

## Exhibit 300: Capital Asset Plan and Business Case Summary

### Part I: Summary Information And Justification (All Capital Assets)

#### Section A: Overview (All Capital Assets)

1. Date of Submission: 7/30/2007
2. Agency: Department of Transportation
3. Bureau: Federal Aviation Administration
4. Name of this Capital Asset: FAAXX169: Wide Area Augmentation System (WAAS) [See FAAXX702]
5. Unique Project (Investment) Identifier: (For IT investment only, see section 53. For all other, use agency ID system.) 021-12-01-15-01-1010-00
6. What kind of investment will this be in FY2009? (Please NOTE: Investments moving to O&M in FY2009, with Planning/Acquisition activities prior to FY2009 should not select O&M. These investments should indicate their current status.) Mixed Life Cycle
7. What was the first budget year this investment was submitted to OMB? FY2004
8. Provide a brief summary and justification for this investment, including a brief description of how this closes in part or in whole an identified agency performance gap:

WAAS is an aviation system providing precise navigation and landing guidance to equipped aircraft in any weather. WAAS supports the DOT strategic goal for increased aviation safety in conjunction with the FAA Flight Plan Goal to reduce the number of fatal accidents in general aviation. WAAS results in safety and capacity improvements in the NAS and will reduce FAA operations costs by enabling the removal of approximately 40% of ground-based navigation infrastructure. WAAS uses a network of precisely located ground reference stations across the U.S., Canada & Mexico to monitor GPS satellite signals. WAAS addresses the following performance gaps: Lack of precise navigation capabilities that can handle continued air traffic growth; Lack of stable vertical guidance in all weather conditions; Aging navigation systems that are expensive to maintain (see Performance Table). WAAS is in a mixed life cycle. DME (CPIC control phase) continues in conjunction with O&M post IOC (CPIC evaluate phase) through four segments: IOC in 2003, Full WAAS LPV Performance (FLP) 2004-2008, WAAS Phase III LPV-200 scheduled for 2009- 2013, WAAS Phase IV Dual Frequency Operations through the rest of the life cycle 2013-2028. The FLP performance segment will expand service to 99% availability to the continental U.S. and 75% of Alaska. In Phase III, the FAA will develop a contract for FY 2009 - 2011 to perform DME and O&M life cycle support focus on transition from contractor-based support to FAA-led support. Phase III efforts will include acquisition of additional leased service for a WAAS Navigation Payload hosted on a Geostationary satellite (GEO), including development, testing and integration. Phase IV, Dual Frequency will provide better operational capability during periods of severe solar storm activity, additional protection against interference to the GPS, and enable FAA to decommission numerous ground-based navigation aids. The dual frequency upgrade will leverage improvements the DoD GPS modernization program. The SOS increased in 2007 & 2008 due to cost for surveys not planned in the May 2004 baseline. WAAS is required to return to the JRC in 2007 to revalidate the business case and receive approval for funding the next segment of work. Current LPV work effort is expected to be completed within cost and schedule parameters. WAAS is scheduled to present a request to obtain an authorization to proceed to the next segment of work from the JRC on October 17, 2007.
9. Did the Agency's Executive/Investment Committee approve this request? Yes
  - a. If "yes," what was the date of this approval? 5/3/2004
10. Did the Project Manager review this Exhibit? Yes
11. Contact information of Project Manager?

Name: Lawrence, Deborah  
Phone Number: Redacted  
Email: deborah.lawrence@faa.gov
- a. What is the current FAC-P/PM certification level of the project/program manager? Senior/Expert-level
12. Has the agency developed and/or promoted cost effective, energy-efficient and environmentally sustainable techniques or practices for this project?
  - a. Will this investment include electronic assets (including computers)? Yes
  - b. Is this investment for new construction or major retrofit of a Federal building or facility? (answer applicable to non-IT assets only) No
    1. If "yes," is an ESPC or UESC being used to help fund this investment?

2. If "yes," will this investment meet sustainable design principles?

3. If "yes," is it designed to be 30% more energy efficient than relevant code?

13. Does this investment directly support one of the PMA initiatives? No

If "yes," check all that apply:

a. Briefly and specifically describe for each selected how this asset directly supports the identified initiative(s)? (e.g. If E-Gov is selected, is it an approved shared service provider or the managing partner?)

14. Does this investment support a program assessed using the Program Assessment Rating Tool (PART)? (For more information about the PART, visit [www.whitehouse.gov/omb/part](http://www.whitehouse.gov/omb/part).) Yes

a. If "yes," does this investment address a weakness found during a PART review? Yes

b. If "yes," what is the name of the PARTed program? FAA Air Traffic Services

c. If "yes," what rating did the PART receive? Adequate

15. Is this investment for information technology? Yes

If the answer to Question 15 is "Yes," complete questions 16-23 below. If the answer is "No," do not answer questions 16-23.

For information technology investments only:

16. What is the level of the IT Project? (per CIO Council PM Guidance) Level 3

17. What project management qualifications does the Project Manager have? (per CIO Council PM Guidance) (1) Project manager has been validated as qualified for this investment

18. Is this investment or any project(s) within this investment identified as "high risk" on the Q4 - FY 2007 agency high risk report (per OMB Memorandum M-05-23) Yes

19. Is this a financial management system? No

a. If "yes," does this investment address a FFMI compliance area?

