

# MVCCA Transportation Committee

Sept 10, 2018

Update on DCA Aircraft Noise WG

# South Flow Departures Pre and Post NextGen

**Pre NextGen**  
**January 14, 2014**



**Post NextGen**  
**January 15, 2016**



# What Data Says

- Departure and Arrival Noise Issues VA and MD – Next Gen Program
- Increased flight ops at DCA
- FAA data for period 1/1/2014 through 9/30/2017 analyzed
  - 360 days – 2014, 361 days – 2015, 330 days – 2016, 263 days - 2017
- Detailed locale study of departures Rwy 19 and arrivals DCA Rwy 19
  - Sherwood Hall Lane community
  - Mt. Vernon Estate
  - Ft Washington
  - Accokeek

# South Flow Departures Post Next Gen

- Sherwood Hall ~ 30,000/yr, peaking around 4000 ft, with airplanes between 2000 to 6000 ft.
- MVE ~ 3,000/yr – 3000 to 7000' avg/peak at 5000'
- Ft Wash ~ 6,000/yr - 3000 to 7000' avg/peak at 5000'
- Accokeek ~ 5000/yr – 4800 to 8000' avg/peak 6200'

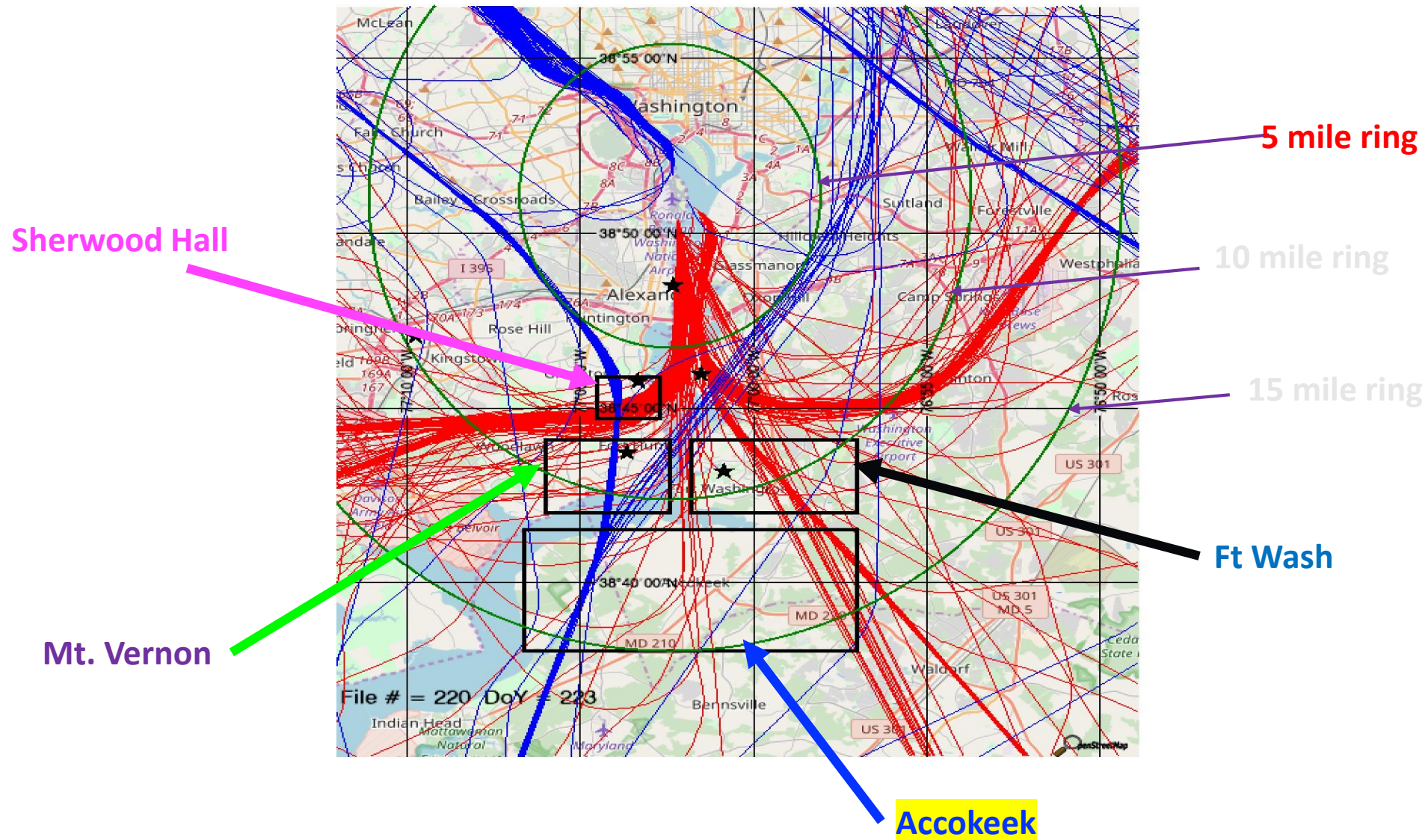
# North Flow Arrivals Post Next Gen

- Sherwood Hall - 2000 / yr flights - altitude distribution peaks at 1600 ft and extends down to about 1200'.
- Mt Vernon - 12,000 /yr - altitude 2000' as low as 1500 ft.
- Ft Washington and Accokeek - 70,000 /yr – sequencing and queiing from N, E, W and S – altitudes 2000' - 5000' as low as 1500'

# 2014 Pre Next Gen vs 2016 Post Next Gen

	Arrivals 2014	Arrivals 2016	Departures 2014	Departures 2016	Total 2014 Arr+Dep	Total 2016 Arr+Dep	Total Change 2014 to 2016
Sherwood Hall Lane	2302	1826	16274	29047	18576	30873	+12297
Mt. Vernon	11666	9090	16115	2752	27781	11842	-15939
Ft. Wash.	71309	74017	14378	6201	85687	80218	-5469
Accokeek	72005	72946	4798	5294	76803	78240	+1437

