



ASSET MANAGEMENT:

Integrating Sound Business Practices into its Fleet Planning Process Could Save Amtrak Hundreds of Millions of Dollars on Equipment Procurements

Report No. OIG-E-2013-014 | May 28, 2013





Memorandum

To: Joseph H. Boardman, President and Chief Executive Officer

From: Ted Alves, Inspector General 

Date: May 28, 2013

Subject: *Asset Management: Integrating Sound Business Practices into its Fleet Planning Process Could Save Amtrak Hundreds of Millions of Dollars on Equipment Procurements (Report No. OIG-E-2013-014)*

Amtrak issued a plan in March 2012 to spend a total of \$13 billion over the next 15 years to replace and augment the majority of its current fleet of locomotives and cars (collectively referred to as *equipment* in this report).¹ The *Fiscal Year (FY) 2012 Fleet Strategy* is the third version of Amtrak's fleet plan submitted to Congress, which was first required in law by the Omnibus Appropriations Act of 2009.² The appropriations act required a comprehensive plan detailing time frames for the maintenance, refurbishment, replacement, and expansion of Amtrak's fleet and its preferred method of financing these activities.

Additionally, the Transportation, Housing and Urban Development and Related Agencies Appropriations Act of 2012³ required Amtrak to incorporate the information from the fleet plan into its annual budget and *Five-Year Financial Plan*. Further, Amtrak is required by the Passenger Rail Investment and Improvement Act of 2008 (PRIIA)⁴ to develop these financial plans in accordance with sound budgetary practices intended to increase its revenue and reduce costs. PRIIA also required estimates of the amount

¹ Amtrak's *Fiscal Year (FY) 2012 Fleet Strategy Version 3.1: Building a Sustainable Fleet for the Future of America's Intercity and High Speed Railroad* included planned acquisitions of 392 locomotives; 1,373 passenger cars; 80 auto-carriers; and 20 high-speed trainsets.

² Public Law 111-8.

³ Public Law 112-55 Division C.

⁴ Public Law 110-432 Division B.

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of funding needed to maintain its passenger services and accommodate projected ridership levels.

At Congress's request,⁵ we previously evaluated and reported on Amtrak's *FY 2010 Fleet Strategy*.⁶ We found that the *Fleet Strategy* was a commendable, high-level plan that would benefit from deeper analysis and a more integrated planning process. We also identified a number of specific areas where detailed analysis and improved planning could reduce projected funding requirements by hundreds of millions, and potentially billions, of dollars. Amtrak management agreed with the findings and recommendations. Since our prior report, Amtrak hired a full-time fleet planning officer in its Finance Department in November 2011 to coordinate and improve the fleet planning process. Amtrak also established a Fleet Strategy Executive Steering Committee in January 2012 to provide oversight and direction to fleet planning.

We initiated this evaluation to determine whether the *FY 2012 Fleet Strategy* was based on detailed analyses and integrated planning in line with our previous recommendations (listed in Appendix II). Based on our initial discussions with the corporation, we expanded the scope of this evaluation to review Amtrak's entire fleet planning process.

Our previous analysis of other passenger rail operators and our current review of guidance from the Department of Transportation and the Government Accountability Office (GAO) indicate three essential elements of sound fleet planning: adequately analyzing how much equipment is needed, identifying the most cost-effective approach to meeting these equipment needs, and properly integrating equipment acquisition planning with overall financial planning to ensure that funds are properly budgeted and used most effectively. Therefore, the objectives of this report are to describe the practices and plan that were in place during the course of our review and evaluate the extent to which Amtrak's fleet planning process had (1) adequately determined the corporation's equipment needs, (2) determined a cost-effective

⁵ We were asked to do this work by the then-ranking member of the U.S. Senate Committee on Appropriations, Subcommittee on Transportation, Housing and Urban Development, and Related Agencies.

⁶ See *Evaluation of Amtrak's FY 2010 Fleet Strategy: A Commendable High-Level Plan That Needs Deeper Analysis and Planning Integration* (OIG-E-11-2, March 31, 2011).

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approach to meeting equipment needs, and (3) integrated its equipment acquisition plans with its financial plans. For a detailed discussion of our evaluation methodology, see Appendix I.

SUMMARY OF RESULTS

Amtrak risks spending hundreds of millions of dollars more than necessary and needing additional operating subsidies if it does not adopt sound business practices as it improves its fleet planning process.

Determining Equipment Needs. Although Amtrak has taken encouraging initial steps to analyze ridership demand for its next generation of high-speed rail trainsets, it has not developed a disciplined process for determining its equipment needs. As a result, it still has not adequately analyzed its other equipment requirements. The corporation projected its fleet acquisition requirements without analyzing route-specific ridership demand and determining the optimal level of service for each route based on its business strategies. Further, it has still not considered its plans to improve equipment availability in determining the amount of equipment needed.

Pursuing acquisitions before adequately analyzing needs could result in spending hundreds of millions of dollars more than necessary on future equipment. For example, Amtrak is spending \$563 million for 70 new electric locomotives without having adequately analyzed its locomotive needs. Based on Amtrak's own numbers, it will need only 56 new locomotives to meet its peak demand on a normal day. Amtrak has yet to conduct a detailed analysis to support the purchase of the additional locomotives and has not determined whether any potential future requirements could be met by maintaining the new locomotives at a better availability rate than it projects (79 percent). Given these conditions, the need for all 70 new locomotives is questionable. The difference in cost, including finance charges, between buying 56 and 70 locomotives is about \$167 million.

Identifying Best Options to Meeting Needs. Amtrak stated in its *FY 2012 Fleet Strategy* that it planned to replace its current fleet based on the assumption that age negatively affects ridership and increases fleet maintenance costs. However, the corporation has not demonstrated that replacing its current equipment with new equipment will

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increase revenue or reduce maintenance costs sufficient to outweigh the expense of procuring new equipment.

For example, Amtrak is replacing all 15 of its HHP-8 electric locomotives that have only been in service between 11 and 13 years,⁷ but has not conducted an analysis to determine whether replacing the locomotives would be more cost-effective than continuing to operate and maintain them. Similarly, Amtrak has not adequately analyzed options to refurbish or repurpose existing equipment rather than buying new equipment, or to incorporate more efficient equipment types into its fleet, such as multi-level passenger cars.

Integrating Fleet Plans with Other Plans. Amtrak did not adequately integrate its fleet acquisition plans with its strategic plans, most notably its financial plans, which is inconsistent with sound business practices intended to ensure that funds are properly budgeted and effectively used. Consequently, Amtrak is still planning for its future equipment needs largely separate from the process it uses to formulate its annual legislative and grant requests and its long-term financial plans. As a result, it is unclear how Amtrak plans to fund future equipment acquisitions because the funding requirements in the *FY 2012 Fleet Strategy* are inconsistent with the current 5-year financial plan. Officials said that Amtrak intends to integrate fleet planning with financial planning in 2014.

Amtrak's financial plans also do not discuss the risks associated with its plans to repay the loan using funds from the net operating surplus it expects to generate on the Northeast Regional and Keystone services, where it will operate the equipment. Based on Amtrak's past financial performance on its Northeast Regional and Keystone services, this surplus may be short of what is needed to cover both the cost of the procurement and Amtrak's increasing operating expenses. This could unexpectedly result in Amtrak having to cut expenses or needing additional operating subsidies to fund the procurement.

⁷ According to projections in Amtrak's *FY 2012 Fleet Strategy*, the average service life of a typical electric locomotive is 25 years.

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New Developments. After we provided the corporation with our preliminary findings for this evaluation, we were told that Amtrak's Chief Executive Officer had tasked the Chief of Corporate Research and Strategy with designing a new approach to fleet planning that aligns with Amtrak's corporate strategy and the changing intercity passenger rail equipment environment. As part of this new approach, Amtrak expects that the newly appointed business line managers in its Operations Department will play a significant role in defining future service plans and recommending the types and quantity of equipment required to meet those plans. This will include comparing the costs of buying new equipment with the costs of operating existing equipment before requests to buy new equipment will be approved. Amtrak officials also expect that a new Chief of Operations Research will assist the business line managers in this area and will likely be the eventual owner of the fleet planning process.

Additionally, we were told that a new fleet strategy that is starting to be developed could be a significant departure from the *FY 2012 Fleet Strategy*. While we are encouraged by these evolving developments, details on these plans have not yet been defined; and policies, procedures, and processes have not yet been documented or approved as of the date of this report. Consequently, we were not able to review them.

Recommendations. To assist management's current efforts to improve the fleet planning process, we are recommending that Amtrak's President and Chief Executive Officer implement the recommendations from our prior report to ensure that the weaknesses in Amtrak's fleet planning processes are addressed, prohibit future equipment purchases until these weaknesses are addressed, review the ongoing electric locomotive procurement to determine whether funds could be better spent elsewhere, and consider asking Congress to suspend any requirements for an FY 2013 fleet strategy document for a year in order to address the recommendations in this report.

Management Comments and OIG Analysis. Amtrak's President and Chief Executive Officer provided us with comments on a draft of this report on May 14, 2013, wherein he generally concurred with all of our recommendations (see Appendix III). We consider his comments responsive to our recommendations and we will follow up on their implementation. We are also closing our recommendation for Amtrak to review its procurement of its electric locomotives because Amtrak conducted the analysis we requested. Although we believe that further analysis to justify the original

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procurement decision was warranted, we are encouraged by Amtrak's commitment to conduct more rigorous and comprehensive analysis to support future equipment procurements. In addition, we made technical changes to the report where appropriate, based on Amtrak's comments.

AMTRAK HAS NOT ADEQUATELY ANALYZED ITS EQUIPMENT NEEDS

Amtrak has not established a disciplined process to analyze its equipment needs in a manner consistent with sound business practices although it agreed to do so in response to our prior recommendations.

Amtrak projected its equipment acquisition requirements without having analyzed route-specific ridership demand or having determined the optimal level of service for each route based on Amtrak's business strategies. Additionally, Amtrak did not consider its plans to improve equipment availability in determining the amount of equipment it needs. Amtrak's ongoing procurement of electric locomotives illustrates the risks that could arise when procuring equipment in this manner, as it appears that Amtrak may have decided to buy more equipment than needed.

