

## **PERFORMANCE REPORTING AND PLANNING**

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NASA leverages the reporting phase of its performance management cycle to bring actionable information to Agency decision-makers and to inform future plans. This section demonstrates that the integration of performance reporting and performance planning information provides insights to NASA leaders to enhance overall performance management. The combined performance report and plans include NASA's FY 2012 Performance Report, updates to the FY 2013 Performance Plan that was provided with the FY 2013 Congressional Justification in February 2012, and the new FY 2014 Performance Plan aligned with the current budget request.

### **Past to Future: Improved Performance Planning and Reporting**

For over a decade, NASA kept performance planning and reporting as separate activities and published them as separate documents. Performance planning was part of budget formulation and execution, resulting with the concurrent publication of annual performance plan and Congressional Justification in February. NASA conducted performance reporting independently at the end of the fiscal year and published the results with the end-of-fiscal year financial statements in November.

Starting in FY 2013, Office of Management and Budget (OMB) Circular A-11 requires agencies to combine their Annual Performance Reports (APRs) and Annual Performance Plans (APPs). NASA elected to combine the APR and APP in FY 2012 to take advantage of the benefits of an integrated, yearlong process while also having more time to adjust to the new requirements. This combined reporting format better aligns with NASA's performance management cycle. NASA holds performance improvement discussions in tandem with performance planning so that measures for upcoming fiscal years are informed by past and current performance. This is helping NASA create better performance measures and conduct relevant assessments of programs and projects by improving baselines, targets or outcomes, and trending. As NASA looks beyond FY 2014, the Agency will leverage performance improvement to aid the development of a new strategic plan, which will be released with the FY 2015 Congressional Justification.

### **Measuring Against Priorities**

In accordance with GPRAMA and a White House initiative for building a high-performing government, NASA works with other Federal agencies to address national needs through its contributions to several Cross-Agency Priority (CAP) Goals. In addition, NASA's own Priority Goals represent challenging, near-term targets that the Agency pursues to benefit the American people in the areas of human exploration, planetary science, and space technology.

### **CROSS-AGENCY PRIORITY GOALS**

Per the GPRA Modernization Act requirement, Federal agencies address CAP Goals in their strategic plans, annual performance plans, and the annual performance reports. NASA currently contributes to the following CAP Goals:

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- Science, Technology, Engineering, and Math (STEM) Education: In support of the President's goal that the U.S. have the highest proportion of college graduates in the world by 2020, the Federal Government will work with education partners to improve the quality of science, technology, engineering and math (STEM) education at all levels to help increase the number of well-prepared graduates with STEM degrees by one-third over the next 10 years, resulting in an additional 1 million graduates with degrees in STEM subjects.
- Data Center Consolidation: Improve IT service delivery, reduce waste and save \$3 billion in taxpayer dollars by closing at least 1200 data centers by fiscal year 2015.
- Cybersecurity: Achieve 95% use of critical cybersecurity capabilities on federal executive branch information systems by 2014, including strong authentication, Trusted Internet Connections (TIC), and Continuous Monitoring.
- Sustainability: By 2020, the Federal Government will reduce its direct greenhouse gas emissions by 28 percent and will reduce its indirect greenhouse gas emissions by 13 percent by 2020 (from 2008 baseline).
- Entrepreneurship and Small Business: Increase federal services to entrepreneurs and small businesses with an emphasis on 1) startups and growing firms and 2) underserved markets.
- Strategic Sourcing: Reduce the costs of acquiring common products and services by agencies' strategic sourcing of at least two new commodities or services in both 2013 and 2014, that yield at least a 10 percent savings.
- Closing Skills Gaps: Close critical skills gaps in the Federal workforce to improve mission performance. By September 30, 2013, close the skills gaps by 50 percent for 3 to 5 critical Federal Government occupations or competencies, and close additional agency-specific high risk occupation and competency gaps.
- Energy Efficiency: Reduce Energy Intensity (energy demand/\$ real GDP) 50 percent by 2035 (2010 as base year).

