



**U.S. Department of
Transportation**

Office of the Secretary
of Transportation

Inspector General

Office of Inspector General
Washington, DC 20590

June 30, 2010

The Honorable Mike Crapo
United States Senate
Washington, DC 20510

The Honorable Mike Simpson
United States House of Representatives
Washington, DC 20515

The Honorable James E. Risch
United States Senate
Washington, DC 20510

The Honorable Walt Minnick
United States House of Representatives
Washington, DC 20515

Dear Senators Crapo and Risch and Representatives Simpson and Minnick:

Thank you for your letter of September 15, 2009, which raised concerns with the Federal Aviation Administration's (FAA) proposal to transfer the terminal radar approach control (TRACON) services currently provided at Boise to Salt Lake City and questions about the cost estimates and the safety impact associated with the move. You asked us to conduct a joint review of these issues with FAA's Air Traffic Safety Oversight Service (ATOS). As agreed with your staff, our office examined FAA's costs, and the Agency's ATOS separately addressed the safety issues. Accordingly, we are providing the results of our cost study in the enclosed briefing, which we discussed with your staff on April 16, 2010.

The scope of our cost review and analysis was FAA's (1) original 2005 business case and Memorandum of Understanding with the city of Boise, (2) subsequent reassessments (in fiscal years 2006 and 2009) and underlying assumptions that drove projected costs and savings, and (3) supporting documentation. In addition, we met with FAA terminal operations officials in Washington, DC, to obtain their perspectives on the transfer and the associated costs based on past and current assumptions. We also visited air traffic facilities in Boise and Salt Lake City and, as part of that work, interviewed FAA officials, air traffic controllers, and representatives from the National Air Traffic Controllers Association.

Your letter specifically cited concerns over the lack of transparency that FAA provided with regard to estimated costs for the TRACON transfer, and our review identified similar concerns. While FAA had a process to evaluate the estimated costs and savings associated with the move from Boise to Salt Lake City, FAA's business

case was flawed and lacked transparency. Perhaps most importantly, FAA did not adequately consider certain costs associated with this move, which are further detailed in the enclosure. On June 11, 2010, FAA officials informed us that they had cancelled the planned transfer of staff and service from Boise to Salt Lake City. The following summarizes the results of our review.

FAA's business case did not reflect changes in key assumptions. Assumptions that drove the projected \$24 million savings in the original 2005 business case for moving TRACON operations to Salt Lake City changed, but FAA did not adjust the 2009 business case accordingly. Specifically, FAA originally planned a facility co-location and estimated that 81 percent of a projected \$24 million in savings would be from manpower costs. However, in 2009, FAA planned a facility consolidation instead and estimated that 10 additional controllers would be needed in Salt Lake City to manage Boise air traffic. This equates to potentially more than \$986,000 in base salary costs alone per year and more than \$19 million over 20 years. Rather than address these additional manpower costs, FAA's 2009 reassessment considered manpower costs/savings as "neutral." This was an unrealistic assumption since a consolidation,¹ as opposed to the co-location² that was originally planned, would have generated a significant pay raise for controllers relocating to Salt Lake City.

FAA's business case understated the \$3.12 million in investment costs associated with relocating the TRACON to Salt Lake City. We estimate that as much as \$12 million in additional costs were not factored into FAA's projected costs. These include modifications to the existing Standard Terminal Automation Replacement System (STARS) at Salt Lake City to accommodate the Boise airspace requirements, estimated to cost between \$2 million and \$8 million. Also, FAA did not factor in additional controller training at Salt Lake City with estimated costs between \$2 million and \$4 million.

FAA's basis for facility lifecycle costs may have been unrealistic. FAA based lifecycle costs on a 40-year model, which is the projected normal life span for an air traffic facility. However, the Salt Lake City facility is already 11 years old, reducing its lifespan by one-fourth. Therefore, comparing costs over a 40-year span for both facilities may not have been appropriate given that Boise is a new facility. Additionally, FAA's analysis failed to address facility upgrades that may have been needed at Salt Lake City to accommodate an increased workforce in the near and long term.

¹ Consolidation combines TRACONs for numerous airports within a common facility. Controllers assigned to a consolidated facility certify on all areas and are paid equally, regardless of how many aircraft for which their area is responsible.

² Co-location is defined by FAA as housing several different level TRACONs, which provide air traffic control to different areas, into a single facility where controllers would only be certified to work a specific area (such as Boise) at a pay band appropriate for the area they are controlling.

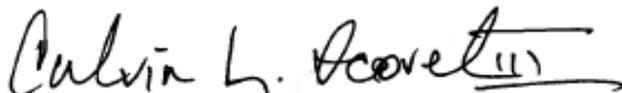
FAA's cost estimates of the option to keep the TRACON in Boise were questionable. While FAA understated the costs to relocate the TRACON, FAA overstated investment costs to keep the TRACON at Boise. Approximately \$7.4 million (or 89 percent) of FAA's projected investment costs for keeping the TRACON in Boise were questionable. For example, \$4.15 million in construction costs for the Boise facility appear double-counted since these costs would have already been accounted for as part of the \$15.5 million provided by Congress for construction of the new tower. In addition, FAA's business case included \$2.25 million, plus associated installation costs, for upgrading the current Boise terminal automation system to STARS. However, FAA's plan to rely on STARS may not have been the most cost effective approach. First, FAA currently does not have any additional STARS systems available or on contract. Second, in its current configuration, STARS needs several technical upgrades to accommodate NextGen technologies, including a new satellite-based surveillance system that is currently being deployed. FAA also plans to upgrade current terminal automation systems, like the one now in service at Boise, for significantly less cost than installing STARS.