Equipment Needs Were Not Based on Full Analyses of Ridership Demand and Equipment Availability

We previously recommended that Amtrak determine its equipment needs by analyzing route-specific ridership demand and taking into consideration plans for improving equipment reliability and availability.⁸ Our prior recommendations are consistent with sound business practices developed by the Department of Transportation's Federal Transit Administration (FTA).⁹ These practices recommend

⁸ For more information, see OIG E-11-2, March 31, 2011.

⁹ FTA developed best practices for rail fleet management plans from the state and local rail operators that it oversees. While the Federal Railroad Administration is the Department of Transportation agency responsible for regulating Amtrak and overseeing its finances, it has not issued similar guidance for

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that rail operators develop fleet management plans and regularly analyze the amount of equipment needed to cost-effectively address their ridership demand.

However, Amtrak did not analyze ridership demand to support projected equipment needs in the *FY 2012 Fleet Strategy*. Amtrak officials agree that conducting route-specific ridership demand analyses would improve the accuracy of Amtrak's estimated equipment needs. Amtrak established a working group in April 2012 to examine ridership on the Northeast Corridor, but it has not established a deadline for completing this analysis or one for its long-distance routes.

Amtrak's prior decision to acquire 130 single-level cars for its long-distance service illustrates what can happen without a thorough analysis of ridership demand. Part of this \$298 million procurement is for 50 additional passenger cars that Amtrak states will provide more capacity to serve more passengers and therefore will improve the corporation's bottom line, consistent with its business strategy to improve its financial performance. Yet Amtrak has not completed the route-specific demand and cost analysis necessary to determine the expected financial impact.¹⁰ If Amtrak's assumption is incorrect and the new cars do not generate enough revenue to offset the costs associated with operating and maintaining this additional new equipment, Amtrak risks increasing its operating deficit.¹¹

Additionally, Amtrak has not considered its plans to improve equipment availability and reliability when determining its equipment needs. Although Amtrak has included some information on projected availability rates in its *FY 2012 Fleet Strategy* and states that new equipment will likely be more reliable than existing equipment, Amtrak has not considered how these improvements will reduce equipment needs. In our previous report,¹² we estimated that Amtrak could reduce acquisition costs by over \$500 million

passenger rail fleet management. We used FTA's guidance to illustrate the need for enhanced processes to define fleet needs.

¹⁰ This analysis is needed to determine whether adding more cars on routes that recover an average of 47 percent of their operating costs will improve Amtrak's bottom line.

¹¹ We recognize that there may be times when increased operating expenses could be in Amtrak's overall best interest, such as to improve service or minimize capital costs, but unexpected increases are avoidable.

¹² OIG-E-11-2, March 31, 2011.

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by considering availability improvements when estimating its equipment requirements.

According to Amtrak officials, the corporation has begun to address some of these issues in the process of planning for its procurement of the next generation of high-speed rail trainsets. This includes analyzing potential ridership and revenue data to determine the amount of equipment required to meet future demand. While we are encouraged by these steps, Amtrak has not yet established a disciplined planning process that ensures that this analysis is conducted for all of its future fleet requirements.

Electric Locomotive Purchase Demonstrates the Risks of Not Fully Analyzing Equipment Needs

Amtrak's previous decision to procure electric locomotives illustrates the risks inherent in procuring equipment without fully analyzing equipment needs. In 2010, Amtrak finalized a \$563-million loan agreement with the Federal Railroad Administration (FRA) to procure 70 new electric locomotives to be delivered between 2013 and 2016. These locomotives are intended to replace all 62 of the electric locomotives¹³ that Amtrak currently operates. Little analysis was performed to support the number of locomotives in this acquisition, such as analyzing the effects that improved availability or increased ridership demand could have on the total number of locomotives needed.

To support the acquisition, Amtrak stated that its current locomotives are not very reliable and that replacing them would improve both the reliability and availability of its electric locomotive fleet. In addition, according to senior Amtrak officials, Amtrak pursued the procurement of the 70 locomotives because the increased availability of federal funding for rail improvement provided an opportunity to acquire new equipment for the first time in more than a decade, and Amtrak was not assured that similar funding would be available again in the future. The officials added that, at the time, Amtrak contemplated using some of these locomotives for potential service

¹³ Amtrak currently owns 66 electric locomotives, but four of these have been damaged and are currently in storage or were scrapped, leaving 62 active electric locomotives in Amtrak's fleet.

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expansion, including the potential electrification of service to Richmond, Virginia, and Albany, New York, and expanded service on the Keystone routes in Pennsylvania. However, Amtrak had not developed plans for any of these services at the time that it signed the contract for the locomotives, nor has it progressed any further with plans for additional services as of the date of this report.

According to Amtrak officials, Amtrak currently requires 44 electric locomotives to meet its peak demand on the busiest days of the week. This includes three locomotives designated as operational spares to be used in case of unexpected equipment breakdowns and other contingencies. In addition, we estimate that Amtrak will need, on average, 12 extra locomotives to cover those out of service for maintenance based on the 79 percent availability rate that Amtrak projects for its electric locomotive fleet in 2016. Since Amtrak still has no firm plans to expand electric service, 56 locomotives, rather than 70, is the number of locomotives needed to meet peak demand on a normal day, based on the current level of service. Although Amtrak officials stated that they need additional locomotives in order to address potential growth in service and to account for other events such as wrecks, Amtrak has yet to conduct a detailed, risk-based analysis to support the purchase of these additional locomotives. Moreover, the corporation has not determined whether these potential future requirements could be met by maintaining the new locomotives at an availability rate above 79 percent, as it currently achieves with the majority of its other locomotives.

Therefore, Amtrak's decision to buy 70 locomotives is questionable, given the lack of analysis and the costs involved. We estimate that the difference in cost between 56 and 70 locomotives includes about \$99 million for the 14 units and their associated spare parts, plus \$68 million in interest over the life of the loan, for a total of about \$167 million.¹⁴ If, based on a more detailed analysis, Amtrak concludes that it needs fewer than 70 new locomotives, it might have to renegotiate the contract with the manufacturer to reduce the size of its order. Contract provisions requiring price

¹⁴ We previously reported that Amtrak could need more locomotives because its current locomotive fleet might not be powerful enough to pull the longer trains resulting from the additional cars Amtrak was planning to buy to address the 2-percent annual growth in ridership it predicted in its *FY 2010 Fleet Strategy*. However, given that Amtrak's plans to buy additional cars have changed, our previous comment appears to no longer be an issue.

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adjustments based on contract change orders could limit the cost savings achieved, but Amtrak still might be able to avoid a significant portion of the costs associated with any unneeded locomotives.

AMTRAK HAS NOT ANALYZED HOW BEST TO MEET ITS NEEDS

Amtrak has not adequately examined how to cost-effectively meet its equipment needs. While sound business practices recommend that rail operators attempt to determine the most cost-effective ways to meet their equipment needs, Amtrak, however, based its equipment replacement plans in its *FY 2012 Fleet Strategy* simply on the age of its equipment alone, instead of analyzing whether procuring new equipment might be more cost-effective than maintaining existing equipment. Amtrak also has not fully explored refurbishing or repurposing existing equipment, or other options to meet its needs.

Costs to Procure New Equipment Were Not Compared with Costs to Maintain Existing Equipment

Amtrak states in its *FY 2012 Fleet Strategy* that its current fleet is in relatively good condition, yet it plans to replace the fleet without examining whether continuing to operate and maintain it is a cost-effective alternative to buying new equipment.

Sound business practices developed by FTA call for rail operators to use empirical evidence to determine the service lives of equipment. But Amtrak has not gathered the data or completed an analysis to demonstrate that replacing equipment when it reaches the end of its predetermined service life is more cost-effective than continuing to operate and maintain the equipment. Instead, Amtrak has decided to replace cars when they reach a certain age, such as 30 years for passenger cars.

One reason Amtrak uses to justify replacing existing equipment is that customers prefer newer equipment, and new equipment would allow it to generate more revenue than it could generate with existing equipment. While we accept Amtrak's premise that passengers would generally prefer to ride in newer equipment, Amtrak has not

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supported its assumption with an analysis validating the amount of additional revenue that the new equipment could generate. According to a senior Amtrak official, while new equipment could lead to ridership increases for up to 3 years, the ridership levels would likely level off or decline thereafter. The official also stated that it is difficult to confirm the degree of ridership growth that would result since customers would have to perceive a difference between new and old equipment. At the present time, Amtrak does not ask its customers whether the age of equipment influences their decision to ride Amtrak's trains, making it difficult to assess whether, or how much, added revenue Amtrak could generate by replacing its current equipment with new equipment.

Amtrak also states that maintaining its existing equipment is becoming more expensive as it ages. Although this seems reasonable, Amtrak has not determined how much its costs are increasing as its equipment ages. For example, an Amtrak official said that Amtrak has collected data on the costs of maintaining its fleet since 2004, but the manner in which it has done so is not consistent enough to make accurate comparisons. Further, Amtrak has not tracked these costs against the mileage of its equipment, making it difficult to assess how equipment usage affects maintenance requirements. In place of actual data, Amtrak's hypothesis that the costs of maintaining equipment will increase significantly over time is based on unvalidated assumptions about a generic passenger car rather than actual equipment.¹⁵ If Amtrak does not collect and use accurate lifecycle data, it may not have a reasonable basis to determine whether buying new equipment is more cost-effective than maintaining what it has on hand.¹⁶

Absent such an analysis, Amtrak risks prematurely replacing equipment and spending more funds than necessary to meet its needs. For example, Amtrak is replacing 15 of its 62 existing electric locomotives, those designated as HHP-8s, as part of its new electric

¹⁵ These assumptions include, among others, a \$3.5-million unit cost for new passenger cars, 3-percent annual increases in revenue over 30 years due to the new equipment, and a generic 2-percent increase in maintenance costs.

¹⁶ According to senior officials, Amtrak has recently started developing business cases to justify equipment acquisitions as part of its effort to create bottom-up, data-driven decisions aligned with its business strategy in order to improve its financial performance. We will be reporting on the adequacy of Amtrak's business cases later this year.

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locomotive procurement, although these locomotives have only been in service between 11 and 13 years (about half of the 25-year service life that Amtrak projects for electric locomotives in its *Fleet Strategy*) and Amtrak would still have to pay \$55 million through 2023 on the leases of these locomotives. As discussed above, Amtrak states that it is replacing these locomotives because of their poor reliability.