**8/11/17**



# South Flow Departures: 1/1/17 - 9/30/17

8/11/17

Sherwood Hall

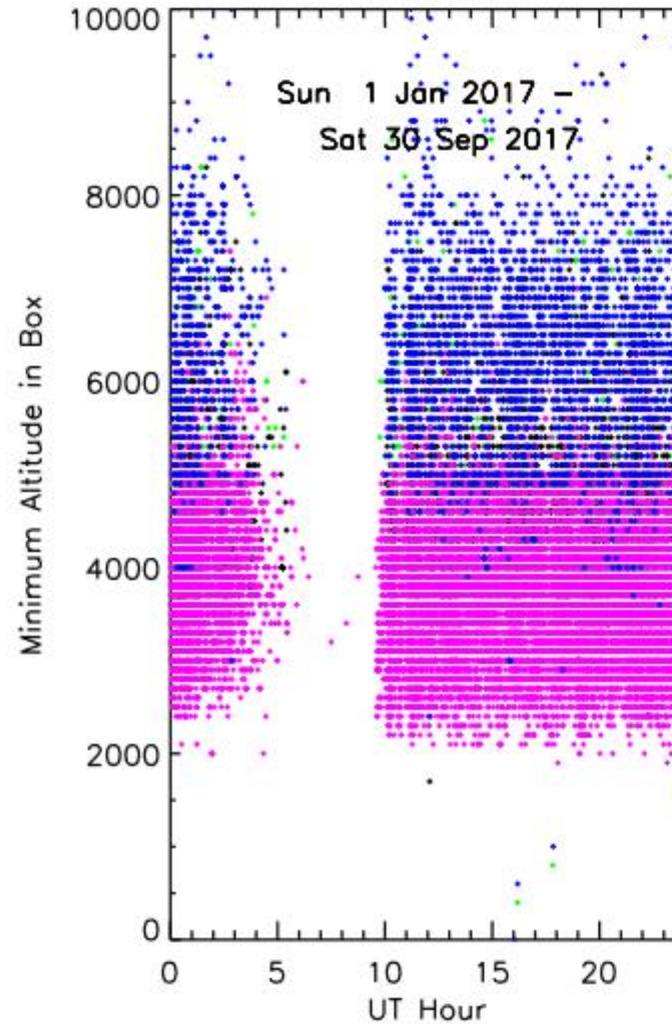


Mt. Vernon

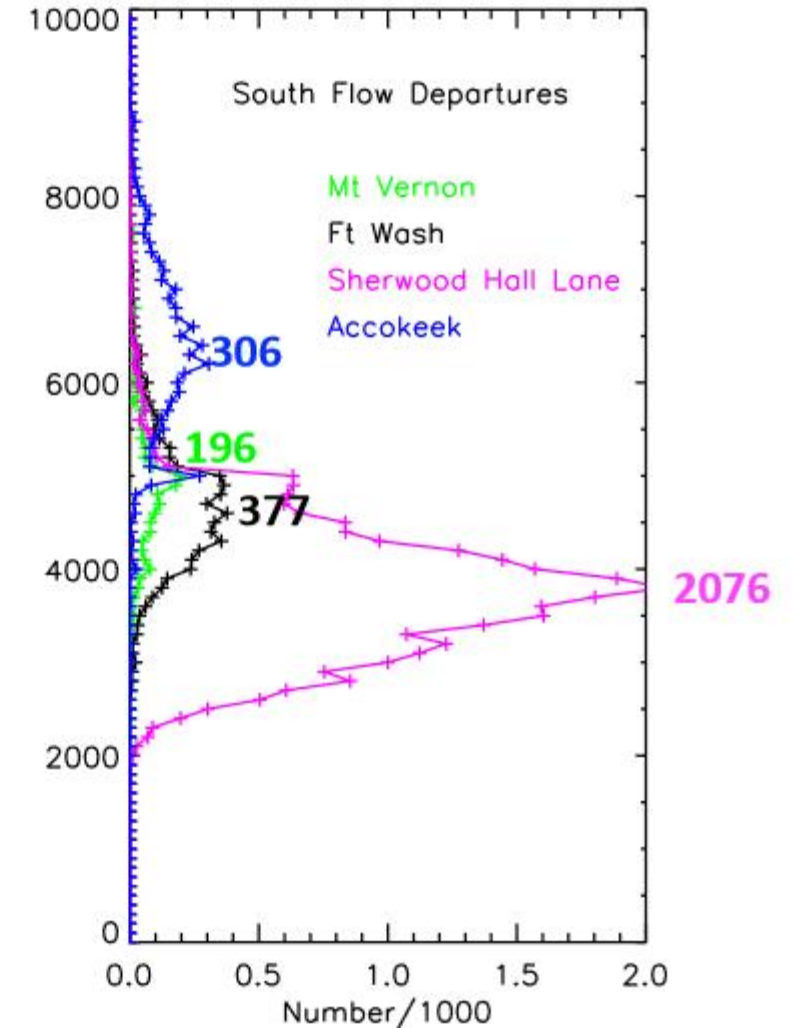
Accokeek

Ft Wash

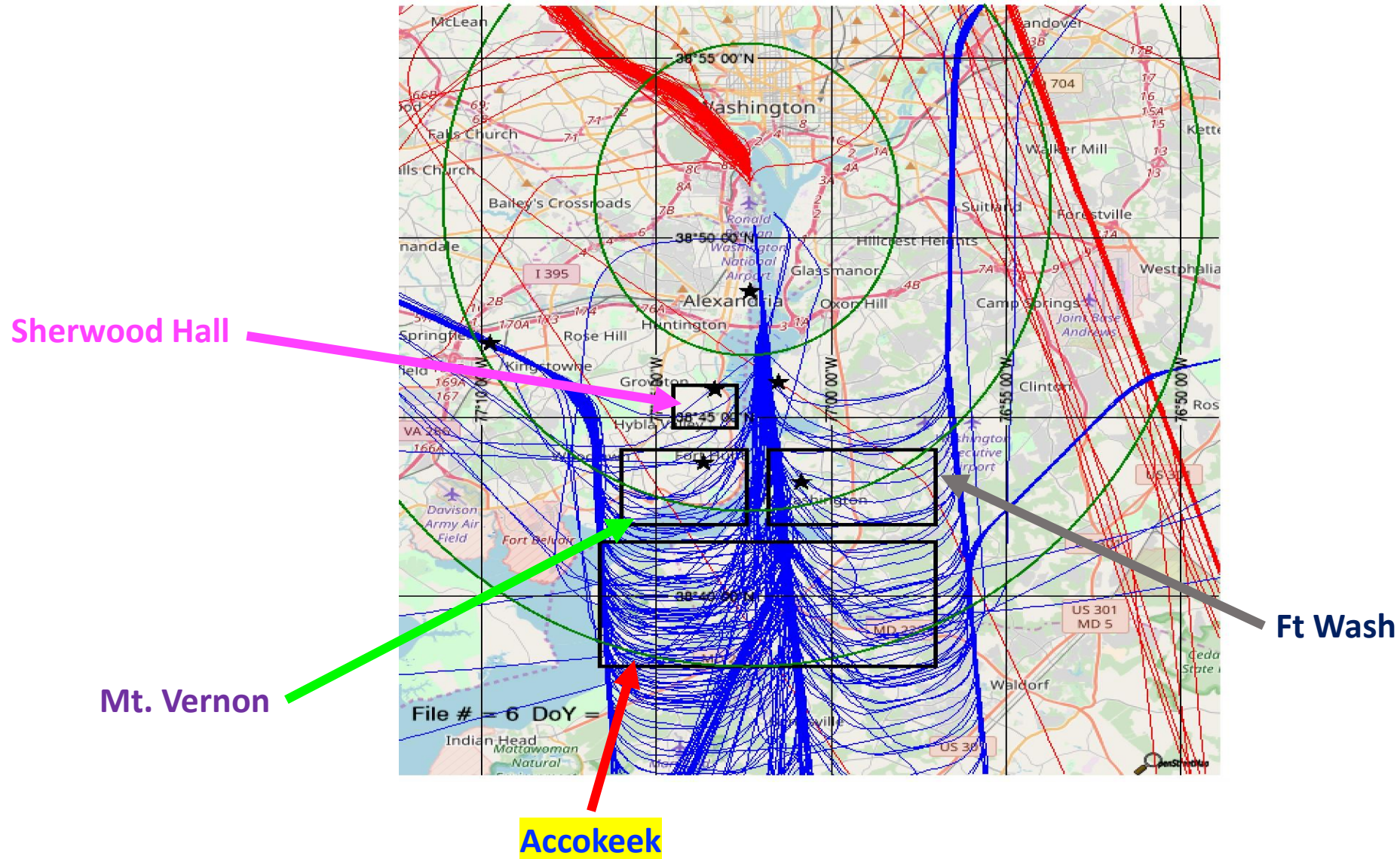
4 Boxes



Number at each Altitude



# North Flow Arrivals: 1/1/17 - 9/30/17



# North Flow Arrivals: 1/1/17 - 9/30/17

1/7/17

Sherwood Hall

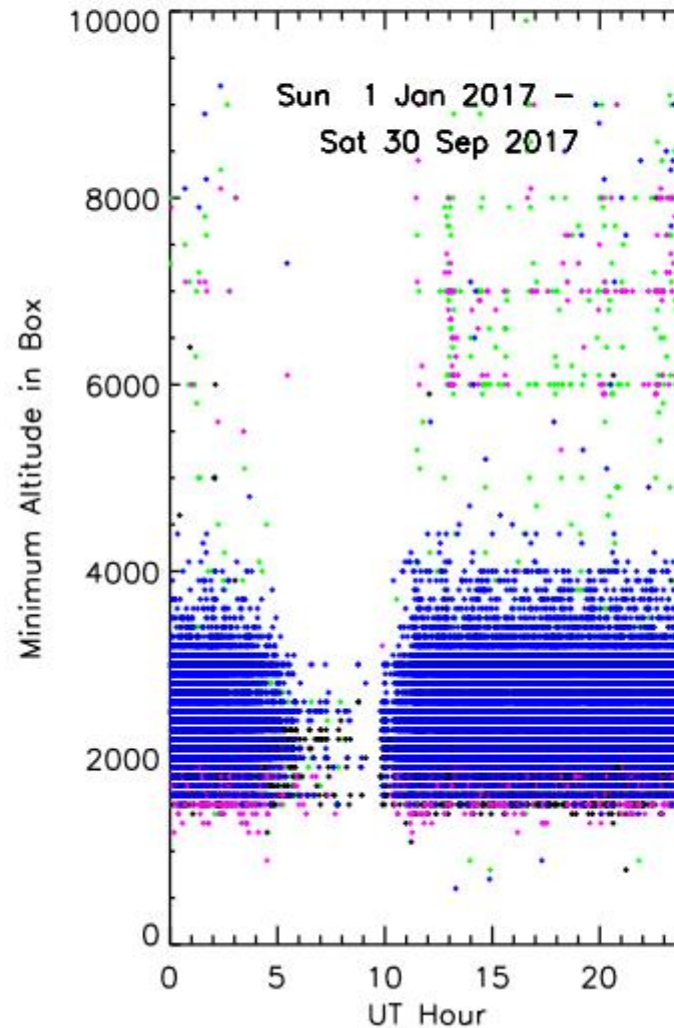


Mt. Vernon

