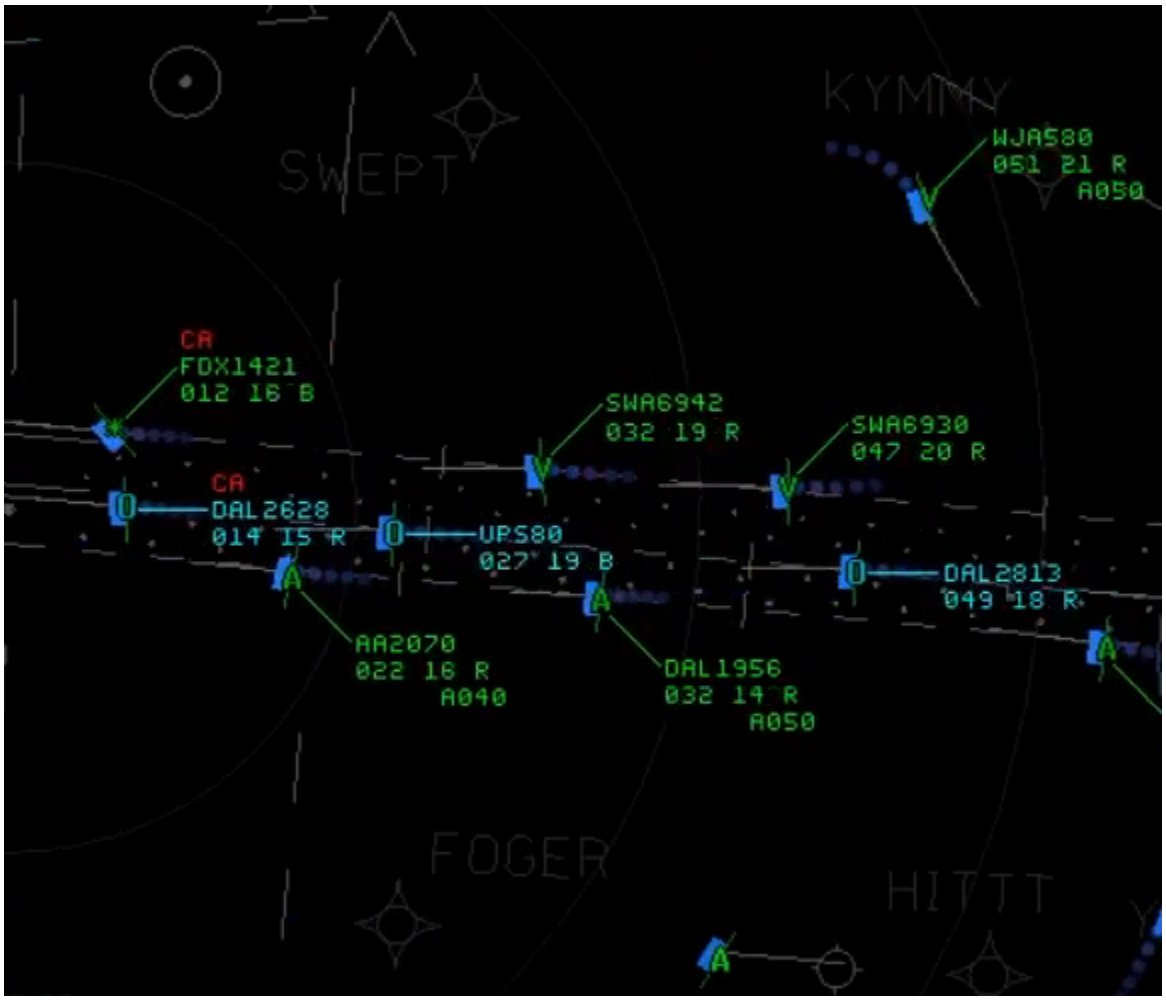

ZTL FNO Proposal

January 2022

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At a Glance:

The Virtual Atlanta Air Route Traffic Control Center (vZTL ARTCC) is requesting a waiver to VATUSA DP003 5.1.3.

> *"An FNO requires 1 host ARTCC with 2 or more supporting ARTCCs. Each ARTCC must feature at least 1 airport that has a Class C or Class B airspace."*

vZTL is requesting a waiver to this policy which will allow the annual Honoring the Dream (1/14/2022 on request) to be a single-field FNO at Atlanta's Hartsfield-Jackson International Airport.

vZTL's justifications for this request are as follows:

1. A demonstrated history of successful events.
2. A demonstrated history of controller staffing.
3. A demonstrated history of minimal Tier 1/vNAS impacts.

Staffing

Current - Staffing Overview

Atlanta ranks as the 4th most populous subdivision within VATUSA with 89 controllers certified on Atlanta ATCT or above:

Certifications	Home	Visitor
Center	32	19*
A80 TRACON	33	16
ATL ATCT	43	26
**There are more visitors certified to work Center than A80 due to the fact that the Center is non-designated airspace - it is possible to receive center certifications without major approach certifications.*		

Table 1 - Certifications Held

Staffing for recent events has been more than adequate for the workload:

Event	# of Signups	# of Signups Req.
I-85 Crossfire	20	16
Summer Sizzle FNO	15	10
80 Years of Atlanta's Hometown Airline	20	14
TRIPS: The FNO	16	10
Share a Coke with Atlanta (2021)	20	14

Table 2 - Recent Event Staffing.

Note - Single Field FNOs tend to attract more staffing than other types of FNOs/events within ZTL.

Historical- Staffing Overview

vZTL does not typically rely on the Advanced Controllers for Events (ACE) Team to assist in staffing events — these events are fairly popular within the ARTCC and therefore attract controllers (both home and visitors) quite easily.

Honoring the Dream	Controllers	The City in the Forest	Controllers
ZTL ARTCC	12	ZTL ARTCC	9
A80 Atlanta TRACON	11	A80 Atlanta TRACON	11
ATL Atlanta ATCT	12	ATL Atlanta ATCT	7
CLT (APP and Below)	4	CLT (APP and Below)	4
Total	39	Total	31

Table 3 - Previous Event Staffing

Workload / Planning

Estimated - Staffing Requirements (ZTL)

ZTL estimates that, internally, 28 controllers are required. Distribution would be as follows:

Honoring the Dream (2022, Estimate)	Required	Target
ZTL Atlanta Center	10	11
A80 Atlanta TRACON	9	11
ATL Atlanta ATCT	6	9
CLT (App & Below)	3	4
Total	28	35

Table 4 - ZTL's Estimated Staffing Requirements

Atlanta Center is likely to require 10 controllers. The split would shift as demand makes itself present. A suggested split is located in Appendix B.