The cost to replace these 15 locomotives, by our estimate, is about \$179 million for the locomotives and their associated spare parts, including finance charges, over the life of the loan.¹⁷ This is in addition to the remaining lease payments, which Amtrak will have to make regardless of whether it uses the equipment or not. According to Amtrak officials, Amtrak could also incur penalties of an additional \$35 million if the locomotives are not returned in good condition at the end of their leases.

Amtrak did not compare the cost of replacing the HHP-8s with the cost of improving their reliability to levels that might allow Amtrak to keep them in service, before deciding to replace them. In analyzing Amtrak's plans to replace the HHP-8s with new locomotives, we considered Amtrak's maintenance practices for its Acela fleet, based on a study we recently conducted.¹⁸ In that report, we compared the maintenance and reliability of Amtrak's Acela equipment with that of the rest of Amtrak's equipment, and found that the Acela equipment was more reliable than the conventional fleet. We attributed the higher Acela reliability rates to the maintenance practices that Amtrak has employed on its Acela fleet, and recommended that Amtrak examine opportunities to implement similar practices, where feasible, across its conventional fleet.

According to Amtrak officials, these practices could be applied to the HHP-8s—since they are similar to the Acela power cars—and could lead to improved reliability. However, Amtrak officials also stated that it would be more efficient to maintain one standard fleet of electric locomotives rather two separate fleets, although Amtrak has not quantified the costs and benefits of maintaining a single fleet. According to a senior official, Amtrak plans to conduct more rigorous analysis comparing costs and benefits of buying new equipment versus maintaining old equipment when justifying future equipment decisions.

¹⁷ Our estimates are based on Amtrak's loan agreement with FRA (numbers subject to rounding).

¹⁸ *Mechanical Maintenance: Improved Practices Have Significantly Enhanced Acela Equipment Performance and Could Benefit Performance of Equipment Company-wide* (OIG-E-2012-008, May 21, 2012).

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Refurbishing or Repurposing Existing Equipment as an Alternative to Buying New Were Not Considered

Amtrak has not yet adequately explored options to refurbish or repurpose its equipment as a way to cost-effectively meet its needs. We previously recommended,¹⁹ and sound business practices developed by FTA suggest, that Amtrak examine the feasibility of refurbishing existing cars and compare the lifecycle costs of these cars with the lifecycle costs of new equipment. This could include replacing all major components with new parts and modern technology, such as Wi-Fi and electrical outlets at seats for portable devices, to ensure that the only “old” part of the car is the stainless steel shell, which Amtrak acknowledges could last almost indefinitely.

Refurbishing equipment in this manner has enabled Amtrak to continue to cost-effectively run some equipment that is over 50 years old, such as the passenger cars that Amtrak operates jointly with the North Carolina Department of Transportation. Similarly, Canada’s national passenger rail service recently employed this practice by scheduling the refurbishment of 98 passenger coaches that are over 30 years old to modernize their interiors, because the cost of doing so was reportedly significantly less than the cost of buying new equipment.

Amtrak’s previous decision to purchase 130 single-level cars for its long-distance service also illustrates what can happen without adequately assessing whether refurbishing or repurposing existing equipment would be a cost-effective option to buying new. Part of that purchase is for 80 cars that Amtrak considers too old to continue to be used. According to Amtrak officials, they discussed the feasibility of refurbishing the 80 old cars. However, they did not fully analyze this option—nor did they analyze options to repurpose existing equipment, such as some of its single-level Amfleet passenger cars—even though Amtrak has repurposed other passenger cars in the past. Amtrak officials said that they plan to examine alternative options to buying new equipment in support of Amtrak’s business strategy in the future.

¹⁹ OIG-E-11-2, March 31, 2011.

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Options to Reduce Costs When Buying New Equipment Were Not Adequately Examined

Other sound business practices for reducing fleet acquisition costs, developed by GAO, include standardizing equipment and selecting more efficient equipment types, but Amtrak has not adequately examined these options. For example, we previously recommended that Amtrak consider increasing its use of multi-level cars wherever practical and feasible because doing so could save between \$174 million and \$679 million if all single-level cars were replaced by multi-level cars.²⁰ Amtrak agreed, stating that the corporation would consider using multi-level cars in state-supported service as long as the states agreed. Amtrak also agreed to analyze the feasibility of increasing the use of multi-level cars on other routes, and report the results by December 31, 2011.

Although Amtrak officials said that they had discussed the challenges in using multi-level cars on the Northeast Corridor, such as height restrictions, luggage requirements, and compliance with the Americans with Disabilities Act of 1990, as amended,²¹ Amtrak has yet to perform the analysis to specifically address our recommendation. Amtrak officials state that they plan to conduct a more complete analysis at some point in the future.

AMTRAK RISKS FUNDING SHORTFALLS DUE TO A LACK OF INTEGRATED PLANNING

Amtrak has not integrated its fleet planning process with its other strategic and financial plans, thereby increasing the risk that it might not use its limited capital funding effectively and could require additional operating subsidies in the future.

Amtrak's *FY 2011–FY 2015 Strategic Plan* provides a comprehensive roadmap for Amtrak's evolution into a corporation more focused on the bottom line. As we recently

²⁰ The savings are dependent on the amount of luggage space Amtrak could provide per passenger. For more information, see OIG-E-11-2, March 31, 2011.

²¹ Public Law 110-325.

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testified,²² one key to improving the efficiency and effectiveness of Amtrak's operations and service is sustaining and effectively implementing its ongoing strategic initiatives over the long term. Although Amtrak officials said that the corporation's fleet planning will eventually be integrated with its financial planning, as of the date of this report, this had not occurred.

As we previously recommended, and in accordance with sound business practices developed by FTA, the funding needed to implement rail operators' equipment acquisition plans should be properly integrated with the operators' overall financial planning to ensure that funding is available when needed and is used for the most effective purposes. In addition, both PRIIA and Amtrak's FY 2012 appropriation required that Amtrak include its fleet funding requirements in its financial plans. However, Amtrak is still planning equipment needs largely separate from the processes used to formulate its annual legislative and grant requests and 5-year financial plans.

As a result, it is unclear how Amtrak plans to fund future equipment acquisitions. The *FY 2012 Fleet Strategy* details \$2.7 billion in equipment acquisition costs for ongoing and planned procurements from FY 2012 through FY 2016, yet the 5-year plan only details \$1.4 billion in estimated equipment acquisition costs over the same period. By not fully identifying its funding needs in its 5-year plan, Amtrak is not consistently communicating its needs to Congress. Further, by not integrating the costs of ongoing and planned acquisitions into the capital planning process, Amtrak may not have a reasonable basis upon which to assess and prioritize its fleet needs with its other needs, such as the \$5.2-billion infrastructure maintenance backlog on the Northeast Corridor.

Amtrak's financial plans also do not discuss the risks associated with relying on additional revenue to fund its current electric locomotive procurement. As mentioned, Amtrak is borrowing \$563 million from FRA to pay for 70 new electric locomotives. Its debt payments on this loan will average about \$38 million per year for 24 years, from FY 2016 through FY 2039. Amtrak plans to repay the loan using funds from the net operating surplus it expects to generate on the Northeast Regional and Keystone

²² *Amtrak Improvement Initiatives: Sustained Attention and Effective Implementation Keys to Success* (OIG-T-2013-001, November 28, 2012).

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services. Although Amtrak's operating revenue from its Northeast Regional and Keystone services has increased on average by \$25 million per year over the last 5 years, these funds have been largely budgeted to cover Amtrak's increasing operating expenses.

Therefore, it seems unlikely that Amtrak will generate sufficient additional future revenue to cover both increasing operating expenses and the loan payments for this locomotive procurement. This could unexpectedly result in having to cut operating expenses in other areas or requesting greater operating subsidies to fund the locomotive loan payments. Although the procurement was discussed in Amtrak's *FY 2012–2016 Five-Year Financial Plan*, the risk of needing additional operating subsidies was not reflected in the plan and does not appear to have been considered.

CONCLUSIONS

Amtrak has yet to implement the recommendations from our prior report, and its fleet planning process is inconsistent with the sound business practices we have identified here. Additionally, the corporation does not have a history of applying analytical rigor to making cost-effective fleet planning decisions. These weaknesses greatly increase the risk that Amtrak's ongoing and planned acquisitions could exacerbate its operating deficit and negatively affect operations, particularly if the acquisitions are not properly integrated into overall financial planning. Therefore, if Amtrak does not improve its fleet planning process, it risks spending hundreds of millions of dollars more than necessary, and potentially needing additional operating subsidies.

We recognize that Amtrak is working to improve its fleet planning process. Successful implementation of an enhanced process will require the inclusion of the sound business practices described in this report, and is necessary given the amount of funds involved.

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RECOMMENDATIONS

To assist management's current efforts to improve Amtrak's fleet planning process, we recommend that Amtrak's President and Chief Executive Officer:

1. Ensure that the recommendations from our previous report, listed in Appendix II and which were designed to improve Amtrak's management of its fleet planning process, are implemented.
2. Prohibit Amtrak from making additional equipment acquisitions until the need for the equipment has been fully analyzed, the acquisitions have been shown to be the most cost-effective option available to satisfy the need, and funding for the acquisitions has been identified through an integrated planning process that supports Amtrak's business strategy.
3. Ensure that a review of the procurement of the 70 electric locomotives is conducted to determine whether funds could be put to better use by reducing the number of locomotives to be purchased or by continuing to operate and maintain existing HHP-8 locomotives.
4. Consider asking Congress to suspend any requirements for an FY 2013 fleet strategy document for a year, in order to address the issues we describe in this report.

MANAGEMENT COMMENTS AND OIG ANALYSIS

Amtrak's President and Chief Executive Office provided comments on a draft of this report on May 14, 2013, wherein he generally concurred with all of our recommendations (see Appendix III). We are encouraged by Amtrak's commitment to improve its fleet planning process in the future by incorporating the sound business practices identified in our report. We also acknowledge the challenges management faces in making these improvements, while concurrently reorganizing Amtrak's structure and focusing on improving its overall financial performance. We consider his comments responsive to our recommendations and we will follow up on their implementation.

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In addition, we are closing our recommendation for Amtrak to review its procurement of the 70 electric locomotives based on its response to this report. Amtrak reviewed the procurement as we recommended and determined that it was in Amtrak's best interest to proceed with the current acquisition of all 70 locomotives. Although we believe that further analysis to justify the original procurement decision was warranted, we are encouraged by Amtrak's commitment to conduct more rigorous and comprehensive analysis to support future equipment procurements.

