19L Lights																																					

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
N Depi		Runway threshold lighting on all runways will be upgraded to meet FAA standards.	10/01/2019 to March 2020	Upcoming		This will require single day closures of each runway to complete this work. Possible airborne holding, expanded miles-in-trail, ground stop, or ground delay program.
A	RWY 1R/19L Lights	Installation of runway guard lights (RGLs) on the taxiways around the intersection of RWY 10-28 and RWY 1R/19L.	10/01/2019 to March 2020	Upcoming		Project expected to close associated TWYs which impact aircraft entering/exiting RWYs.

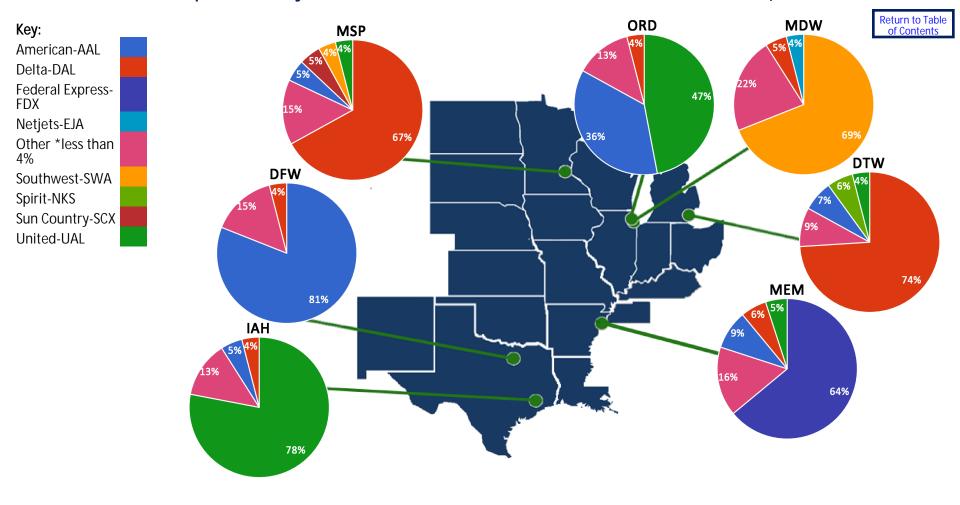


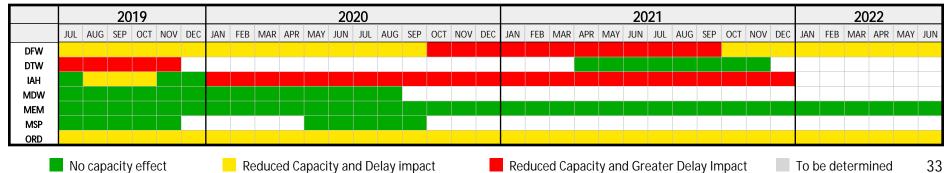
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В	RWY 1L/19R																																				
С	RWY 1R/19L																																				

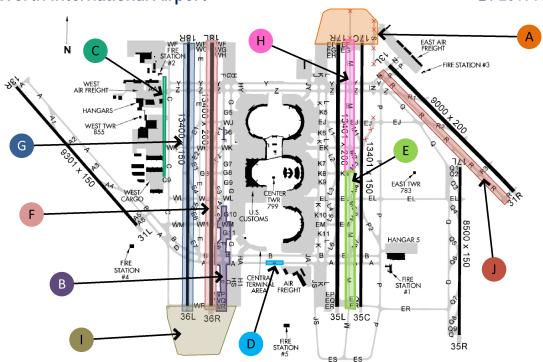
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
В	RWY 1L/19R	RWY 1L/19R closed for multiple runway and RSA projects. RWY closed continuously - 15 days	10/07/2019 to 10/22/2019	Upcoming		Expecting arrival and departure delays due to reduction in airport capacity. Possible arrival holding, expanded miles-in-trail, ground stops or ground delay programs.
С	RWY 1R/19L	RWY 1L/19R closed for multiple runway and RSA projects. RWY closed continuously - 15 days	November 2019	Upcoming		Expecting arrival and departure delays due to reduction in airport capacity. Possible arrival holding, expanded miles-in-trail, ground stops or ground delay programs.

### Central Service Area, Impact Summary, Carrier Distribution

#### Q4-2019 Airport Construction Outlook





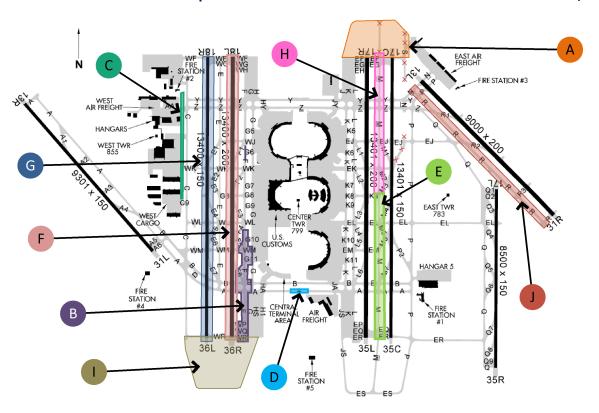


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	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Δ	Northeast End-Around	RWYs 17C and 17R, Northeast End-Around Taxiway (EAT). Package I: TWY P realignment will need non-simultaneous closures of TWYS Y/N and Z/P, 5/24/18 to 10/19/2019.	05/24/2018 to 12/31/2020	In Progress		
A	Taxiway	Package II: Includes construction of TWY N from the N1 high speed and connection to TWY M.	03/01/2020 to 12/31/2020	Upcoming		
		Package III: Glycol facilities relocation near the approach end of RWY 17R.	07/09/2019 to 06/30/2020	In Progress		
В	TWY F	TWY F and associated TWYs closed for rehabilitation. Replace and expand asphalt shoulders, replace concrete panels, expand pavement at key intersections.	July 2019 to April 2020	In Progress		Multiple access points will be left open to minimize impact. Possible increase to taxi-out/taxi-in times.

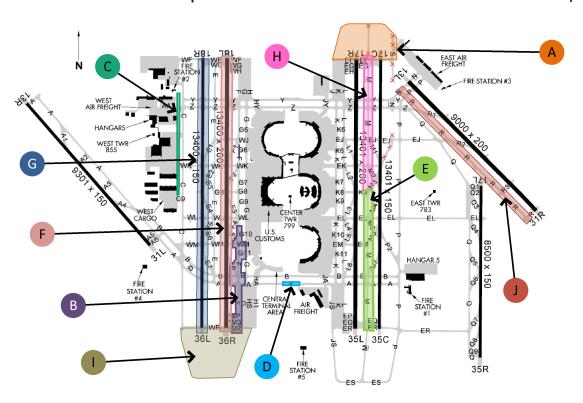
Project
Northeast End-Around
Taxiway

TWY F



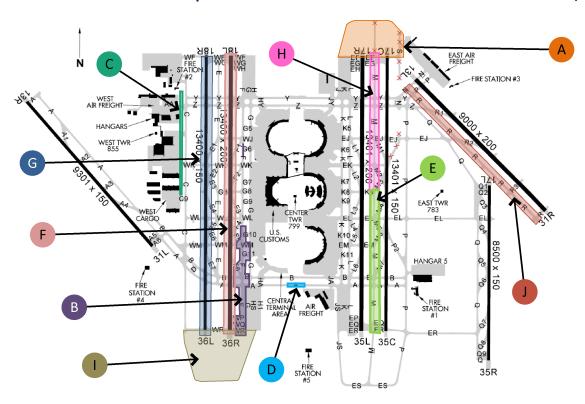
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С	RWY 18R Service Road																																	
D	TWY A																																	
Е	TWY M South																																	

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
С	RWY 18R Service Road	Aircraft rescue and firefighting (ARFF) service road reconstruction West of RWY 18R and north of Taxiway C9.	July 2019 to December 2019	In Progress		
D	TWY A	TWY A Emergency bridge repairs (East bridge)	September 2019 to October 2019	In Progress		
E	TWY M South	TWY M South closed for construction.  Package III	10/01/2019 to 04/30/2020	Upcoming		Lessened access to high speed turn-offs in south flow will increase taxi-in times.