Please refer to <http://www.Performance.gov> for NASA's and the lead agency's contributions and progress to these goals, where applicable.

### NASA'S PRIORITY GOALS

In FY 2010, NASA developed and began reporting on a quarterly basis on five Priority Goals.<sup>1</sup> In FY 2012, NASA completed three Priority Goals begun in FY 2010, outlined in the table below. The other two goals were completed in FY 2011. NASA rated this first set of goals under the criteria used by the Agency for all of its performance goals, and the final ratings and rationale are provided below. NASA selected four new Priority Goals in February 2012. These are reviewed through a separate process, which is used government-wide. More information on this latter set of goals can be found below and at <http://goals.performance.gov/agency/nasa>.

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<sup>1</sup> When originally published, these goals were designated as High Priority Performance Goals. The GPRA Modernization Act of 2010 and subsequent guidance from OMB changed the designation to Agency Priority Goals.

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### AGENCY PRIORITY GOALS RETIRED IN FY 2012

Retired Agency Priority Goal	Responsible Organization	Rating
PG 2.1.5.2 (Priority): Study Earth from space to understand climate change, weather, and human impact on our planet by launching at least two missions by 2015.	Science Mission Directorate, Earth Science	Red
PG 1.1.1.2 (Priority): Safely fly out the Space Shuttle manifest and retire the fleet.	Human Exploration Operations Mission Directorate, Space Shuttle Program	Green
PG 4.1.2.1 (Priority): Increase efficiency and throughput of aircraft operations during arrival phase of flight.	Aeronautics Research Mission Directorate, Airspace Systems	Green

In FY 2012, NASA closed out three FY 2010 Priority Goals. NASA completed all milestones, with the exception of a loss of one of the two Earth Science missions that had been planned, due to a launch vehicle failure in FY 2011. In 2012, NASA successfully launched the second mission, the [NPOESS Preparatory Project \(NPP\)](#), which has been renamed the Suomi National Polar Orbiting Partnership (Suomi NPP), and completed the on-orbit checkout to close out the activities planned for that goal. Suomi NPP will extend key climate measurements begun by NASA's Earth Observing System for the climate research and applications communities. As originally planned, Suomi NPP also will provide a pre-operational demonstration mission for validation and risk reduction for the National Polar Orbiting Environmental Satellite System (NPOESS), which was being developed by NOAA, the Department of Defense (DoD) and NASA. NPOESS has been reformulated and is now the Joint Polar Satellite System (JPSS), being developed by the National Oceanic and Atmospheric Administration (NOAA) and NASA. In addition, because of the delays in NPOESS that led to the creation of JPSS, there is a possibility of a gap in some of the Nation's operational weather prediction capabilities. As a result, until the first JPSS satellite is launched and brought on line in 2016-2017, Suomi NPP sensor data and data products will serve as an essential gap-filler in the Nation's satellite observational systems for civil and military operational weather prediction.

NASA worked throughout FY 2012 with each of the museums and centers designated to receive one of the retired [Space Shuttle](#) fleet and completed plans to transfer the orbiters. On April 18, 2012, NASA delivered Space Shuttle Discovery to the National Air and Space Museum's Udvar-Hazy Center in Chantilly, Virginia. Space Shuttle Enterprise, which had been on display at Udvar-Hazy, was moved to the John F. Kennedy International Airport on April 27. NASA placed the orbiter on a barge and sailed it to a temporary display location on the deck of the Intrepid at Pier 87 in New York City on July 19. NASA delivered Space Shuttle Endeavour to Los Angeles International Airport on September 21, and placed it in its final resting place at the California Science Center. The Space Shuttle Atlantis was moved to its final display location at the Kennedy Space Center Visitor Center in November 2012.