We also made technical changes to the report, where appropriate, based on Amtrak's comments. In particular, Amtrak now states that the assertion in its recent *Five-Year Financial Plan* that it was planning to repay its loan for the locomotives with additional revenue gained from operating more reliable locomotives was incorrect. Instead, Amtrak plans to rely on funds from the net operating surplus from the Northeast Corridor to repay the loan. We removed the incorrect information and subsequent discussion around the revenue generated from operating more reliable equipment from the report. However, our initial finding that Amtrak may not be able to repay the loan without reducing expenses in other areas, or requesting greater operating subsidies, remains valid.

We appreciate the courtesies and cooperation that Amtrak representatives extended to us during the course of this review. If you have any questions, please contact me (Ted.Alves@amtrakoig.com, 202.906.4600) or Cal Evans, Assistant Inspector General for Inspections and Evaluations (Calvin.Evans@amtrakoig.gov, 202.906.4507).

cc: Donald J. Stadler, Jr., Vice President, Operations
Mark Yachmetz, Chief, Corporate Research & Strategy
Dan M. Black, Acting Chief Financial Officer
Matthew F. Hardison, Chief Marketing and Sales
Mario Bergeron, Chief Mechanical Officer
Charles S. Farmer III, Assistant Vice President, Financial Planning
John J. Martin, Chief Logistics Officer
Scott D. Riley, Principal Officer, Strategic Fleet Planning
Matthew Gagnon, Senior Director, Business Processes and Management
Controls
Melantha Page, Senior Audit Liaison

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Appendix I

SCOPE AND METHODOLOGY

This report provides the results of our evaluation of Amtrak's fleet planning process. We initiated this evaluation to determine whether Amtrak based its *FY 2012 Fleet Strategy* on detailed analyses and integrated planning in line with our previous recommendations that were designed to improve the fleet planning process and minimize Amtrak's risk of spending funds on unnecessary acquisitions. Upon reviewing the *FY 2012 Fleet Strategy*, we found that Amtrak had not yet addressed our recommendations or significantly changed its fleet strategy from the one it published in 2010. Therefore, we expanded the scope of this evaluation to review Amtrak's entire fleet planning process. Our objectives for this report are to describe the practices and plan that were in place during the course of our review and the extent to which Amtrak's fleet planning process had (1) adequately determined the corporation's equipment needs, (2) determined a cost-effective approach to meeting equipment needs, and (3) integrated its equipment acquisition plans with its financial plans. We performed our work from May through April 2013 in Washington, DC, and Wilmington, DE.

To evaluate the extent to which Amtrak has determined what equipment it needs, we obtained and analyzed Amtrak's *FY 2012 Fleet Strategy* and supporting documentation detailing Amtrak's equipment needs. We also interviewed officials from Amtrak's Finance, Marketing, Mechanical, and Procurement Services departments and reviewed policies, procedures, and guidance to gain an understanding of ongoing changes Amtrak plans to make in its process to determine equipment needs. Further, we reviewed guidance established and recommended by the Federal Transit Administration and Government Accountability Office relevant to rail fleet management to assess the extent to which Amtrak's fleet planning process is consistent with sound business practices.

To determine the extent to which Amtrak has reviewed cost-effective options to meeting its equipment needs, we examined documents for its ongoing equipment acquisitions and analyzed cost estimates for future acquisitions detailed in Amtrak's *FY 2012 Fleet Strategy*. We obtained and reviewed meeting minutes from Amtrak's Fleet Strategy Executive Steering Committee and the committee's decommissioning

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work group, and discussed its ongoing work with members of Amtrak's Finance and Mechanical departments. We also interviewed officials from Amtrak's Finance, Marketing, Mechanical, and Information Technology departments to obtain an understanding of the corporation's maintenance and acquisitions (lifecycle) costs. We interviewed the Amtrak-hired consultant who compiled the FY 2010 and FY 2011 *Fleet Strategy* documents and examined Amtrak's lifecycle cost model to determine factors that may affect equipment replacement periods.

To determine the extent to which Amtrak has integrated its fleet planning process with funding for other priorities, we analyzed its *FY 2012 Fleet Strategy* and its *FY 2012–2016 Five-Year Financial Plan*. We also obtained and analyzed documents on Amtrak's ongoing acquisitions and associated policies and procedures, and discussed this information and Amtrak's funding sources with officials in Amtrak's Finance Department. We reviewed the risks associated with not integrating equipment acquisitions with Amtrak's overall financial plans and discussed these risks with Amtrak officials.

We performed this evaluation in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the evaluation to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our objectives.

Internal Controls

In conducting the evaluation, we reviewed Amtrak's fleet planning project management controls within the context of our objectives. We also examined other Amtrak controls associated with estimating, budgeting, and funding capital construction projects. We determined that deficiencies in internal controls existed due to Amtrak's limited progress in implementing sufficient fleet planning processes and enterprise risk management controls, in line with our prior recommendations and the sound business practices we identified. We present the results of our review in the body of this report.

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Use of Computer-Processed Data

We used computer-processed data to support our findings in this report. We specifically examined Amtrak's maintenance data and lifecycle cost data to determine the extent to which Amtrak has examined equipment lifecycle costs. We did not review the overall reliability of these systems, but did interview Amtrak officials to obtain a general understanding of how the data are collected and the extent to which Amtrak incorporated the data into its fleet planning process. We determined that the data were sufficiently reliable for the purposes of our objectives.

Prior Reports

We relied on the following Amtrak OIG and U.S. Government Accountability Office (GAO) reports and testimony in conducting our evaluation:

Amtrak Improvement Initiatives: Sustained Attention and Effective Implementation Keys to Success (OIG-T-2013-001, November 28, 2012)

Mechanical Maintenance: Improved Practices Have Significantly Enhanced Acela Equipment Performance and Could Benefit Performance of Equipment Company-wide (OIG-E-2012-008, May 21, 2012)

Amtrak Corporate Governance: Implementing a Risk Management Framework is Essential to Achieving Amtrak's Strategic Goals (OIG-A-2012-007, March 30, 2012)

Evaluation of Amtrak's FY 2010 Fleet Strategy: A Commendable High-Level Plan That Needs Deeper Analysis and Planning Integration (OIG-E-11-2, March 31, 2011)

Transit Rail: Potential Rail Car Cost-Saving Strategies Exist, U.S. Government Accountability Office (GAO-10-730, June 30, 2010)

Financial Impact of Equipment Delays (OIG-E-09-02, March 25, 2009)

GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs, U.S. Government Accountability Office (GAO-09-3SP, March 2, 2009)

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Appendix II

**PRIOR RECOMMENDATIONS TO IMPROVE AMTRAK'S
FLEET PLANNING PROCESS**

The following seven recommendations were made to Amtrak's President and Chief Executive Officer in our March 31, 2011, report *Evaluation of Amtrak's FY 2010 Fleet Strategy: A Commendable High-Level Plan That Needs Deeper Analysis and Planning Integration* (OIG-E-11-2):

1. **Rolling Stock Requirements.** Ensure that future strategy updates include a more detailed process to determine future rolling stock requirements. Specifically, this would include
 - route-specific ridership demand forecasts incorporating service extensions and new services, in addition to existing service;
 - the identification of external factors that significantly influence ridership demand, sensitivity analyses to measure their impact, and alternative strategies to accommodate potential changes in demand;
 - equipment-type-specific load factors (for example, sleeper v. coach cars);
 - the consideration of possible consist²³ alternatives and changes in train frequency; and
 - an analysis of the locomotive requirements needed to support future car fleet requirements.
2. **Multi-level Passenger Cars.** Ensure that future strategy updates consider increasing the use of multi-level passenger coaches wherever practical and feasible.
3. **Equipment Availability.** Ensure that future strategy updates consider Amtrak's planned equipment availability and reliability improvements and incorporate their impact into equipment estimates. Also ensure that future strategy updates incorporate the impact of any additional equipment availability improvements.

²³ *Consist* refers to the number of locomotives and cars in a train.

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4. **Economic Useful Life of Amtrak's Rolling Stock.** Ensure that future strategy updates are based on an economic evaluation model that uses strategic, operational, and financial factors (including replacement costs, operating expenses, overhaul and upgrading expenses, maintenance expenses, and revenue/ridership impact of each relevant equipment alternative) to determine the optimal retirement age for Amtrak's rolling stock.
5. **Fleet Plan for Acela Express.** Ensure that future strategy updates include the results of an Acela Express replacement and expansion plan that is linked to a clear strategic focus for the service and considers alternatives in the context of strategic goals, forecast demand and revenue scenarios, cost performance, and other relevant factors.
6. **Rolling Stock Acquisition Approach.** Ensure that future strategy updates clearly demonstrate how Amtrak's procurement approach results in the most cost-effective use of its funds while advancing support for a competitive supplier base.
7. **Integration of Systematic Fleet Planning Process into Amtrak's Overall Strategy.** Ensure that future updates of the fleet strategy are based on a more systematic and iterative planning process, one that is integrated with Amtrak's overall strategy and linked to other strategic plans and activities. This should include a financial assessment to identify the most economical solution for Amtrak and the taxpayer.

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Appendix III

**COMMENTS FROM AMTRAK'S
 PRESIDENT AND CHIEF EXECUTIVE OFFICER**

NATIONAL RAILROAD PASSENGER CORPORATION
 60 Massachusetts Avenue, NE, Washington, DC 20002
 tel (202) 906-3960, fax (202) 906-2850

Memo



Date May 14, 2013
 To Ted Alves
 Inspector General

From 
 Department President and Chief Executive
 Office
 Subject *Asset Management: Integrating
 Sound Business Practices into its
 Fleet Planning Process Could Save
 Amtrak Hundreds of Millions of
 Dollars on Equipment
 Procurements. (Draft Evaluation
 Report 010-2012)*
 cc DJ Stadler
 Mark Yachmetz
 Dan Black
 Matt Hardison
 Mario Bergeron
 Charles Farmer
 Jeff Martin
 Scott Riley
 Matthew Gagnon
 Melantha Paige

Message This is in response to your request for comments on the referenced report. If you have any questions, please contact me or Mark Yachmetz, Chief, Corporate Research and Strategy.