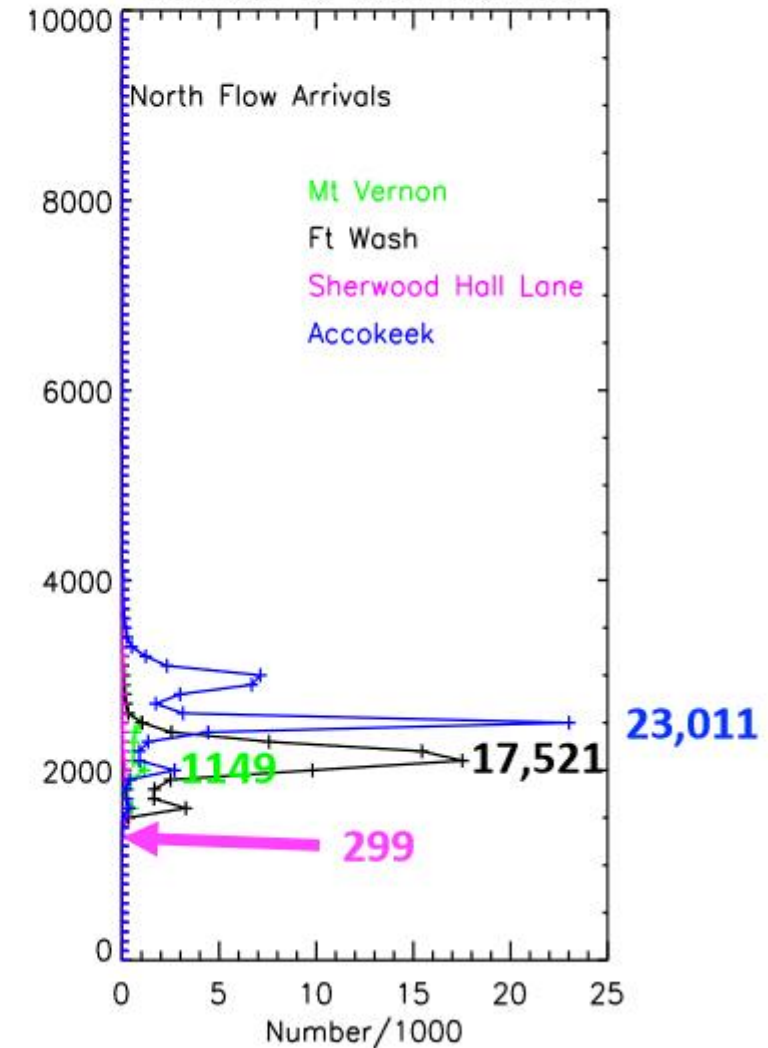
Accokeek

Ft Wash

4 Boxes

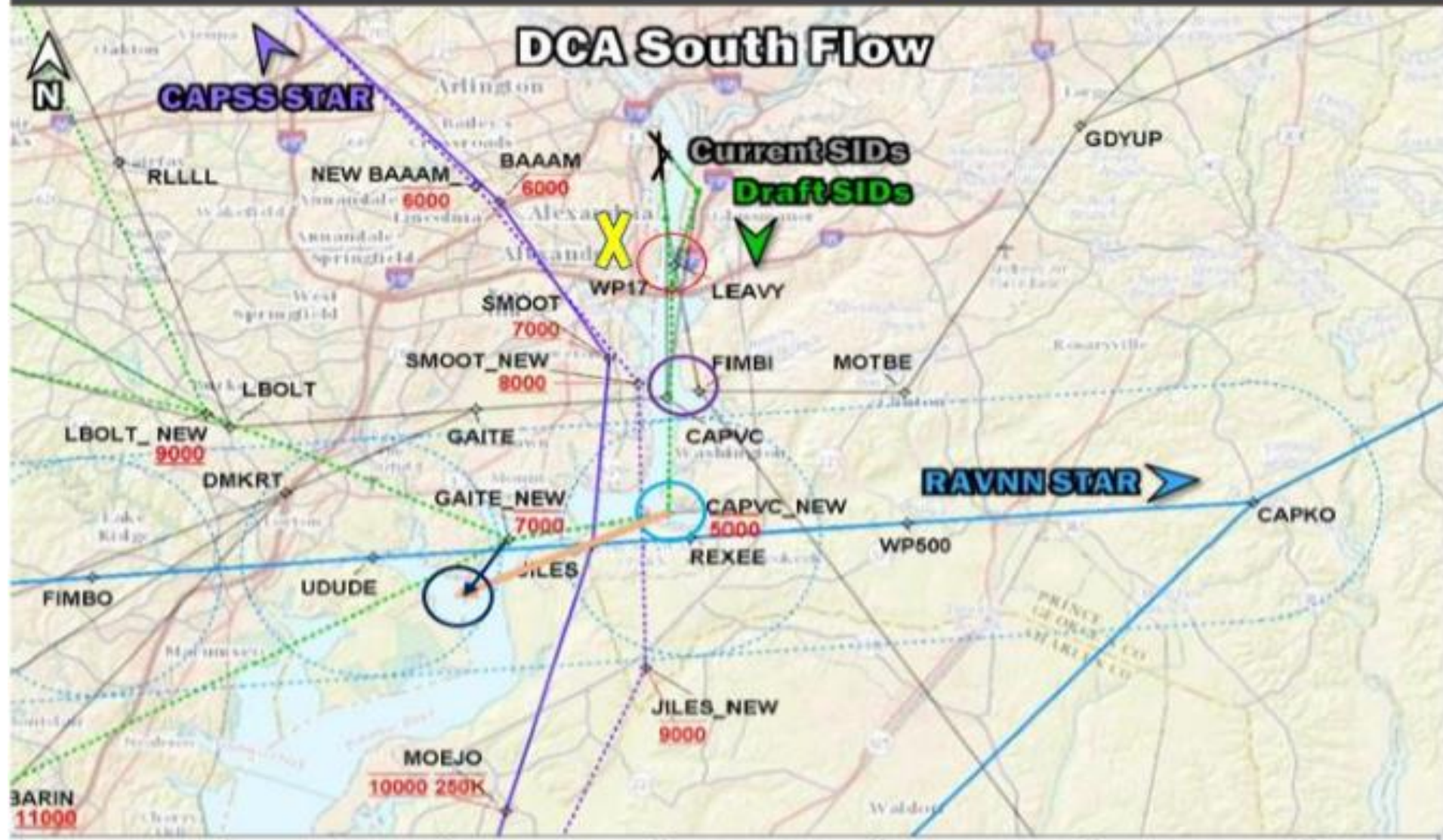


Number at each Altitude

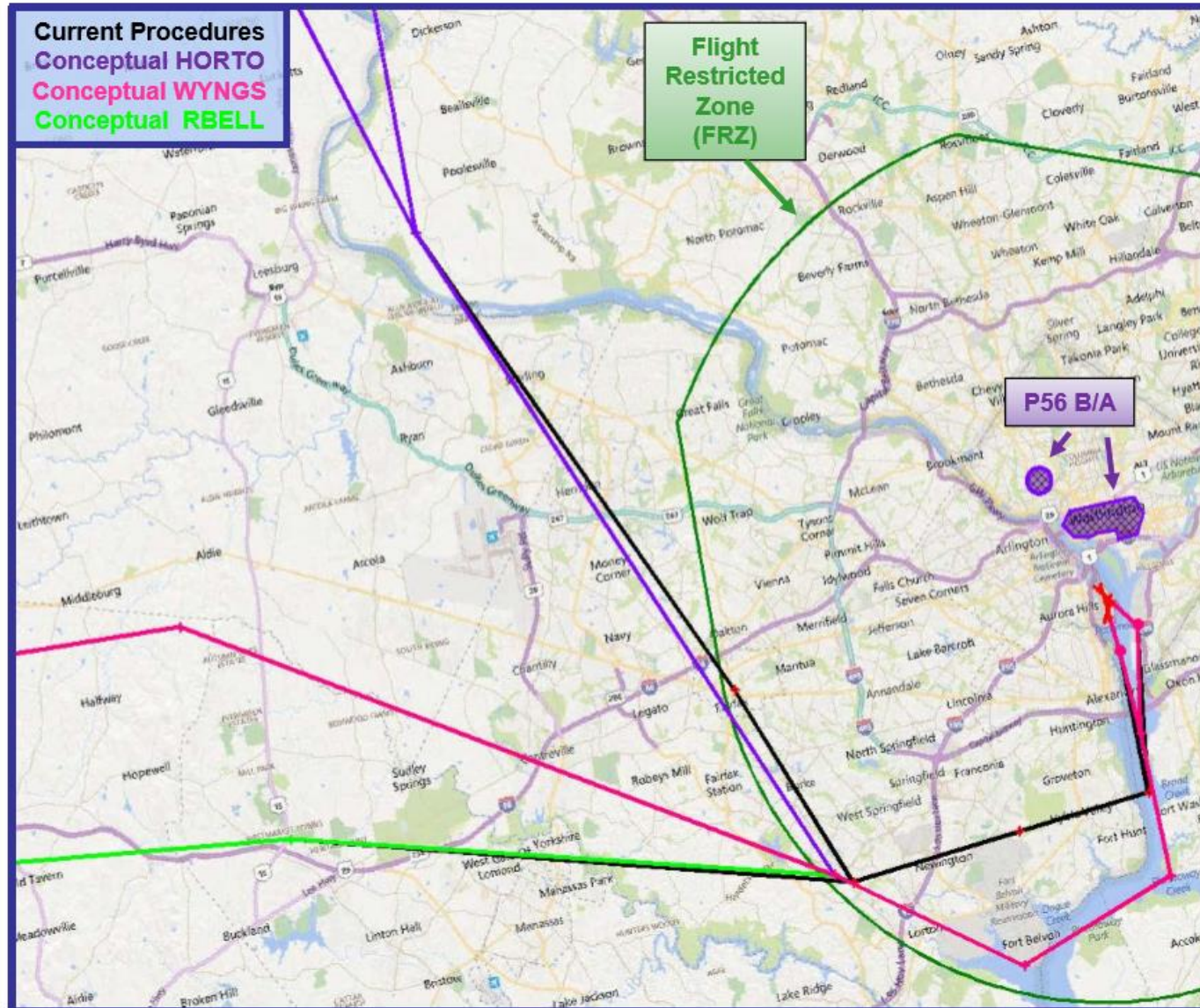


# FAA Proposed Procedural Design Changes

- Background
  - MWAA WG Recommendation 8 included both departure and arrivals
  - FAA stated no operational need to revise arrivals
  - Recommendation 11 presented new DCA Rwy 01 arrival proposal
  - FAA only addressing south flow departure