1. If "yes," which compliance area:

2. If "no," what does it address?

b. If "yes," please identify the system name(s) and system acronym(s) as reported in the most recent financial systems inventory update required by Circular A-11 section 52

20. What is the percentage breakout for the total FY2009 funding request for the following? (This should total 100%)

Hardware 36.000000

Software 17.000000

Services 38.000000

Other 9.000000

21. If this project produces information dissemination products for the public, are these products published to the Internet in conformance with OMB Memorandum 05-04 and included in your agency inventory, schedules and priorities? N/A

22. Contact information of individual responsible for privacy related questions:

Name Mauney, Carla

Phone Number Redacted

Title Privacy Officer

E-mail [carla.mauney@faa.gov](mailto:carla.mauney@faa.gov)

23. Are the records produced by this investment appropriately scheduled with the National Archives and Records Administration's approval? Yes

Question 24 must be answered by all Investments:

24. Does this investment directly support one of the GAO High Risk Areas? Yes

## **Section B: Summary of Spending (All Capital Assets)**

1. Provide the total estimated life-cycle cost for this investment by completing the following table. All amounts represent budget authority in millions, and are rounded to three decimal places. Federal personnel costs should be included only in the row designated "Government FTE Cost," and should be excluded from the amounts shown for "Planning," "Full Acquisition," and "Operation/Maintenance." The "TOTAL" estimated annual cost of the investment is the sum of costs for "Planning," "Full Acquisition," and "Operation/Maintenance." For Federal buildings and facilities, life-cycle costs should include long term energy, environmental, decommissioning, and/or restoration costs. The costs associated with the entire life-cycle of the investment should be included in this report.

<b>Table 1: SUMMARY OF SPENDING FOR PROJECT PHASES (REPORTED IN MILLIONS)</b>									
(Estimates for BY+1 and beyond are for planning purposes only and do not represent budget decisions)									
	<b>PY-1 and earlier</b>	<b>PY 2007</b>	<b>CY 2008</b>	<b>BY 2009</b>	<b>BY+1 2010</b>	<b>BY+2 2011</b>	<b>BY+3 2012</b>	<b>BY+4 and beyond</b>	<b>Total</b>
Planning:	13.847	2.87	2.53	2.27	Redacted	Redacted	Redacted	Redacted	Redacted
Acquisition:	1112.249	119.53	103.37	107.13	Redacted	Redacted	Redacted	Redacted	Redacted
Subtotal Planning & Acquisition:	1126.096	122.40	105.90	109.40	Redacted	Redacted	Redacted	Redacted	Redacted
Operations & Maintenance:	74.66	24.18	23.34	24.82	Redacted	Redacted	Redacted	Redacted	Redacted
<b>TOTAL:</b>	<b>1200.756</b>	<b>146.58</b>	<b>129.24</b>	<b>134.22</b>	<b>Redacted</b>	<b>Redacted</b>	<b>Redacted</b>	<b>Redacted</b>	<b>Redacted</b>
<b>Government FTE Costs should not be included in the amounts provided above.</b>									
Government FTE Costs	53.106	9.745	7.66	8.42	Redacted	Redacted	Redacted	Redacted	Redacted
Number of FTE represented by Costs:	406	67	51	53	Redacted	Redacted	Redacted	Redacted	Redacted

Note: For the multi-agency investments, this table should include all funding (both managing partner and partner agencies). Government FTE Costs should not be included as part of the TOTAL represented.

2. Will this project require the agency to hire additional FTE's? No

a. If "yes," How many and in what year? The WAAS Program will need 4 additional FTEs in FY08 and 4 additional in FY09.

3. If the summary of spending has changed from the FY2008 President's budget request, briefly explain those changes:  
Redacted

### **Section C: Acquisition/Contract Strategy (All Capital Assets)**

1. Complete the table for all (including all non-Federal) contracts and/or task orders currently in place or planned for this investment. Total Value should include all option years for each contract. Contracts and/or task orders completed do not need to be included.



2. If earned value is not required or will not be a contract requirement for any of the contracts or task orders above, explain why:

(LM) DTFAWA-03-C-0059- The FFP portion of this contract doesn't require EVM for leased satellite services paid with F&E money. The CPFF portion of this contract requires EVM for development activities.

DTFAWA-06-C-00006 (AMT1) - EVM was not a requirement at the time of award, however, the contract has been modified to require EVM.

WAT95G005 (Stanford) - This contract is a Cooperative Agreement, which has deliverables, products, and schedules identified.

DTFAWA-03-C-00079 (Zeta) - EVM was not a requirement at the time of award and the contract will not extend beyond 2008.

80-9208 JPL- This contract has discrete deliverables associated with each task. The WAAS Program is not exposed to any additional risk because these contract vehicles provide program support, technical analysis, and/or lease services. The WAAS Program conducts periodic reviews to monitor cost, schedule, performance, and technical status for these contracts. All of the WAAS prime development contracts are managed according to the ANSI/EIA Standard-748 guidelines. The WAAS Program is implementing EVM at the program level according to our Plan of Actions and Milestones (POA&M). The WAAS program has created a WAAS master program schedule, restructured contractor WBSs, established control account managers (CAMs), control accounts, and modified labor distribution reporting (LDR) codes to track FTEs consistent with the FAA WBS. In addition, an EVM control plan has been implemented which includes MPM software for data collection and wlnsight software to facilitate management analysis. Control Account Manager (CAM) training has been developed and is being validated to ensure EVM control processes have been properly described and implemented. The WAAS Program expects to be fully EVM compliant by September 2007.

3. Do the contracts ensure Section 508 compliance? Yes
- a. Explain why: Section 508 is included in all statements of work and enforced by all team leads. In accordance with FAA's Section 508 Procurement Operating Procedures, WAAS has determined that the following Section 508 standards apply and are in compliance with each applicable standard; 1194.21, 1194.22, 1194.23, 1194.25, 1194.26, 1194.31, 1194.41
4. Is there an acquisition plan which has been approved in accordance with agency requirements? Yes
- a. If "yes," what is the date? 6/20/2007
- b. If "no," will an acquisition plan be developed?
1. If "no," briefly explain why:

**Section D: Performance Information (All Capital Assets)**

In order to successfully address this area of the exhibit 300, performance goals must be provided for the agency and be linked to the annual performance plan. The investment must discuss the agency's mission and strategic goals, and performance measures (indicators) must be provided. These goals need to map to the gap in the agency's strategic goals and objectives this investment is designed to fill. They are the internal and external performance benefits this investment is expected to deliver to the agency (e.g., improve efficiency by 60 percent, increase citizen participation by 300 percent a year to achieve an overall citizen participation rate of 75 percent by FY 2xxx, etc.). The goals must be clearly measurable investment outcomes, and if applicable, investment outputs. They do not include the completion date of the module, milestones, or investment, or general goals, such as, significant, better, improved that do not have a quantitative or qualitative measure.