Your draft report offers valuable insight into the need for Amtrak to better align our decisions on allocation of resources – not just for fleet, but for all aspects of the company – with those actions and initiatives critical to implementing our strategic plan. While we have some different views on specific examples contained in the draft OIG report, we are in agreement with regard to the primary theme. That theme, as I see it, is to be successful. Amtrak needs a comprehensive approach to strategy execution that 1) defines the strategic objectives necessary to implement the strategic plan, 2) develops plans specifically designed to achieve those strategic objectives, 3) aligns our organization and allocation of resources with the achievement of those plans, and 4) holds managers accountable for delivering desired results through the effective use of the resources allocated to them.

Background

There are many changes underway at Amtrak as we endeavor to implement our strategic plan and remake our culture to one that not only provides superior customer service, but also has a strong focus on the financial bottom line. This is sometimes described by the short-hand phrase “run it like a business.”

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I can appreciate the challenge that your team faces in undertaking an evaluation of an organization in the midst of such change. Indeed, the challenges in implementing change, while still providing safe and reliable service that our customers expect, set practical limits as to how fast we can accomplish all that we need to do.

As recognized in the draft OIG report, Amtrak's approach to fleet planning and more importantly allocation of resources to meet our fleet needs continues to evolve since the release of the March 2012 *Amtrak Fleet Strategy: Building a Sustainable Fleet for the Future of America's Intercity and High Speed Railroad Version 3.1*, (March 2012 Fleet Strategy). The March 2012 Fleet Strategy, which is the focus of most of the observations in the draft OIG report, was developed shortly after approval of Amtrak's strategic plan in October 2011, and just as we were initiating realignment of the company.

In setting priorities for senior management attention, our focus has been on the reorganization along business lines, and developing the structures for execution of strategy that identifies key corporate strategic objectives and the measures, metrics and accountability critical to accomplishing those objectives. These will be the foundation on which we base other change initiatives. The draft OIG report observes that in Amtrak's March 2012 Fleet Strategy we had not fully implemented recommendations in the earlier OIG report on fleet strategic planning.¹ This should be viewed in the context of the need of management to set priorities for implementing specific elements of our change agenda. As will be discussed at the conclusion of this response, we intend to implement most of those recommendations as our fleet strategic planning process evolves. However, since we do not intend to commit to any significant new equipment acquisition until late FY 2014 at the earliest, management concluded that focusing on more foundational elements of the corporate realignment, rather than on fleet planning, was the appropriate priority for the use of available resources.

Executing Amtrak's Strategic Plan

As part of our effort to make sure that our most recent strategic plan is implemented, in June 2012, the Board of Directors approved creation of the position of Chief, Corporate Research and Strategy (CR&S). The primary mission of that department is to develop the structures and assist other Amtrak departments in aligning their organizations and our resource allocation to achieve the corporate strategic goals. This addresses what I believe will be changes key to the future of the company. We need to take on more of the attributes of successful private sector for-profit entities in prioritizing how we use our resources – including both financial and human capital – to improve our financial bottom line while providing superior customer service. We need to do this through well documented, corporately inclusive processes that use both traditional business management tools, as well as our wealth of professional experiences. There needs to be accountability throughout the management structure for delivering on both the allocation of resources and for their effective use. Amtrak, for all of the success we have achieved in preserving and growing intercity passenger rail service, has not done this well on a consistent basis.

Recognizing that fleet issues are central to how we will be implementing our strategy, in the

¹ *Evaluation of Amtrak's FY2010 Fleet Strategy: A Commendable High-Level Plan That Needs Deeper Analysis and Planning Integration* (OIG-E11-2, March 31, 2011)

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fall of 2012, I charged CR&S with oversight of fleet planning. The charge is to design an approach to fleet planning that aligns with our corporate strategy and the changing intercity passenger rail equipment environment, oversee development of the next fleet plan and then hand off responsibility for fleet planning to the most appropriate entity in the reorganized Amtrak. In addition, CR&S is overseeing the preliminary work associated with acquisition of the next generation high-speed rail equipment for use on the NEC.

Amtrak's New Approach to Fleet Strategy

Amtrak rarely orders new rolling stock, and thus there has not been a consistent approach to developing the requirements for such acquisitions. Past practice involved a combination of varying degrees of analytical rigor and professional judgment with varying degrees of documentation of the processes used. Moreover, past investment decisions frequently were based upon preserving the status quo with some general accommodation for growth, but without necessarily strong connections to corporate strategic goals. Going forward as a strategy-based organization, Amtrak has to improve the way it links resource allocation to corporate strategy.

Our current approach to fleet strategy and execution is being designed to emphasize the commercial nature of Amtrak's business. The foundation for fleet strategy is articulation of the commercial strategy for the operating business lines that will be based on a strategic evaluation of the markets they serve. The business line general manager will recommend how the service will be positioned and designed to maximize net income while meeting customer expectations. From this will flow proposed operating schedules and the equipment requirements needed to meet these schedules (e.g. number of trains, seats and amenities for each train, and performance attributes of trains).

The next step is an assessment of Amtrak's current assets, including assets that might need to be repurposed to meet equipment requirements, as well as options and opportunities for supplementing Amtrak's fleet through acquisition of existing or new equipment. This assessment will develop into the business case for the proposed service including costs of various scenarios involving equipment, opportunities for internal synergies, opportunities for external partnerships, opportunities for external financing, and estimates of return on investment, external benefits, and risks.

The business case will then flow into Amtrak's resource allocation decision making process where the recommendations for use of Amtrak's resources and future investment will be prioritized against other investment needs. I recognize that at this point the theory intersects with the reality of Amtrak in that we do not know from year to year the level of capital resources that will be available to meet those needs. The end result will still be aspirational in many respects, but we will be better able to link investment needs to strategic outcomes than we have in the past.

This new approach to fleet decision-making is being piloted as part of our efforts, in partnership with the California High-Speed Rail Authority (CHSRA), to explore and possibly procure the next generation high-speed rail trainsets. This equipment would supplement and possibly replace the current *Acela* trainsets used for premium service on the spine of the NEC while also meeting the requirements for the initial operating segment of the California High-Speed Train. Amtrak at this time is assessing the market needs and opportunities for high-speed service on the current NEC infrastructure which we anticipate will be completed by the early summer. Amtrak and the CHSRA have jointly released a

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Request for Information to builders of high-speed trainsets in operation overseas, to help inform the partners as to what is available in the market place that can meet the requirements of Amtrak and California and the emerging flexibility of FRA from a safety regulatory perspective. The acquisition would be the first major effort by Amtrak to undertake a significant equipment acquisition with an outside partner and the first major use of performance-based rather than design-based specifications. Working groups are being established to help define what those performance-based specifications will be. The current schedule anticipates a decision on a vendor and notice to proceed will likely happen in mid to late 2014.

Past fleet plans provided an inventory of Amtrak's entire fleet, including the age and average mileage accumulated by specific equipment types. This was designed to provide an indication of when, as part of a total recapitalization of the fleet, replacement equipment should be ordered. These plans however did not emphasize the distinctions between where Amtrak had affirmatively made a decision to order equipment in the short-term and where the information was being provided to policy makers as to the rough size of the challenge of recapitalization of the fleet over the long-term.

The fleet plan of the future most likely will consider fleet needs in three different time frames and thus provide for a better distinction between short-term actions and long-term plans. The first time frame will be one year and align with the Corporation's legislative and grant request. It will address the status of equipment acquisitions previously committed to and those specific fleet-related actions for which we will seek financing in the next year or public capital investment in the next Appropriations Act.

The second time frame will reflect the five-year, mid-term plans of the business lines and align with the Corporation's five-year financial plan. These requests will identify the fleet needs required to implement the five-year plans, but not necessarily reflect decisions on the prioritization of the use of capital. It is during this time frame that business cases will be developed that address specific equipment needs and address such options as the use of existing equipment, repurpose/rebuild of existing equipment, and/or acquisition of new equipment. Thus the five-year mid-term plan will be less specific as to the cost and timing.

The third time frame will provide a long-term outlook of issues that do not fall within the five-year time frame, in particular the aging and additional wear and tear being placed upon our fleet. This will help provide policy makers an opportunity to see the long-term, but not immediate financial needs of intercity passenger rail service and help inform decisions such as the development of a reliable, long-term source of capital investment and opportunities to develop domestic manufacturing of rail equipment that is sustainable over the long-term.

Challenges Facing Strategic Fleet Planning

The greatest challenge to any strategic planning at Amtrak is that we do not know the nature, amount or conditions related to funds available for capital investment with any sense of assurance from year to year. There is no better example than this year. We do not yet have a completed capital grant agreement for FY 2013 even though we are more than half way through the fiscal year. This lack of certainty makes it difficult to commit to long-term projects, even those with very good returns on investment. It drives up costs as we frequently cannot take advantage of economies of scale or respond to unexpected opportunities. To address this, in Amtrak's FY 2014 Legislative and Grant Request, we have proposed to Congress creation of a predictable multi-year funding program for Amtrak

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similar to enacted legislation currently in place for highways, transit and aviation. A similar proposal has been made by the Administration in the President's FY 2014 budget request.

A second significant challenge is the atrophied nature of the domestic passenger rail equipment manufacturing base. The interchange standards of the Association of American Railroads, the promulgation of safety regulations by the Federal Railroad Administration (FRA), and statutory and regulatory requirements addressing Buy America and the Americans with Disabilities Act have effectively precluded equipment manufactured overseas from being used in the U.S. rail market up until this time. While the more robust funding of transit has caused some foreign manufacturers to produce equipment for the commuter rail market in U.S., periodic spikes in orders for that market rather than extended periods of relatively constant orders, and the tendency of many commuter properties to "customize" their equipment, have limited the opportunities for Amtrak to benefit from that manufacturing base.

Amtrak cannot order one or two additional pieces of passenger equipment at reasonable costs for delivery in reasonable time frames. Instead, Amtrak's experience in acquiring equipment for passenger rail service can best be described as infrequent, episodic and limited to batches frequently separated by decades from the acquisition of equipment for similar purposes. Amtrak has been required to base its equipment orders not just on existing needs, but also in anticipation of growth in demand and allowances for equipment that might become unserviceable before the end of its commercial life.