Current air traffic control operations require an air traffic controller to generate and provide clearances manually (that include path and speeds) so aircraft can arrive at an established point on a route, and time-regulate entry into an airport's terminal area, at a scheduled time during the arrival phase of flight. The manual process often results in inefficient paths for an aircraft's flight and descent (particularly during higher traffic density operations) restricting the number of aircraft that can be processed for arrival operations, while increasing noise and fuel consumption. Success was seen in FY 2011 when NASA's

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[Airspace Systems Program](#) field-tested the Efficient Descent Advisor (EDA) tool that proposes to the air traffic controller the speed and path changes that will allow an efficient arrival profile. Building on this success in FY 2012, NASA officially transferred the results of its research to the Federal Aviation Administration for further evaluation and potential operational use as part of a more widespread government effort to modernize the Nation’s air traffic control system.

### NASA’s FY 2012-FY 2013 PRIORITY GOALS

Agency Priority Goal	Responsible Organization
Sustain operations and full utilization of the International Space Station (ISS).	Human Exploration Operations Directorate, International Space Station Program
Develop the Nation’s next generation Human Space Flight (HSF) system to allow for travel beyond low Earth orbit (LEO).	Human Exploration Operations Directorate, Exploration Systems Division
Use the Mars Science Laboratory Curiosity Rover to explore and quantitatively assess a local region on the surface of Mars as a potential habitat for life, past or present.	Science Mission Directorate, Mars Exploration Program
Enable bold new missions and make new technologies available to government Agencies and U.S. industry.	Office of the Chief Technologist

In FY 2012, NASA made significant progress toward achieving all of the Agency Priority Goals. A brief summary of progress is provided below, and more details found at <http://goals.performance.gov/agency/nasa>.

The [International Space Station \(ISS\)](#) is a major steppingstone in achieving NASA’s exploration goals across the solar system. The ISS provides a space-based research and technology development laboratory to safely perform multidisciplinary, cutting-edge research. In FY 2012, the laboratory had on-going operations and research activities. The demonstration of the delivery of supplies from a U.S. commercial provider for the first time since the laboratory was in service marked a groundbreaking success.

In line with the [NASA Authorization Act of 2010 \(P.L. 111-267\)](#), NASA is moving ahead with a deep space exploration program designed to carry human beings beyond low Earth orbit. This goal focuses on ensuring these programs finalize cross-program requirements and meet their milestone reviews in order to realize the long-term goal. In FY 2012, NASA successfully completed an integrated Systems Requirements Review for the combined Exploration Systems Development portfolio of the Orion Multi-Purpose Crew Vehicle (MPCV), the Space Launch System (SLS), and ground systems capabilities.

The [Mars Science Laboratory \(MSL\)](#) successfully reached Mars on August 5, 2012, after an eight-month trip from Earth. MSL has the overall science objective of exploring and quantitatively assessing a local region on the surface of Mars as a potential habitat for life, past or present, and is expected to remain active for one Mars year, or 687 days.

Through continued investment in technology, NASA is able to achieve increasingly challenging and complex science, exploration, and aeronautics mission goals, many of which will have direct public benefit through [technology transfer](#). This past fiscal year, NASA exceeded its goal of 1,990 technology-related products with 2,948 new products. These products include New Technology Reports, software

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usage agreements, new patent applications filed, patent licenses executed, and NASA Technology Mission Use Documents. These products represent the important first steps in the process of infusing them back into NASA's work and transferring them to U.S. industry.

### **Changes to NASA's Performance Plans**

Each fiscal year, NASA's budget request to Congress contains an annual performance plan that aligns with the funds requested. Changes to a performance plan are generally reflected in the next year's budget request, if the change is known before the request is sent to Congress. If a change occurs after, then it is reflected in the annual performance report. NASA updates measures in the plan when the final appropriation differs from the amount requested, or if Congressional or Executive direction places a different emphasis on programs relative to what was initially requested. Additionally, the dynamic nature of research and development can lead to shifting priorities. This may result in NASA no longer pursuing activities originally identified in the annual performance plan or placing greater emphasis on another activity.

NASA's policy has been to allow one of the following actions if programs are impacted by Congressional budget action via an appropriations or authorization law or Executive direction places a different emphasis on programs:

- Eliminate the performance measure (do not rate the performance measure);
- Change the targeted performance (rate at the new target); or
- Move the measure to the next year's annual performance plan (do not rate until the following year).