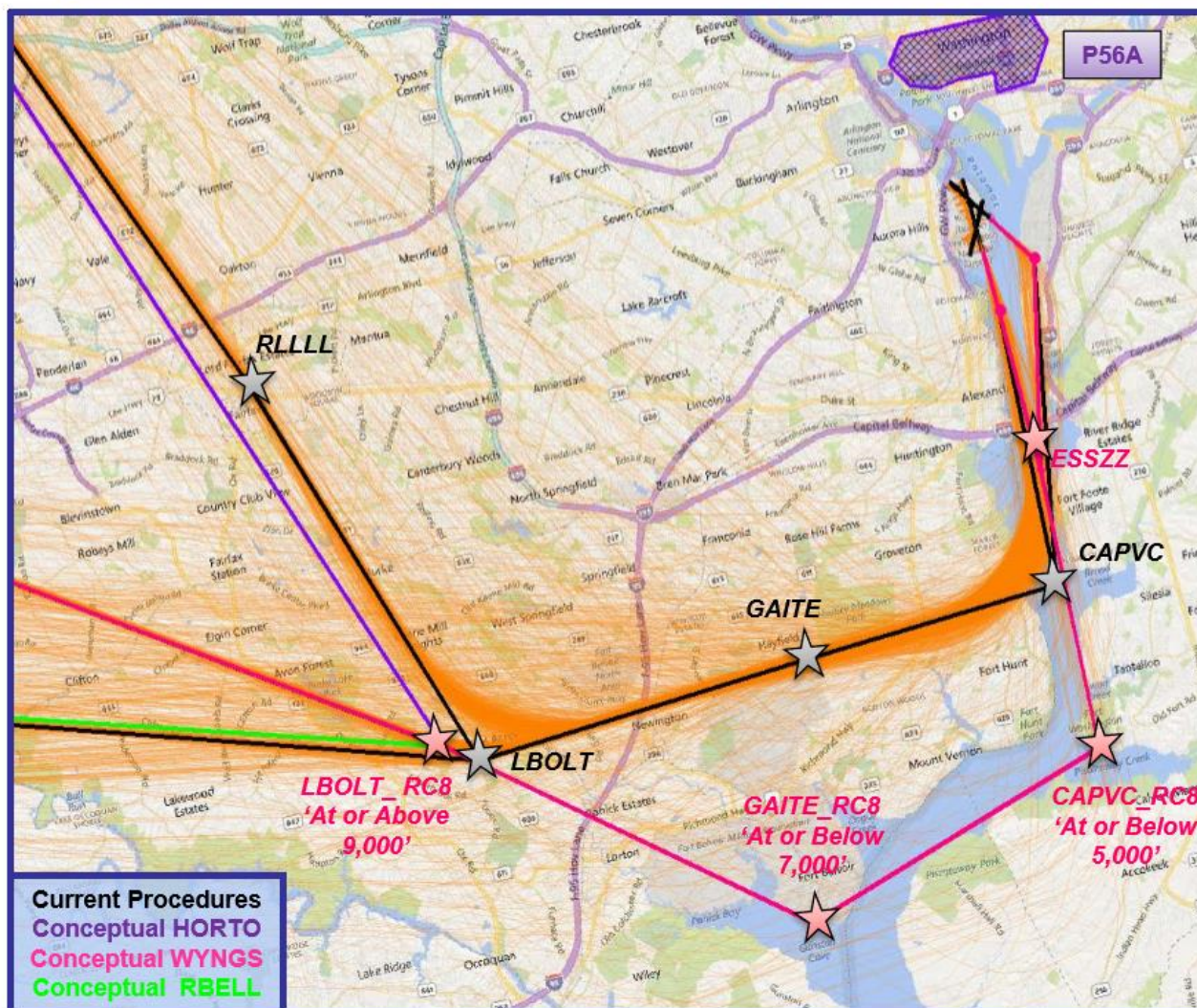


# DCA HORTO / WYNGS / REBLL RNAV SIDs (Departures)



- Current HORTO, REBLL, and WYNGS procedures are shown in black
- **HORTO** - Serves jet departures to the northwest
- **WYNGS** and **REBLL** - Serve jet departures to the west

# DCA HORTO / WYNGS / REBLL RNAV SIDs (Departures)

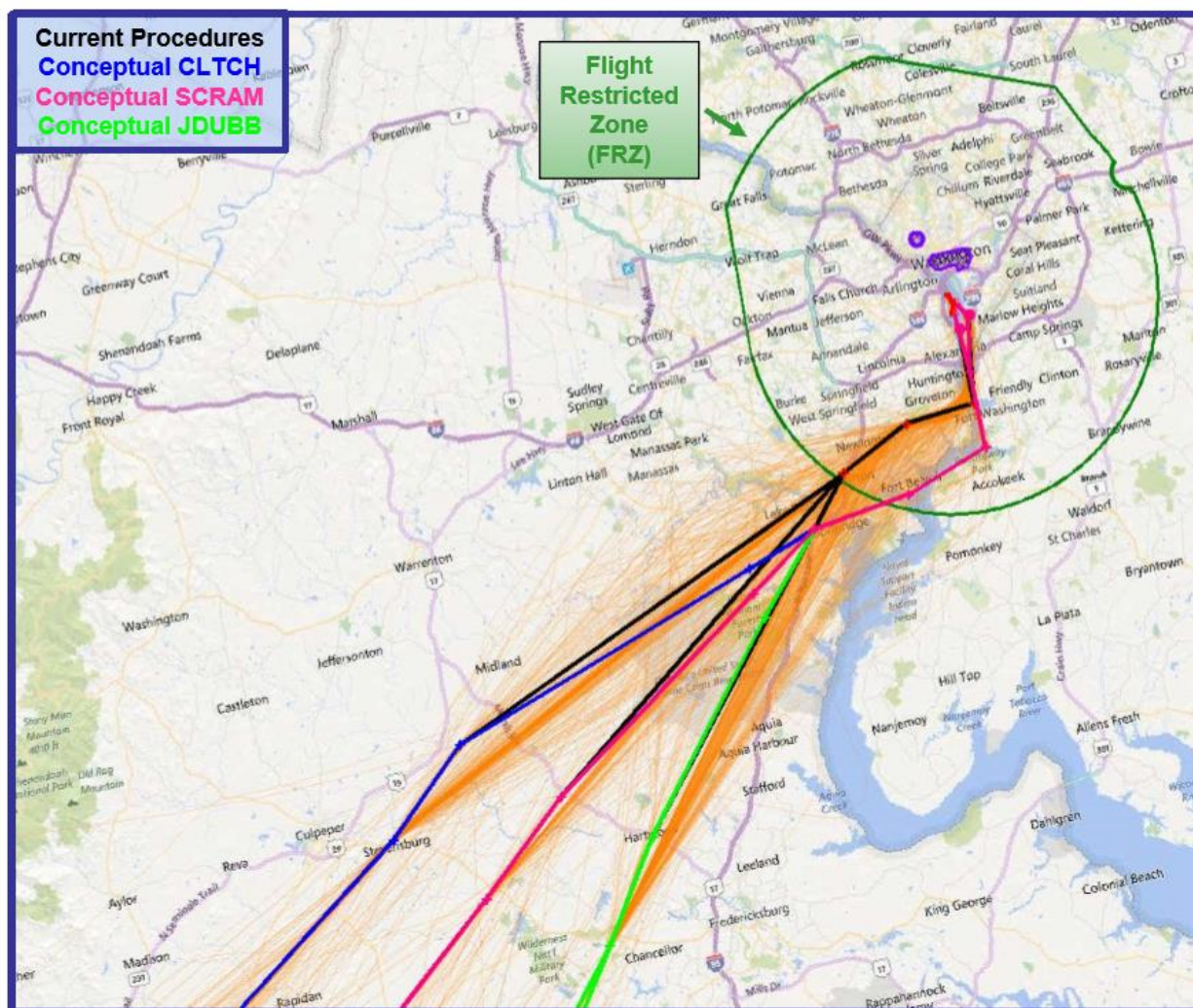


## • Per DCA WG Recommendation 8

- ✓ To bring departures back over the river, added ESSZZ
- ✓ To remain over the river longer, moved CAPVC 2.71 nm south to CAPVC\_RC8 and GAITE 4.18 nm south to GAITE\_RC8
- ✓ To top FRDMM and TRUPS arrivals, moved LBOLT 0.66 nm northwest, and added 'At or Above 9,000'
- ✓ To clear CAPPS arrivals descending via, added restrictions 'At or Below 5,000' to CAPVC\_RC8 and 'At or Below 7,000' to GAITE\_RC8

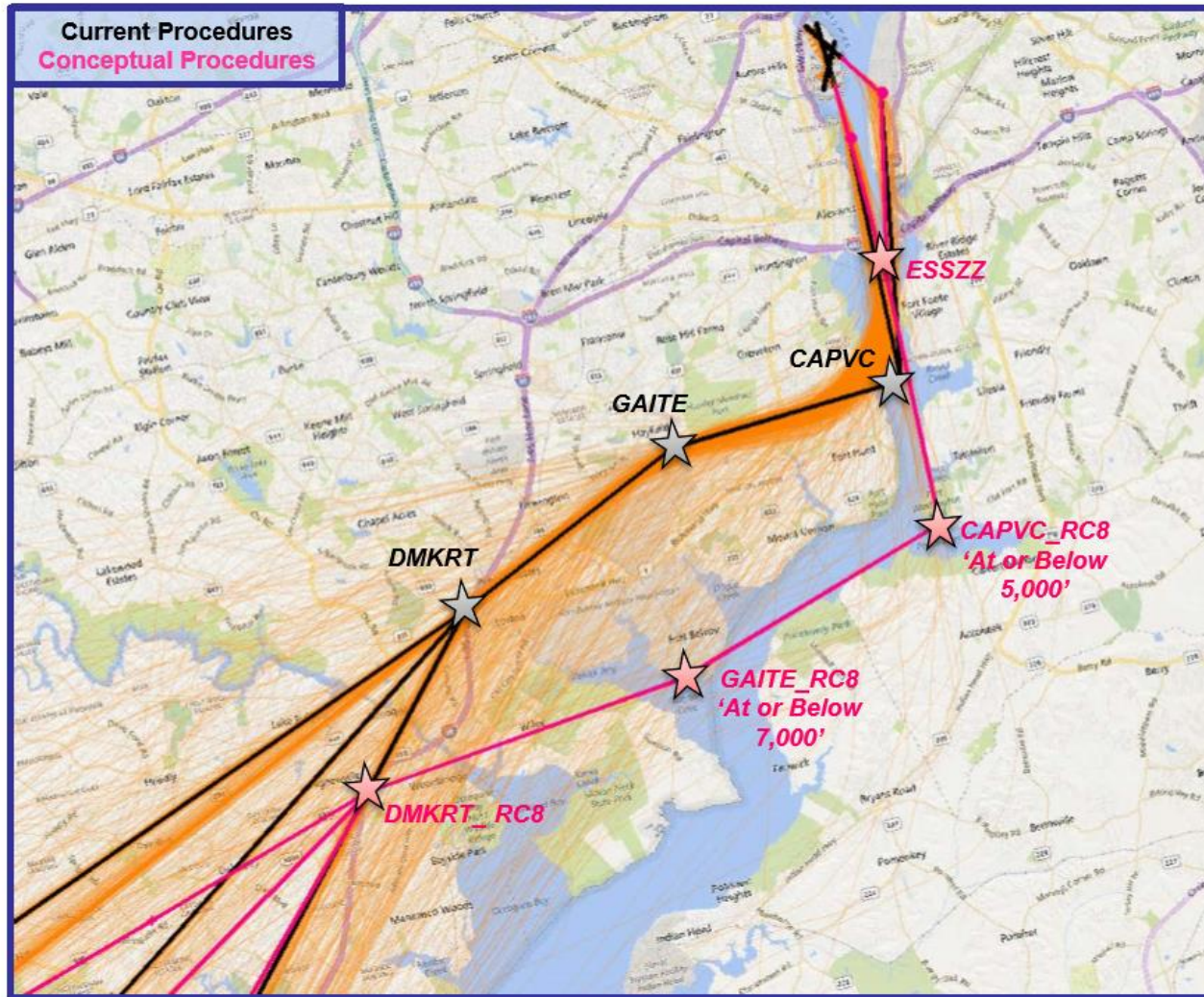
## • Current track data (Apr 2017)

