

Next**GEN**

Performance-Based Navigation (PBN) Non-OAPM



FAA



Federal Aviation
Administration

PBN Milestones Summary and Dashboard Status as of Jul 24, 2012

No.	FY 12 Milestones	Completion
1	Portland preliminary designs complete	Jan 2012
2	St. Louis preliminary designs complete	Mar 2012
3	Memphis RNAV SIDs published	Apr 2012
4	Philadelphia RNAV STARs published	May 2012
5	LaGuardia RNAV SIDs published	May 2012
6	Portland RNP Published	Sep 2012
7	St. Louis RNAV SIDs and RNP published	Sep 2012
8	Anchorage RNAV SIDs and STAR published	Sep 2012

No.	FY 13 Milestones	Completion
1	Denver STARs and RNP published	Nov 2012
2	Nashville procedures published	Nov 2012
3	St. Louis STARs Published	Nov 2012
4	Denver SIDs published	Jan 2013
5	Minneapolis STARs and RNP published	Mar 2013
6	Seattle procedures published	Mar 2013
7	Minneapolis SIDs published	May 2013
8	Portland STARs published	Jun 2013

Complete

On Track

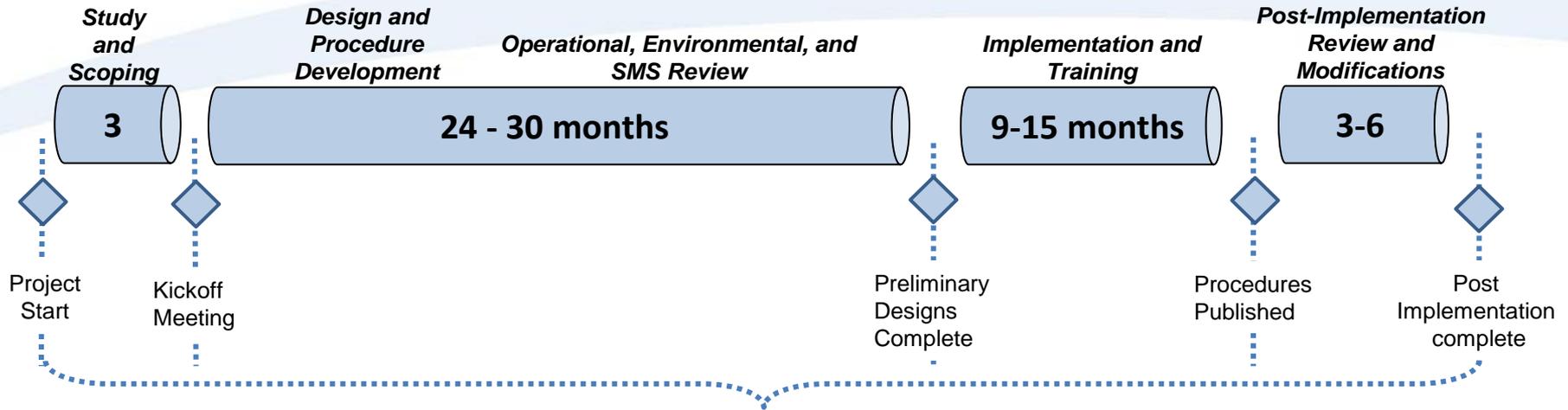
May Be Missed
* See details page

Missed

Site	Project Start	Prototype design complete (pencils down)	Environmental Start	Environmental End	Submitted to Flight Procedures Team (FPT)		Submitted to AeroNav Products (AJV-3)		Published		
Denver	11/2009	1/2012	1/2010	8/2012	4/2012	6/2012	5/2012	7/2012	11/2012	1/2013	
Minneapolis	10/2010	8/2012	4/2012	9/2012	8/2012	10/2012	9/2012	11/2012	3/2013	5/2013	
Nashville	7/2010	3/2012	8/2011	8/2012	4/2012		5/2012		11/2012		
Portland	8/2011	3/2012	10/2011	3/2012	3/2012	8/2012	3/2012	9/2012	9/2011	3/2013	6/2013
St. Louis	4/2008	11/2011	6/2008	7/2012	3/2012	4/2012	3/2012	5/2012	9/2012	11/2012	
Seattle	6/2010	12/2011	10/2011	10/2012	8/2012		9/2012		3/2013		
Philadelphia	3/2008	12/2010	3/2008	2005	3/2012		12/2011		5/2012		
LaGuardia	1/2011	4/2011	1/2011	2005	11/2011		12/2011		5/2012		
Anchorage					3/2012		3/2012		9/2012		



PBN Site Timeline



Study and Scoping: a preliminary look at a PBN project where data is gathered for use in evaluating current operations and to design draft procedures that will be use in the PBN project.