A third significant challenge is the uncertainty that comes with the upcoming end of the authorizations contained in the Passenger Rail Investment and Improvement Act of 2008 (PRIIA). PRIIA enacted fundamental changes in the roles of Amtrak, the Federal Government and the states as they relate to the provision of intercity passenger rail service. As outlined below, some of these changes materially affect Amtrak's ability to undertake fleet planning for the long-term. The timing and nature of the provisions contained in PRIIA's successor may also have significant, but as yet unknown ramifications for Amtrak's fleet planning. As an example, the President's FY 2014 budget proposal contains the outline of a five-year authorization of investments in intercity passenger rail service. If enacted, it would significantly accelerate the timing of certain fleet acquisitions outlined in the FY 2012 Fleet Strategy. It can be safely assumed that there might be alternative views on reauthorization in the Congress.

A fourth significant challenge relates to the fleet strategy for short-distance trains, which account for over 36 percent of our passenger cars and over 40 percent of our locomotives. Under Section 209 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), starting in FY 2014 states will begin and/or expand their financial support for short-distance trains, defined as those that operate over routes 750 miles in length or less. Included within this financial support will be a capital charge reflecting Amtrak's costs, including capital and maintenance costs of equipment, associated with providing this service. The effect of PRIIA section 209 is to have Amtrak's relationship to the states for short-distance trains take on many of the attributes of a contract operator. We will run the trains the states compensate us to run. Some short-distance services may be terminated. For those that are not, the states will play the major role in the design of the service including determining the equipment that is provided for each of these services. Among the states' options are: 1) to compensate Amtrak for the use of Amtrak-owned and maintained equipment; 2) to compensate Amtrak for acquiring equipment for the benefit of a specific service; 3) to compensate Amtrak for operating and maintaining equipment owned by the state; 4) to

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compensate Amtrak to operate equipment owned and maintained by the state; or 5) various combinations of the above. Adding further to the complexity of addressing this part of fleet strategic planning, is that under past practice, certain types of equipment have been shared between short-distance and long-distance trains, and it is unclear whether and how that will continue in the future.

This represents a new environment in which Amtrak must plan its fleet needs. With limited exceptions, primarily California, North Carolina, and Washington, for the previous 40+ years the market for intercity passenger rail equipment was largely defined by Amtrak. Now there are other entities (albeit with some degree of Amtrak's support) that are taking the lead in defining equipment specifications, ordering equipment, testing prototypes and entering the new equipment into revenue service. On November 20, 2012, California, on behalf of itself, Illinois, Michigan and Missouri, ordered 130 Section 305-compliant multi-level coaches for corridor service in California and the Midwest. In the near future, Illinois will initiate procurement on behalf of several states for 125 mph capable diesel locomotives. This changed environment will lessen Amtrak's need to acquire equipment for short-distance service. It will also offer Amtrak opportunities to benefit from having the states assume the responsibility for overseeing the design, initial fabrication and prototype testing (and the unexpected costs that frequently accompany such activities), and from the economies of scale that can be realized by placing options on state orders where the equipment being ordered meets Amtrak's needs.

No doubt with time Amtrak will be better able to judge how to plan for the states' decisions concerning equipment, but the early years of transition will be filled with ambiguity. As an example, many questions remain to be answered for the states participating in the order of multi-level coaches that will replace Amtrak-owned equipment. When will the new equipment be delivered and ready for revenue service; will Amtrak or some other entity maintain the equipment; will the states ordering the passenger coaches also acquire section 305 locomotives or ask Amtrak to supply the power; will the FRA have funds in the future to assist the states in translating their other equipment desires into reality; and what becomes of the older single-level coaches freed up by this acquisition? While states' obligations under section 209 begin in FY 2014, thus far we have heard affirmatively from just two of the 18 section 209 states that they are committed to continuing the state-supported service after September 30 of this year. Moreover, we expect that at least the initial state commitments under section 209 will be for time periods of one or two years – too brief on which to base a decision to order new equipment. Thus, for the time being, Amtrak's fleet strategy for the state business line will be very much a wait and see how section 209 develops.

Timing of the Evolution of Fleet Strategic Planning

Developing the next fleet strategy using our new business line focus and recognizing the changing environment affecting state-supported trains would be a challenge even if our reorganization was complete and our process for executing our strategy imbedded in the organization. With so many important variables in motion, I doubt that a meaningful new fleet strategy reflecting execution of our overall corporate strategy will be possible before FY 2014 at the earliest and most likely not until the FY 2015 report. Thus I appreciate the recommendation in your report that Congress defers this requirement.

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Specific Comments on the draft OIG report

Identifying Equipment Needs

The role of ridership demand analyses. Early versions of Amtrak's strategic fleet planning focused on identifying the cost to recapitalize Amtrak's aging fleet in a timely manner based upon assumptions that Amtrak's services would remain essentially unchanged and that ridership would increase uniformly system-wide by a modest annual growth rate. This was an acceptable process for providing a high-level estimate of the cost of recapitalizing Amtrak's fleet in an environment where the availability of capital is unconstrained. It is not a practical approach to helping identify the investments required to improve the financial performance of Amtrak in an environment where the availability of capital for equipment investments is and likely will be severely constrained.

A key element of executing Amtrak's strategic plan is to use the discipline of business plans as part of planning and decisions related to resource allocation. The General Managers of Amtrak's operating business lines are accountable for providing superior customer service in their areas of responsibility while focusing on the financial bottom line. Each will propose business plans to best address their particular market segments. From these business plans will flow business cases, developed in a consistent manner, for allocation of resources available to Amtrak. In the equipment context, this could be allocation of existing equipment or allocation of capital to rebuild or repurpose existing equipment or acquire new equipment. Assuming that past is prologue and that capital available for investment is limited, the business cases will be an important consideration in setting priorities for the allocation of available resources.

Integral to the business cases, in particular for the Northeast Corridor and long-distance trains, will be estimates of ridership and revenue for their specific routes and services and strategies to yield the best financial outcome to Amtrak. As discussed above, planning for state-supported short-distance services will be somewhat different. The states and not Amtrak will be the key actors in decisions as to the amount and type of equipment to be used in the services they support. While Amtrak will help the states in service planning if requested to do so, in the end it will be the states' decisions such as whether there will be four cars or six cars on a particular train, whether the train includes a food service car, or whether the car is owned and maintained by Amtrak or some other entity. Thus, in this important segment of Amtrak's business, it is the decisions of our customers, the states, and not our customers, the passengers, that will be preeminent in fleet planning. It will be some time before we can effectively integrate the State-Supported Service segment of our business into long-term fleet strategic planning.

The potential acquisition of next generation high-speed rail equipment for the Northeast Corridor is serving in many ways as a pilot for demand-based equipment planning. Amtrak presently is undertaking in-depth reviews of the market potential for services along the spine of the NEC to identify the optimal size of the fleet – both in terms of numbers of trainsets and numbers of seats per trainset. This analysis is developing ridership and revenue projections under a number of scenarios, not just for trainset configuration but the type of infrastructure the equipment will operate on, both initially and later during its expected commercial life. This analysis is complex and has priority for the use of our resources available for this kind of planning. So, while ridership demand will become a part of planning for long-distance trains, such detailed analyses will not be available in the near term.

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Improving Equipment Availability. Amtrak agrees with the draft OIG report that improvements in equipment availability have the potential to improve our financial bottom line. Improved equipment availability together with a business case-based assessment of equipment needed for specific routes and services can generate more net revenue and/or lessen the operating and maintenance costs related to our existing fleet. It also can be an important factor in optimizing the size of orders of new equipment. The necessary companion to realizing this potential is the need for a high degree of reliability. This, in turn, is dependent upon the availability of capital for investment in equipment, both existing and new, on a long-term predictable basis.

A recent example resulted from the improved reliability of the current *Acela* trainsets. The resulting increase in equipment availability permitted Amtrak on January 28, 2013, to add one more departure each way between Washington and New York City in the evenings Monday through Friday. While the expanded service is still too new to declare a long-term success, thus far ridership on these new departures is almost double that projected prior to the start of the service.

An important observation in the draft OIG report is how Amtrak must become more of a data driven organization if we are to be successful in executing our corporate strategy. Our reorganized department led by the Vice President for Operations (VPO), will institutionalize a more focused effort tying fleet strategic planning, consist planning and equipment availability together. These functions are presently planned to be integrated under the Chief of Operations Research along with oversight of Amtrak's Lean Six Sigma activities. This is a new organization and largely a new function at Amtrak. Part of its mission will be to define how Amtrak can consistently acquire and use data and standardize processes through which we undertake and document analyses of investment options, including approaches to continuous improvement in areas of quality enhancement and cost reduction. This will help inform Amtrak decision-makers at all levels as to which options will yield the greatest net benefit to the Corporation.

Sizing the electric locomotive order. The Mobility Division of Siemens Corporation is producing 70 ACS-64 electric locomotives for Amtrak at its plant in Sacramento, CA. The request for proposals for this order was released in June 2009, the notice to proceed was issued in September 2010, the first prototypes of this equipment are presently being tested, and the final locomotive will be delivered for revenue service by January 2016. Amtrak uses electric locomotives to haul NEC Regional, Keystone, state-supported and long-distance trains over the spine of the NEC. Approximately 26 percent of Amtrak's ridership and 27 percent of Amtrak's ticket revenue comes from these services. Thus, electric locomotives are critical to our current and future operations and business model.

Our current active electric locomotive fleet totals 62 units, consisting of 18 AEM-7 DCs built between 1978 and 1988 by Electro Motive Division (EMD) of General Motors, 29 AEM-7 ACs built initially by EMD during the same time period but converted to AC traction in 1999 and 15 HHP-8 locomotives built in 1999 by the same consortium of Bombardier and Alstom that built the current *Acela* fleet.

The draft OIG report opines that only 56 locomotives, six fewer than Amtrak currently operates, are needed to meet the requirements for reliable operation of the NEC. The conclusion in the draft OIG report is based upon the 44 electric locomotives Amtrak uses on a typical non-holiday Friday and 12 additional locomotives to account for those out of

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service for maintenance. Amtrak disagrees that 56 was the appropriate size of a fleet on which to base the order of new locomotives.