Agencies must use the following table to report performance goals and measures for the major investment and use the Federal Enterprise Architecture (FEA) Performance Reference Model (PRM). Map all Measurement Indicators to the corresponding "Measurement Area" and "Measurement Grouping" identified in the PRM. There should be at least one Measurement Indicator for each of the four different Measurement Areas (for each fiscal year). The PRM is available at [www.egov.gov](http://www.egov.gov). The table can be extended to include performance measures for years beyond FY 2009.

Performance Information Table								
Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
2005	Safety	Customer Results	Service Accessibility	Availability	Provide additional availability to customers by increasing the WAAS LPV signal availability	LPV service over 95% of the continental United States	Install 4 wide area reference stations (WRSS) in Alaska to provide additional coverage in Alaska. Scheduled to be operational in 2006	Complete. 4 new reference stations were installed in Alaska in February 2005.
2005	Global Connectivity	Customer Results	Service Coverage	New Customers and Market	Promote cooperation	There are 23 bilateral	Add 1 additional country	Complete. The U.S. signed an

Performance Information Table								
Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
				Penetration	through the creation of bilateral international agreements with other nations on the use of GPS and its augmentations. This will encourage the use of GNSS and provide opportunities for American air carriers and industry	agreements today on use of GPS and its augmentation	cooperating with the United States on the use of GNSS. This improvement goal supports the DOT goal of global connectivity and the FAA goal of international leadership.	agreement with the European Union (E.U.) to cooperate on the use of GPS and Galileo the core components of GNSS. The E.U. is currently comprised of 25 member states.
2005	Safety	Mission and Business Results	Transportation	Air Transportation	Increase safety and capacity of the airspace by providing new vertically guided approaches	There are 7500 runway ends without vertical guidance	Add 100 LPV approach procedures to runways without an ILS. This improvement supports the DOT and FAA goals of increased safety, capacity, and mobility	Complete. In 2005, 101 new LPV procedures were published to runway ends without ILS.
2005	Safety	Processes and Activities	Financial (Processes and Activities)	Savings and Cost Avoidance	Cost avoidance by providing WAAS service at runway ends currently not served by ILS.	There are 7500 runway ends without vertical guidance	The cost savings of implementing an LPV approach instead of an ILS is approximately \$1 million per runway end; Resulting in over approximately \$100 million in cost savings.	Complete. In 2005, 101 new LPV procedures were published to runway ends without ILS.
2005	Organizational Excellence	Technology	Effectiveness	User Satisfaction	Demonstrate user satisfaction through sales of WAAS-enabled receivers	There are 205,000 aircraft without WAAS receivers	500 aircraft equipped with WAAS receivers	Complete. At the end of FY05, Garmin International (Avionics Manufacturer) reported over 1,000 WAAS receivers have been sold.
2006	Safety	Customer Results	Service Accessibility	Availability	Provide additional availability to customers by increasing the WAAS LPV signal availability	LPV service over 95% of the continental United States	Install 3 additional wide area reference stations (WRSS) in Canada and 2 WRSS in Mexico to increase coverage in northeast United States, southern Texas, and southern California. Scheduled to be operational in 2007	Completed in July 2006. Reference stations were installed in Canada (Goose Bay, Winnipeg, and Iqaluit) and Mexico (Merida and Puerto Vallarta)
2006	Global Connectivity	Customer Results	Service Coverage	New Customers and Market Penetration	Promote cooperation through the creation of bilateral international agreements with other nations on the use of GPS and its augmentations. This will encourage the use of GNSS and provide opportunities for American air carriers and	There are 24 bilateral agreements today on use of GPS and its augmentation	Add 1 additional country cooperating with the United States on the use of GNSS. This improvement goal supports the DOT goal of global connectivity and the FAA goal of international leadership.	Complete. Indian Certification Road Map for GAGAN on April 26, 2006.

Performance Information Table								
Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
2006	Safety	Mission and Business Results	Transportation	Air Transportation	Increase safety and capacity of the airspace by providing new vertically guided approaches	There will be 7400 runway ends without vertical guidance	Add 300 LPV approach procedures to runways without an ILS. This improvement supports the DOT and FAA goals of increased safety and mobility/capacity.	Incomplete. FAA was not able to meet the goal of publishing 300 LPV procedures at non-ILS runway ends due to lack of survey data. Production of survey data has been increased to meet 2007 goal.
2006	Safety	Processes and Activities	Financial (Processes and Activities)	Savings and Cost Avoidance	Cost avoidance by providing WAAS service at runway ends currently not served by ILS.	There are 7400 runway ends without vertical guidance	The cost savings of implementing an LPV approach instead of an ILS is approximately \$1 million per runway end, resulting in a cost savings of approximately \$200 million.	Incomplete. FAA was not able to meet the goal to publish 300 LPV procedures at non-ILS runway ends due to lack of survey data. Production of survey data has increased to meet 2007 goal.
2006	Organizational Excellence	Technology	Effectiveness	User Satisfaction	Demonstrate user satisfaction through sales of WAAS-enabled receivers	There are 204,000 aircraft without WAAS receivers	500 aircraft equipped with WAAS receivers	Complete. At the end of FY06, Garmin International (Avionics Manufacturer) reported over 3,100 WAAS receivers have been sold.
2007	Safety	Customer Results	Service Accessibility	Availability	Provide additional availability to customers by increasing the WAAS LPV signal availability	LPV service over 95% of the continental United States	Certify 2 additional wide area reference stations (WRSS) in Canada and 2 WRSS in Mexico for operational use to increase coverage in northeast United States, southern Texas, and southern California. Scheduled to be operational in 2007	On track. All reference stations have been installed. System modifications to integrate these stations are underway and scheduled to be complete in September 2007.
2007	Global Connectivity	Customer Results	Service Coverage	New Customers and Market Penetration	Promote cooperation through the creation of bilateral international agreements with other nations on the use of GPS and its augmentations. This will encourage the use of GNSS and provide opportunities for American air carriers and industry	There are 25 bilateral agreements today on use of GPS and its augmentation	Add 1 additional country cooperating with the United States on the use of GNSS. This improvement goal supports the DOT goal of global connectivity and the FAA goal of international leadership.	Signed Memorandum of Cooperation with Australia.
2007	Safety	Mission and Business Results	Transportation	Air Transportation	Increase safety and capacity of the airspace by providing new vertically guided approaches	There will be 7100 runway ends without vertical guidance	Add 300 LPV approach procedures to runways. This improvement supports the DOT and FAA goals of increased safety, capacity, and mobility	On track. As of June 7, 2007, 157 new LPV approaches have been commissioned. Current forecasts have 338 LPVs being completed in FY07.
2007	Safety	Processes and	Financial	Savings and	Cost avoidance	7100 runway	Add 300 LPV	On track. As of