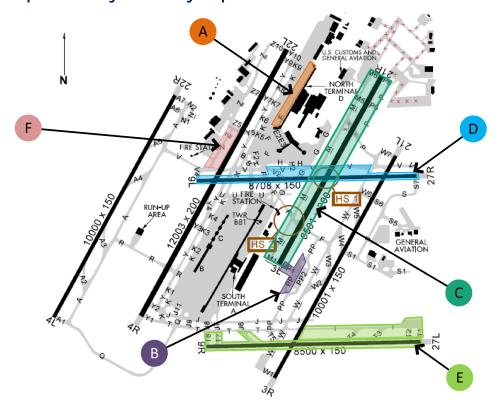
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F	RWY 18L/36R											L																						
G	RWY 18R/36L																																	
Н	TWY M North																																	

ľ		Project	Description of Work	Estimated Dates	Status	Impact	Notes
l	F	RWY 18L/36R	RWY 18L/36R nightly closures in preparation for upcoming rehabilitation.	02/01/2020 to 05/31/2020	Upcoming		Preparation for full closure.
I	)		RWY 18R/36L nightly closures in preparation for upcoming rehabilitation.	03/01/2020 to 08/31/2020	Upcoming		Preparation for full closure.
ı	G	RWY 18R/36L	RWY 18R/36L closed for rehabilitation. Full closure.	10/01/2020 TBD to 09/30/2021	Upcoming		Lowered AAR for the duration of construction will require greater use of TMIs, GDP, and MIT.
	Н	TWY M North	TWY M North closed for construction. Package II.	01/01/2021 to 06/30/2021	Upcoming		Lessened access to high speed turn-offs in north flow.



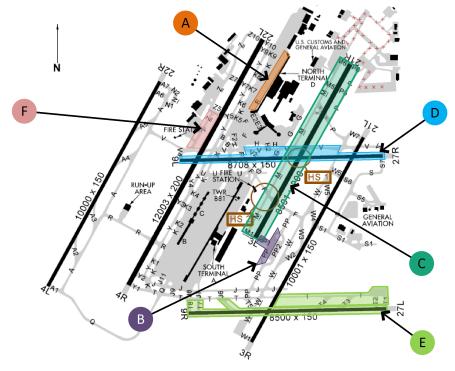
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-1	Southwest End-Around Taxiway																																				
J	TWY R																																				

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
		RWYs 36L and 36R Southwest End-Around Taxiway (EAT). Package I, 3/1/2020 to 4/30/2021.	03/01/2020 to 12/31/2023	Upcoming		
1	Southwest End-Around Taxiway	RWY 36L & 36R South Section. Package II.	07/01/2021 to 09/30/2022	Upcoming		Possible increase to taxi-in/taxi-out times.
		Southwest End-Around Taxiway (EAT). Package III.	07/01/2022 to 12/31/2023	Upcoming		
J	TWY R	TWY R closed for rehabilitation and electrical improvements.	01/01/2021 to 06/30/2021	Upcoming		



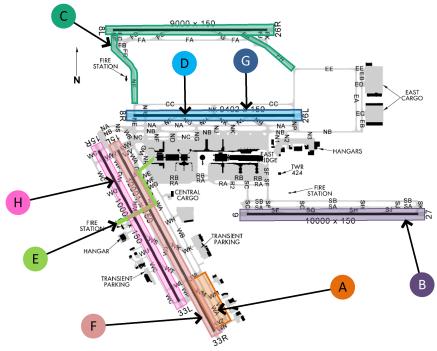
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Α	North Terminal Expansion																																		
В	TWY P & PP																																		
С	RWY 3L/21R and TWY M																																		

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	North Terminal Expansion	North Terminal gate expansion (3 gates), Apron rehabilitation, and return overnight (RON) parking.	07/01/2018 to 11/15/2019 TBD	In Progress		Project is in non-movement area. Minimal impact to aircraft ground movement is expected.
В	TWY P & PP	TWYs will be closed for Taxiway PP and P rehabilitation. Taxiway P extension construction.	04/01/2019 to 11/15/2019	In Progress		Multi-phased project to allow for crossings to be maintained and facilitate ground movement of aircraft from Runway 3R-21L and tenant locations.
С		RWY 3L/21R and parallel TWY M closed for rehabilitation.	04/22/2019 to 11/15/2019	In Progress		Runway 3L/21R is a primary departure runway. During peak arrival demand possible departure delays due to single runway departure operation.



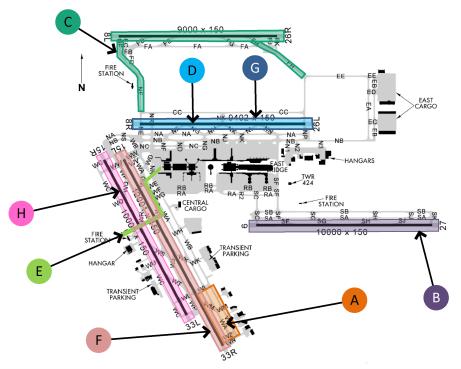
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D	RWY 9L/27R & TWYs																																			
Ε	RWY 9R/27L & TWYs																																			
F	TWY Z																																			

I		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	D	RWY 9L/27R & TWYs	RWY 9L/27R and associated TWYs closed for rehabilitation of intersection with RWY 3L/21R.	08/08/2019 to 11/15/2019	In Progress		Runway 9L-27R is primary departure runway during crosswind conditions (<3% of the time). Phasing scheduled outside of the crosswind season to minimize use.
	E	RWY 9R/27L & TWYs	RWY 9R/27L and associated TWYs closed for rehabilitation. RYW closed 9/5/19 to 9/27/19.	09/05/2019 to 09/30/2019	Complete		Expected RWY return to service 9/27/2019. Expected TWYs T6, T7, & T8 return service 9/30/2019.
	F	TWY Z	TWY Z relocation between TWY V and TWY Z5.	04/01/2021 to 11/15/2021	Upcoming		



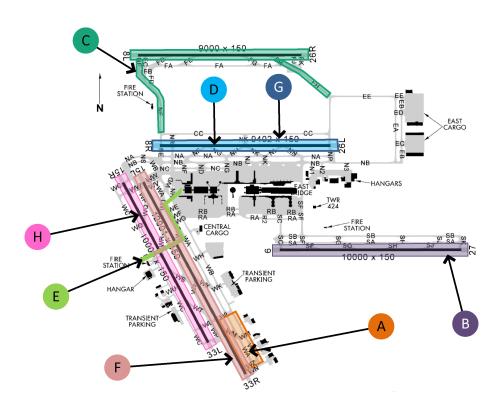
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Α	TWY WA & WB																																				
В	RWY 9/27																																				
С	RWY 8L/26R & TWYs																																				

		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	Α	TWY WA & WB	Reconstruction of Taxiway WA to make ADG VI compliant. Rehabilitation of TWY WB.	October 2018 to 12/31/2019	In Progress		TWY WA will be returned to service prior to TWY WB closure.
			Complete reconstruction of Taxiway WB.	Jan 2020 TBD to October 2021	Upcoming		Will begin phasing closures a few weeks after TWY WA opens.
I	В	RWY 9/27	RWY 9/27 and adjacent taxiways closed for maintenance.  Continuous closure - 21 days	08/11/2019 to 08/31/2019	Complete		Runway 9/27 is a primary arrival runway. Arrival rate will be reduced to a 68-64 (VMC/IMC). Delays up to 45 minutes may be realized during this closure due to limited airport runway capacity.
	С	RWY 8L/26R & TWYs	RWY 8L/26R and associated TWYs closed for maintenance.	09/03/2019 to 09/25/2019	Complete		Runway 8L/26R is a primary arrival runway. Arrival rate will be reduced to a 68-64 (VMC/IMC). Delays up to 45 minutes may be realized during this closure.