Design and Procedure Development: Development work on prototype procedures is conducted. Procedures usually go through many changes and testing before becoming final drafts.

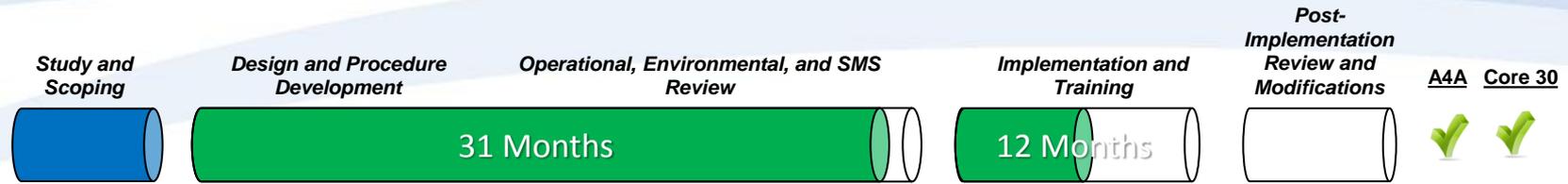
Operational, Environmental and SMS Review: All necessary operational modeling, safety analyses, and environmental reviews are conducted.

Implementation and Training: This includes all steps required for implementation including facility preparation and procedure development including flight inspection, publishing procedures and executing training.

Post Implementation Review and Modifications: Includes a review of the procedures changes to determine if they have delivered desired benefits and/or caused other impacts. Modifications or refinements may be made to better achieve desired benefits or address unforeseen impacts.

Denver Site Progress Status

15 SIDs, 17 STARs, and 12 RNP



Project Start*	11/13/09	AJV-14
Gather Data	12/13/10	AJV-14
Initial draft prototype designs	1/15/11	AJV-14
Kickoff meeting	1/27/11	AJV-14

Environmental Review start (EA)	1/25/10	AJV-W2
Flight simulations complete	12/12/11	UA/SWA
Prototype designs draft	1/5/12	AJV-14
Procedure design complete (Pencils down)	1/10/12	AJV-14
Post Prototype design work	1/19/12	AJV-14
Orig Environmental Review complete **	6/30/12	AJV-W2
Conduct Public Meetings***	6/29/12	AJV-W2
Revised Environmental Review complete	8/16/12	AJV-W2

Orig First Publication Cycle (5/31/12)

Orig Second Publication Cycle (9/20/12)

Revised First Publication Cycle (11/15/12) STARs/RNPs		
Procedures submitted to FPT	4/27/12	AJV-14
Procedures submitted to AJV-3	5/25/12	AJV-W24
Due to QA	7/9/12	AJV-3
Due to Flight Inspection	8/1/12	AJV-3
Due to NACO	9/18/12	AJV-3
Training Complete	10/15/12	DEN/ZDV
Procedures Published	11/15/12	AJV-3
Procedures Implemented	11/22/12	AJV-14

Revised Second Publication Cycle (1/10/13) SIDs		
Procedures submitted to FPT	6/22/12	AJV-14
Procedures submitted to AJV-3	7/20/12	AJV-W24
Due to QA	9/3/12	AJV-3
Due to Flight Inspection	9/26/12	AJV-3
Due to NACO	11/13/12	AJV-3
Training Complete	2/10/13	DEN/ZDE
Procedures Published	1/10/13	AJV-3
Procedures Implemented	1/15/13	AJV-14

NOTES:

* Project start date reflects project re-start after delays to resolve inter-facility operational challenges.
 ** Original environmental review date revised to 8/16/12 due to delays to resolve partner airline procedure design concerns. Publication dates revised from 5/31/12 and 9/20/12 to 11/15/12 and 1/10/13.
 *** Approximately 30 comments received from public meeting, mainly regarding Alternative 3.