Performance Information Table								
Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
		Activities	(Processes and Activities)	Cost Avoidance	by providing WAAS service at runway ends currently not served by ILS. The cost savings of implementing an LPV approach instead of an ILS is approximately \$1 million per runway end.	ends without vertical guidance	approach procedures to runways. This improvement supports the DOT and FAA goals of increased safety, capacity, and mobility	June 7, 2007, 157 new LPV approaches have been commissioned. Current forecasts have 338 LPBs being completed in FY07.
2007	Organizational Excellence	Technology	Effectiveness	User Satisfaction	Demonstrate user satisfaction through sales of WAAS-enabled receivers	There are 203,500 aircraft without WAAS receivers	500 aircraft equipped with WAAS receivers	Complete. As of March 1, 2007, Garmin International reported that over 4,400 WAAS receivers have been sold to date.
2008	Safety	Customer Results	Service Accessibility	Availability	Provide additional availability to customers by increasing the WAAS LPV signal availability	LPV service over 95% of the continental United States	Complete development and testing of Full LPV Capability WAAS to provide LPV service over 95% of the United States.	Planned to be complete by 9/08.
2008	Global Connectivity	Customer Results	Service Coverage	New Customers and Market Penetration	Promote cooperation through the creation of bilateral international agreements with other nations on the use of GPS and its augmentations. This will encourage the use of GNSS and provide opportunities for American air carriers and industry	There are 26 bilateral agreements today on use of GPS and its augmentation	Add 1 additional country cooperating with the United States on the use of GNSS. This improvement goal supports the DOT goal of global connectivity and the FAA goal of international leadership.	Planned to be complete by 9/08.
2008	Safety	Mission and Business Results	Transportation	Air Transportation	Increase safety and capacity of the airspace by providing new vertically guided approaches	There will be 6800 runway ends without vertical guidance	Add 300 LPV approach procedures to runways. This improvement supports the DOT and FAA goals of increased safety and mobility/capacity.	Planned to be complete by 9/08.
2008	Safety	Processes and Activities	Financial (Processes and Activities)	Savings and Cost Avoidance	Cost avoidance by providing WAAS service at runway ends currently not served by ILS.	6800 runway ends lack either an LPV or an ILS approach	The cost savings of implementing an LPV approach instead of an ILS is approximately \$1 million per runway end, resulting in a cost savings of approximately \$300 million.	Planned to be complete by 9/08.
2008	Organizational Excellence	Technology	Effectiveness	User Satisfaction	Demonstrate user satisfaction through sales of WAAS-enabled receivers	There are 203,000 aircraft without WAAS receivers	500 aircraft equipped with WAAS receivers	Planned to be complete by 9/08.
2009	Safety	Customer Results	Service Accessibility	Availability	Provide additional availability to customers by increasing the WAAS LPV signal availability	LPV service over 95% of the continental United States	Complete development and testing of Full LPV Capability WAAS to provide LPV service over 95% of the	Planned to be complete by 12/08.



Performance Information Table								
Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
							United States and 2/3 of Alaska.	
2009	Global Connectivity	Customer Results	Service Coverage	New Customers and Market Penetration	Promote cooperation through the creation of bilateral international agreements with other nations on the use of GPS and its augmentations. This will encourage the use of GNSS and provide opportunities for American air carriers and industry	There are 26 bilateral agreements today on use of GPS and its augmentation	Add 1 additional country cooperating with the United States on the use of GNSS. This improvement goal supports the DOT goal of global connectivity and the FAA goal of international leadership.	Planned to be complete by 09/09.
2009	Safety	Mission and Business Results	Transportation	Air Transportation	Increase safety and capacity of the airspace by providing new vertically guided approaches	There are 6500 runway ends without vertical guidance	Add 300 LPV approach procedures to runways. This improvement supports the DOT and FAA goals of increased safety, capacity, and mobility.	Planned to be complete by 09/09.
2009	Safety	Processes and Activities	Financial (Processes and Activities)	Savings and Cost Avoidance	Cost avoidance by providing WAAS service at runway ends currently not served by ILS.	There are 6500 runway ends without vertical guidance	The cost savings of implementing an LPV approach instead of an ILS is approximately \$1 million per runway end. A savings of over approximately \$300 million in cost savings.	Planned to be complete by 09/09.
2009	Organizational Excellence	Technology	Effectiveness	IT Contribution to Process, Customer, or Mission	Demonstrate user satisfaction through sales of WAAS-enabled receivers	There are 202,500 aircraft without WAAS receivers	500 aircraft equipped with WAAS receivers	Planned to be complete by 09/09.
2010	Safety	Customer Results	Service Accessibility	Availability	Provide additional availability to customers by increasing the WAAS LPV-200 signal availability.	LPV-200 availability over 95% of CONUS.	Upgrade WAAS reference stations.	Planned to be complete by 9/10.
2010	Global Connectivity	Customer Results	Service Coverage	New Customers and Market Penetration	Promote cooperation through the creation of bilateral international agreements with other nations on the use of GPS and its augmentations. This will encourage the use of GNSS and provide opportunities for American air carriers and industry.	There are 26 bilateral agreements today on use of GPS and its augmentation.	Add one additional country cooperating with the United States on the use of GNSS. This improvement goal supports the DOT goal of global connectivity and the FAA goal of international leadership.	Planned to be complete by 9/10.
2010	Safety	Mission and Business Results	Transportation	Air Transportation	Increase safety and capacity of the airspace by providing new vertically guided approaches.	There are 6,200 runway ends without vertical guidance.	Add 300 LPV approach procedures to runways. This improvement supports the DOT and FAA goals of increased safety,	Planned to be complete by 9/10