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D	RWY 8R/26L																																				
E	Airport Sanitary Sewer Mains																																				
F	RWY 15L/33R																																				

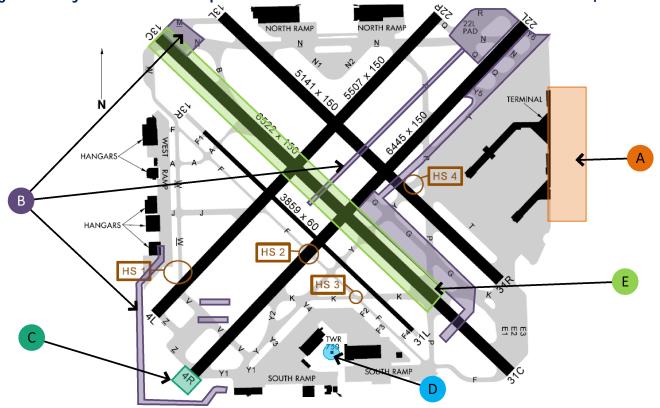
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
D	RWY 8R/26L	RWY 8R/26L closed for maintenance.	10/06/2019 to 10/26/2019	Upcoming		Runway 8R/26L is a primary arrival runway. Arrival rate will be reduced to a 68-64 (VMC/IMC). Delays up to 45 minutes may be realized during this closure
Е	Airport Sanitary Sewer Mains	Rehabilitation of sewer line from Terminal A Southbound, then West of TWY WC.	Fall 2019 TBD to Spring 2021 TBD	Upcoming		Project delayed, estimated project duration 419 days.
F	RWY 15L/33R	RWY 15L/33R closed for maintenance.	01/06/2020 to 01/26/2020	Upcoming		RWY 15L/33R is a primary departure runway. When necessary, arrival runways will share with departures to mitigate delays. 15 to 30 minutes delays may be realized during this closure.



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G	RWY 8R/26L & TWYs																																	
Н	RWY 15R/33L																																	

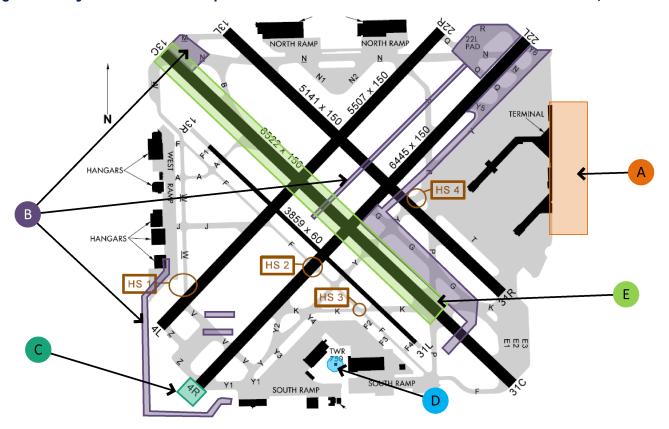
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
G	RWY 8R/26L & TWYs	RWY 8R/26L closed for resurfacing, and electrical upgrades. TWY NA closed in conjunction for widening to accommodate ADG VI aircraft.	2020 TBD to 2021 TBD	Upcoming		Expecting project to start late 2020 or early 2021.
Н	RWY 15R/33L	RWY 15R/33L closed for maintenance.	02/16/2020 to 03/08/2020	Upcoming		RWY 15R/33L is a primary departure runway. When necessary, arrival runways will share with departures to mitigate delays.  15 to 30 minutes delays may be realized during this closure.

## Q4-2019 Airport Construction Outlook



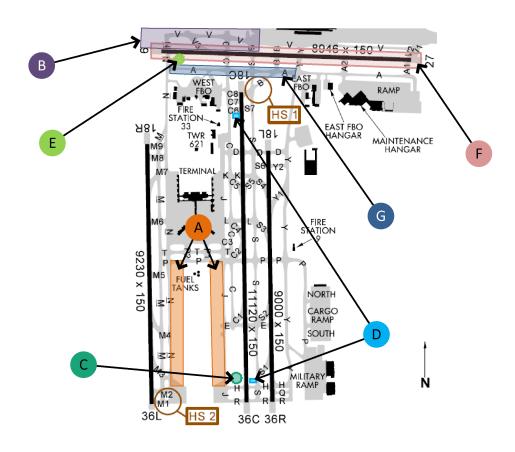
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Α	Terminal Parking Garage																																				
В	Airfield Lighting																																				
С	RWY 4R/22L EMAS																																				

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	Terminal Parking Garage	Expansion of the existing terminal parking structure.	01/01/2018 to 08/14/2020 TBD	In Progress		This project should be minimal impact. During occasional weather periods the RNAV 22L approach may have increased minimums.
В	Airfield Lighting	Airfield lighting improvements. Construction of electrical duct banks and manhole system near the approach end of RWY 22L.	04/01/2018 to 11/30/2019	In Progress		Primarily nighttime work near the approach end of RWY 22L that may require associated TWY closures.
С	RWY 4R/22L EMAS	Repair/replace Engineered Material Arresting System (EMAS) at Southwest end of RWY 4R/22L.	October 2018 to 09/27/2019	Complete		Project will require runway closure but will be based on availability of alternate runways.



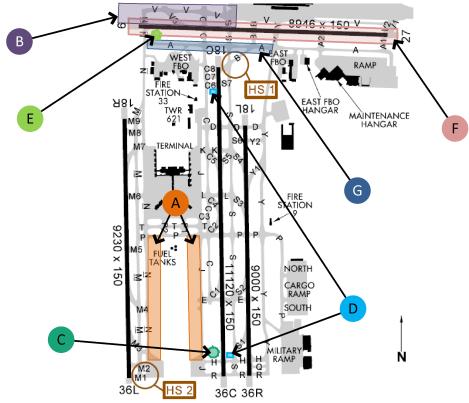
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D	ATCT																																			
Е	Runway 13C/31C																																			

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
D	ATCT	Replacement/upgrade of ATCT emergency battery power supply (UPS).	08/01/2019 to 08/31/2019	Complete		ORM meetings in progress, plans for temporary tower during weekend overnight power loss.
E	Runway 13C/31C	Runway 13C/31C runway grooving. Installation of in-ground Runway Guard Lights (RGL) on Taxiways M & N at the approach end of Runway 13C. Concurrent full runway closures of RWY 4R/22L and RWY 13C/31C. Full RWY closure 9/16/19 to 9/19/19 (56 hrs.)	09/01/2019 to 09/20/2019	Complete		Project will be scheduled for minimum impact.  Expecting nighttime work.



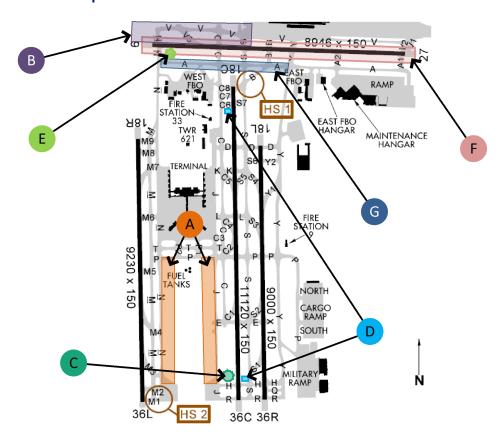
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Α	TWYs N & J Deicing Pad																																	
В	Ramp Area																																	

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	TWYs N & J Deicing Pad	TWYs N & J, deicing (glycol collection) pad between RWY 36L and 36C.	September 2017 to August 2022	In Progress		Area affects approaches during CAT 2/3 conditions. Airport will lower crane(s) when anticipating CAT 2/3 conditions to mitigate impact. However, some CAT 2/3 conditions may still add impact.
В	Ramp Area	Fed Ex ramp western area expansion.	02/04/2019 to 11/30/2019	In Progress		Sub projects associated with this operation expected to fluidly affect taxi operations. Crane operations planned.



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С	RWY 36C Glideslope Bldg.																																			
D	RWY 18C/36C Lighting																																			
Е	RWY 9 Lighting																																		$\top$	

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
С	RWY 36C Glideslope Bldg.	RWY 36C glideslope shelter replacement	06/20/2019 to 07/10/2019	Complete		Possible daytime and short term closures. Some concrete work may involve close in obstacles that require Obstacle Evaluation.
D	RWY 18C/36C Lighting	RWY 18C/36C Precision Approach Path Indicator (PAPI) installation.	07/01/2019 to 08/05/2019	Complete		Daytime closure required – scheduling hours of work to be accomplished during time periods that minimize impact on air traffic operations.
E	RWY 9 Lighting	RWY 9 ILS/LOC system and shelter replacement.	08/05/2019 to 10/07/2019	In Progress		Runway 09/27 daily closure with delays. Impact has been discussed. Daytime Hours: 0630-1430L. May include weekend work.