RISKS:

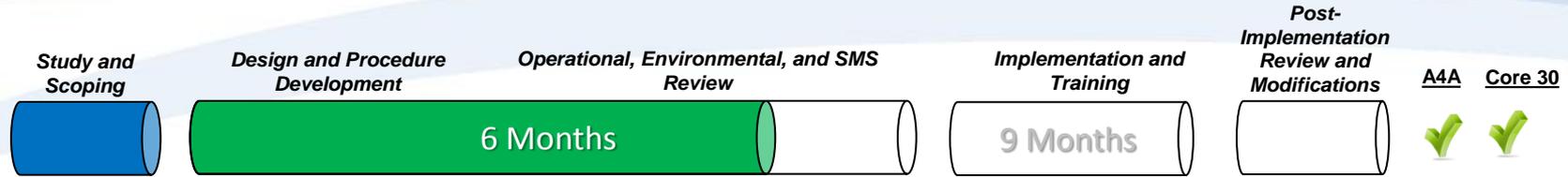
Criteria changes impact DEN SIDs. Workgroup is looking into mitigation options.

Complete
On Track
May Be Missed
Missed



Minneapolis Site Progress Status

13 SIDs, 6 STARs, 6 RNP's



Project Start	10/30/10	AJV-14
Gather Data	10/15/10	AJV-14
Initial draft prototype designs	11/1/10	AJV-14
Kickoff meeting	11/30/10	AJV-14

Environmental Review start	4/25/12	AJV-C2
Prototype designs draft	3/29/12	AJV-14
Noise Screen Complete*	6/22/12	AJV-14
Flight simulations complete	6/30/12 7/09/12	DAL/ SWA
Workgroup concurrence ***	7/15/12	AJV-14
Prototype design complete (Pencils down)	8/20/12	AJV-14
Post Prototype design work	9/20/12	AJV-14
Environmental Review complete*	9/30/12	AJV-C2

Orig First Publication Cycle (9/20/2012)

Chg. 1 First Publication Cycle (1/10/2013)

Chg. 1 Second Publication Cycle (3/7/2013)

Chg. 2 First Publication Cycle (3/7/2013) STARs/RNP's		
Procedures submitted to FPT	8/17/12	AJV-14
Procedures submitted to AJV-3	9/14/12	AJV-C24
Due to QA	10/29/12	AJV-3
Due to Flight Inspection	11/21/12	AJV-3
Due to NACO	1/8/13	AJV-3
Training Complete	2/15/13	MSP/ZMP
Procedures Published	3/7/13	AJV-3
Procedures Implemented	3/15/13	AJV-14

Chg. 2 Second Publication Cycle (5/2/2013) SIDs		
Procedures submitted to FPT	10/12/12	AJV-14
Procedures submitted to AJV-3	11/9/12	AJV-C24
Due to QA	12/24/12	AJV-3
Due to Flight Inspection	1/16/13	AJV-3
Due to NACO	3/5/13	AJV-3
Training Complete	4/2/13	MSP/ZMP
Procedures Published	5/2/13	AJV-3
Procedures Implemented	5/15/13	AJV-14

NOTES: Procedures chart date was originally set for 09/20/2012.

Change 1: Chart dates revised to 01/10/2013 and 03/7/2013 to permit Minneapolis Airport Commission (MAC) Noise Oversight Committee (NOC) review.

Change 2: NOC accepted procedures; Lead operator needed additional time to fly simulations. Chart dates moved to 03/7/2013 and 05/2/2013.

* Previous report reflected environmental review completion date as 6/30/12; this date was for completing the noise screen. Projected environmental review date is 9/30/12.

** Two SIDs published 7/25/12.

*** Workgroup concurrence delayed due to block altitude criteria issue on SIDs.

RISKS:

- The Airport Commission has hired an environmental contractor for noise contour analysis, whereas the FAA is using internal resources to complete a noise screen. Differences in results could lead to project delay to resolve differences.
- MAC and the NOC plan to host an open house with the public later in the year. This has the potential to impact publication dates should changes to developed procedures be required.