Performance Information Table								
Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
							capacity and mobility.	
2010	Safety	Processes and Activities	Financial (Processes and Activities)	Savings and Cost Avoidance	Cost avoidance by providing WAAS service at runway ends currently not served by ILS.	6200 runway ends lack either an LPV or an ILS approach.	The cost savings of implementing an LPV approach instead of an ILS is approximately \$1 million per runway end. A savings of over approximately \$300 million in cost savings.	Planned to be complete by 9/10.
2010	Organizational Excellence	Technology	Effectiveness	User Satisfaction	Demonstrate user satisfaction through sales of WAAS-enabled receivers.	There are 202,000 aircraft without WAAS receivers.	500 aircraft equipped with WAAS receivers.	Planned to be complete by 9/10.
2011	Safety	Customer Results	Service Accessibility	Availability	Provide additional availability to customers by increasing the WAAS LPV-200 signal availability.	LPV-200 availability over 95 % of the CONUS.	Integrate an additional geostationary satellite into the WAAS software.	Planned to be complete by 9/11.
2011	Global Connectivity	Customer Results	Service Coverage	New Customers and Market Penetration	Promote cooperation through the creation of bilateral agreements with other nations on the use of GPS and its augmentations. This will encourage the use of GNSS and provide opportunities for American air carriers and industry.	There are 27 bilateral agreements today on use of GPS and its augmentation.	Add 1 additional country cooperating with the United States on the use of GNSS. This improvement goal supports the DOT goal of global connectivity and the FAA goal of international leadership.	Planned to be complete by 9/11.
2011	Safety	Mission and Business Results	Transportation	Air Transportation	Increase safety and capacity of the airspace by providing new vertically guided approaches.	There are 5900 runway ends without vertical guidance.	Add 300 LPV approach procedures to runways. This improvement supports the DOT and FAA goals of increased safety, capacity and mobility.	Planned to be complete by 9/11.
2011	Safety	Processes and Activities	Financial (Processes and Activities)	Savings and Cost Avoidance	Cost avoidance by providing WAAS service at runway ends currently not served by ILS.	5900 runway ends lack either an LPV or an ILS approach.	The cost savings of implementing an LPV approach instead of an ILS is approximately \$1 million per runway end. A savings of over approximately \$300 million in cost savings.	Planned to be complete by 9/11.
2011	Organizational Excellence	Technology	Effectiveness	IT Contribution to Process, Customer, or Mission	Demonstrate user satisfaction through sales of WAAS-enabled receivers.	There are 201,500 aircraft without WAAS receivers.		Planned to be complete by 9/11.
2012	Safety	Customer Results	Service Accessibility	Availability	Provide additional availability to customers by increasing the WAAS LPV-200 signal availability.	LPV-200 availability over 95% of CONUS.	Upgrade the WAAS safety computers.	Planned to be complete by 9/12.
2012	Global Connectivity	Customer Results	Service Coverage	New Customers and Market Penetration	Promote cooperation through the creation of bilateral	There are 29 bilateral agreements today on use of GPS and its	Add 1 additional country cooperating with the United States on the	Planned to be complete by 9/12.

Performance Information Table								
Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
					international agreements with other nations on the use of GPS and its augmentations. This will encourage the use of GNSS and provide opportunities for American air carriers and industry.	augmentation.	use of GNSS. This improvement goal supports the DOT goal of global connectivity and the FAA goal of international leadership.	
2012	Safety	Mission and Business Results	Transportation	Air Transportation	Increase safety and capacity of the airspace by providing new vertically guided approaches.	There are 5600 runway ends without vertical guidance.	Add 300 LPV approach procedures to runways. This improvement supports the DOT and FAA goals of increased safety, capacity and mobility.	Planned to be complete by 9/12.
2012	Safety	Processes and Activities	Financial (Processes and Activities)	Savings and Cost Avoidance	Cost avoidance by providing WAAS service at runway ends currently not served by ILS.	5600 runway ends lack either an LPV or an ILS approach.	The cost savings of implementing an LPV approach instead of an ILS is approximately \$1 million per runway end. A savings of over approximately \$300 million.	Planned to be complete by 9/12.
2012	Organizational Excellence	Technology	Effectiveness	User Satisfaction	Demonstrate user satisfaction through sales of WAAS-enabled receivers.	There are 201,000 aircraft without WAAS receivers.	500 aircraft equipped with WAAS receivers.	Planned to be complete by 9/12.
2013	Safety	Customer Results	Service Accessibility	Availability	Provide additional availability to customers by increasing the WAAS LPV-200 signal availability.	LPV-200 availability over 95% of CONUS.	Complete WAAS availability and continuity upgrade.	Planned to be complete by 9/13.
2013	Global Connectivity	Customer Results	Service Coverage	New Customers and Market Penetration	Promote cooperation through the creation of bilateral international agreements with other nations on the use of GPS and its augmentations. This will encourage the use of GNSS and provide opportunities for American air carriers and industry.	There are 29 bilateral agreements today on use of GPS and its augmentation.	Add 1 additional country cooperating with the United States on the use of GNSS. This improvement goal supports the DOT goal of global connectivity and the FAA goal of international leadership.	Planned to be complete by 9/13.
2013	Safety	Mission and Business Results	Transportation	Air Transportation	Increase safety and capacity of the airspace by providing new vertically guided approaches.	There are 5300 runway ends without vertical guidance.	Add 300 LPV approach procedures to runways. This improvement supports the DOT and FAA goals of increased safety, capacity and mobility.	Planned to be complete by 9/13.
2013	Safety	Processes and Activities	Financial (Processes and Activities)	Savings and Cost Avoidance	Cost avoidance by providing WAAS service at runway ends currently not served by ILS. The cost savings	5300 runway ends lack either an LPV or an ILS approach.	The cost savings of implementing an LPV approach instead of an ILS is approximately \$1 million per runway end. A	Planned to be complete by 9/13.