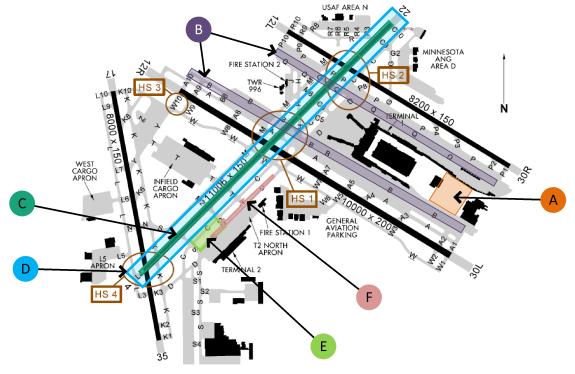


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F	RWY 9/27 Status Lights																																
G	TWY A																																

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
F		RWY 9/27 runway status lights (RWSL) system will be installed.	2021 TBD	Upcoming		Construction dates are TBD. Impact level will be changed if there is any effect on capacity or delays.
G	TWY A	TWY A (West) full-depth reconstruction of approx. 4,125 ft. Includes demolition, grading, drainage, airfield signage, markings, and electrical lighting.  Duration 4 months	Summer 2022	Upcoming		Preconstruction meeting with airport authorities and discussion included construction dates and potential impacts.Construction will be done in sections. Impact level will be changed if there is any effect on capacity or delays.

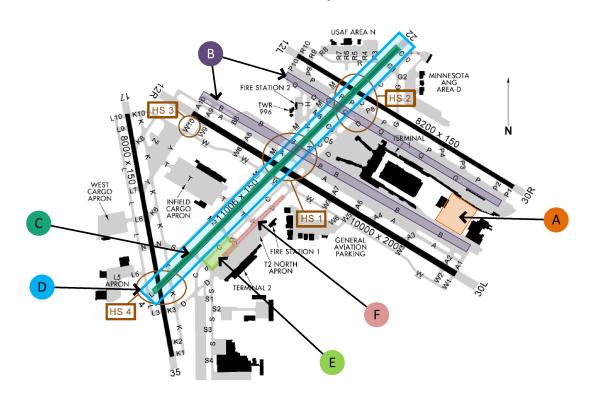
## Q4-2019 Airport Construction Outlook





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Α	Parking Ramp Construction																																	
В	TWYs B & Q																																	
С	RWY 4/22 as TWY																																	

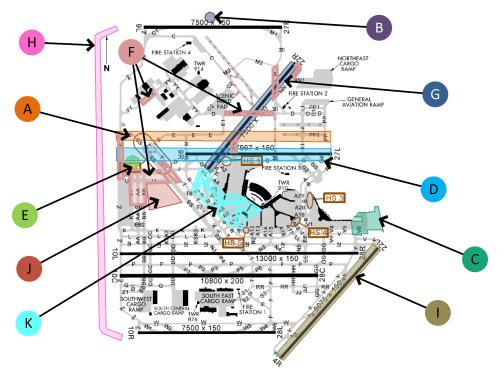
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	Parking Ramp Construction	Large cranes (4) will be erected to support Terminal 1 parking ramp construction. RWYs 12R and 12L have Cat II available to RWY threshold. Beyond RWY threshold, the localizer is unusable.	03/02/2018 to 11/30/2019	In Progress		Cranes impact localizers RWYs 12R, 12L, and 30L. And RWY 30L is Cat I ILS only. No Cat III approaches available to RWY 12L or 12R. No impact on arrival rate, but will impact what aircraft/airlines using those approaches. TMIs will be utilized during active weather conditions.
В	TWYs B & Q	Adding Centerline Lighting for Taxiways B & Q.	05/06/2019 to 11/30/2019	In Progress		Work to be completed on overnights.
С	RWY 4/22 as TWY	Install RWY 4/22 guard and TWY edge lights.  RWY 04/22 closed 9/4/2019 to 11/30/2019.	05/27/2019 to 11/30/2019	In Progress		These lights will be turned on when RWY 4/22 is used as a taxiway.



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D	RWY 4/22 Grading							L																															
E	TWY C and C1																																						
F	TWY D																																						

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
D	RWY 4/22 Grading	RWY 4/22 safety area grading.	06/01/2019 to 11/30/2019	In Progress		Limited impact to RWY operations.
E		Construction of new TWY C1. Phase 1 - 8/9/19-9/15/19 Phase 2 - 9/15/19-10/31/19 TWY C closed between TWY C2 and TWY S.	08/09/2019 to 10/31/2019	In Progress		Limited taxi restrictions on ADG V & IV aircraft.  Alternate taxi routes will be available.
F	TWY D	TWY D closed for reconstruction.	May 2020 to September 2020	Upcoming		Multi-phased project. Limited taxi restrictions on ADG III and IV aircraft.





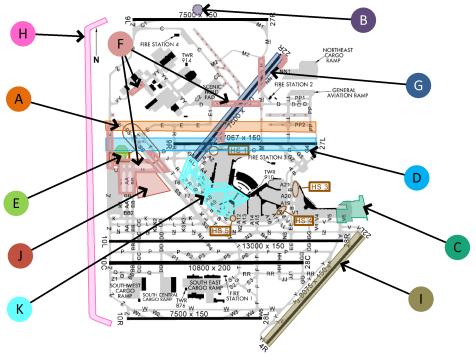
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Α	RWY 9C/27C																															
В	North ASDE																															

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	RWY 9C/27C	New center runway construction (11,245 ft. long x 200 ft. wide).	05/01/2017 to 11/05/2020 TBD	In Progress		Dates fluctuate due to construction complexities. The scheduled commissioning date is 11/5/2020. RWY 9R ILS currently in-service for Cat I approaches, further outage requests likely. Impact level may change during project due to weather changes. Delays during IMC conditions are expected which is approx. 4% of the year. If weather is below 500-1/2 (LOCALIZER minimums); GDPs, MIT, airborne holding, and arrival delays of up to 60 minutes possible. The loss of 9R/27L glideslope during IMC conditions lowers airport to a 76 AAR.
В	North ASDE	Construction of a new North ASDE SMR (airport surface detection radar antenna) site.	06/18/2018 to 10/31/2019 TBD	In Progress		Construction completion and commissioning dates are currently on hold.

ORD (2 of 5)—Chicago-O'Hare International Airport

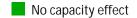
Q4-2019 Airport Construction Outlook

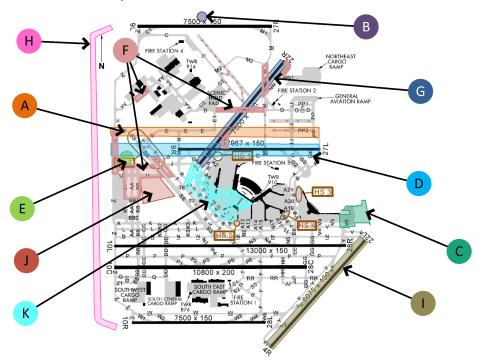
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С	Terminal 5 M Extension																																				
D	RWY 9R/27L																																			$\Box$	
E	Relocation of the west ASR-9																																				

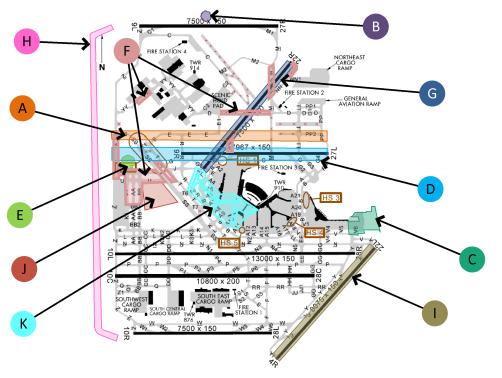
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
С	Terminal 5 M Extension	Terminal 5 - M extension. Site/civil package includes demolition of existing airside and landside facilities and construction of new airside apron and TWY pavement servicing the Terminal 5 Extension. Includes landside improvements.	January 2019 to April 2020	In Progress		Expecting RWY and TWY closures including RWY 4R/22L, 10L/28R, and 10C/28C.
D	RWY 9R/27L	Runway 9R will be extended approximately 3,000 feet to the west. Runway 27L will be shortened approximately 300 feet to the west.	03/01/2019 to 12/02/2021	In Progress		Multi-phased construction during 3 seasons (2019, 2020, & 2021). After commissioning back into the NAS at its proposed new length, the runway will only be available for departures and RNAV approaches. CAT I is anticipated in 2022 and CAT II/III in 2023.
Е	Relocation of the west ASR-9	The ASR will be relocated to the south airfield to support new RWY 9C-27C.	05/01/2019 to 07/01/2019	Complete		South ASR-9 will be in service May 1, 2019 and the west ASR-9 (or mid-airfield) demolition June 1, 2019.