If priorities have shifted due to the dynamic nature of research and development, and the activity is no longer pursued, NASA generally retains the measure and does not reduce the target, but rather reflects this via a White rating. If emphasis is shifted onto a program for which there was no measure, NASA may choose to add a measure and rate it, to reflect the priority of that activity. Details on NASA's rating scales and criteria are in the Management and Performance Overview.

### **CHANGES TO THE FY 2012 PERFORMANCE PLAN**

NASA corrected one annual performance goal in the FY 2012 Performance Plan and assigned White ratings to three measures. NASA justifies these performance plan changes below.

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Corrected Measure	Budget Account/ Program	Correction Made
5.4.1.2: SFS-12-3: Incorporate information sharing processes into <del>programmatic</del> policies and incorporate into crew demonstration addressing new entrant launch vehicle certification activities and future crew space transportation service contracts.	Human Exploration and Operations/ Launch Services	NASA updated the measure to reflect that the reference to crew space transportation partner information sharing, which would include other U.S. Government agencies, was incorrect, since none beyond NASA have crewed space flight. NASA's Launch Services Program partnership with the Department of Defense for space transportation is focused on launch vehicle certification of non-crewed flights, to the benefit of both organizations. NASA rated the measure after making the correction.

Measure Rated White	Budget Account/ Program	Rating Justification
2.4.2.2: JWST-12-1: Begin integration of James Webb Space Telescope (JWST) flight optics into Optical Telescope Element (OTE).	Science/ James Webb Space Telescope	The JWST Program replanning process resulted in a schedule revision that changed the milestone encapsulated in the FY 2012 measure. In the final review of the updated performance plan, NASA inadvertently missed correcting this measure to reflect the replan. The JWST Program continues to be on-track toward its revised plan.
6.3.1.1: AMO-12-20: Issue a competitive opportunity to engage the public in NASA's activities.	Cross Agency Support/ Agency Management & Operations	The original plan was for NASA to use the April 2012 OpenGov International Apps Challenge as the venue for a competitive opportunity for participatory engagement of the public. In 2012, the Office of Communications management determined that the participatory engagement resources would be better focused on leveraging other existing activities and redirected the funds planned for the competitive opportunity.

### FY 2013 PERFORMANCE PLAN UPDATE

NASA submitted the FY 2013 Performance Plan with its FY 2013 Congressional Justification in February 2012. Since then, several factors, including typographical or other inaccuracies and changes to NASA's budget structure, have made it necessary to update the plan. Additionally, NASA's review of the FY 2013 and FY 2014 performance plans, within the context of performance trends seen for reported year of FY 2012 and spanning backward for up to five years, revealed several areas for improved and streamlined measurement. Specifically, NASA added several annual measures into the FY 2013 plan to ensure that both NASA and the public can see the trend from the past into future performance for key program areas.

NASA corrected nine annual performance goals after NASA published them in the FY 2013 Congressional Justification in February 2012. The table below provides the details of those corrections.