The A80 Terminal Radar Approach Control is likely to require at least 9 controllers. Positions that would be staffed include 1 Departure position (DR-N), 1 Satellite position (SAT-P), 3 Feeder positions (TAR-D, TAR-L, TAR-H), 3 Final positions (AR-V, AR-O, AR-A), and 1 Traffic Management / Controller in Charge position (TMU-U/CIC). Additional positions that would be beneficial to have staffed include a second Traffic Management position. A fourth Feeder (TAR-Y) could be beneficial in limited scenarios.

The Atlanta Airport Traffic Control Tower is likely to require at least 6 controllers. Positions that require staffing include 3 Local Control positions (LC-1, LC-3, and LC-4), 2 ground positions (GC-N, GC-C), 1 Clearance Delivery position (CD-1), and 1 Controller-in-Charge/TMU (CIC/TMU). Additional positions that would be beneficial to have staffed include LC-2 and LC-5.

Estimated - Traffic Impacts / Staffing Requirements (NAS-Wide)

Predicting where demand originates for ATL events is difficult on the network. However, there are a couple of trends that begin to form from previous events.

ZTL collected a list of airports that had at least 5 departures for both Honoring the Dream and the City in the Forest FNOs.

	Honoring the Dream (2021)	City in the Forest (2020)
Facilities	Aircraft Originating	Aircraft Originating
ZMA (MIA, FLL, TPA)	41	20
ZHU (IAH, HOU, MSY)	29	11
ZAU (ORD, MDW)	19	22
ZJX (MCO, JAX)	19	17
ZBW (BOS)	--	12
ZMP (MSP)	10	10
ZDC (DCA, IAD)	9	15
ZNY (JFK, EWR)	9	12
ZID (SDF)	8	9
ZKC (STL)	8	9
ZDV (DEN)	7	12
ZTL (CLT)	7	11
ZFW (DFW)	--	7
ZME (MEM, BNA)	6	6
ZAN (ANC)	5	--

Table 5 - Number of aircraft originating from facilities across the vNAS.
Note - Only airports that saw at least 5 departures are included.

Historically, ZTL tends to request Tier 1 staffing from ZJX, ZDC, ZID, and ZME ARTCCs. Jacksonville, Memphis, and Washington assist with partial sequencing of Atlanta's arrival streams. Indianapolis is responsible for volume exiting ZAU/ZOB before reaching Memphis and/or Atlanta.

Based on previous event volume, Atlanta expects that the following staffing from the Tier I and Tier II neighbors will be necessary:

Numbers	Facilities
2-3 Centers, 1-2 Terminal Positions	ZME, ZID, ZJX, ZMA, ZDC
1 Center, 1-3 Terminal Positions	ZHU, ZNY, ZAU
1 Center, 1 Terminal Position	ZBW, ZFW
1 Center	ZMP, ZKC

Table 6 - Anticipated Support Staffing

Estimated - Tier 1 / vNAS Workload

Upon analysis of previous FNOs (See Appendices C/D), ZTL tends to impose very few TMIs upon Tier 1 facilities, leaving the workload on the lighter side.

However, to say that other facilities have only done the bare minimum of keeping aircraft separated is naive. ZDC is known to operate a Departure Sequencing Program (DSP) for aircraft departing from the Potomac Consolidated TRACON. Additionally, these facilities prefer to provide 10 Miles-In-Trail, even when it's not requested.

To decrease the strain of a Traffic Management Initiative, especially when imposed "immediately", ZTL acknowledges that it may be necessary to start the event with imposed restrictions (unlike several events past), and adjust the restrictions as demand makes itself more visible.

Nonetheless, workload by Tier 1 and Tier 2 facilities is still expected to neither be excessive nor backbreaking. For the 1/14/2021 "Honoring the Dream FNO", Atlanta imposed 1 restriction that was at or exceeded 25 MIT: For a period of 25 minutes, ATL arrivals crossing LAIRI (on the JJEDI2 STAR) were requested to be at 25 Miles-In-Trail.

Log Time	Restriction	Duration	Providing
0010Z (Start Restriction)	ATL via HOBTT 15 MIT	Event	ZJX
0038Z	APREQ CLT to ATL	0050 - 0400	CLT
0051Z	ATL via HOBTT 15 MIT	0100 - 0130	ZHU
0213Z	ATL via LAIRI 20 MIT	0213 - 0252	ZJX
0252Z	ATL via LAIRI 25 MIT	0252 - 0315	ZJX
0317Z	LAIRI, HOBTT 15 MIT	0317 - 0345	ZJX
0333Z	CHPPR, GLAVN 20 MIT	0333 - 0355	ZME

Table 7 - A list of Traffic Management Initiatives for Honoring the Dream (2021)

Technology-Aided Traffic Management

Kyle Porter (ZTL) has been actively developing Traffic Management tools with the intent of optimizing operational efficiency while increasing situational awareness. One system that, while still in development, appears to be quite promising is an iteration of Time Based Flow Management (TBFM).

The following figures are examples of the system during early-stage testing.

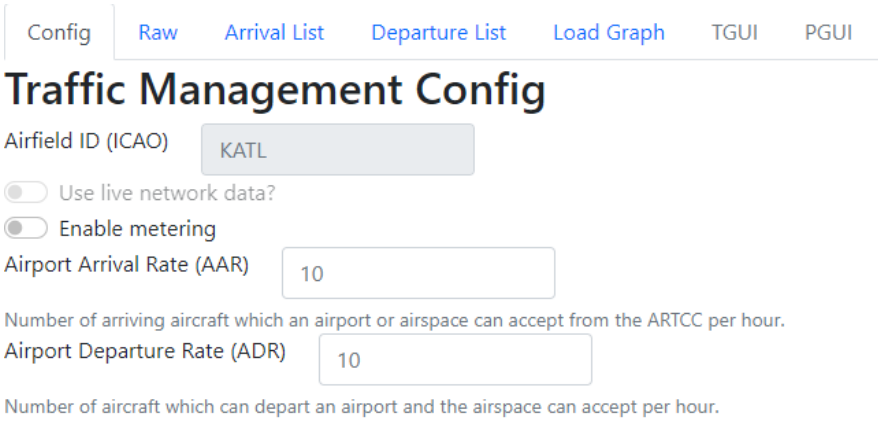

Figure 1 - Time Based Flow Management (TBFM) configuration page. The airport configuration is automatically selected through the ZTL Information Display System (vIDS).