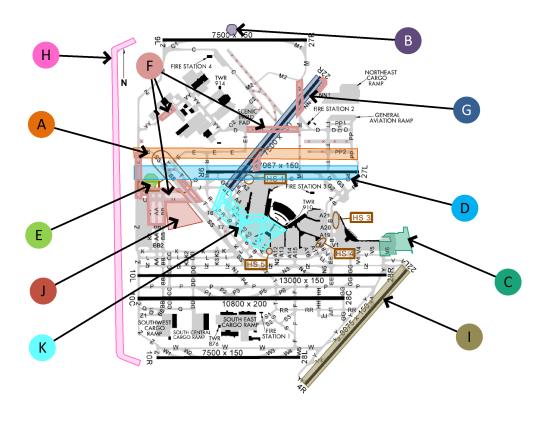
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F	Multiple TWYs																																				
G	RWY 4L/22R																																				

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
F	Multiple TWYs	Multiple TWYs closed for construction. TWY NN, TWY A1 (3/15/19-10/31/19). TWY M (7/25/19-10/10/19). TWY T3 (8/6/9-10/10/19). TWY Z (8/26/19-11/28/19). TWY D (9/11/19-11/7/19). TWY YY (9/9/19-10/10/19). TWY S AA, BB, U, J, & J1 (9/11/19-10/12/19).	03/15/2019 to 11/28/2019	In Progress		Alternate taxi routes will be utilized.
G	RWY 4L/22R	RWY 4L/22R closed for full length rehabilitation, lighting upgrades and surface markings. RWY closed continuously.	07/24/2019 to 12/01/2019	In Progress		Expecting no TMIs during typical East or West flow operations. However, if weather prohibits a West flow, significant arrival/departure delays are possible. Landing Distance Available (LDA) approx. 7,300 feet for Runway 22R arrivals. Full length departures of Runway 4L will remain available.



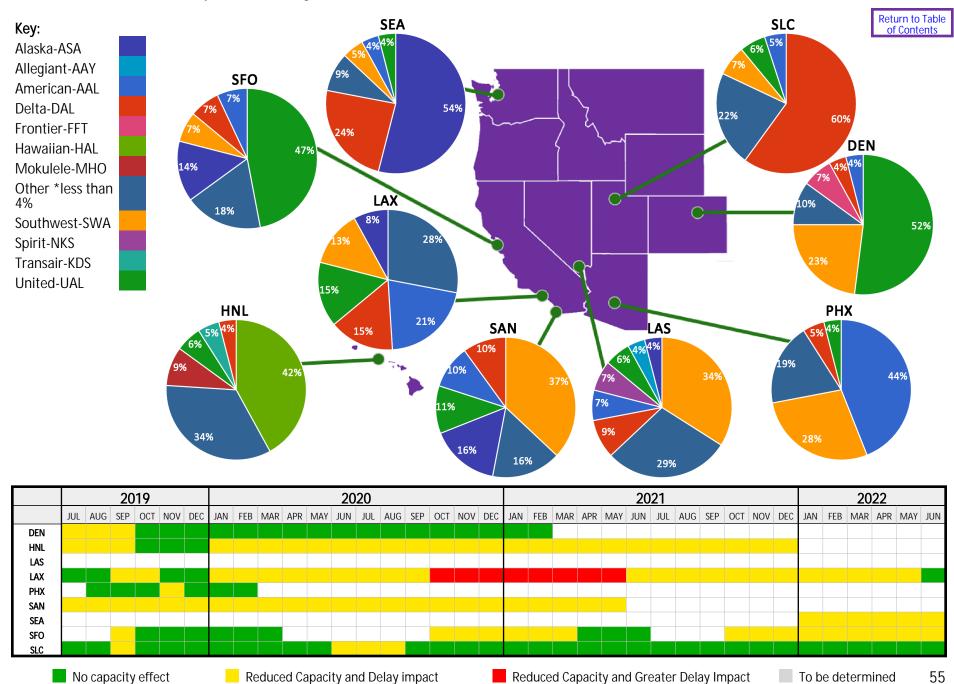
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Н	Western toll-way bypass																																		
I	RWY 4R/22L																																		
J	FAA Facilities Relocation																																		

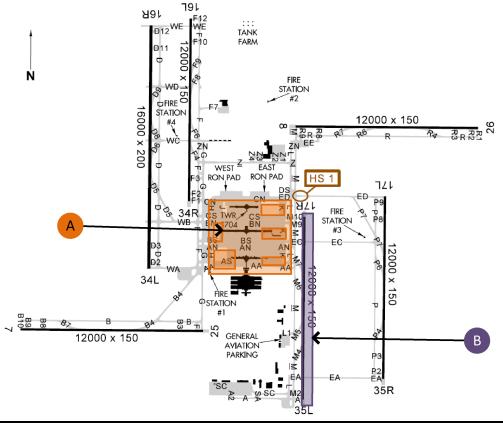
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Н	Western toll-way bypass	Toll-way construction along the western airport boundary from intersection of Business Road and S.R.83 westbound to Interstate 355.	2020 TBD to 2023 TBD	Upcoming		Construction is currently on hold. During construction, Construction cranes will impact approach minimums by increasing decision height (DH). NOTAMS in effect.
ı	RWY 4R/22L	RWY 4R/22L closed for rehabilitation.	05/15/2020 to 09/15/2020	Upcoming		RWY will be closed continuously.
J	FAA Facilities Relocation	Relocation of FAA facilities: Remote Transmitter Receiver (RTR)-U, Low Level Wind Shear Alert System (LLWAS)-16, Airport Surface Detection Equipment, Model X (ASDE-X), and Fixed Target Reflector (FTR).	Q4 2020 to Q3 2022	Upcoming		



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K	New Terminal Areas Plan (TAP)																																		

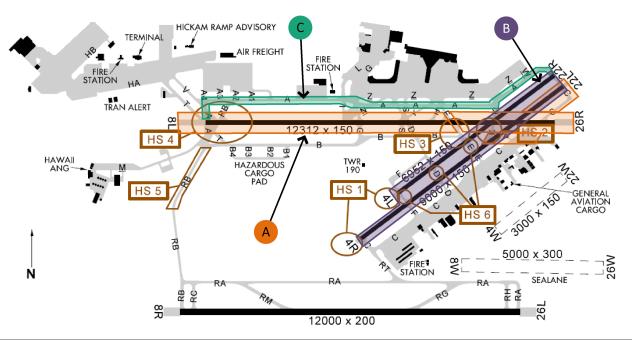
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
K	New Terminal Areas Plan (TAP)	Terminal areas redevelopment and construction.	2021 TBD to 2028 TBD	Upcoming		Multi-year phased projects. Taxiway closures may change taxi routes and increase taxi in/out times during construction. Total Airport and Airspace Modeling (TAAM) in process for development of the Environmental Assessment.





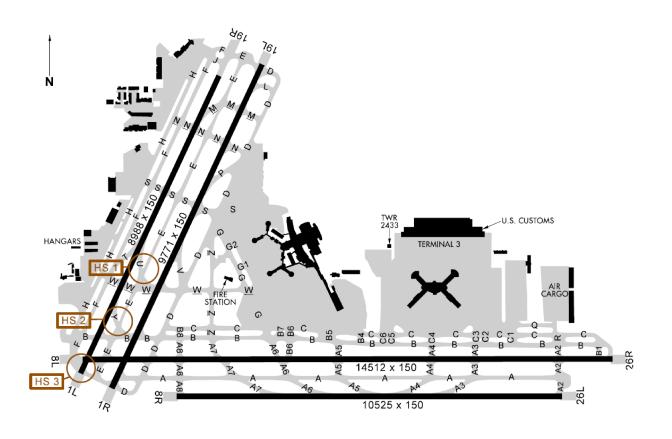
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Α	Terminals A, B, & C																																
В	RWY 17R/35L																																

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	Terminals A, B, & C	Ramp and Apron Construction for Terminals A, B, and C expansion and redevelopment: Concourse A - 12 new gates Concourse B - 11 new gates Concourse C - 16 new gates	05/10/2018 to 02/28/2021	In Progress		Ramp and apron construction coinciding with the concourse expansion plan. Expecting increased taxi times. New gates will increase gate capacity by 30%.
В		RWY 17R/35L closed for pavement rehabilitation and lighting upgrades.	06/03/2019 to 09/30/2019	In Progress		Limited impact. Miles in trail, Time Based Flow Management, fix balancing, ground stop, GDP, and AAR adjustments will be used to accommodate traffic demand. Expected RWY return September 2019.