# DCA CLTCH / SCRAM / JDUBB RNAV SIDs (Departures)



- Current CLTCH, SCRAM, and JDUBB procedures are shown in black
- CLTCH, SCRAM, JDUBB - Serve jet departures to the southwest
- Current track data (Apr 2017)

# DCA CLTCH / SCRAM / JDUBB RNAV SIDs (Departures)



- **Per DCA WG Recommendation 8**
  - ✓ To bring departures back over the river added ESSZZ
  - ✓ To remain over the river longer, moved CAPVC 2.71 nm south to CAPVC\_RC8, GAITE 4.18 nm south to GAITE\_RC8, and DMKRT 3.77 nm southwest to DMKRT\_RC8
  - ✓ To clear CAPPS arrivals descending via, added restrictions 'At or Below 5,000'' to CAPVC\_RC8 and 'At or Below 7,000'' to GAITE\_RC8
  - ✓ Estimated altitude at DMKRT\_RC8 – 10,000 feet
- **Current track data (Apr 2017)**

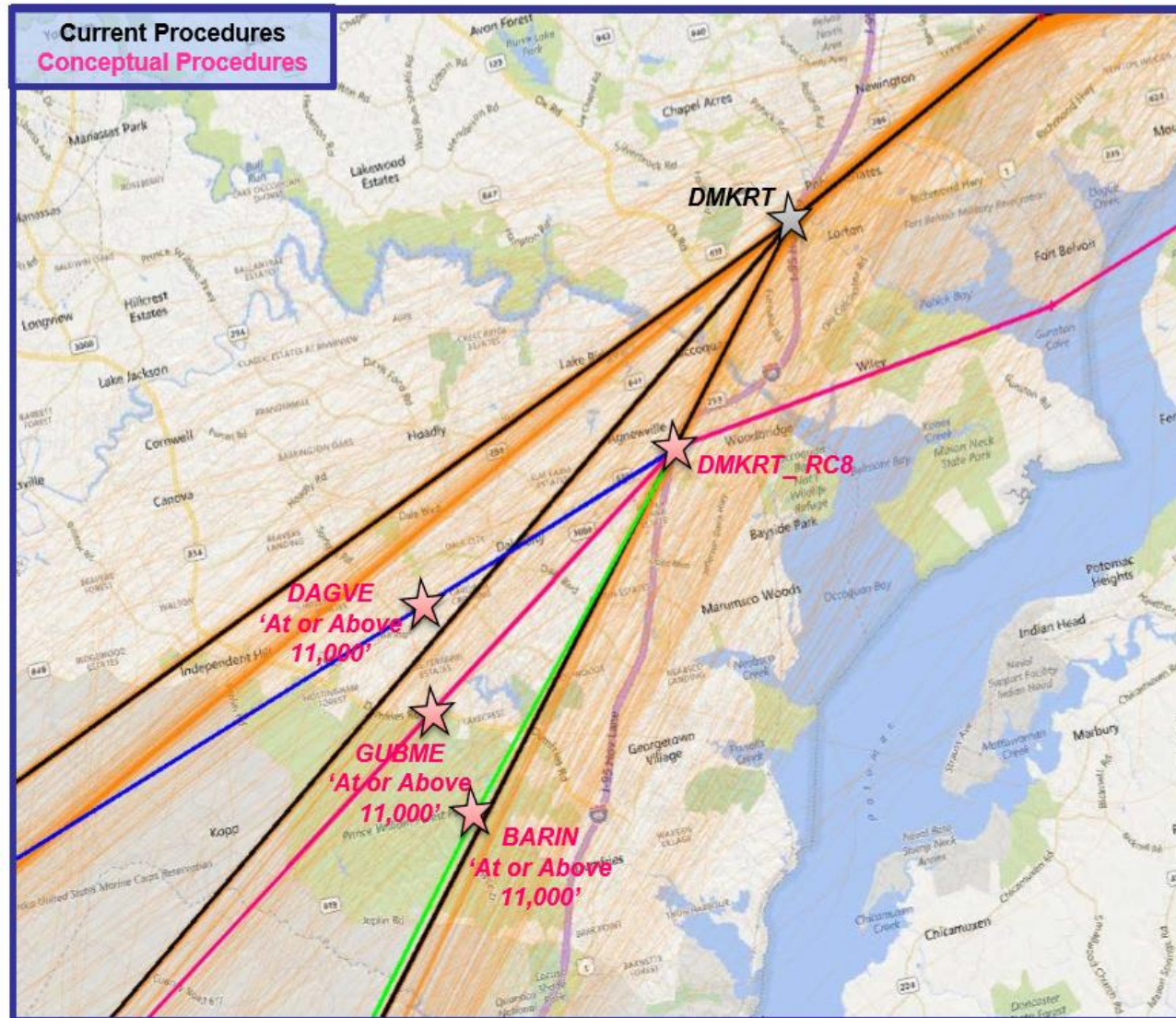
## Comments

1. Flight tracks would move SE to DMKRT with more flights over MV and PG County – altitude key – how can we ensure airplanes are 5-7K?
2. Altitude at DMKRT RC \* is?
3. Dispersion over MV and PG County
4. Why flight spillover occurs?
5. How will new WP eliminate SO's

# DCA CLTCH / SCRAM / JDUBB RNAV SIDs (Departures)

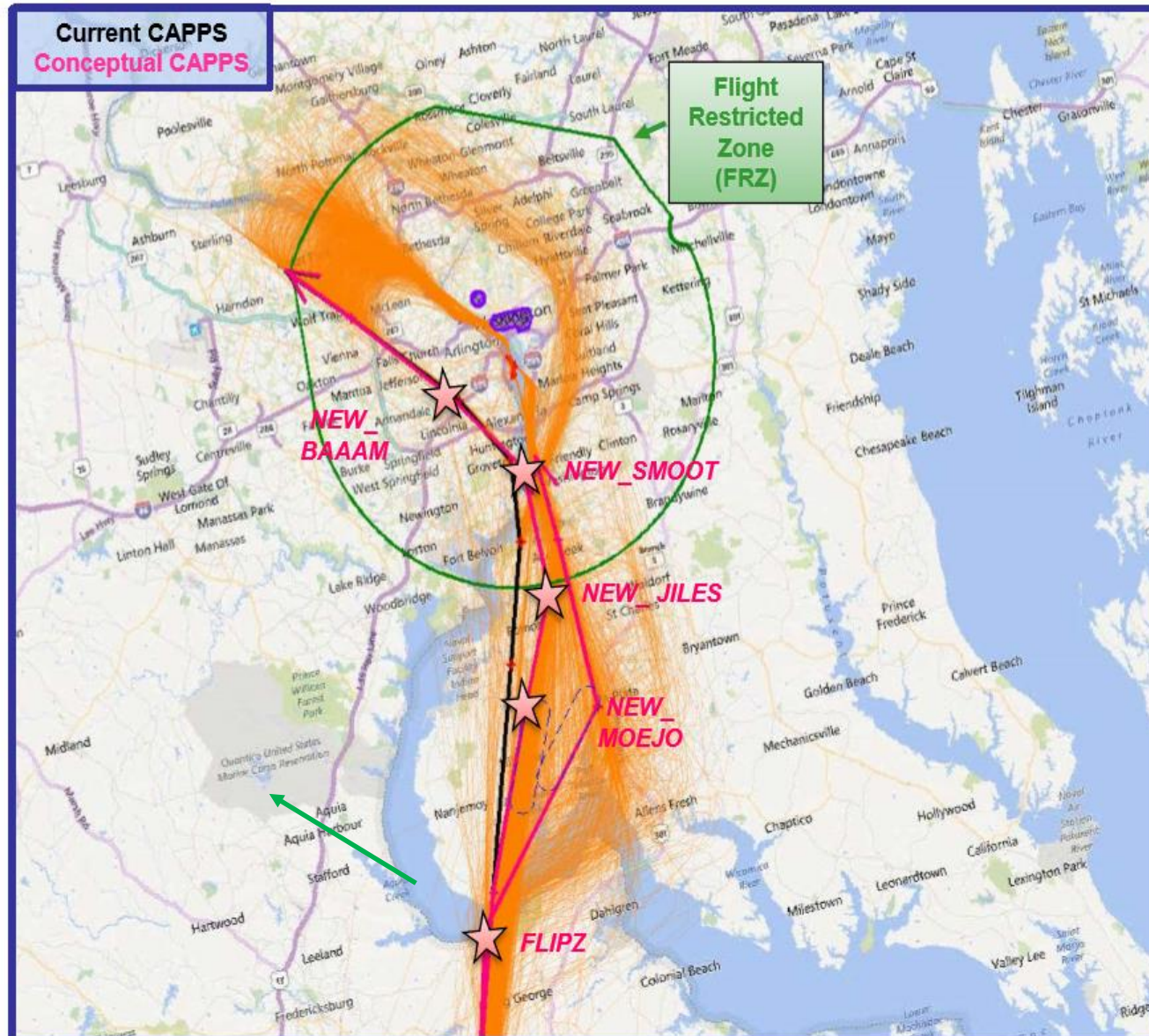
Comments:

1. Ditto comments



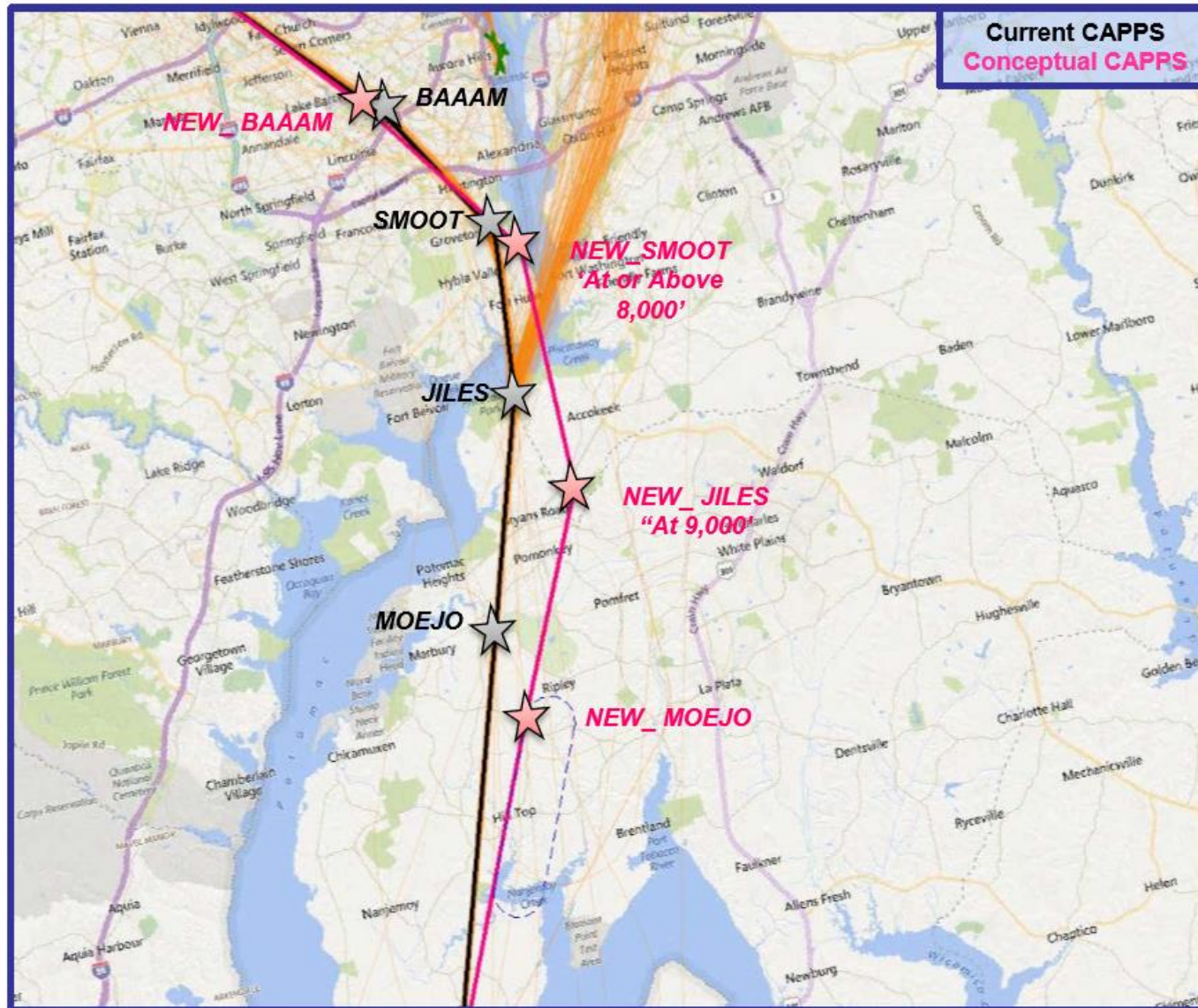
- To top Potomac airspace sector:
  - ✓ **CLTCH** – Added DAGVE 'At or above 11,000 ft'
  - ✓ **SCRAM** – Added GUBME 'At or above 11,000 ft'
  - ✓ **JDUBB** – Added BARIN 'At or above 11,000 ft'
- **Current tracks** (Apr 2017)

# DCA CAPPS RNAV STAR (Arrival)



- Serves jet arrivals from the south
- Portion of procedure, between FLIPZ to BAAAM, moved slightly southeast to allow climb via on the SIDs
- Current track data (Apr 2017)

# DCA CAPPS RNAV STAR RWY 19 (Arrival)



- MOEJO moved 2.71 nm southeast to **NEW\_MOEJO**; 'At 10,000' altitude restriction remains
- JILES moved 3.32 nm southeast to **NEW\_JILES**; altitude restriction added, 'At 9,000'
- SMOOT moved .92 nm southeast to **NEW\_SMOOT**; altitude restriction changed from 'At or Above 7,000' to 'At or Above 8,000'
- BAAAM moved .68 northwest to **NEW\_BAAAM**; 'At 6,000' altitude restriction remains
- **Current track data (Apr 2017)**

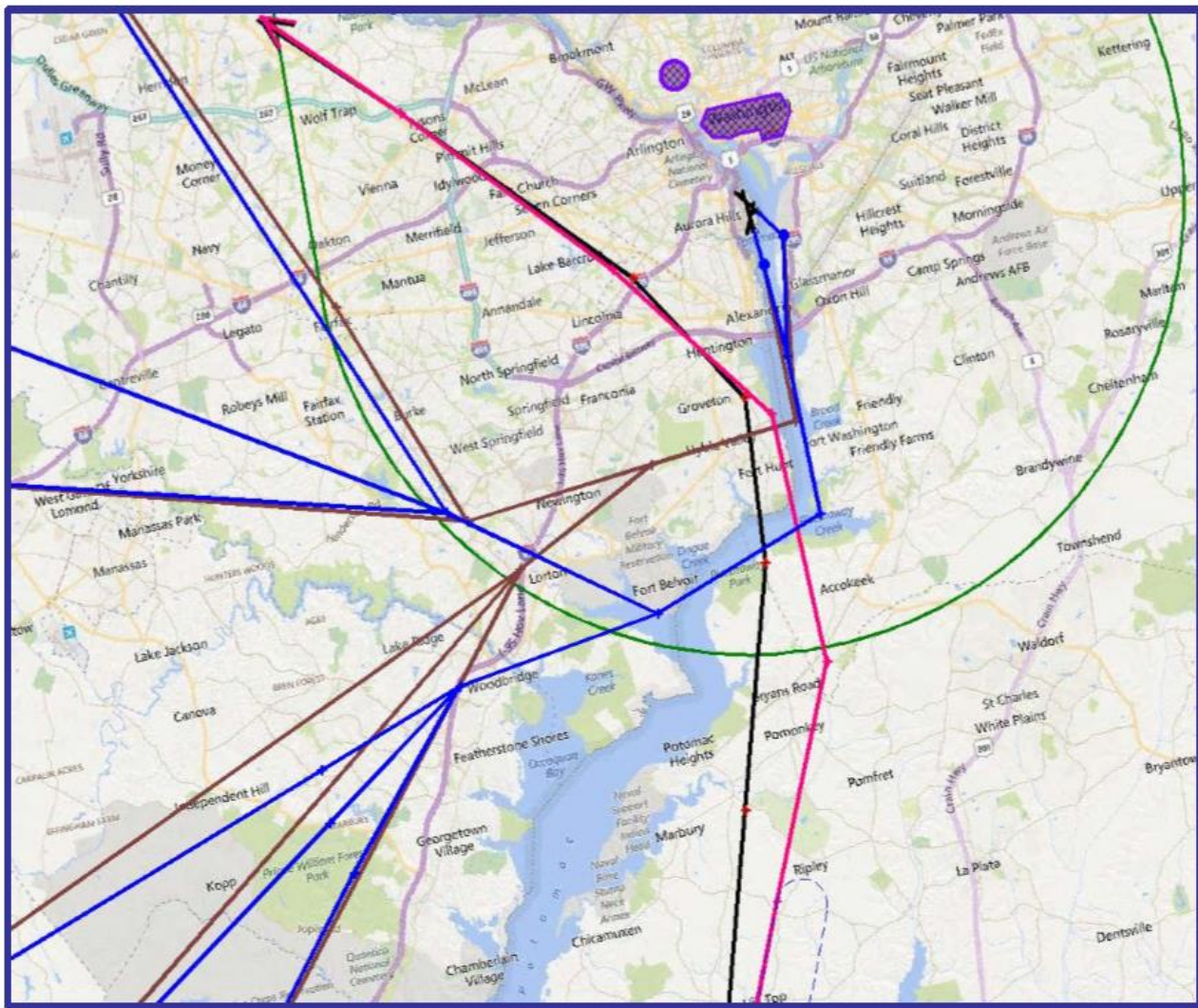
## Comments

1. Add a new WP between New Giles and New Smoot to keep close to old procedure?
2. Is safety a consideration for adding new track slide 11?

# South Flow Departures and CAPPS Arrival

Comments

1.