SWA3009 B738/L	Dep: KDAL Arr: KATL	Route: +LNDRE5 FORCK ELD MEI DUUCK ORRKK GNDLF2 STAR: GNDLF2/ORRKK | DTG: 261.3 NM | TTG: 42.29 min | ETA: 02:44:15 GMT	GS: 453 kts GNDLF ETA: 03:01:12 FAF ETA: 02:42:21	Rwy: 9R MFT: 03:01:12 VT: 02:42:21	
KAL226 CRJ7/L	Dep: KORD Arr: KATL	Route: +CMSKY CARYN CYBIL PXV BNA NEWBB IHAVE MTHEW CHPPR1 STAR: CHPPR1/MTHEW | DTG: 303.1 NM | TTG: 42.92 min | ETA: 02:44:53 GMT	GS: 500 kts CHPPR ETA: 03:09:45 FAF ETA: 02:42:59	Rwy: 8L MFT: 03:09:45 VT: 02:42:59	EFC 10
DAL1873 B752/L	Dep: TNCM Arr: KATL	Route: +MULLT2 JUICE B520 STT DCT ACONY Y308 ANTOX R507 GTK A555 RATTL/N0452F400 A555 ZBV DCT OCTAL Q77 MJAMS/N0454F410 Q77 SHRKS/N0458F400 DCT LAIRI DCT LARZZ SITTH2 STAR: SITTH2/LARZZ | DTG: 248.3 NM | TTG: 44.17 min | ETA: 02:46:08 GMT	GS: 448 kts SITTH ETA: 02:53:07 FAF ETA: 02:44:14	Rwy: 9R MFT: 02:53:07 VT: 02:44:14	
AAL220 A20N/L	Dep: KMEM Arr: KATL	Route: BBKNG7 KERMI HUTCC KNSAW RUSSA GLAVN1 STAR: GLAVN1/RUSSA | DTG: 265.4 NM | TTG: 45.93 min | ETA: 02:47:54 GMT	GS: 395 kts GLAVN ETA: 03:15:25 FAF ETA: 02:46:00	Rwy: 9R MFT: 03:15:25 VT: 02:46:00	

Figure 2 - A demonstration of the metering system automatically assigning landing runway and calculating meter times based on an aircraft's distance from the metering fix. Holding details automatically appear, including EFC times, for aircraft that may require excessive delay vectors to achieve meter times.

			FAF ETA: 0	VT: 0
DAL146 H/A333/L	Dep: SCEL Arr: KATL	Route: DONTI UT131 ESNOX UT200 TOY UL302 IREMI DCT ASOXI L525 JCL UV1 TRU UL780 TBG UL465 GCM UG448 IKBIX Y183 PEAKY Q118 SHEEK Q116 JAWJA DCT WYATT DCT BEORN Aircraft has not departed origin Warning: STAR invalid for landing flow.	GS: 0 kts HOBTT ETA: ---- FAF ETA: 0	Rwy: 0 MFT: ---- VT: 0
DAL2112	Dep: CYYZ	Route: BETES2·FOXEE/06R BETES2 FOXEE Q145 HVQ DCT HLRRY ONDRE1	GS: 25 kts	Rwy: 8L

Figure 3 - The system is able to detect aircraft that have not departed, as well as incorrect STAR for landing direction. Traffic Management Personnel will have the ability to schedule these departures into the timelines.

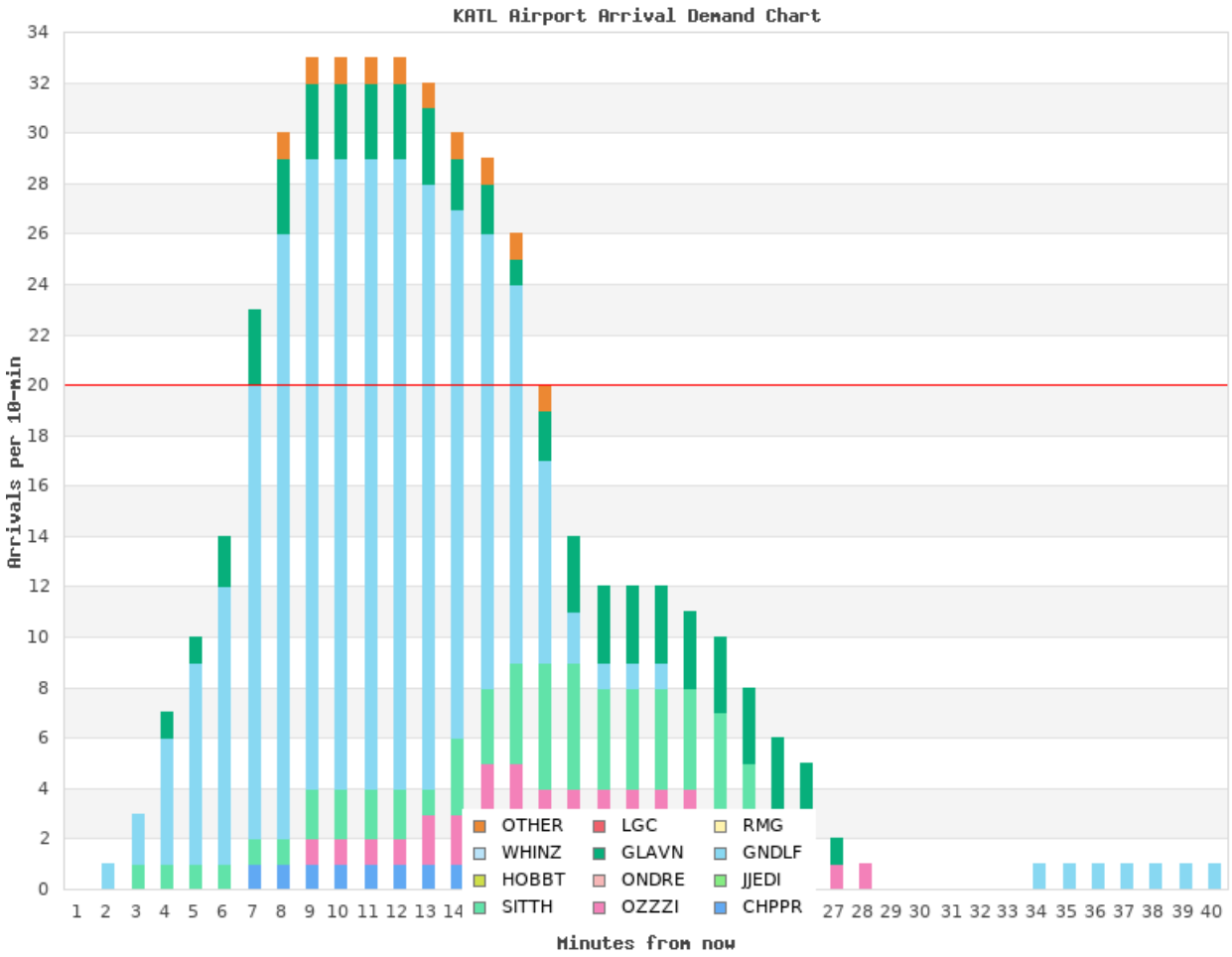

Figure 4 - Airport Arrival Demand Chart, in periods of 10 minutes.
In this example, Traffic Management set the Airport Arrival Rate to be 120 aircraft an hour (for demonstration purposes).