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Α	RWY 8L/26R																																		
В	RWY 4L/22R & 4R/22L																																		
С	TWY A																																		

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
A	RWY 8L/26R	RWY 8L/26R widening project from 150 to 200 feet.	03/19/2019 to 09/10/2019	Complete		9 Stage project. West and center stages RWY 8L requires full closures resulting in lower AARs. TMIs will be in place for arrivals during peak periods (0900-1500 HST), miles in trail (MIT), and/or call for release may be implemented.
		Phase 2 (stages 3-9) of 8L/26R should start January 2020 and should be completed by 2021. Design is being finalized. Stages 3-9 = full closures	January 2020 to 2021 TBD	Upcoming		Expect TMIs for arrivals during peak periods.  Expect airborne and departure delays.
В	RWY 4L/22R & 4R/22L	Install runway Guard Lights for Runway Incursion Mitigation program (RIM).	Fall 2019 TBD to Winter 2020 TBD	Upcoming		
С	TWY A	TWY A realignment. Estimated start construction near end of year 2021.	2021 TBD to Fall 2021 TBD	Upcoming		Taxiway reconfigurations based on HNL geometry study completed May 2018.



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Project	Description of Work	Estimated Dates	Status	Impact	Notes
No projects at this time					



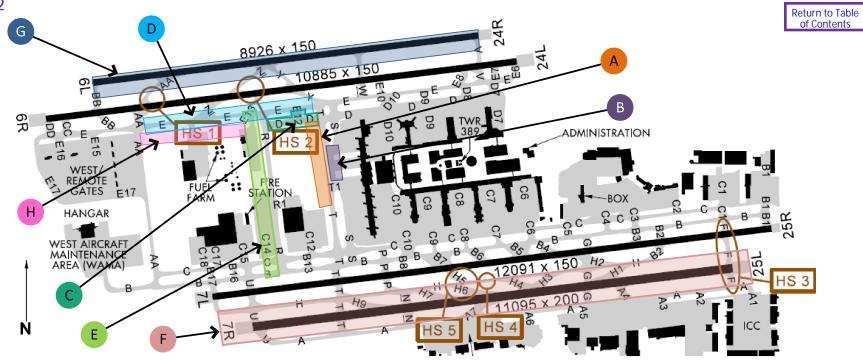
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Α	Midfield Satellite Concourse (MSC)																																			
В	TWY S																																			
С	TWY D and E12 (Center)																																			

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
A	Midfield Satellite Concourse (MSC)	The MSC project includes construction of a new passenger concourse facility and will be located in the central area of the airfield. The MSC project consists of a multi-gate concourse, aircraft parking aprons, taxiways/lanes, and utilities.	08/01/2016 to 07/01/2020	In Progress		LAX Tower will release control of Taxilanes L and K (currently named Taxilanes S and T) to Los Angeles World Airports (LAWA) when Taxiway P construction has been completed.
В		TWY S closed for construction, between TWY T1 and T2.	06/06/2018 to 12/15/2019 TBD	In Progress		TWY T was replaced by TWY S as the North standard taxi route. TWY T2 is restricted to ADG-III and smaller aircraft. Gate 132 push back on TWY T blocks North taxi route.
С	TWY D and E12 (Center)	TWY D closed for construction, between TWY R and T. TWY E12 closed for construction, between TWY D and E.	06/25/2018 to 08/15/2019	Complete		Limited impact for taxiing aircraft. Increased surface congestion during periods of peak demand.



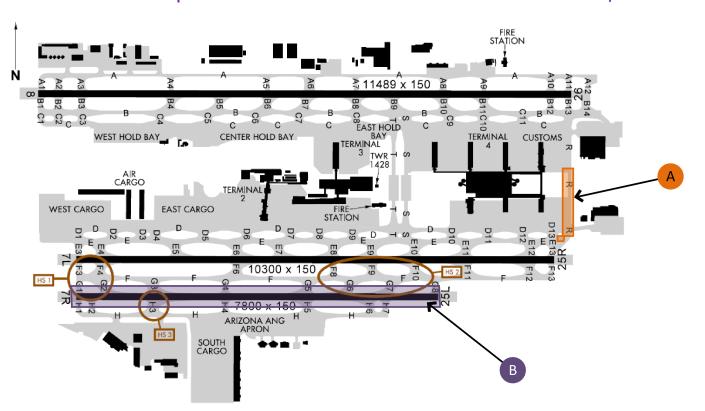
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Not Depicted	Taxiway Re-Designation Project																																		
D	TWY E																																		
Е	TWY C14																																		

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Not Depicted	Taxiway Re-Designation Project	Airfield wide project to re-designate LAX TWYs.	02/28/2019 to 2022 TBD	In Progress		Multi-phased project to rename airport taxiways. Renaming the South airfield first will enable the North airfield to utilized single letter TWYs.
D	TWY E	TWY E will be closed for a pavement rehabilitation project between TWY AA and TWY T.	09/09/2019 to 10/10/2019	In Progress	-	Five separate phases closing TWY E for four days (MON 0030L to THU 1600L) Increased surface congestion. Longer taxi route expected for aircraft landing and parking on north complex.  AAR restricted to 68 due to RWY 24L not available for arrivals.
Е	TWY C14	New TWY C14 between TWY E and TWY C and parallel to TWY R. TWY C14 renaming to TWY P.	January 2020 to November 2020	Upcoming		New taxiway construction. Capacity will be reduced with limited impact. Extended closure of TWY R (current South taxi route)



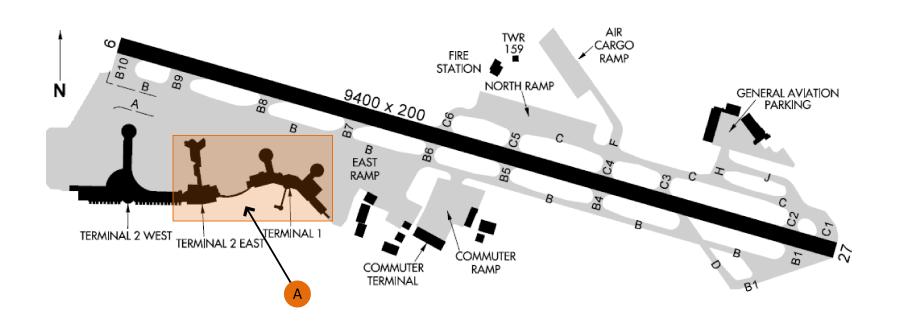
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F	RWY 7R/25L & TWY H																																	
G	RWY 6L/24R Exit TWYs																																	
Н	TWY D Extension & TWYs																																	

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
F		RWY 7R/25L and TWY H rehabilitation. RWY closure: Jan-Mar 2021	October 2020 to April 2021	Upcoming		Runway closure will occur in phases. Including nighttime closures of RWY 7L/25R during the initial phase and end phase of the project.
G	RWY 6L/24R Exit TWYs	Runway 6L/24R closure to support TWY construction.	Jan 2021 TBD to May 2021 TBD	Upcoming		No operational notes.
Н	TWY D Extension & TWYs	TWY D extension (new construction) from TWY C14 (TWY P) to TWY AA. Includes associated TWYs tie-in to TWY D.	May 2021 to May 2022	Upcoming		Capacity will be reduced with limited impact. Additional TWY D construction west from TWY AA to TWY E17 will provide a second full TWY for RWY 6R/24L, (dates TBD).