Performance Information Table								
Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
					of implementing an LPV approach instead of an ILS is approximately \$1 million per runway end.		savings of over approximately \$300 million.	
2013	Organizational Excellence	Technology	Effectiveness	User Satisfaction	Demonstrate user satisfaction through sales of WAAS-enabled receivers.	There are 200,500 aircraft without WAAS receivers.	500 aircraft equipped with WAAS receivers.	Planned to be complete by 9/13.

**Section E: Security and Privacy (IT Capital Assets only)**

In order to successfully address this area of the business case, each question below must be answered at the system/application level, not at a program or agency level. Systems supporting this investment on the planning and operational systems security tables should match the systems on the privacy table below. Systems on the Operational Security Table must be included on your agency FISMA system inventory and should be easily referenced in the inventory (i.e., should use the same name or identifier).

For existing Mixed-Life Cycle investments where enhancement, development, and/or modernization is planned, include the investment in both the "Systems in Planning" table (Table 3) and the "Operational Systems" table (Table 4). Systems which are already operational, but have enhancement, development, and/or modernization activity, should be included in both Table 3 and Table 4. Table 3 should reflect the planned date for the system changes to be complete and operational, and the planned date for the associated C&A update. Table 4 should reflect the current status of the requirements listed. In this context, information contained within Table 3 should characterize what updates to testing and documentation will occur before implementing the enhancements; and Table 4 should characterize the current state of the materials associated with the existing system.

All systems listed in the two security tables should be identified in the privacy table. The list of systems in the "Name of System" column of the privacy table (Table 8) should match the systems listed in columns titled "Name of System" in the security tables (Tables 3 and 4). For the Privacy table, it is possible that there may not be a one-to-one ratio between the list of systems and the related privacy documents. For example, one PIA could cover multiple systems. If this is the case, a working link to the PIA may be listed in column (d) of the privacy table more than once (for each system covered by the PIA).

The questions asking whether there is a PIA which covers the system and whether a SORN is required for the system are discrete from the narrative fields. The narrative column provides an opportunity for free text explanation why a working link is not provided. For example, a SORN may be required for the system, but the system is not yet operational. In this circumstance, answer "yes" for column (e) and in the narrative in column (f), explain that because the system is not operational the SORN is not yet required to be published.

Please respond to the questions below and verify the system owner took the following actions:

1. Have the IT security costs for the system(s) been identified Yes and integrated into the overall costs of the investment:
  - a. If "yes," provide the "Percentage IT Security" for the 1.50 budget year:
2. Is identifying and assessing security and privacy risks a part Yes of the overall risk management effort for each system supporting or part of this investment.

3. Systems in Planning and Undergoing Enhancement(s), Development, and/or Modernization - Security Table(s):			
Name of System	Agency/ or Contractor Operated System?	Planned Operational Date	Date of Planned C&A update (for existing mixed life cycle systems) or Planned Completion Date (for new systems)
Redacted			

4. Operational Systems - Security Table:hbhgkhh							
Name of System	Agency/ or Contractor Operated System?	NIST FIPS 199 Risk Impact level (High, Moderate, Low)	Has C&A been Completed, using NIST 800-37? (Y/N)	Date Completed: C&A	What standards were used for the Security Controls tests? (FIPS 200/NIST 800-53, Other, N/A)	Date Complete(d): Security Control Testing	Date the contingency plan tested
Redacted							

5. Have any weaknesses, not yet remediated, related to any of No the systems part of or supporting this investment been identified by the agency or IG?

a. If "yes," have those weaknesses been incorporated into the agency's plan of action and milestone process?

6. Indicate whether an increase in IT security funding is requested to remediate IT security weaknesses? Redacted

a. If "yes," specify the amount, provide a general description of the weakness, and explain how the funding request will remediate the weakness.

7. How are contractor security procedures monitored, verified, and validated by the agency for the contractor systems above?

Redacted

8. Planning & Operational Systems - Privacy Table:					
(a) Name of System	(b) Is this a new system? (Y/N)	(c) Is there at least one Privacy Impact Assessment (PIA) which covers this system? (Y/N)	(d) Internet Link or Explanation	(e) Is a System of Records Notice (SORN) required for this system? (Y/N)	(f) Internet Link or Explanation
Wide Area Augmentation System-Operational Systems BY09	No	No	No, because the system does not contain, process, or transmit personal identifying information and a PIA is not required to be completed at this time.	No	No, because the system is not a Privacy Act system of records.
Wide Area Augmentation System-Planning Systems BY09	No	No	No, because the system does not contain, process, or transmit personal identifying information and a PIA is not required to be completed at this time.	No	No, because the system is not a Privacy Act system of records.

**Details for Text Options:**  
 Column (d): If yes to (c), provide the link(s) to the publicly posted PIA(s) with which this system is associated. If no to (c), provide an explanation why the PIA has not been publicly posted or why the PIA has not been conducted.  
 Column (f): If yes to (e), provide the link(s) to where the current and up to date SORN(s) is published in the federal register. If no to (e), provide an explanation why the SORN has not been published or why there isn't a current and up to date SORN.  
 Note: Working links must be provided to specific documents not general privacy websites. Non-working links will be considered as a blank field.

**Section F: Enterprise Architecture (EA) (IT Capital Assets only)**

In order to successfully address this area of the capital asset plan and business case, the investment must be included in the agency's EA and Capital Planning and Investment Control (CPIC) process and mapped to and supporting the FEA. The business case must demonstrate the relationship between the investment and the business, performance, data, services, application, and technology layers of the agency's EA.