Not only does the system enhance situational awareness, but it also allows for automatic runway assignment, automatic airport metering, and will have a public facing interface for adjacent facilities/pilots.

Additionally, departures that are on the ground will be able to be scheduled into the system.

Facility Weak Points

Holding

Historically, ZTL controllers have an aversion to issuing hold instructions. A rough survey of those controllers working “Honoring the Dream” (2021) indicated uncertainties with proper procedure, pilot compliance, and overall duration of holding. Honoring the Dream is not the only event that holding has been conducted for ZTL; there are certain events where delay vectors were used in lieu of holding.

There are a few methods to mitigate these problems:

1. Provide additional training about holding aircraft, including locations and phraseology - especially for those controllers working Center.
2. Ensure controllers are briefed on holding (no-notice and planned) plans, as well as holding recovery.
3. When the length of the delays are unknown, instruct controllers to advise aircraft that “delays indefinite”, and to issue 30 minute Expect Further Clearance times (EFC).

ZTL/A80 Communication

Occasionally, communication between ZTL ARTCC and A80 TRACON is lacking. The TRACON tends to communicate difficulties far too late for resolutions to occur, compounding issues already being experienced.

A few methods of mitigating these issues include periodic check-ins by the Center. For example,

1. ZTL TMU analyzes the A80 operation every 15 minutes (or more/less often, as the situation warrants). The A80 TMC will give ZTL a heads-up for any potential upcoming requirements.
2. ZTL TMU streams an overview of the enroute operation to discord, to allow the A80 TMC to maintain situational awareness.

Runway Issuance

During previous Friday Night Operations, A80 has started on a DUAL configuration, switching to a Full Triple Arrival (FTA) configuration throughout the event. Previously, the third final was opened after an arrival push entered A80 airspace. This does not allow for sufficient time to assign and/or balance all three arrival runways correctly. This issue can be mitigated in the future by having the facility start in the FTA configuration.

Contingency Plans

Estimated - Recovery Capabilities

If Atlanta is able to achieve an Airport Acceptance Rate of 96 aircraft an hour consistently, the facility is able to land 344 arrivals in a period of approximately 3½ hours. The airport itself and terminal airspace should prove to be no problem in recovering.

Concern lies with the ARTCC’s recovery abilities from items such as airborne holding. However, strategies (including coaching controllers in live time) are available and can be further refined to assist in these endeavors.

Terminal Failures

Definition of Terms:

1. ATC Normal - The facility is operating as normal.
2. ATC Alert - A precautionary notification that a facility is one point of failure away from being unable to provide published Air Traffic Services.
3. ATC Limited - A notification that a facility is unable to provide services in some areas, while still being able to provide services in other areas.
4. ATC Zero - A facility is unable to provide Air Traffic Services.

ZTL trains Traffic Management Personnel to follow the principles of MAID; Personnel should **M**onitor situations as/before they develop, **A**nalyze the causes and impacts on the operation, **I**mplement Traffic Management Initiatives, and **D**ocument actions taken in the appropriate log. The following list of possible problems is not all inclusive:

1. A80 Equipment Failures (Audio-For-VATSIM, vSTARS/VRC/FSD):
    a. Assess the overall impact of equipment failure(s), including control positions affected. Is it specific to only one controller? Is it affecting some controllers, but not others? Is every position experiencing these issues?
    b. If only one control position is affected, the issue most likely client side. Assume control of the position (or have another position, such as Satellite, take the frequency) while the controller troubleshoots the issue.
    c. If some, but not all positions, are affected: Inform the Center that A80 is ATC Limited. Determine which positions are operational and have them cover frequencies that are not operational. If needed, implement a STOP on arrivals to inoperative control positions.
    d. If all positions are affected: Inform the Center that A80 is ATC Zero.
2. ZTL Unable to Provide Air Traffic Services:
    a. Upon being advised by ZTL that certain sectors are unable to provide Air Traffic Services, request more information on the nature of the failure. Is it limited to one sector? If so, obtain control to provide services to FL230. Otherwise, await further instruction from ZTL.
3. TMU and/or Control Position Failures (Oversaturation):
    a. Assess the overall status of oversaturation. Is it specific to one runway? Is it specific to all corner posts?
    b. Determine the severity of the oversaturation. Is the final just starting to push out the back of the box? Are airplanes flying in completely different directions? Are there severe gaps in the final, indicating a lower AAR than expected?
    c. Determine how lengthy oversaturation is expected. If you were to do nothing, would the situation improve, get worse, or remain the same. If it's going to improve, how long would it take to improve?

    d. If the oversaturation is affecting all positions, implement a STOP restriction on all corner posts. RESUME arrivals when the airspace is no longer over capacity.
    e. If the oversaturation is affecting some positions/runways, request more intrail or slower speeds on arrivals.
4. Pavement Failures (Unusable Runways):
    a. Assess the cause of the problem. Is it an aircraft that spawned on the runway? Did an arrival land and lose a tire?
    b. Assess communication ability with the aircraft. Are they NORDO? Are they responsive to contact mes/private chat? If so, have the communicating controller ask them to disconnect.
    c. .wallop to request a .kill
5. Emergency Aircraft:
    a. Assign the arriving aircraft a departure only runway.
    b. Coordinate with the Atlanta ATCT Controller-In-Charge.
    c. Ensure the aircraft is sent to the appropriate local control frequency at the final approach fix (LC-2/LC-3).
6. Controller Misjudgements/Inefficiencies:
    a. Assess the reason for the misjudgements. Is the controller just having a bad night? Are the pilots just absolutely murdering them?
    b. If the cause is solely pilot quality, consider lowering the arrival rate for that runway.
    c. If the cause is controller misjudgements, coach the controller until the situation is resolved. If the situation is taking too long to be resolved / the controller is unable to provide Air Traffic Services, obtain relief.

Enroute Failures

1. ZTL Equipment Failure (Audio-For-VATSIM, VRC/vERAM):
    a. Assess the overall impact of equipment failure(s), including control positions affected. Is it specific to only one controller? Is it affecting some controllers, but not others? Is every position experiencing these issues?
    b. If only one control position is affected, the issue is most likely client side. Assume control of the position (or have another position, such as an adjacent center position, take the frequency) while the controller troubleshoots the issue.
    c. If some, but not all positions, are affected: Inform the Command Center that ZTL is ATC Limited. Determine which positions are operational and have them cover frequencies that are not operational. If needed, implement a STOP on arrivals to inoperative control positions.
    d. If all positions are affected: Inform the Command Center that ZTL is ATC Zero. Inform ATL/A80/CLT to STOP launching departures.
2. ZTL Oversaturation:

a. Assess the overall status of oversaturation. Is it specific to one sector/area?
b. If it is only one sector/area, consider rerouting aircraft around the sector, using speed reductions, or implementing holds.
c. Issue restrictions, as necessary, to internal facilities/adjacent facilities.