Complete
On Track
May Be Missed
Missed

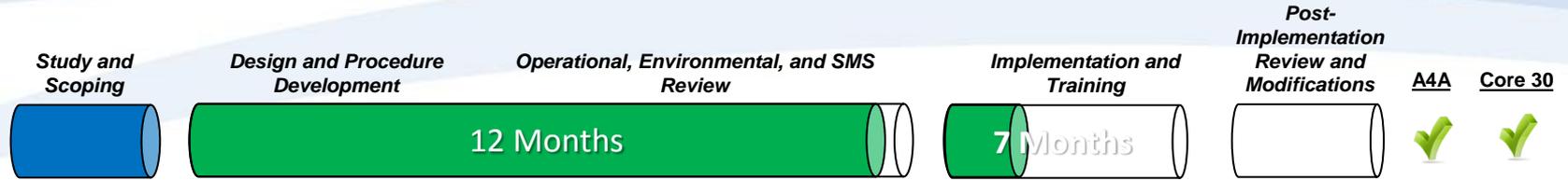


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Nashville Site Progress Status

12 SIDs, 4 STARs, and 6 RNP's



Project Start	7/1/2010	AJV-14
Gather data	8/23/2010	AJV-14
Initial draft prototype designs	11/20/2010	AJV-14
Kickoff meeting	8/5/2010	AJV-14

Environmental Review start(CATEX)	8/16/11	AJV-E2
Prototype designs draft	8/16/11	AJV-14
Flight simulations complete	8/14/11	SWA
Workgroup concurrence	10/30/11	AJV-14
Prototype design complete (pencils down)	3/30/12	AJV-14
Post Prototype design work	4/15/12	AJV-14
Environmental Review complete	8/8/12	AJV-E2

Publication Cycle (11/15/2012)		
Procedures submitted to FPT	4/27/12	AJV-14
Procedures submitted to AJV-3	5/25/12	AJV-E24
Due to QA	7/9/12	AJV-3
Due to Flight Inspection	8/1/12	AJV-3
Due to NACO	9/18/12	AJV-3
Training Complete	10/01/12	BNA/ZME/ZTL
Procedures Published	11/15/12	AJV-3
Procedures Implemented	11/20/12	AJV-14

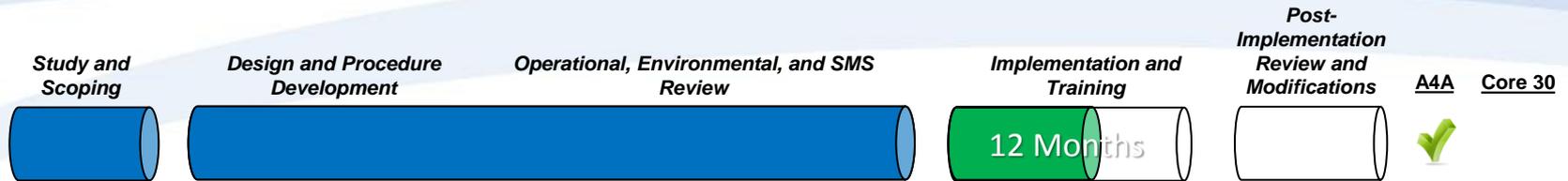
Complete
On Track
May Be Missed
Missed

RISKS: None



Portland OR (PDX) Site Progress Status

3 STARs 6 RNP's



Project Start	8/15/11	AJV-14
Gather data	8/15/11	AJV-14
Initial draft prototype designs	9/23/11	AJV-14
Kickoff meeting	10/3/11	AJV-14

Environmental Review start	10/3/11	AJV-W2
Prototype designs draft	1/19/12	AJV-14
Flight simulations complete	1/29/12	SWA
Workgroup concurrence	3/16/12	AJV-14
Prototype design complete (pencils down)	3/20/12	AJV-14
Post Prototype design work	3/20/12	AJV-14
Environmental Review complete	3/20/12	AJV-W2

First Publication Cycle (9/20/2012) RNP's		
Procedures submitted to FPT	3/2/12	AJV-14
Procedures submitted to AJV-3	3/30/12	AJV-W24
Due to QA	5/14/12	AJV-3
Due to Flight Inspection	6/6/12	AJV-3
Due to NACO***	7/24/12	AJV-3
Training Complete	8/20/12	PDX
Procedures Published	9/20/12	AJV-3
Procedures Implemented	9/25/12	AJV-14