1. Is this investment included in your agency's target enterprise architecture? Yes

a. If "no," please explain why?

2. Is this investment included in the agency's EA Transition Strategy? Yes

a. If "yes," provide the investment name as identified in the Transition Strategy provided in the agency's most recent annual EA Assessment. Wide Area Augmentation System (WAAS) as noted in the DOT Transition Strategy February 2007, page 145 - 160.

b. If "no," please explain why?

3. Is this investment identified in a completed (contains a target architecture) and approved segment architecture? Yes

a. If "yes," provide the name of the segment architecture as provided in the agency's most recent annual EA Assessment. Air Traffic

4. Service Component Reference Model (SRM) Table:								
Identify the service components funded by this major IT investment (e.g., knowledge management, content management, customer relationship management, etc.). Provide this information in the format of the following table. For detailed guidance regarding components, please refer to <a href="http://www.egov.gov">http://www.egov.gov</a> .								
Agency Component Name	Agency Component Description	FEA SRM Service Domain	FEA SRM Service Type	FEA SRM Component (a)	Service Component Reused Name (b)	Service Component Reused UPI (b)	Internal or External Reuse? (c)	BY Funding Percentage (d)
Airborne	NAS provides	Business	Visualization	Mapping /			No Reuse	89

4. Service Component Reference Model (SRM) Table:								
Identify the service components funded by this major IT investment (e.g., knowledge management, content management, customer relationship management, etc.). Provide this information in the format of the following table. For detailed guidance regarding components, please refer to <a href="http://www.egov.gov">http://www.egov.gov</a> .								
Agency Component Name	Agency Component Description	FEA SRM Service Domain	FEA SRM Service Type	FEA SRM Component (a)	Service Component Reused Name (b)	Service Component Reused UPI (b)	Internal or External Reuse? (c)	BY Funding Percentage (d)
Guidance	signals in space, through space-based mechanisms and ground-based aids, for point-in-space navigation through a variety of operating environments. These environments include structured routes, random routings, and transitions. Guidance is provided for position determination in both vertical and lateral planes in all phases of flight. Visual NAVAIDS provide approach and landing guidance to aircraft in addition to electronic type NAVAIDS. (NAS Navigation)	Analytical Services		Geospatial / Elevation / GPS				
Airborne Guidance	NAS provides signals in space, through space-based mechanisms and ground-based aids, for point-in-space navigation through a variety of operating environments. These environments include structured routes, random routings, and transitions. Guidance is provided for position determination in both vertical and lateral planes in all phases of flight. Visual NAVAIDS provide approach and landing guidance to aircraft in addition to electronic type NAVAIDS. (NAS Navigation)	Digital Asset Services	Knowledge Management	Information Sharing			No Reuse	11

a. Use existing SRM Components or identify as "NEW". A "NEW" component is one not already identified as a service component in the FEA SRM.

b. A reused component is one being funded by another investment, but being used by this investment. Rather than answer

yes or no, identify the reused service component funded by the other investment and identify the other investment using the Unique Project Identifier (UPI) code from the OMB Ex 300 or Ex 53 submission.

c. 'Internal' reuse is within an agency. For example, one agency within a department is reusing a service component provided by another agency within the same department. 'External' reuse is one agency within a department reusing a service component provided by another agency in another department. A good example of this is an E-Gov initiative service being reused by multiple organizations across the federal government.

d. Please provide the percentage of the BY requested funding amount used for each service component listed in the table. If external, provide the percentage of the BY requested funding amount transferred to another agency to pay for the service. The percentages in the column can, but are not required to, add up to 100%.

**5. Technical Reference Model (TRM) Table:**  
 To demonstrate how this major IT investment aligns with the FEA Technical Reference Model (TRM), please list the Service Areas, Categories, Standards, and Service Specifications supporting this IT investment.

FEA SRM Component (a)	FEA TRM Service Area	FEA TRM Service Category	FEA TRM Service Standard	Service Specification (b) (i.e., vendor and product name)
Information Sharing	Service Access and Delivery	Access Channels	Other Electronic Channels	Redacted
Information Sharing	Service Access and Delivery	Service Requirements	Legislative / Compliance	Redacted
Mapping / Geospatial / Elevation / GPS	Service Platform and Infrastructure	Hardware / Infrastructure	Local Area Network (LAN)	Redacted
Mapping / Geospatial / Elevation / GPS	Service Platform and Infrastructure	Hardware / Infrastructure	Network Devices / Standards	Redacted
Mapping / Geospatial / Elevation / GPS	Service Platform and Infrastructure	Hardware / Infrastructure	Network Devices / Standards	Redacted
Mapping / Geospatial / Elevation / GPS	Service Platform and Infrastructure	Hardware / Infrastructure	Network Devices / Standards	Redacted
Mapping / Geospatial / Elevation / GPS	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Redacted
Information Sharing	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	Redacted
Mapping / Geospatial / Elevation / GPS	Service Platform and Infrastructure	Support Platforms	Platform Dependent	Redacted

a. Service Components identified in the previous question should be entered in this column. Please enter multiple rows for FEA SRM Components supported by multiple TRM Service Specifications

b. In the Service Specification field, agencies should provide information on the specified technical standard or vendor product mapped to the FEA TRM Service Standard, including model or version numbers, as appropriate.

6. Will the application leverage existing components and/or applications across the Government (i.e., FirstGov, Pay.Gov, etc)? No

a. If "yes," please describe.

**Exhibit 300: Part II: Planning, Acquisition and Performance Information**

**Section A: Alternatives Analysis (All Capital Assets)**

Part II should be completed only for investments identified as "Planning" or "Full Acquisition," or "Mixed Life-Cycle" investments in response to Question 6 in Part I, Section A above.

In selecting the best capital asset, you should identify and consider at least three viable alternatives, in addition to the current baseline, i.e., the status quo. Use OMB Circular A-94 for all investments and the Clinger Cohen Act of 1996 for IT investments to determine the criteria you should use in your Benefit/Cost Analysis.