Underlying considerations in determining the size of the order was Amtrak's past experience (which is little changed today) that such orders of new equipment are rare and must address the needs that Amtrak will likely face for decades. Thus the order needed to consider the possibility of growth in the services supported by these electric locomotives as well as the possibility that some percentage of the electric locomotives will become unserviceable before the projected end of their commercial life. The Federal Transit Administration, in its guidance for oversight of equipment fleet planning by commuter agencies (which OIG reports have considered authoritative in such matters) believes consideration of both factors is appropriate.²

Ridership on the NEC Regional service has grown by a compound average growth rate (CAGR) of 1.7 percent since 2008 and 3.1 percent since 2002 (a period that bridges the recent recession). Extrapolating ridership on the NEC Regional until 2026, when the ACS-64 locomotives will be 10 years old, using these rates of growth would result in NEC Regional ridership being between one-third (two million additional passengers) and one-half (four million additional passengers) greater than it is today. While one can not be sure what will happen 13 years hence, and there are many factors that could affect these projections, prudence and sound business practices would dictate a need to plan for some degree of growth based upon these trends.

Amtrak's experience with the AEM-7 fleet is that over its life, 7 units (about 10 percent) of the initial acquisition have been destroyed in accidents or fires. Two of the 15 HHP-8 locomotives (about 13 percent) were out of service for almost two years due to collisions and fire issues. So the potential for an unexpected reduction in the available fleet is real. Given the lack of a source of readily available replacement electric locomotives, prudence and sound business practices would dictate a need to plan for the contingency that some of the locomotives will become unserviceable before they would otherwise be retired.

There may be a difference between the minimum units necessary to operate a service and the optimum number of units for an effective and reliable service. Amtrak has a long history of making do with the absolute minimum amount of investment. Amtrak's utilization rate of our electric locomotives exceeds by far that of our European counterparts.³ New Jersey Transit, as another example, operated the second largest number of AEM-7s, but retired these locomotives at a younger age and with significantly fewer miles than the locomotives Amtrak continues to operate. In the professional judgment of Amtrak's mechanical department, based upon literally decades of experience maintaining aging electric locomotives, a pool of equipment larger than the minimum necessary will enhance reliability, lower maintenance costs, and extend the life of these locomotives.

The result of sizing a fleet to the absolute minimum necessary is the resulting reduction or inability to deal with unexpected contingencies that might pose significant risk to the Corporation. As an example, *Acela* equipment has on occasion been unexpectedly removed

² U.S. DOT Federal Transit Administration; Oversight Procedure 37-Fleet Management Plan Review, May 2010, page 4.

³ Current mileage on the AEM-7 fleet is nearly 4 million miles. Amtrak's OIG 2011 Evaluation of Amtrak's FY2010 Fleet Strategy: p.28 shows European railroads retire electric locomotives at generally the same age as Amtrak, but before they reach 3 million miles.

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from service. Most notable was the removal from service of the entire *Acela* fleet in April 2005 to address unexpected cracking in the brake systems. Complete *Acela* service was not restored until late in September of that year. Amtrak was able to cobble together a substitute “*Metroliner*” service using electric locomotives and passenger cars assembled from across the Amtrak system, to limit the financial and transportation impact of the loss of use of *Acela* equipment. Amtrak’s ability to respond to such risks would be significantly curtailed if the electric locomotive fleet is sized to the minimum needed on a typical Friday. Given that NEC premium service accounts for 25 percent of Amtrak’s total ticket revenues and about 50 percent of the NEC operating surplus, the lack of flexibility to meet an unanticipated interruption in *Acela* service by sizing the electric locomotive fleet to the absolute minimum represents a significant enterprise risk.

As outlined above, Amtrak believes that an electric locomotive fleet of 70 units is appropriate. Looking at the equipment needs when the new locomotives have been in service for 10 years, if one considers the number of units presently used on a typical Friday, two to four units for seasonal peaks and special trains, three to five units for protect, ten to twelve units out of service for extended maintenance or overhaul, allowances of five to seven units lost to service due to accidents, and five to seven units for growth, 70 units is reasonable. Until the units are needed for growth or lost due to accidents, Amtrak can operate a larger pool of equipment than in the past and realize the benefits of increased reliability, reduced maintenance expense and extended useful life that would flow from less intensive use of this equipment.

How Best to Meet Amtrak’s Equipment Needs

Tradeoff between Procuring New and Maintaining Existing Equipment. The March 2012 Fleet Plan like its predecessors took the approach of identifying how the Amtrak fleet could be recapitalized with new equipment over a period of years should funding for that purpose be available. It is important to distinguish such an aspirational strategic plan with tactical decisions that reflect the reality of resource availability. Thus while the strategic plan discussed fleet in terms of acquisition of new equipment, no decisions had been made to implement most aspects of the plan.

The draft OIG report discusses the relative impact of new equipment on ridership. In two of the most recent instances where new equipment was introduced into an existing Amtrak service, *Talgo* equipment in the Pacific Northwest (1999) and *Acela* on the NEC (2001), both were accompanied by prolonged periods of ridership and revenue growth. That is not to say that the new equipment was the sole reason for these improvements, but it can be assumed that the new equipment has contributed to the success of these services. However, we will not acquire equipment simply because new is better than old. Acquisition of new equipment will be based upon sound investment decisions that reflect our twin goals of improving our financial bottom line and providing superior customer service.

Amtrak’s primary equipment strategy, of necessity, has been maintaining existing equipment for extended periods of time. While the structure of past fleet strategies used equipment age as a basis for identifying when replacement should be considered, this has not translated into being the sole decision-making criteria on whether and when we will replace equipment. Given the resource constraints Amtrak will likely live under for the foreseeable future, rehabilitation, reuse and repurposing of equipment will be explored before decisions are made to buy new. The future structure of fleet strategic plans identified above will make this distinction more clear.

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Retirement of HHP-8 Electric Locomotives. Amtrak operates 15 HHP-8 electric locomotives that were ordered in 1996 from the same Bombardier/Alstom consortium that manufactured the *Acela* trainsets. These locomotives were designed to replace aging E-60 locomotives that were primarily used to haul the longer long-distance and regional train segments operating between New York City and Washington, and in anticipation of the extension of electric traction from New Haven to Boston. These will be retired from active passenger service on Amtrak upon arrival of the new ACS-64 locomotives.

HHP-8 locomotives are maintained as part of the electric locomotive fleet along with the AEM-7ACs and AEM-7DCs, and not as part of the *Acela* fleet. Since their delivery in 1999, they have not demonstrated the level of reliability that Amtrak expected to achieve, despite several efforts to improve their performance. While the efforts by the Mechanical Department have improved reliability over the last three years, they have done so at a much higher cost. As an example, the average number of incidents for HHP-8s per 10,000 miles has improved 40 percent over the last three years, yet they have not yet reached the level of AEM-7ACs. An average HHP-8, however, costs 64 percent more to operate on a per mile basis than the older AEM-7.

While the HHP-8s have some similarities to *Acela* power cars, there are significant differences as well, including that with two power cars in the fixed *Acela* trainset, there is some degree of redundancy with the power cars not normally present in regional trains pulled by HHP-8s. But the most important similarity is that they are both technologically complex and based upon technology that is at least 17 years old. Amtrak expects that we will see benefits from having one common electric locomotive type instead of the three we currently operate in terms of training, staffing, scheduling, inventory maintenance and other factors. Amtrak also expects to see benefits from a more robust supply chain in maintaining locomotives using contemporary technology similar in many respects to locomotives presently being manufactured and in operation in Europe, when compared to the older technology HHP-8s whose maintenance is challenged by many parts no longer being in production by their original manufacturers, if at all.

The draft OIG report asserts and we agree that applying more intensive maintenance practices to HHP-8s could continue recent trends of improved reliability and extend its useful life indefinitely. However, the engineers that maintain this equipment on a daily basis are not confident that such a strategy would result in a level of improvement commensurate with the level of additional resources that would be required.

Amtrak believes that replacement of the entire existing electric locomotive fleet with one standard modern design is in the best long-term interests of the Corporation. A point on which we agree with the draft OIG report is that in making decisions that involve the acquisition of new equipment at substantial cost, we will undertake formal analyses that lay out the costs and benefits to the Corporation of various investment options. As an example, a review of options for future use of the existing *Acela* equipment will be part of the effort that will lead to decisions as to whether and to what extent Amtrak will acquire next generation high-speed rail equipment on the Northeast Corridor.

Use of Multi-Level Passenger Cars. The draft OIG report recites a previous recommendation that Amtrak consider increasing the use of multi-level cars where practical and feasible, but concludes that Amtrak has not made decisions reflecting this recommendation. Since Amtrak is not in the market today, nor anticipates being in the

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market in the near term for equipment that would lend itself to the application of the OIG's recommendation, other analytical needs have taken precedence over a more detailed response to this recommendation.

Approximately one-third of Amtrak's current passenger car fleet is comprised of multi-level cars, so Amtrak is familiar with this car type and its advantages and constraints. As mentioned earlier, California and three Midwest States are procuring 130 multi-level cars that will in part replace aging single level coaches owned by Amtrak. Amtrak is closely monitoring this procurement to see how it might benefit the Corporation in other ways. Amtrak has also provided the OIG with comments reflecting challenges associated with using the types of multi-level commuter equipment currently operating on the NEC for intercity service. Specific concerns include the aisle width, the high center of gravity's impact on the maximum unbalance that FRA will permit, the impact on capacity from including ADA-compliant seating and bathrooms, adequate accommodations for luggage, and the impact of this equipment configuration on dwell times. These concerns do not imply that Amtrak is opposed to consideration of multi-level equipment, but that the use of multi-level equipment must result from a complex analysis that addresses both the advantages and challenges that the equipment presents in the specific situation being considered.

When Amtrak does move to address equipment needs through future equipment acquisitions, we expect to do so through performance-based specifications, rather than design based specifications. This will help yield the best value to the Corporation while meeting our operational and customer service needs. The request for information that is laying the foundation for acquisition of next generation high-speed rail equipment to provide premium service on the spine of the Northeast Corridor did not specify single-level equipment. Instead, it is asking potential vendors to identify equipment they presently make that can meet the performance requirements of the NEC.

Integrating Fleet Planning into Overall Corporate Strategic Planning

The Corporate Research and Strategy department (CR&S) is responsible for coordinating Amtrak's strategic planning and helping design and oversee the corporate-wide approach to strategy execution. CR&S has been assigned temporary authority over the development of the fleet strategy to design the processes to assure that fleet strategy aligns with other elements of corporate strategy execution, including development of the annual legislative and grant requests and five year financial plans.