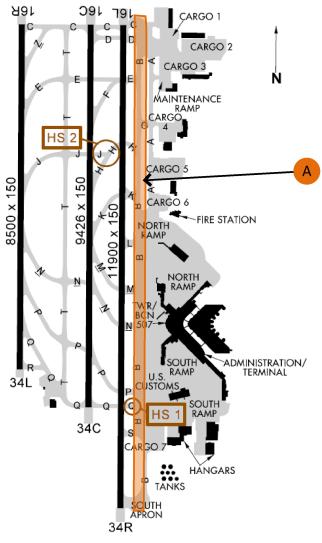
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Α	TWYs R & E																																	
В	RWY 7R/25L																																	

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	IVVYCRXIE	TWY R & E extended restriction/closure for construction.	08/29/2019 to 02/05/2020	In Progress		Project is for expansion of the SWA maintenance hangar. TWY D and R intersection will be restricted to ADG III and below. TWY R south of TWY D will be closed. Expecting TWY congestion, but, Impact will be minimal.
В	RWY 7R/25L	RWY 7R/25L closed for pavement repairs, installation of electrical and lighting upgrades.	11/01/2019 to 11/04/2019	Upcoming		During VFR operations, the AAR will be reduced from 72/76 to 48. During IFR operations, the AAR will be reduced from 48 to 36. During IFR conditions; possible arrival delays up to 90 minutes and departure delays exceeding 30 minutes.



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Α	Terminal Replacement																															
No Depic	Electrical Vault Relocation																															

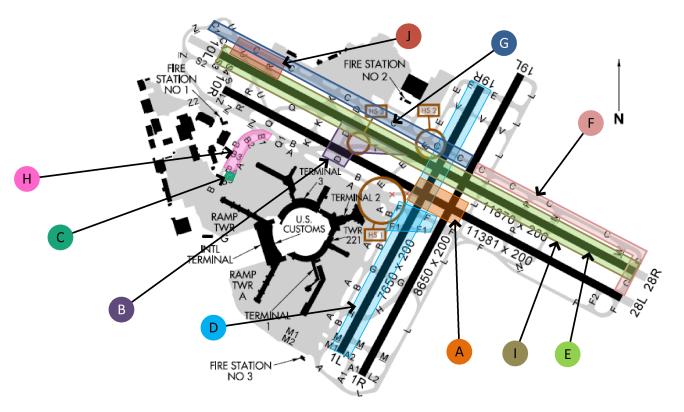
·	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	Terminal Replacement	Airport will replace passenger terminals.	01/01/2019 to 01/01/2021	In Progress		Aircraft gates added sequentially before legacy gates demolished.
Not Depicted	Electrical Vault Relocation	Electrical vault moved approximately 150 feet SE to allow for TWY expansion.	08/01/2020 to 05/01/2021	Upcoming		Phased to avoid reduction in services/capabilities. Also relocation of security fences keeps equipment shelters inside the Air Operations Area (AOA).



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Α	TWY B																																					
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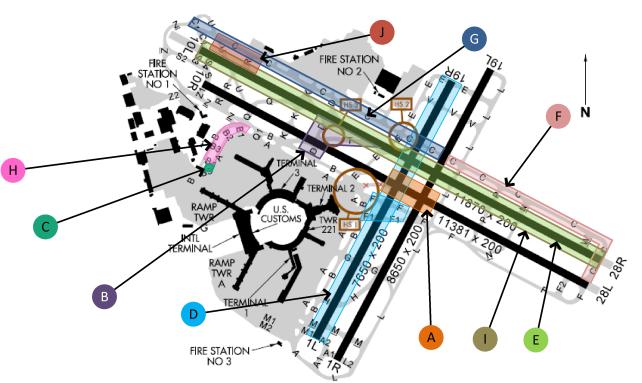
	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	TWY B	TWY B closed for reconstruction.	2022 TBD	Upcoming		TWY B 500 ft. separation and runway incursion mitigation (RIM).





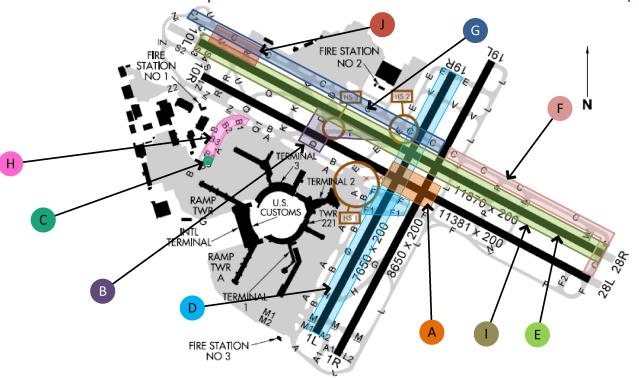
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Α	RWY 28L Intersections																																		
Not Depicted	Airfield Lighting																																		

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
A	RWY 28L Intersections	RWY 28L closed for full depth reconstruction of the middle section of the runway. Includes reconstruction of RWY intersections at RWY 1L and RWY 1R.	09/07/2019 to 09/27/2019	Complete		20-day closure: RWY 28L and RWY 1R closure for 10 days RWY 28L and RWY 1L closures for 10 days. Expect limited night time RWY closures, before and after full time 20 day closure.
No	A'-C'-LIL'-LIL	Airfield Lighting, Bldg. 1 electrical system upgrade.	11/01/2019 to Winter 2020	Upcoming		No operational notes.
No Depi	ed Airfield Lighting	Airfield lighting, 5kV cable replacement	Fall 2019 to Winter 2020	Upcoming		Future project, exact dates unknown.



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В	TWYs D & T																																				
С	TWY B5																																				

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
E	TIME DO T	TWYs D and T closed for realignment, runway incursion mitigation (RIM) program. Will require separate 28L and 28R closures; dates and duration TBD. Phase A - nighttime 28L Closures - weeks Phase B - weekend runway 28R closure Phase C - full week runway 28L closure Phase D - nighttime 28L closures - 3 weeks Phase E - nighttime 28L closures - 3 weeks	Fall 2020 to Winter 2021	Upcoming	_	Multi-phased project to realign TWYs in order to rectify deficiencies with the existing geometry. It will enable aircraft entering RWY 10R to utilize the full length of the runway.  Expect increased surface congestion on TWY E.
C	TWY B5	Taxiway B5 closed for reconstruction.	02/01/2021 to 06/01/2021	Upcoming		ATC involved in discussions.



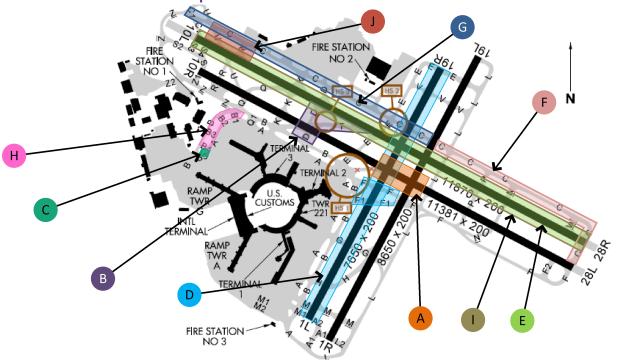
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D	RWY 1L/19R & TWYs F and F1																																			
E	RWY 10L/28R Airfield Lighting																																			
F	TWY C (East Area)																																			

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
D	RWY 1L/19R & TWYs F and F1	RWY 1L/19R closed for rehabilitation and realignment of non-standard TWY geometry. TWY F1 will become TWY W. Existing TWY W will become TWY C2.	Fall 2021 to Winter 2022	Upcoming		Repaving RWY and realign TWYs in order to rectify deficiencies. Impact will be closure of 1L or 1R when the new TWYs are constructed to tie-in the RWYs.
E	RWY 10L/28R Airfield Lighting	RWY 10L/28R closed for lighting cable replacement (5kV).	Jan 2022 TBD to Aug 2022 TBD	Upcoming		Future project, exact dates unknown.
F		TWY C realignment/reconstruction on the East- side of the airfield. Realign TWY C, 50ft away from 10L/28R.	2022 TBD	Upcoming		Future project, exact dates unknown.