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Corrected Measure	Budget Account/ Program	Correction Made
APG 2.4.2.2: JWST-13-1: <del>Initiate James Webb Space Telescope Backplane Support Frame Assembly. Deliver James Webb Space Telescope Near Infrared Camera to Integrated Science Instrument Module (ISIM) Integration and Test.</del>	Science/ James Webb Space Telescope	The JWST Program replanning process resulted in a schedule revision that changed the milestone encapsulated in the FY 2013 measure. In the final review of the updated performance plan, NASA inadvertently missed correcting this measure to reflect the replan. The JWST Program continues to be on-track toward its revised plan.
APG ST-13-1: Research, study, or develop concepts for <del>400</del> 120 technologies as documented in technology reports or plans.	Space Technology/ Crosscutting Space Technology Development	NASA increased the FY 2013 target based on the FY 2012 actual of 110 technologies documented in reports and plans and the anticipated number for FY 2013.
APG 3.2.1.1: ST-13-3: Implement at least one new small <del>satellite</del> spacecraft mission that was <del>initiated in FY 2012</del> selected in the previous fiscal year to <del>and</del> demonstrate game changing or crosscutting technologies in space.	Space Technology/ Crosscutting Space Technology Development	Clarified the measurement to be made.
APG 3.2.1.1: ST-13-4: Implement at least <del>three</del> two Technology Demonstration Missions (TDM) technology development projects that were initiated in the previous two years.	Space Technology/ Crosscutting Space Technology Development	The solicitation for these missions had not been completed prior to the inclusion of the measure in the FY 2013 Congressional Justification. The final proposals selected were fewer than expected once the acquisition was completed.
APG 3.4.1.1: ST-13-6: Establish a total of <del>two</del> twelve partnerships with U.S. industry, other U.S. agencies, or other entities to develop technology that supports NASA's missions or national interests.	Space Technology/ Partnership Development and Strategic Integration	Typographical error corrected.
APG 4.1.1.1: AR-13-1: Conduct flight tests to characterize the ice crystal environment, which can adversely affect jet engine performance.	Aeronautics/Aviation Safety	This work was dependent on a contract that was discontinued due to unforeseen circumstances. As a result, NASA will not be able to complete a test flight in FY 2013 and has removed the associated FY 2013 APG from the performance plan. NASA and its partners are exploring opportunities for acquiring this important test data in the future.

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Corrected Measure	Budget Account/ Program	Correction Made
APG 5.4.2.1: SFS-13-3: Continue to establish and develop the 21 <sup>st</sup> Century Space Launch Complex (21 <sup>st</sup> CSLC) <del>partnerships aimed at understanding government and commercial ground processing, launch, and range infrastructure requirements, while and</del> implementing the modifications identified during the FY 2011 initiated studies.	Human Exploration and Operations/ 21 <sup>st</sup> Century Space Launch Complex	Clarified the measurement to be made.
APG 5.4.3.1: SFS-13-4: Complete TDRS L <del>Pre-Ship for its Flight Readiness Review (FRR).</del>	Human Exploration and Operations/ Space Communications and Navigation	Clarified the measurement to be made. The Pre-Ship Review is a milestone that ensures that the spacecraft is prepared for its Flight Readiness Review, which is scheduled to occur in FY 2013.
APG 6.1.3.1: AMO-13-10: Provide equal opportunity ( <i>EO</i> ) assessment and technical assistance, or onsite compliance assessment <i>on-location</i> , at a minimum of two <i>STEM or</i> STEM-related programs that receive NASA funding.	Agency Management and Operations/ Office of Diversity & Equal Opportunity	Clarified the measurement to be made.

To improve performance trending within a multi-year performance goal, NASA has added the following annual performance goals to the FY 2013 plan:

- APG 1.1.2.1: ISS-13-5: Provide 100 percent of planned on-orbit resources (including power, data, crew time, logistics, and accommodations) needed to support research.
- APG 1.2.1.1: CS-13-2: Conduct a minimum of one commercial cargo demonstration flight of new cargo transportation systems, including proximity operations with ISS.
- APG 3.3.1.1: ERD-13-4: Assess the feasibility of a Multi-Purpose Logistics Module based habitation module to support human deep-space missions.
- APG 5.3.2.1: AR-13-9: Perform a condition assessment of the ground support facilities, systems, and equipment within the Flight Test Project portfolio.
- APG 5.4.3.1: SFS-13-4: Complete TDRS L Pre-Ship Review.
- APG 5.4.3.2: SFS-13-5: Complete Space Network Ground Segment Sustainment (SGSS) Critical Design Review (CDR).
- APG 5.4.3.3: SFS-13-6: Complete antenna structure for DSS-35 at the CDSCC.

Further discussion on measurement changes can be found in the combined annual performance report and plans contained in the next section, “NASA’s Combined Performance Report and Plan.”