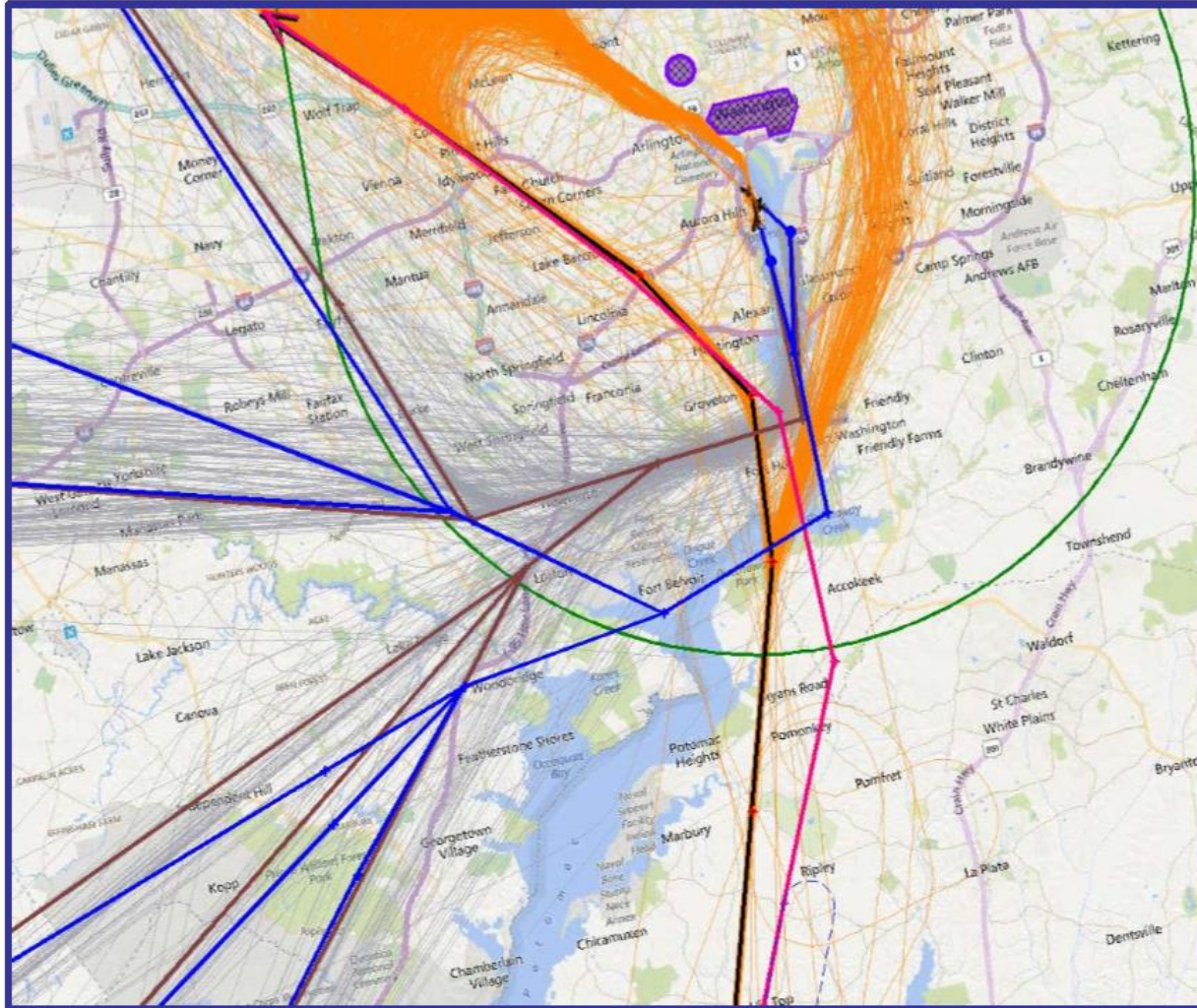


- Interaction between departures and arrivals
- **Current Departures**
- **Conceptual Departures**
- **Current Arrival**
- **Conceptual Arrival**

# South Flow Departures and CAPPS Arrival

Comments

1.

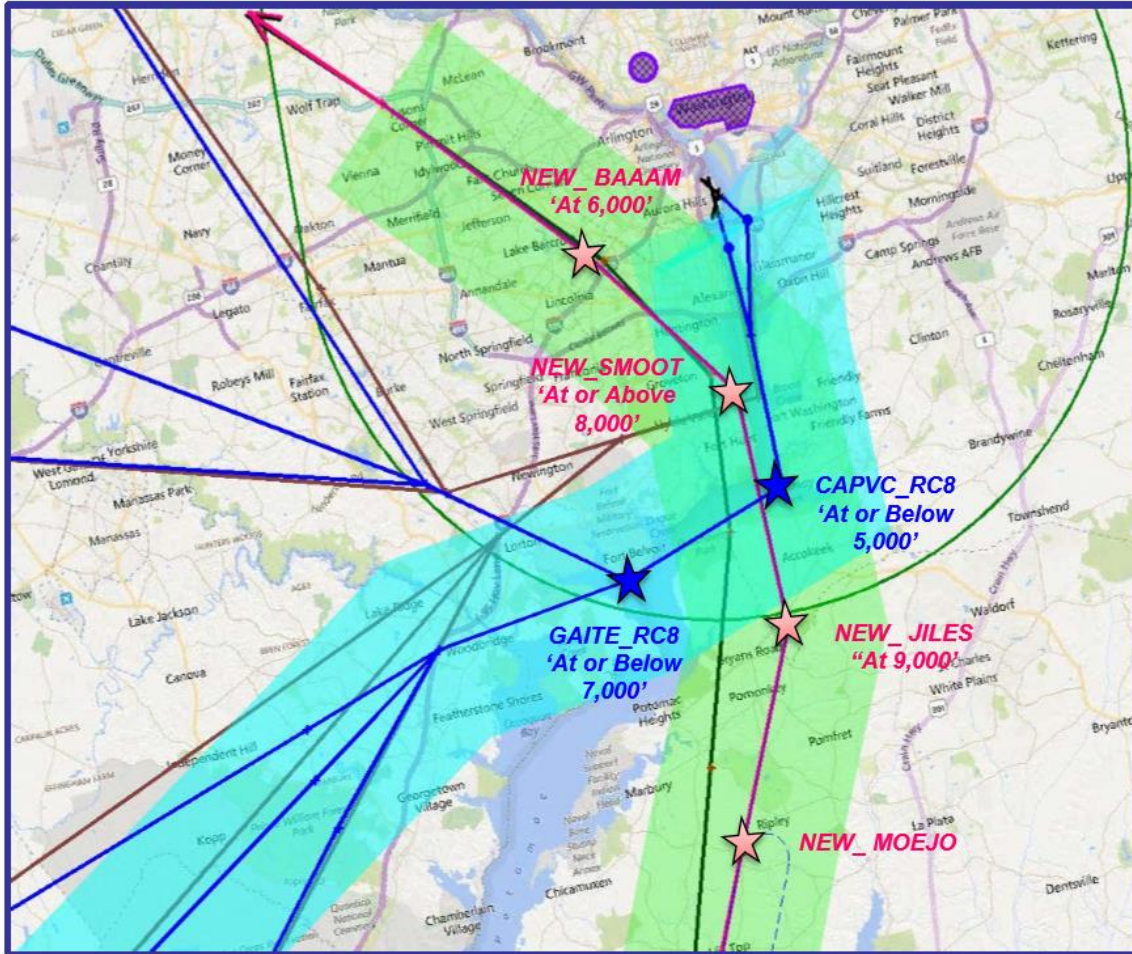


- Current Departure data (Apr 2017)
- Current Arrival data (Apr 2017)

# South Flow Departures and CAPPS Arrival

## Comments

1.



- Protected Airspace for Departures
- Protected Airspace for Arrival
- Restriction at CAPVC\_RC8 'At or Below 5,000' is to protect for the 'At or Above 6,000' at NEW\_BAAAM
- Restriction at GAITE\_RC8 'At or Below 7,000' is to protect for the 'At or Above 8,000' at NEW\_SMOOT

# Addressing Arrivals

- Data to FAA
- Raise min altitude at KATRN

## MOUNT VERNON VISUAL RUNWAY 1

AL-443 (FAA)

WASHINGTON, DC

D-ATIS 132.65  
 POTOMAC APP CON  
 119.85 319.1 (WEST/SOUTH)  
 124.2 269.0 (EAST)  
 WASHINGTON TOWER  
 119.1 257.6  
 GND CON  
 121.7 257.6  
 CLNC DEL  
 128.25  
 CPDLC

LOCALIZER 109.2  
 I-DCA  
 Chan 36

WASHINGTON  
 111.0 DCA  
 Chan 47

NOTE: PROHIBITED AREA (P-56) 1.5 NM NORTH  
 OF DCA-AVOID-SURFACE TO 18000 MSL.

RADAR REQUIRED

Vertical Guidance  
 Navaid and Angle:  
 I-DCA 3.00°

Weather Minimums: 3000  
 feet ceiling and 4 mile  
 visibility.

Aircraft may proceed via DCA VOR/DME R-185 (inbound 005°), or via the ILS or  
 LOC/DME RWY 1 approach to 5.9 DME, then follow the Potomac River to the airport.

## MOUNT VERNON VISUAL RUNWAY 1

38°51'N-77°02'W

WASHINGTON, DC

Amdt 4 22AUG13

RONALD REAGAN WASHINGTON NATIONAL (DCA)

WASHINGTON, DC

AL-443 (FAA)

18116

## RNAV (RNP) RWY 1

RONALD REAGAN WASHINGTON NATIONAL (DCA)

APP CRS  
 007°  
 Rwy Idg  
 TDZE  
 14  
 Apt Elev  
 14

For uncompensated Baro-VNAV systems, procedure NA below  
 -10°C (14°F) or above 48°C (120°F). RF required. GPS required.  
 Missed approach requires RNP less than 1.0. For inop ALS,  
 increase RNP 0.30 all Cots visibility to 1½ mile.

ALSIF-2  
 A

MISSSED APPROACH: (Do not exceed 185K  
 until FIVUD) Climb to 2200 left turn to FIVUD  
 and on track 327° to HESLO and on track  
 327° to GTN NDB and hold.