3. A80 Oversaturation:
    a. Assess the overall status of oversaturation. Is the final just starting to push out the back of the box? Are airplanes flying in completely different directions? Are there severe gaps in the final, indicating a lower AAR than expected?
    b. Determine how lengthy oversaturation is expected. If you were to do nothing, would the situation improve, get worse, or remain the same. If it's going to improve, how long would it take to improve?
    c. If the oversaturation is affecting some positions/runways, provide more intrail or slower speeds on arrivals.
    d. If the oversaturation is affecting all positions, implement a STOP restriction on all corner posts. RESUME arrivals when the airspace is no longer over capacity.
        i. **STOP** restrictions are extremely restrictive and should be used as a no-other-options-available extreme last resort.
        ii. **STOP** restrictions typically result in TMIs (incl. GDP/GS) being issued simultaneously. If the STOP restriction is for Area 4, coordinate restrictions with ZJX immediately, as demand warrants. If the STOP restriction is for Area 5, coordination may be required with ZJX, ZHU, and/or ZME, as demand warrants. If the STOP restriction is for Area 6, coordinate with ZME immediately, as demand warrants. If the STOP restriction is for Area 3, Coordination with ZDC/ZID may be required.
        iii. When certain areas are issued STOP restrictions, but not others, explore internal reroutes.

Delay Mitigation Strategies

No Notice Holding:

1. A combination of no-notice holding and aircraft barrelling in “full-steam ahead” is a disastrous scenario that requires quick response to prevent an hours-long ripple effect. The best response is a planned response.
2. If no-notice holding is placed into effect, the volume of traffic impacted needs to be assessed immediately. Is there an opportunity to have aircraft escape to another cornerpost? Is a ground-stop necessary? Do other facilities need to be shut off to prevent oversaturation of sectors?
3. If other cornerposts are available, the following escape routes can be implemented immediately:

Area 3 (OZZZI/ONDRE) Avoidance:

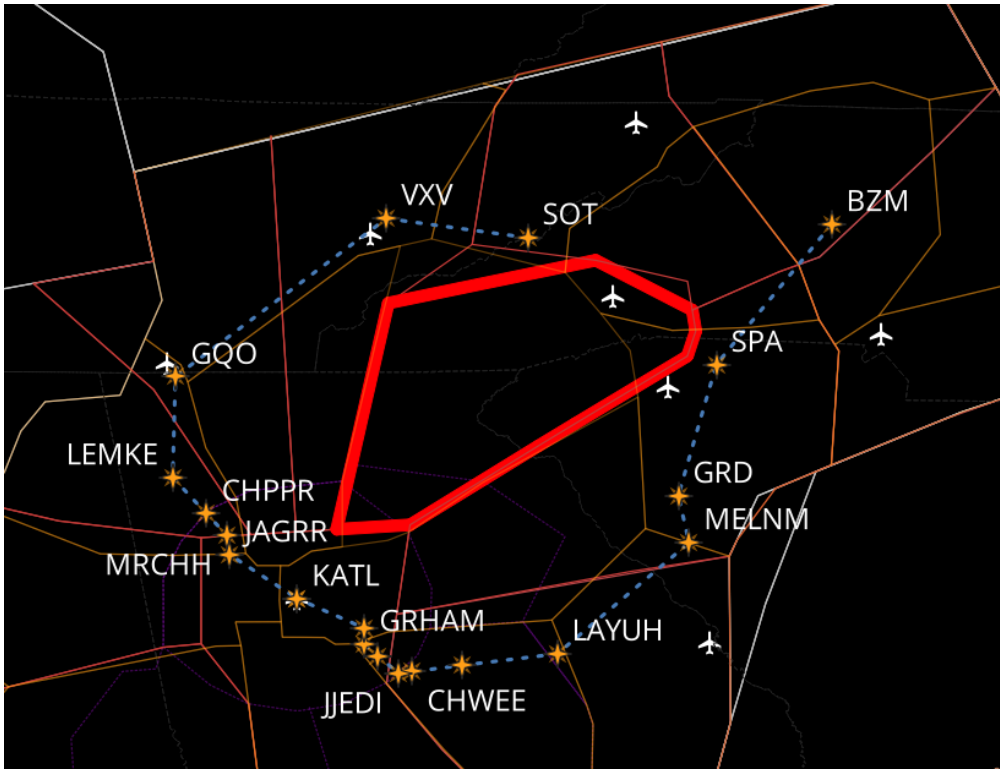

Figure 5 - Internal Area 3 Avoidance Routes

Aircraft may be rerouted via:

1. > SOT VXV GQO LEMKE < CHPPR1
2. > BZM SPA GRD MELNM < JJEDI/SITTH2

Additionally, departures from AVL, CLT, GSP, GSO, TYS, and TRI would need to be STOPPED or REROUTED.

Area 4 (JJEDI) Avoidance:

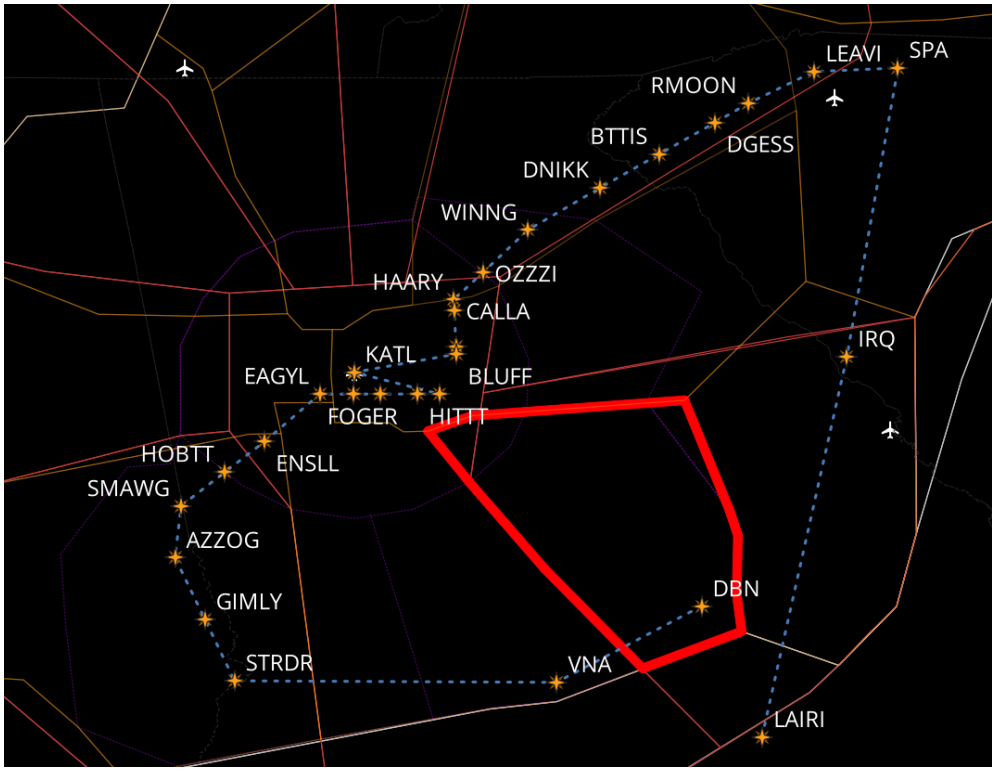

Figure 6 - Internal Area 4 Avoidance Routes

Aircraft may be rerouted via:

1. > DBN VNA STRDR< HOBTT2/GNDLF2
2. > LAIRI IRQ SPA LEAVI< OZZZI1

Additionally, Departures from AGS, CAE, CHS, and JAX must be STOPPED or REROUTED. When using route 1, additional MIT (15 / 20) is required from ZME, ZJX, and ZHU. Route 2 may require MIT restrictions imposed to ZDC (you'll have 5 minutes or so to request intrail).

Area 6 (CHPPR/GLAVN) Avoidance:

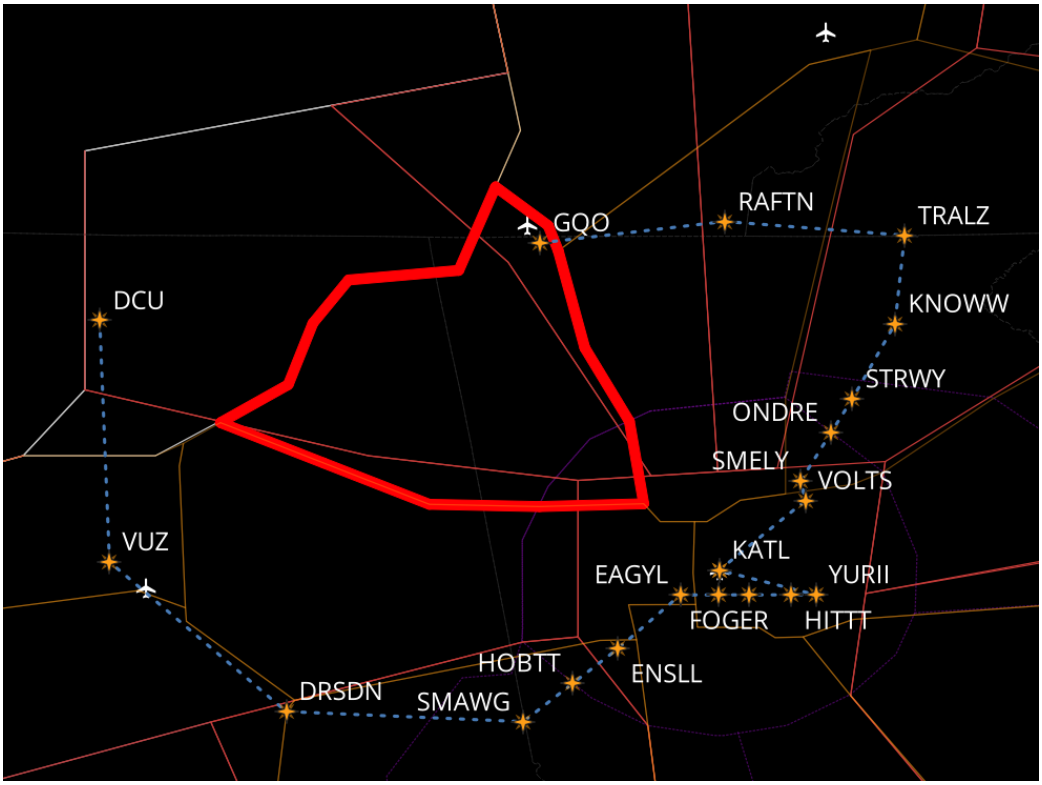

Figure 7 - Internal Area 6 Avoidance Routes

Aircraft may be rerouted via:

1. > GQO RAFTN TRALZ KNOWW STRWY< ONDRE1
2. > DCU VUZ DRSDN< HOBTT2/GNDLF2

Additionally, Departures from BHM, BNA, and CHA would need to be STOPPED or REROUTED.

When using route 1, additional MIT is required from ZID (and most likely, ZME).

When using route 2, additional MIT is required from ZJX, ZHU, and ZME (via HOBTT2, GLAVN, CHPPR, and DCU per route).

Holding Recovery:

1. Many controllers apply “first come, first serve” operational priority. While this is the inherent nature of the Air Traffic Control system, there are periods where an operational advantage is gained by deviating from the principles of “first come, first serve”.
2. One period is when holding (or delay vectors…) is in progress.
3. The first step is to analyze the volume of aircraft that are currently holding. Aircraft on the ground must be taken into consideration.
4. If only a few aircraft (< 5) are holding, the sector **may** be able to accept new aircraft with specific restrictions (such as speeds). If there are 5 or more aircraft holding, and other sectors are operating normally, reroutes may be the most advantageous option. See the area avoidance plans listed above.

Intractable Aircraft:

Certain aircraft can prove to be difficult to handle during events - both intentionally and unintentionally.

ZTL tends to staff an A80 Satellite controller to deal with:

1. Propeller driven aircraft destined for/departing from Hartsfield-Jackson Atlanta International Airport.
2. Propeller/Jet aircraft destined for Atlanta satellite airports.

Propeller arrivals to FNO fields, while not unheard of, tend to be uncommon. Therefore, the Satellite controller is likely to be able to handle aircraft that are unable to conduct their approach (or go around aircraft that are unable to re-enter the final box due to volume).

External Reroutes:

Heavy/Unable OZZZI & ONDRE: ATL NO OZZZI ONDRE
Heavy/Unable CHPPR & GLAVN: ATL NO CHPPR GLAVN
Heavy/Unable JJEDI: ATL NO JJEDI
Heavy/Unable HOBTT: ATL NO HOBTT
Weather/Unable SOT: ATL NO SOT
Unable J48: NO J48 2

Appendix A

Waivers previously issued

The issuance of waivers to VATUSA DP003 5.1.3 is not unheard of. On 9/24/2021, The division sponsored the “FNOklahoma” event featured only 2 of the 3 required ARTCCs.