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### Performance–Budget Integration

Performance-budget integration is the alignment of NASA’s strategic and performance plans with its planned investments. Each year, NASA checks the alignment by mapping its annual approved budget authority to its strategic goals. This process involves linking mission directorate, mission support, and education accounts, and their supporting programs, to their respective strategic goals.<sup>2</sup> This performance-to-budget alignment is reinforced in the Agency’s annual performance plan that links each annual performance goal, and responsible program, to the strategic goals.

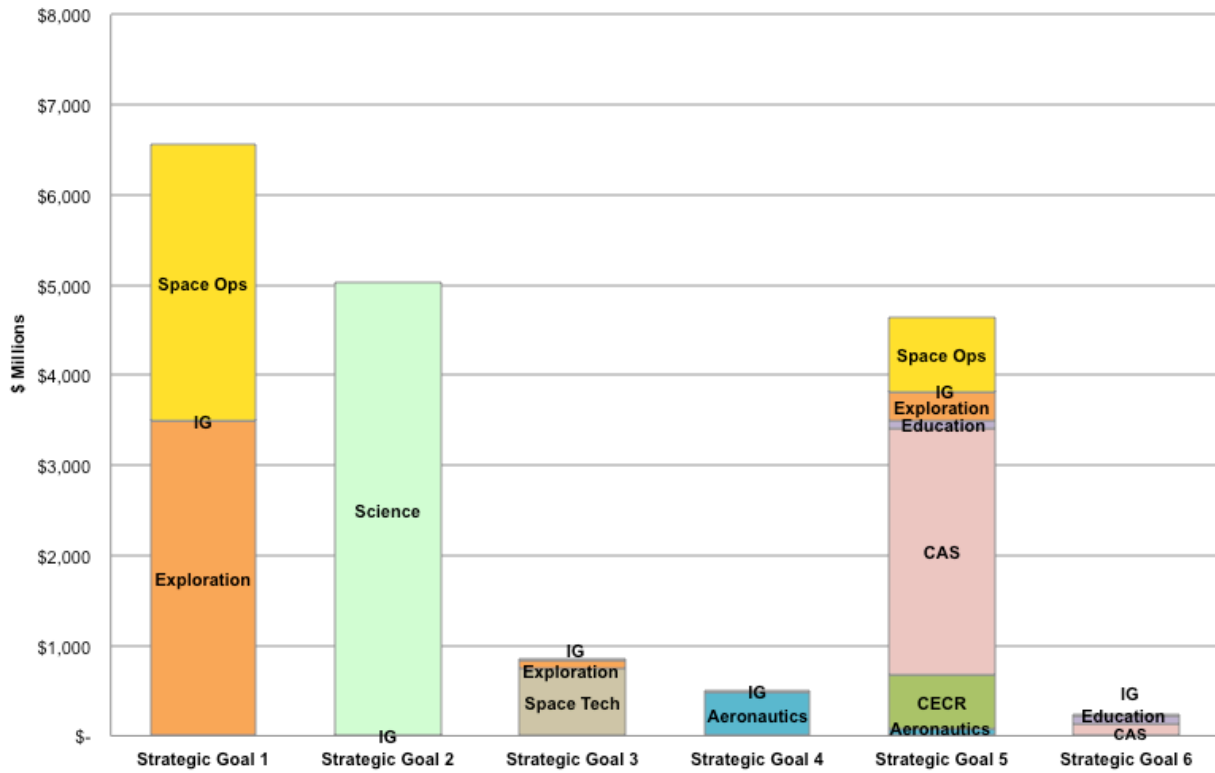
NASA shows strong performance-budget integration for FY 2014. The President’s FY 2014 budget request for NASA is \$17.7 billion through eight budget accounts. These accounts support NASA’s six strategic goals, outlined in detail in the [2011 NASA Strategic Plan](#). The strategic goals drive the mission priorities and activities within each account. In the FY 2014 Performance Plan, NASA plans numerous activities that further advance the Agency’s goals and contribute to national initiatives. Figure 2.1 maps the budget to strategic goals for FY 2014. Additional details on NASA’s FY 2014 Performance Plan are in the following section.