D-ATIS 132.65  
 POTOMAC APP CON  
 119.85 319.1 (WEST/SOUTH)  
 124.2 269.0 (EAST)

WASHINGTON TOWER  
 119.1 257.6

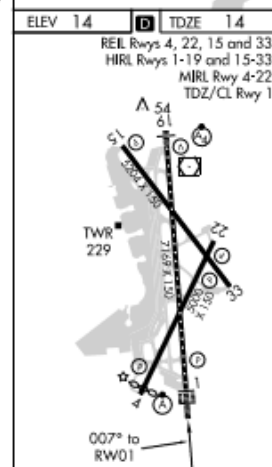
GND CON  
 121.7 257.6

CLNC DEL  
 128.25

CPDLC

MISSSED APCH FIX  
 4 NM  
 GEORGETOWN  
 GTN

NE-3, 19 JUL 2018 to 18 AUG 2018



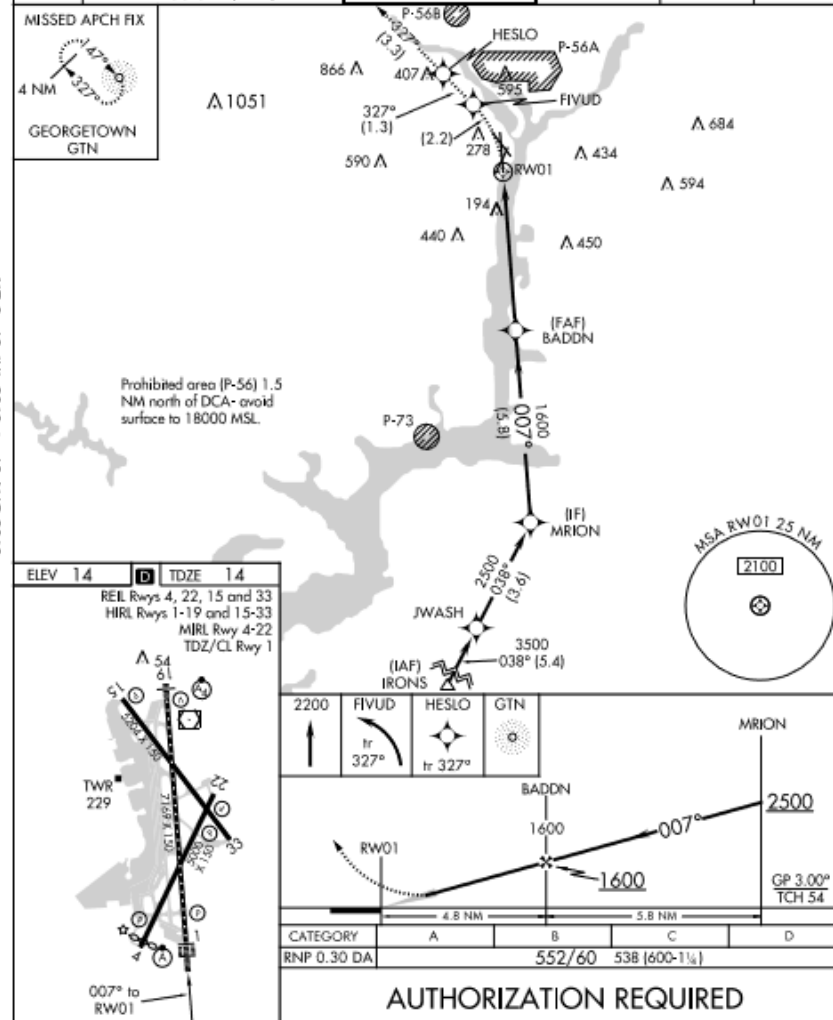
WASHINGTON, DC

Amdt 18 26APR18

RONALD REAGAN WASHINGTON NATIONAL (DCA)

38°51'N-77°02'W

## RNAV (RNP) RWY 1



NE-3, 19 JUL 2018 to 18 AUG 2018

LOC/DME F-DCA <b>109.9</b> Chan 36	APP CRS <b>006°</b>	Rwy Idg <b>6869</b> TDZE <b>14</b> Apt Elev <b>14</b>
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## ILS or LOC RWY

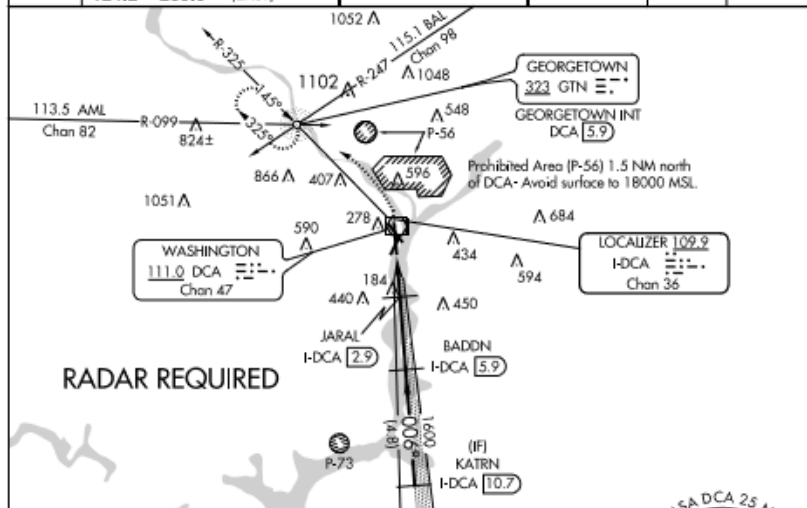
RONALD REAGAN WASHINGTON NATIONAL (DCA)

**T** Circling to Rwy 4 NA at night.  
**A** Circling NA northeast of Rwy 15-33.  
DME required.  
For inapp ALS, increase S-LOC 1 Cats C and D visibility to 1½ mile.

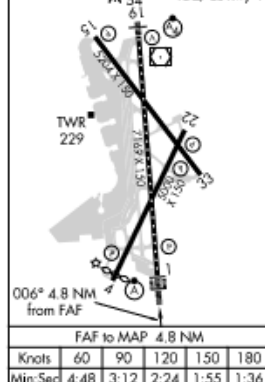
ALSF-2

**MISSED APPROACH:** Climb to 420 then climbing left turn to 2200 on DCA VOR/DME R-325 to GTN NDB/INT/DCA 5.9 DME and hold.

D-ATIS 132.65	POTOMAC APP CON 119.85 319.1 (WEST/SOUTH) 124.2 269.0 (EAST)	WASHINGTON TOWER 119.1 257.6	GND CON 121.7 257.6	CLNC DEL 128.25	CPDLC
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RADAR REQUIRED



WASHINGTON, DC  
Amdt 41C 29MAR18



RONALD REAGAN WASHINGTON NATIONAL (DCA)  
38°51'N-77°02'W ILS or LOC RWY

ILS or LOC RWY

LOC/DME I-DCA <b>109.9</b> Chn 36	APP CRS <b>006°</b>	Rwy Idg <b>6869</b> TDZE <b>14</b> Apt Elev <b>14</b>
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## ILS RWY 1 (SA CAT)

RONALD REAGAN WASHINGTON NATIONAL (DC)

 DME required.  
 Requires specific OPSPEC, MSPEC or LOA approval and use of HUD to DH.

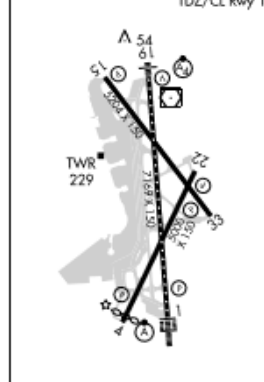
ALSF-2

**MISSED APPROACH:** Climb to 420 then climbing left turn to 220 on DCA VOR/DME R-325 to GTN NDB/INT/DCA 5.9 DME and hold.

D-ATIS 132.65	POTOMAC APP CON 119.85 319.1 (WEST/SOUTH) 124.2 269.0 (EAST)		WASHINGTON TOWER 119.1 257.6	GND CON 121.7 257.6	CLNC DEL 128.25	CPDLC
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RADAR REQUIRED



WASHINGTON, DC  
Amdt 41C 29MAR18

RONALD REAGAN WASHINGTON NATIONAL (DC)  
38°51'N-77°02'W ILS RWY 1 (SA CAT

ILS RWY 1 (SA CAT)

LOC/DME I-DCA <b>109.9</b> Chap. 36	APP CRS <b>006°</b>	Rwy Idg <b>6869</b> TDZE <b>14</b> Apt Elev <b>14</b>
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## ILS RWY 1 (CAT II)

RONALD REAGAN WASHINGTON NATIONAL (DCA)

**T**  
**A** DME required.

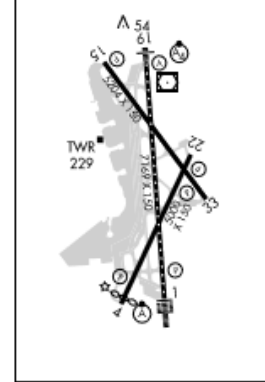
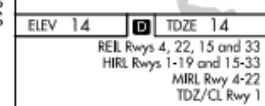
ALSF-2

**MISSED APPROACH:** Climb to 420 then climbing left turn to 2200 on DCA VOR/DME R-325 to GTN NDB/INT/DCA 5.9 DME and hold.

D-ATIS 132.65	POTOMAC APP CON 119.85 319.1 (WEST/SOUTH) 124.2 269.0 (EAST)	WASHINGTON TOWER 119.1 257.6	GND CON 121.7 257.6	CLNC DEL 128.25	CPDLC
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RADAR REQUIRED



WASHINGTON, DC  
Amdt 41C 29MAR18

RONALD REAGAN WASHINGTON NATIONAL (DCA)  
38°51'N-77°02'W ILS RWY 1 (CAT II)

ILS RWY 1 (CAT II)

# Other Actions to Recue Noise

- Fly Quiet – NADP 1 and 2
- CDA/OPD
- Reduce departure climb airspeed to 220 Kts
- Aircraft Mods
  - Flexible wing flap, “porous” landing gear fairings, and alteration of airflow across the landing-gear wheel well
  - 70 percent less noise during landings

# Next Steps

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## ❖ DCA WG Recommendation 8 Changes

- Earliest Possible Implementation – Late 2019 / Early 2020
  - Moving forward, the FAA anticipates questions and comments, and will review input received on these conceptual designs
  - Written response from the DCA WG indicating its position on the conceptual procedure changes (those based on their recommendation) is preferred before proceeding with Environmental/Safety Review (18-month process)
  - The DCA WG response should be submitted to the MWAA which will forward to the FAA's Eastern Regional Administrator's office within 60 days (June 25, 2018) to help meet anticipated implementation

## ❖ Criteria-Related (Code) Changes

## ❖ Environmental Review

- Community Involvement

## ❖ FAA Safety Approval

## ❖ Revisit Procedures if Changes are Required Based on Review

- FAA will reconvene the 7100.41 PBN FWG to discuss changes and will re-brief the MWAA

Back Up Slides