SFO (4 of 4)—San Francisco International Airport

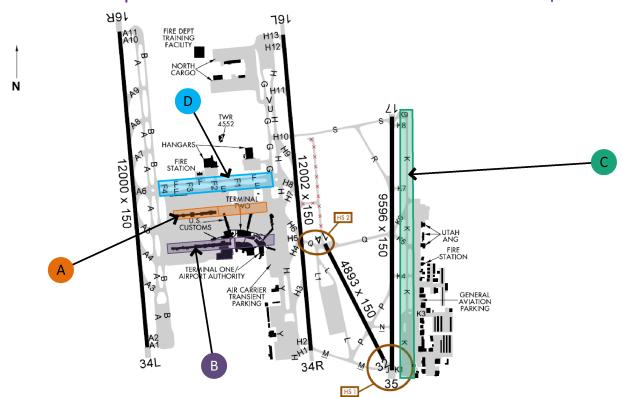
Q4-2019 Airport Construction Outlook

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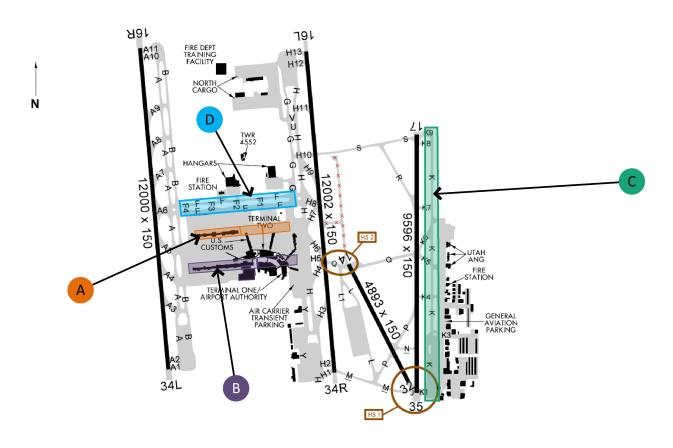
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G	TWY C (West Area)																																				
Н	TWY B1-B4																																				
1	RWY 10L/28R																																				
J	TWY C3 and R																																				

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
G	TWY C (West Area)	TWY C realignment/reconstruction on the West- side of the airfield. Realign TWY C, 50ft away from 10L/28R.	2022 TBD	Upcoming		Future project, exact dates unknown.
Н	TWY B1-B4	TWYs B1 to B4 closed for reconstruction.	03/01/2022 to 09/01/2022	Upcoming		ATC involved in discussions.
1	RWY 10L/28R	RWY 10L/28R closed for rehabilitation. Shortened runway and weekend closures.	Fall 2022 TBD to Winter 2023 TBD	Upcoming		Future project, exact dates unknown.
J	TWY C3 and R	TWYs closed for realignment/reconstruction TWYs C3 and R.	Fall 2022 TBD to Winter 2023 TBD	Upcoming		Project may be combined with RWY 10L/28R project. Exact dates unknown.



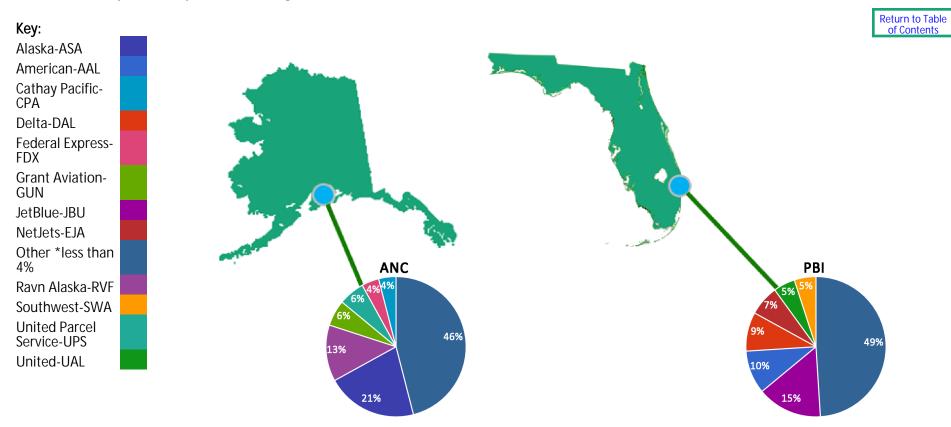
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Α	North Terminal																																
В	South Terminal																																

		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	Α	North Terminal	North terminal concourse and apron redevelopment.	June 2017 to 2024 TBD	In Progress		Terminal redevelopment program. New concourses will accommodate larger planes.
	^	North Terminal	First phase: 20 gates. Second phase: 11 gates.	Julie 2017 to 2021 188	iii rogress		First phase (West side) to open in fall of 2020. Second phase to open in 2023/24.
ı			South terminal concourse and apron redevelopment.				Terminal redevelopment program. New concourses will accommodate larger planes, including doubling international capable gates from 3 to 6. Current gate
	В	South Terminal	First phase: 25 gates (+6 international gates). Second phase: 22 gates. Demolition of existing 3 terminals.	June 2017 to 2024 TBD	In Progress		count 71 (only 55 have jet bridges); at completion all 78 gates will have jet bridges. First phase (West side) to open in fall of 2020. Second phase (East side) to open in 2024.

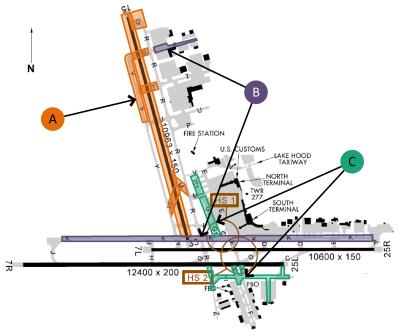


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С	TWY K																																		
D	TWYs E & F																																		

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
С		TWY K closed for rehabilitation. RWY 17/35 closed nighttime during TWY lighting system upgrades.	09/03/2019 to 09/18/2019	Complete		Multiphase project to minimize impact to traffic flow in and around GA apron. All TWY work will be outside RWY 17/35 Safety Area, except for lighting system upgrades.
D	TWYs E & F	TWYs E and F closed for rehabilitation between TWYs B and G.	06/01/2020 to 08/31/2020	Upcoming		Project will be phased to minimize operational impact.

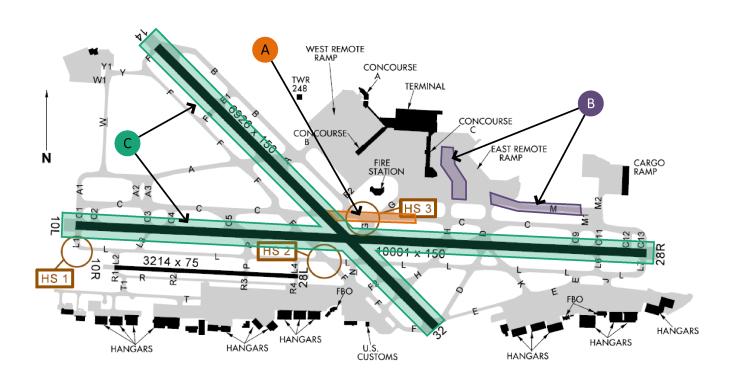


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Α	RWY 15/33 & TWYs																																		
В	TWYs S & K																																		
С	TWYs G1 & Z																																		

I		Project	Description of Work	Estimated Dates	Status	Impact	Notes
	Α	RWY 15/33 & TWYs	Runway 15/33 reconstruction.  Associated TWYs closed for reconstruction: TWYs W, T, M, S, Y, and Q.	04/01/2019 to 10/01/2019	In Progress		TWYs K and L will remain open and available to cross at the North end and South end of the runway. Possible call for release of aircraft departing from Alaska. Miles in-trail and speed restrictions. Expected RWY return Oct 1, 2019. Expected associated TWYs return Oct 31, 2019.
ı	В	TWYs S & K	TWYS S and TWY K reconstruction. TWY K will be reconstructed and relocated to the North.	2020 TBD	Upcoming		
	С	TWYs G1 & Z	TWY G1/Z East/West extension and reconstruction. Reconstruction of TWY Z and associated TWYs/TXLs to accommodate Airplane Design Group (ADG VI) and TWY Design Group (TDG 7). TWY R extension (West side).	2021 TBD	Upcoming		Project includes road alignments parallel and South of TWY Z.



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Α	TWY C																																		
В	TWY and Apron Areas																																		
С	RWYs 14/32 & 10L/28R																																		

	Project	Description of Work	Estimated Dates	Status	Impact	Notes
Α	TWY C	TWY C closed for rehabilitation. TWY C closed from RWY 14 and TWY H.	08/22/2019 to 11/15/2019	In Progress		Taxi delays expected. But no considerable impact. Voluntary push plan in effect.
В	TWY and Apron Areas	Non-movement area and Apron rehabilitation. Repaving areas by concourse C and behind east remote parking.	08/22/2019 to 06/24/2020	In Progress		The category IV air carrier aircraft part on western gates on concourse C.
С	RWYs 14/32 & 10L/28R	RWY 14/32 and 10L/28R closed for maintenance.	10/22/2019 to 11/18/2019	Upcoming		Electrical work in safety area with 30 minute call back if needed.