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<sup>2</sup> FY 2011 was the first year where mission support and education activities map directly to a strategic goal. In previous years, NASA allocated the budget for mission support and education activities across all strategic goals. The budget for the Office of Inspector General remains allocated across all strategic goals by an equal amount.

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Figure 2.1: FY 2014 Budget by Strategic Goal



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### **NASA's Combined Performance Report and Plan**

Presenting the APR and APP information together allows a unique opportunity to see the trend across multiple years within a program and the tie between multi-year performance goals and the annual components of these. Multi-year performance trends are incorporated into the FY 2014 Performance Plan, starting with the currently reported year of FY 2012 and spanning backward for up to five years. NASA's method for trending multi-year performance data is to show the linkages between measures tracking similar data and annual progress for follow-on program activities. Linked measures, even if revised in subsequent years, are shown as related performance data. They are not meant to show back data for measures written exactly the same. In some cases, measures have been updated over the years to improve accuracy and data quality. For detailed information on performance ratings and measures from FY 2009 to FY 2011, go to <http://www.nasa.gov/news/budget/index.html>.

The combined report is organized by strategic goal, followed by an overview of each outcome. NASA summarizes FY 2012 performance for each multi-year performance goal, and whether there is planned performance against these in FY 2013 and/or FY 2014. The performance goal summary is followed by:

- The annual performance goals (APGs) associated with the performance goal;
- The FY 2012 ratings for both the performance goal and its supporting APGs and the performance for the past five fiscal years (if applicable);
- The annual performance plan for FY 2013 and FY 2014; and
- If an FY 2012 annual performance measure was not met, an explanation for why performance was less than planned.

Figure 2.2 below is an annotated sample from the combined APR/APP.

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Figure 2.2 APR/APP Sample

## Reported Multi-Year Performance

**Multi-Year Performance Goal 2.1.0.0: By 2015, launch at least two missions in support of objective 2.1.0.**

FY11	The performance goal is to launch satellites in support of Earth Science Plan. NASA's Earth Science program outlines a portfolio of new missions, along with the design and development of an existing fleet of Earth observing spacecraft. Launching missions in a timely way increases scientific capabilities and helps maintain data continuity. Once the satellites are operating on orbit, NASA uses these assets for scientific research and a range of Earth-observing capabilities. Earth Science launched the first satellite supporting this performance goal, Aquarius, in June 2011. Aquarius will observe and year-to-year variations of sea-surface salinity and how these variations in the water cycle and ocean circulation, thereby influencing climate. In its mission life, Aquarius will collect more sea surface salinity measurements than the entire 125-year historical record from ships and buoys.	Performance goal current and past ratings	Performance goal number and description
Green			
FY12			Explanation of performance goal and its rating
Green			

<b>Update to Multi-Year Performance Goal</b>		Changes, if any, to the performance goal in the FY13 or FY14 Performance Plans
<b>FY13 Update</b>	This performance goal remains the same in FY13	
<b>FY14</b>	This performance goal remains the same in FY14	

<b>Reported Annual Performance</b>						APG number and description
<b>ES-12-0: Complete the Example Mission Systems Integration Review.</b>						
<b>Contributing Theme:</b>		Earth Science				
<b>Contributing Program(s):</b>		Earth System Science Pathfinder				
<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>	<b>FY12</b>	
7ESS0 Green	8ES00 Yellow	9ES0 Green	10ES00 Green	ES-11-0 Green	ES-12-0 Yellow	
<b>Why this APG was not achieved:</b>						APG rating for FY12 and past 5 fiscal years
NASA delayed the SIR from September 2012 to November 2012 due to a potential problem with a widget subsystem. The contractor isolated the problem as a faulty component.						
Explanation for APG not rated Green						

<b>Planned Annual Performance</b>	
<b>FY13 Update</b>	Conduct Launch Readiness Review.
<b>FY14</b>	No APG in FY14

FY13 and FY14 Performance Plans for the APG