Second Publication Cycle (3/7/2013) STAR		
Procedures submitted to FPT	8/17/12	AJV-14
Procedures submitted to AJV-3	9/14/12	AJV-W24
Due to QA	10/29/12	AJV-3
Due to Flight Inspection	11/21/12	AJV-3
Due to NACO	1/8/13	AJV-3
Training Complete	2/7/13	PDX/ZSE
Procedures Published	3/7/13	AJV-3
Procedures Implemented	3/20/13	AJV-14

Third Publication Cycle (6/27/2013) STARs		
Procedures submitted to FPT	12/7/12	AJV-14
Procedures submitted to AJV-3	1/4/13	AJV-W24
Due to QA	2/18/13	AJV-3
Due to Flight Inspection	3/13/13	AJV-3
Due to NACO	5/14/13	AJV-3
Training Complete	5/27/13	PDX/ZSE
Procedures Published	6/27/13	AJV-3
Procedures Implemented	7/3/13	AJV-14

NOTES:

Projected publication date for two STARs is being adjusted to 6/27/13 at the request of Seattle ARTCC to avoid potential conflicts with the Greener Skies STAR implementation at Seattle.

*** Flight inspection scheduled to start week of 7/23/12. Coordination made for late submission to NACO by 7/31/12.

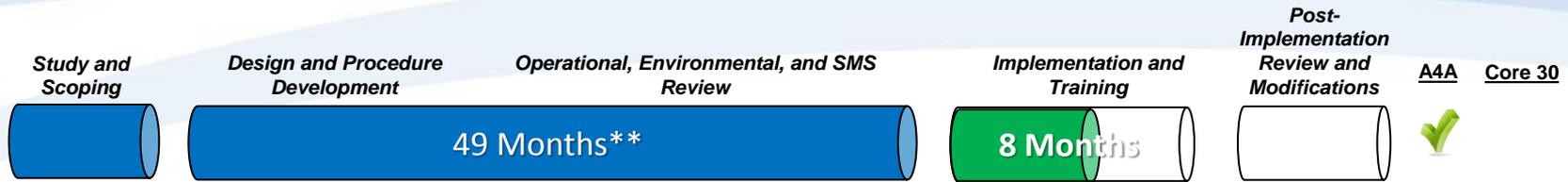
RISKS: None

Complete
On Track
May Be Missed
Missed



St. Louis Site Progress Status

13 SIDs 12 STARs 6 RNP



Project Start*	4/2008	AJV-14
Gather data	5/2008	AJV-14
Initial draft prototype designs	5/2008	AJV-14
Kickoff meeting	6/2008	AJV-14

Environmental Review start	6/30/2008	AJV-C2
Prototype designs draft	6/30/2011**	AJV-14
Flight simulations complete	8/31/2011	SWA
Workgroup concurrence	11/30/2011	AJV-14
Prototype design complete (pencils down)	11/30/2011	AJV-14
Post Prototype design work	12/15/2011	AJV-14
Environmental Review complete	7/2/2012***	AJV-C2

First Publication Cycle (9/20/2012) SIDs and RNP		
Procedures submitted to FPT	3/2/12	AJV-14
Procedures submitted to AJV-3	3/30/12	AJV-C24
Due to QA	5/14/12	AJV-3
Due to Flight Inspection	6/6/12	AJV-3
Due to NACO****	7/24/12	AJV-3
Training Complete	8/20/12	STL/ZKC
Procedures Published	9/20/12	AJV-3
Procedures Implemented	9/27/12	AJV-14

Second Publication Cycle (11/15/2012) STARs		
Procedures submitted to FPT	4/27/12	AJV-14
Procedures submitted to AJV-3	5/25/12	AJV-C24
Due to QA	7/9/12	AJV-3
Due to Flight Inspection	8/1/12	AJV-3
Due to NACO	9/18/12	AJV-3
Training Complete	10/15/12	STL/ZKC
Procedures Published	11/15/12	AJV-3
Procedures Implemented	11/22/12	AJV-14

Complete
On Track
May Be Missed
Missed

NOTES:

- * SID/STAR project started Apr 2008; RNP added Jul 2009
- ** Over 2 years of delay was incurred due to:
 - An out of date Part 150 study and addition of a new runway resulted in the FAA hiring an environmental contractor for noise analysis.
 - Subsequent changes in the lead airline operator and procedure development criteria resulted in procedures being re-developed and simulated.
 - New FAA/NATCA labor agreement resulted in delay for new review of designs
- *** CATEX signed by FAA.
- **** Flight inspection scheduled to start 7/29/12. Coordination made for late submission to NACO by 8/10/12.