- 1. Did you conduct an alternatives analysis for this project? Yes
  - a. If "yes," provide the date the analysis was completed? 6/29/2007
  - b. If "no," what is the anticipated date this analysis will be completed?
  - c. If no analysis is planned, please briefly explain why:

2. Alternative Analysis Results: \* Costs in millions  
 Use the results of your alternatives analysis to complete the following table:

Alternative Analyzed	Description of Alternative	Risk Adjusted Lifecycle Costs estimate	Risk Adjusted Lifecycle Benefits estimate
Redacted			

3. Which alternative was selected by the Agency's Executive/Investment Committee and why was it chosen?

Redacted

4. What specific qualitative benefits will be realized?

Redacted

5. Will the selected alternative replace a legacy system in-part No or in-whole?

a. If "yes," are the migration costs associated with the migration to the selected alternative included in this investment, the legacy investment, or in a separate migration investment.

b. If "yes," please provide the following information:

List of Legacy Investment or Systems		
Name of the Legacy Investment of Systems	UPI if available	Date of the System Retirement

**Section B: Risk Management (All Capital Assets)**

You should have performed a risk assessment during the early planning and initial concept phase of this investment's life-cycle, developed a risk-adjusted life-cycle cost estimate and a plan to eliminate, mitigate or manage risk, and be actively managing risk throughout the investment's life-cycle.

- 1. Does the investment have a Risk Management Plan? Yes
  - a. If "yes," what is the date of the plan? 5/13/2007
  - b. Has the Risk Management Plan been significantly changed since last year's submission to OMB? Yes
  - c. If "yes," describe any significant changes:

WAAS has a proactive iCMM level 3 capable risk management process in compliance with the FAA's Acquisition Management System. The methodology focuses on mitigation of risks versus assumption and consists of identifying risks before they become critical; analyzing risk data to determine probability and impact to the program; proactively handling the risks by building mitigation plans to reduce, eliminate, or transfer the risks; incorporating mitigations into risk adjusted cost estimates and program schedules, and monitoring risk status and tracking mitigation plans throughout the risk lifecycle. Our risk identification methods are team initiation, quarterly risk inquiries, and semi-annual independent risk assessments. WAAS tracks and documents risk information utilizing the Automated Risk Management System (ARMS). ARMS supports metric analysis and measurement of the performance and quality of work performed. A monthly report provides status and risk activity. Risk Management Board meetings are held periodically to brief the current risk items. ARMS permits entering risks as they are identified, attaching both risk owner and subject matter expert for each risk, quantifying and prioritizing them, and documenting



the required risk information. It is also a risk archive storing previous risks, activities strategies performed to close them, and lessons learned. WAAS employs the Satellite Navigation Automated Program Information Tool (SNAPIT) to combine contractor provided and government status data and facilitate review and analysis of contractor and government performance. These analyses identify potential problem areas and surface them to management for corrective action. Cost and schedule reserves have been identified and evaluated. Risks for the added useful segments were identified for a Joint Resources Council decision and are being evaluated. Lessons learned from ARMS are also reviewed and cost and schedule related mitigations are continually evaluated.

Part of the FAA's improvement plan for the Facility's PART review is to develop better internal financial management standards and controls. WAAS program has mitigated this risk by implementing EVM program wide and completing the ANSI/EIA 748 EVM guideline's compliance.

TABLE II.C-Changes in past milestone costs from BY08 version are result of diff. btwn. '08 planned costs in '04 baseline + '08 President's budget subm. Change in planned costs for segment '04-08 is less than 10% of funds approved

2. If there currently is no plan, will a plan be developed?

- a. If "yes," what is the planned completion date?
- b. If "no," what is the strategy for managing the risks?

3. Briefly describe how investment risks are reflected in the life cycle cost estimate and investment schedule:

In order to calculate the risk adjusted estimates a thorough risk assessment was conducted for all WAAS life cycle activities. The cost and schedule impact of each identified risk was either fully absorbed or a mitigation identified and costed out. These risks and associated costs and schedule impact were documented and included in the WAAS cost basis of estimate. The inclusion of risk in the cost basis of estimate follows a 3 step process. First, the calculation of the most likely cost is made as an initial point estimate. Second, all mitigation activities are costed out and added to the initial point estimate. Third, a statistical model is established for yet unidentified risks based on accepted program management practices. Cost and schedule risk is modeled using @RISK.

The principal risks are associated with GEO satellite deployment, Ground Uplink Station development, the completion of LPV development, and technology refresh. All these activities fall under F&E. The OPS activities are well-defined and the costs are bounded. There are no additional funds allocated to management reserve.

The total life-cycle funds, all F&E, that are allocated to risk mitigation total \$67.7M in constant-year FY07 dollars. The total funds allocated to risk adjustment to bring the confidence-level to the 80th percentile is an additional \$67.5M in constant-year FY07 dollars. The combined total risk allocation amounts to 7% of the total life-cycle budget. The next SCAP update will be conducted in 2009 and in 2012.

### **Section C: Cost and Schedule Performance (All Capital Assets)**

EVM is required only on DME portions of investments. For mixed lifecycle investments, O&M milestones should still be included in the table (Comparison of Initial Baseline and Current Approved Baseline). This table should accurately reflect the milestones in the initial baseline, as well as milestones in the current baseline.

1. Does the earned value management system meet the criteria in ANSI/EIA Standard-748? Yes

2. Is the CV% or SV% greater than +/- 10%? (CV%= CV/EV x 100; SV%= SV/PV x 100) No

- a. If "yes," was it the CV or SV or both?
- b. If "yes," explain the causes of the variance:
- c. If "yes," describe the corrective actions:

3. Has the investment re-baselined during the past fiscal year? No

a. If "yes," when was it approved by the agency head?

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in \$ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost (\$M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost (\$M)		Schedule (# days)	Cost (\$M)	
				Planned	Actual	Planned	Actual			
Redacted										