Appendix B

Planned Staffing Configurations

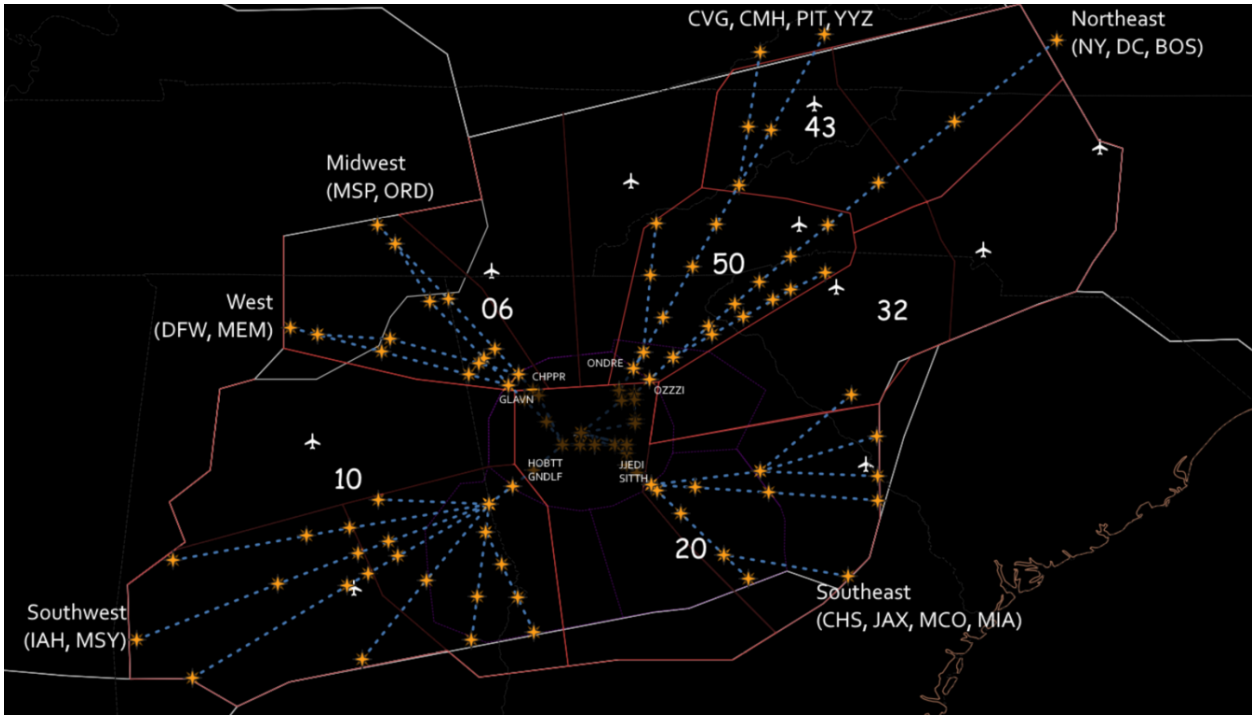

Figure 8 - A possible high sectorization plan.

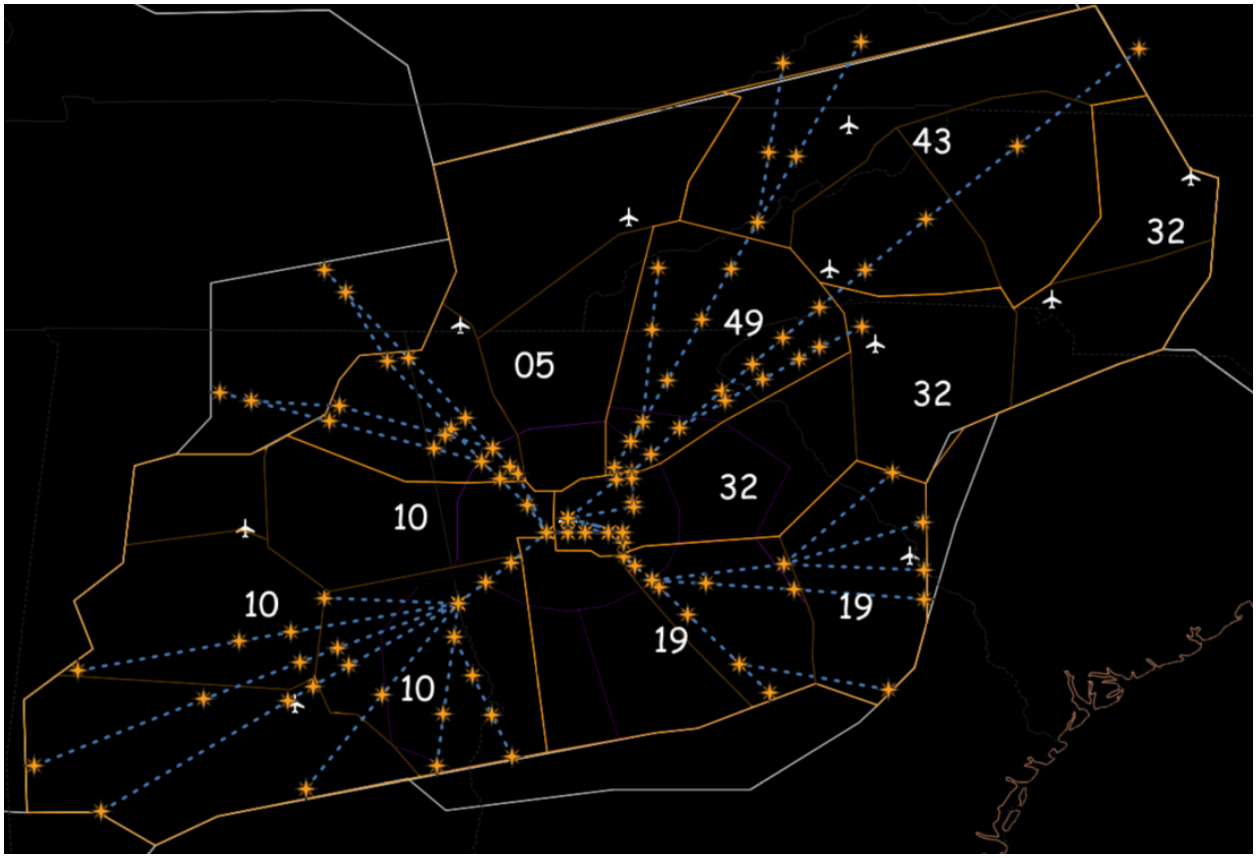

Figure 9 - A possible low sectorization plan.

Assuming that 3 of 4 cornerposts are "busy", the center could very possibly be split as follows: Area 1 (Sector 43), Area 2 (Sector 32), ZTL 50, ZTL 49, Area 4 High (Sector 20), Area 4 Low, Area 5 (Sector 10), Area 6 high (Sector 06), Area 6 Low, and CIC/Traffic Management Arrival Coordinator (TMAC). Additional positions include an additional Traffic Management Coordinator (TMEC) and a "floater".

Appendix C

Historical Event Analysis - The City in the Forest FNO

The City in the Forest FNO was a single facility FNO scheduled to begin on the 17th of July at 2300Z, with a published duration of 4 hours.