Amtrak is implementing the Balanced Scorecard (BSC) approach to strategy execution, which will align our organization and our allocation of resources with objectives necessary to accomplish our strategic goals. Fleet needs will be based upon how each of the business lines believe they can best serve their markets from the perspective of improving Amtrak's financial bottom line while providing superior customer service. These investment needs will then compete with the business cases for other corporate investment needs to determine the priority for allocation of available resources. As discussed earlier, the fleet needs will be presented in three different time frames:

1. One year (short-term) to align with annual legislative and grant request. It will address the status of equipment acquisitions previously committed to and those specific fleet-related actions for which we will seek financing in the next year or public capital investment in the next Appropriations Act.

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2. Five years (mid-term) to align the equipment needs identified in the operating business lines five-year plans with the five-year financial plans, and to show the "out-year" funding of multi-year acquisitions.
3. Longer than five years (long-term outlook) that will address long-term issues that do not fall within the five-year time frame, in particular the aging and additional wear and tear being placed upon our fleet.

The draft OIG report points out that it is unclear how Amtrak plans to fund future equipment acquisitions. This is indeed true. The lack of a predictable long-term source of capital has been an impediment to effective strategic planning by the Corporation since its creation. It is unfortunate but true that in the absence of such access to capital, even meritorious proposed actions with significant returns on investment might be deferred indefinitely, in favor of deferring maintenance or short-term repairs that might get Amtrak through yet one more year but are more costly in the long-term. Both the Administration and Amtrak in this year's budget proposal have proposed that Congress address this fundamental shortcoming with how this nation provides intercity passenger rail service.

There is one point in the draft OIG report that needs clarification. The draft report states that Amtrak is depending upon the increased ticket revenues resulting from the operation of the 70 new ACS-64 electric locomotives, citing a previous version of Amtrak's five-year financial plan. That statement in the five-year plan was in error. While initial discussions with FRA over the RRIF loan included a number of options through which a financial stream for repayment of the loan would be identified, the final loan agreement provides that the source of funds for repayment of the RRIF loan is the net operating surplus of the NEC and not operating enhancements resulting from the 70 electric locomotives. The NEC operating surplus has grown significantly since we received the RRIF loan in 2010 and shows every indication of continuing to grow in the near future. Future versions of the five-year plan will clarify the source of funds for repayment of the loan.

Recommendations in the Draft OIG Report

1. Ensure that recommendations from our prior report are implemented.

Response: See below.

Prior Recommendations to Improve Amtrak's Fleet Planning Process (March 2011 OIG Report)

1. Rolling Stock Requirements. Ensure that future strategy updates include a more detailed process to determine future rolling stock requirements. Specifically, this would include:
 - Route-specific ridership demand forecasts incorporating service extensions, in addition to existing service;
 - The identification of external factors that significantly influence ridership demand, sensitivity analyses to measure their impact, and alternative strategies to accommodate potential changes in demand; equipment-type-specific load factors (for example sleeper v. coach cars);
 - The consideration of possible consist alternatives and changes in train frequencies; and
 - An analysis of the locomotive requirements needed to support future car fleet requirements.

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Response: We are in basic agreement with this recommendation. Amtrak's fleet strategic planning is shifting to a business line-based strategy where the business lines, based upon demand forecasts and other relevant factors, will make recommendations as to how they can best deliver on Amtrak's twin priorities of focus on the bottom line and providing superior customer service. For the NEC and long-distance trains, this will include ridership forecasts and related market analyses, in addition to consideration of existing minimal service, particularly as it relates to long-distance trains. For state-supported, short-distance service, this will be more orientated toward meeting the rolling stock requirements articulated by the state service plans. While Amtrak will assist the states in developing their plans, it is the states and not Amtrak that make these decisions.

2. Multi-level Passenger Cars. Ensure that future strategy updates consider increasing the use of multi-level passenger coaches wherever practical and feasible.

Response: We are in basic agreement with this recommendation. Multi-level passenger cars offer both opportunities and challenges for intercity passenger rail operations, particularly on the NEC. Amtrak anticipates, however, that future equipment acquisitions will be performance-based rather than design-based. In such a process, Amtrak generally will not dictate whether or not the equipment proposed by a potential vendor is multi-level. Instead, Amtrak will look to the vendors to determine how they can deliver best value to Amtrak while meeting our operational and customer service needs.

3. Equipment Availability. Ensure that future strategy updates consider Amtrak's planned equipment availability and reliability improvements and incorporates their impact into equipment estimates. Also ensure that future strategy updates incorporate the impact of any additional equipment availability improvements.

Response: We are in basic agreement with this recommendation. After business lines identify market opportunities and the specifics of how best to realize those opportunities there will be an analysis of fleet requirements. This will be based upon an analysis by Amtrak's experts, particularly those in the mechanical and operations research departments. That analysis will incorporate realistic assumptions of equipment capabilities, including the reliability and hence the availability, of that equipment needed to provide the high level of customer service Amtrak seeks to provide.

4. Economic Useful Life of Amtrak's Rolling Stock. Ensure that future strategy updates are based upon an economic evaluation model that uses strategic, operational, and financial factors (including replacement costs, operating expenses, overhaul and upgrading expenses, maintenance expenses, and revenue/ridership impact of each relevant equipment alternative) to determine the optimal retirement age for Amtrak's rolling stock.

Response: We are in basic agreement with this recommendation, particularly as it would apply to short-term (i.e. annual funding request) and near-term (five-year time frame) components of the plan. As business lines develop their plans to serve their markets, they will look at all factors relevant to developing a profit/loss-focused business case for that service including the capital and maintenance costs

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associated with the necessary equipment. This then will drive particular decisions about the use of specific equipment. Outside a specific business case, it will be more difficult to develop an economic evaluation model, in part because the specific potential uses of the equipment, including the availability of capital and maintenance funding to extend the life or modify the equipment for other uses, would not be known. However, we will explore how considerations beyond age, in particular our experiences in maintaining and overhauling equipment, can be worked into the more general portions of the long-range strategic plan.

5. Fleet Plan for *Acela Express*. Ensure that future strategy updates include the results of an *Acela Express* replacement and expansion plan that is linked to clear strategic focus for the service and considers alternatives in the context of strategic goals, forecast demand and revenue scenarios, cost performance and other relevant factors.

Response: We agree with this recommendation. The new approach to fleet decision-making is being piloted as part of our efforts, in partnership with the California High-Speed Rail Authority (CHSRA), to explore and possibly procure the next generation high-speed rail trainsets to supplement and perhaps replace the current *Acela* trainsets. Amtrak at this time is assessing the market needs and opportunities for high-speed service on the current NEC infrastructure which we anticipate will be completed in the late spring. This will support development of options to exploit the market opportunities, with performance characteristics of the trainsets (seats, schedules, stops, and trip times) from which potential revenues can be derived. This will then be applied to various fleet-based capital investment options to help inform the decision of how best to proceed.

6. Rolling Stock Acquisition Approach. Ensure that future strategy updates clearly demonstrate how Amtrak's procurement approach results in the most cost effective use of its funds while advancing support for a competitive supplier base.

Response: We agree with this recommendation. These considerations will be foundational to decisions to proceed with acquisition of equipment. Developing general plans outside the business cases for specific acquisitions would require these issues be addressed at a higher level. But even in that regard, these considerations are both high priorities of Amtrak.

7. Integration of Systematic Fleet Planning Process into Amtrak's Overall Strategy. Ensure that future updates of the Fleet Strategy are based on a more systematic and iterative planning process, one that integrated with Amtrak's overall strategy and linked to other strategic plans and activities. This would include a financial assessment to identify the most economical solution for Amtrak and the taxpayer.

Response: We agree with this recommendation. Fleet Strategic Planning is being directly related to and will flow from the strategic objectives and initiatives in the corporate strategic plan. While financial issues will certainly be addressed at high levels, the specific determination of the most economic solution will actually flow from much more tactical business cases developed for specific services by the individual business lines.

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Recommendations in the Draft OIG Report (continued)

2. Prohibit Amtrak from making additional equipment acquisitions until the need for the equipment has been fully analyzed, the acquisitions have been shown to be the most cost-effective option available to satisfy the need, and that funding for the acquisitions has been identified through an integrated planning process that supports Amtrak's business strategy.

Response: We agree with this recommendation. Additional equipment acquisitions by Amtrak will be based upon the identified need for such acquisitions as part of a business case developed by an operating business line that aligns with Amtrak's corporate strategy.

3. Ensure that a review of the current procurement of 70 locomotives is conducted to determine whether to reduce the size of the order so that the funds that will be spent repaying the loan in the future could be put to better use elsewhere; this should document both the number of locomotives needed to satisfy demand and whether Amtrak could cost effectively address its needs by continuing to operate and maintain existing HHP-8 locomotives.

Response: Amtrak has reviewed this procurement, including its size and the potential savings that could be realized by reducing the size of the order. Amtrak believes that the 70 ACS-64 locomotives can be productively used to meet the current and future needs of electric operation on the Northeast Corridor. The net benefit the Corporation could realize from changing this procurement, which is already in the advanced stages of implementation, would be limited, and could have adverse ramifications to the Corporation in future procurements. We believe that proceeding with the current acquisition is a better option over the long-term than reducing the order size and trying to maintain the HHP-8 locomotives. In addition, opportunities exist to minimize the downside risk if that does not prove to be the case.

4. Consider asking Congress to suspend any requirements for an FY 2013 fleet strategy document for a year, in order to address the issues we describe in this report.

Response: We agree with this recommendation. We plan to provide a discussion to Congress that fleet strategic planning at Amtrak is evolving along the lines discussed above

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Appendix IV

ABBREVIATIONS

FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	fiscal year
GAO	U.S. Government Accountability Office
OIG	Office of Inspector General
PRIIA	Passenger Rail Investment and Improvement Act of 2008

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Appendix V

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OIG MISSION AND CONTACT INFORMATION

Amtrak OIG's Mission The Amtrak OIG's mission is to provide independent, objective oversight of Amtrak's programs and operations through audits, inspections, evaluations, and investigations focused on recommending improvements to Amtrak's economy, efficiency, and effectiveness; preventing and detecting fraud, waste, and abuse; and providing Congress, Amtrak management, and Amtrak's Board of Directors with timely information about problems and deficiencies relating to Amtrak's programs and operations.

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