RISKS:

- Potential risk to completion of flight inspection of the RNAV SIDs and RNP due to construction on runway 12R/30L.
- Staffing constraint on Gateway TRACON to accomplish facility training prior to implementation. Risk will be mitigated by staggering RNAV SID and RNP training.

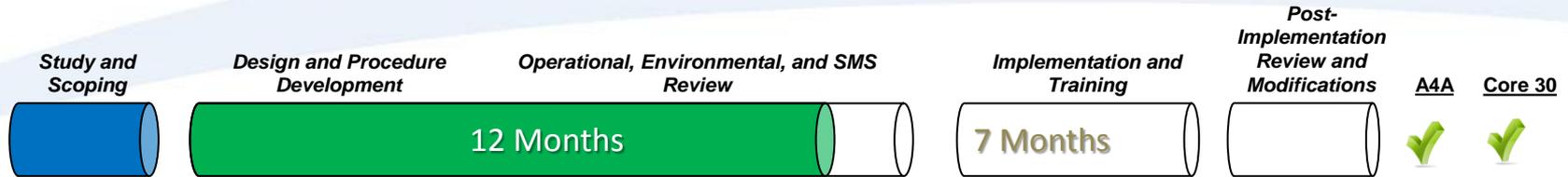


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Seattle Site Progress Status

4 STARs 12 RNPs
(Greener Skies I1)



Project Start	6/2010	AJV-14
Gather data	7/2010	AJV-14
Initial draft prototype designs	8/2010	AJV-14
Kickoff meeting	9/2010	AJV-14

Environmental Review start	10/15/11	AJV-W2
Prototype designs draft	9/20/11	AJV-14
Flight simulations complete	11/10/11	ASA
Workgroup concurrence	12/1/11	AJV-14
Prototype design complete (pencils down)	12/15/11	AJV-14
Special RNAV STAR/RNP AR/RVFP submitted to AFS-460 and passed Flight Check	4/20/12	AJV-14
Special RNAV STAR/RNP AR/RVFP approved for 12-06 publication cycle	5/20/12	AFS-400
ATC training	5/11/12	SEA/ZSE
Flight Trials under 180 day CatX begin	6/11/12	SEA/ZSE
Post Prototype design work	8/1/12	AJV-14
Environmental Review complete	Est. 10/2012	AJV-W2

Publication Cycle (3/7/2013)		
Procedures submitted to FPT	8/17/12	AJV-14
Procedures submitted to AJV-3	9/14/12	AJV-W24
Due to QA	10/29/12	AJV-3
Due to Flight Inspection	11/21/12	AJV-3
Due to NACO	1/8/13	AJV-3
Training Complete	2/7/13	SEA/ZSE
Procedures Published	3/7/13	AJV-3
Procedures Implemented	3/14/13	AJV-14

Complete
On Track
May Be Missed
Missed

RISKS:

ROD date is an estimate. Draft EA was completed June 22, 2012. Two public workshops will be held in August 2012. Any challenges in completion of the EA or due to public comment could lead to delays to resolve concerns.



Anchorage Site Progress Status

2 STARs 1 SID



Complete 2011

Complete 2011

Publication Cycle (9/20/2012)		
Procedures submitted to FPT	3/2/12	AJV-14
Procedures submitted to AJV-3	3/30/12	AJV-W24
Due to QA	5/14/12	AJV-3
Due to Flight Inspection	6/6/12	AJV-3
Due to NACO	7/24/12	AJV-3
Training Complete	8/20/12	ANC/ZAN
Procedures Published	9/20/12	AJV-3
Procedures Implemented	9/27/12	AJV-14

NOTE: Published 4 revised STARs and 1 SID 2/2012

RISKS: None

- Complete
- On Track
- May Be Missed
- Missed