The actual rates for each hour of the event, including 1 hour prior and 1 after after, as well as the peak recorded arrival rate, are as follows:

Hour	Airport Arrival Rate
2200 - 2300Z	6
2300 - 0000Z	25
0000 - 0100Z	49
0100 - 0200Z	87
0114 - 0214Z	96
0200 - 0300Z	59
0300 - 0400Z	26

Total number of arrivals: 252 arrivals

Table 8 - Airport Arrival Rate broken down by hour, including the period with the most arrivals.

What these numbers tell us:

1. Following the peak period, the airport arrival rate consistently decreased. No traffic management initiatives were logged by ZTL, indicating that arrivals that intended to land at Atlanta during the event period were, for the most part, permitted to land during the event period.
2. In addition to the aforementioned, unless delays at other facilities were not logged, no departure delays have been recorded for any other facilities.
3. In addition to the aforementioned, unless in-trail requests were not logged in the National Traffic Management Log (NTML), ZTL Tier 1 facilities made no formal requests for any Miles-In-Trail (MIT) for ATL Landing Traffic (LTFC).

Traffic Flow Management for the City in the Forest:

1. NTML Entries are far and few, indicating little to no restrictions imposed on ZTL Tier 1 facilities.
2. Of the 3 NTML entries made that night, 2 are used to log enroute delays imposed by ZID. The beginning of these delays are logged at 0012Z, and conclude at 0019Z.

3. Aircraft were tactically managed within A80 airspace by the A80 TMU to ensure maximum runway utilization.

Division-Wide Impacts of the City in the Forest:

We estimate that the City in the Forest had marginal impacts on the vNAS.

1. The DCMETs implement a departure sequencing program (see here) when a high volume of departures are scheduled to a single airfield. Typically, ZDC institutes MIT restrictions of approximately 15-20 to ZNY, which (typically) passes back around 25-30 to ZBW.
2. Additionally, average departure delays out of the DCMETs were 21 minutes, with the maximum delay incurred being 33 minutes. These delays were incurred as a result of ZDC's Departure Sequencing Program.
3. The only delays logged were enroute delays imposed by ZID for a total of 8 minutes.

Minor Problem Areas of the City in the Forest:

1. Due to surface constraints, ZTL does not appreciate the assignment of runway 10/28 when demand does not suggest it and/or staffing does not support it.
    a. Much of this revolves around certain controller's (mis)understanding of how 10/28 arrivals are to be treated. This can be mitigated through additional training.
        i. One aircraft received an unprecedented taxi time of 27 minutes as a result of being instructed to taxi via SG, SC, R, hold short of runway 27L at the departure end (PINK WEST). This is far from the preferred taxi route for arrivals vacating runway 28, which calls for aircraft to be held short of runway 27L no further west than SC.
        ii. An additional video of live time demonstrates the actual delay experienced. Had the controller instructed the aircraft to taxi via SG, SC, and to hold short of runway 27L (PINK SIERRA CHARLIE) or SG, SJ, R, R7 to hold short of runway 27L (BLACK ROMEO-7), many of these aircraft would have been able to cross without issue.
    b. While it is an issue that is becoming more uncommon, aircraft that do not have scenery are unable to land on runways 10/28.
    c. Additional training on runway 10/28 operations in the tower environment is the most simple solution.
2. Late fix balancing (of approx. 3 aircraft) resulted in a minor loss of separation within ZTL Area 5. Aircraft were not in conflict & adequately separated by the A80 40 DME.
3. A80 Terminal Arrival Radar did not assign runway 28 while coordination to implement Full Triple Arrivals were in progress. Additionally, while FTA was operational at an appropriate time, it should have been enacted slightly earlier to allow for a more smooth transition.

What went well:

1. A80 reached an optimal acceptance rate of 96.
2. Aircraft were tactically managed to maximize airspace & airport capacity.

Appendix D

Historical Event Analysis - Honoring the Dream FNO (2021)

The Honoring the Dream FNO (2021) was a single facility FNO scheduled to begin on the 15th of January at 2359Z, with an unpublished duration.

Additionally, planning for Honoring the Dream was minimal.

The actual rates for each hour of the event, as well as the peak recorded arrival rate, are as follows:

Hour	Airport Arrival Rate
2300 - 0000Z	5
0000 - 0100Z	25
0100 - 0200Z	63
0155 - 0255Z	90
0200 - 0300Z	85
0300 - 0400Z	73
0400 - 0500Z	63
0500 - 0600Z	30

Total number of arrivals: 344 arrivals

Table 9 - Airport Arrival Rate broken down by hour, including the period with the most arrivals.

What these numbers tell us:

1. The demand does not drop as suddenly as it did during the previous FNO. This indicates that aircraft, most likely, experienced delays.

Traffic Flow Management to Honor the Dream:

1. Several issues occurred that places blame on the planning & execution, rather than the format, of this event.
2. One example: A80 TRACON Saturation
    a. According to previous analysis, FTA was fully usable at 0126Z - 30 minutes before the beginning of the 0155Z arrival push. According to the VATUSA Command Center's Airport Acceptance Rate, the Atlanta Airport is reasonably able to accept 60 arrivals within a 60 minute period while only using 2 runways.

b. At 0139Z, TAR-H requested more intrail or better runway assignments from TMU. TAR-H's requests were rejected.
c. At 0153Z (14 minutes after assistance is requested), A majority of aircraft are observed on the final approach course for Runways 26R and 28. A gap of 20 miles is observed on Runway 27L. Runway 26R and 28 are being pushed out of the final box.
d. At 0205Z (26 minutes after assistance is requested by TAR-H), Holding was implemented at the request of A80 TMU on the urgent advice of TAR-H.
e. At 0212Z, holding is terminated. ZTL recovery from holding was slow and weak, causing delays to ripple to ZDC/ZJX/ZMA.

3. An additional example: ZTL Holding/Hold Recovery
    a. According to the Traffic Management Review, ZTL received a "3" in Traffic Management Initiatives due to impacts within ZDC due to communication breakdowns.
    b. Communication breakdown between ZTL TMU and ZTL Arrival Controllers resulted in uncertainty about the duration of holding. Some sectors issued hold instructions, others did not.

Additional context is required prior to characterizing this particular event as successful or otherwise:

1. ZTL did not anticipate these particular traffic levels prior to the event start times.
    a. The FNO two weeks prior (New Year, New FNO) featuring SEA, PDX, RNO, and OAK, saw a total combined airport arrival rate of 240.
    b. The FNO one week prior (Texas Center Crossfire FNO) featuring DFW, IAH, DAL, and HOU, saw a total combined airport arrival rate of 328, an increase of 130% from the week prior.

Failure of A80 TRACON to runway balance (and of control personnel to adequately brief relieving positions) resulted in overdelivery to two (and under delivery to one) out of three available runways.