In conclusion, our work shows that FAA must periodically reassess business cases for consolidating air traffic facilities to evaluate whether the assumptions underlying any projected cost savings remain valid and adjust the course of action as appropriate. FAA's business case and the two subsequent reassessments were "snapshots" in time, taken years apart, and did not reflect the actual conditions on the ground. As we observed in Boise, the new tower could have been equipped with a fully functional TRACON, without any upgrades, in space already built and allocated specifically for that purpose. However, FAA Headquarters officials were under the impression that retaining the TRACON in Boise would require significant upgrades to the building and factored in additional costs for that purpose. FAA may have avoided this situation with periodic FAA Headquarters staff visits to the site. This highlights the need for improved coordination and communication between FAA Headquarters and air traffic facilities in the field.

Facility realignments and consolidations will assume greater importance as FAA moves forward with the Next Generation Air Transportation System. Therefore, the Agency's processes for estimating the costs and expected benefits of realignment efforts will warrant greater oversight. We discussed the results of our work with FAA's Chief Operating Officer, and he agreed that it will be important to have sound business cases in the future for realigning and consolidating FAA facilities.

If I can answer any questions or be of further assistance, please contact me at (202) 366-1959 or Matthew E. Hampton, Deputy Assistant Inspector General for Aviation and Special Program Audits, at (202) 366-1987.

Sincerely,

A handwritten signature in black ink that reads "Calvin L. Scovel III". The signature is written in a cursive style with a horizontal line underlining the name.

Calvin L. Scovel III
Inspector General

Enclosure

cc: FAA Administrator
FAA Deputy Administrator
Vice President of Terminal Services, Air Traffic Organization



FAA's Business Case for the Boise – Salt Lake City TRACON Consolidation

Requested by the Idaho Congressional Delegation

Summary of OIG Scope of Review

▶ Idaho Congressional Delegation Request

- On September 15, 2009, the Idaho Congressional Delegation (comprised of Senators Mike Crapo and James Risch and Representatives Mike Simpson and Walt Minnick) requested that our office and FAA's Air Traffic Safety Oversight Service (ATOS) examine FAA's cost estimates for the planned transfer of the Boise Terminal Radar Control (TRACON) facility to Salt Lake City.
- The Members cited concerns over FAA's lack of transparency with data and specifically questioned the (1) cost effectiveness of relocating the radar and (2) assumptions that drove FAA's original proposal in 2005.

▶ Objectives

- As agreed with congressional staff, we examined the soundness of FAA's business case and the costs presented. FAA's ATOS reviewed safety concerns.

▶ Scope & Methodology

- Our scope of review and analysis focused on FAA's original 2005 business case and Memorandum of Understanding with the city of Boise, subsequent FAA relooks, the underlying assumptions supporting the transfer, and FAA documentation for the projected costs and savings.
- We visited terminal and TRACON facilities in Boise and Salt Lake City to (1) interview FAA officials, NATCA representatives, and controllers and (2) tour air traffic facilities.

Background on FAA's Plan To Relocate the Boise TRACON to Salt Lake City

- ▶ After replacing the main passenger terminal at Boise/Gowen Field, FAA and the City of Boise determined that a new tower was also required. To date, Congress has provided FAA with \$15.5 million for the replacement of the Boise tower, and construction is underway.
- ▶ FAA also concluded that TRACON operations, if realigned to Salt Lake City, would result in benefits and efficiencies for operations and avoid costs by utilizing space and equipment available at the Salt Lake TRACON.
- ▶ Movement of TRACON operations originally included the relocation of 14 air traffic controllers from Boise to Salt Lake City.
- ▶ At the time of our review, the movement of the TRACON, to include transferring controllers and commissioning the new tower, was planned for January 2011. FAA has since decided against relocating Boise TRACON operations to Salt Lake City.

Background on FAA's Plan To Relocate the Boise TRACON to Salt Lake (continued)

- ▶ FAA conducted an analysis of several alternatives before deciding to proceed with the Boise TRACON Realignment.
- **Original 2005 FAA Business Case: Considered Four Alternatives**
 - Alternative 1 – Continue operations in existing facility (no action)
 - Alternative 2 – Modernize existing Air Traffic Control Tower (ATCT) and TRACON
 - Alternative 3 – Replace ATCT and base building and co-locate TRACON operations at Salt Lake City TRACON (S56)
 - Alternative 4 – Replace existing ATCT and TRACON
- FAA considered Alternatives 3 & 4 as acceptable to correct existing problems at Boise and recommended and proceeded with Alternative 3 (see note 1).
- **2006 Reassessment**
 - Conducted a relook of four original 2005 alternatives
 - FAA again concluded that Alternative 3, moving Boise TRACON operations and co-locating them at Salt Lake City TRACON – S56, was the most cost effective alternative.
- **2009 Reassessment**
 - Second relook of alternatives focused only on the original Alternatives 3 and 4 (see note 2).
 - “Consolidation” of Boise TRACON to Salt Lake City TRACON mentioned for first time—as opposed to a TRACON “co-location” as planned in 2005—having significant implications on manpower savings.

Notes: 1) Co-location is defined by FAA as housing several different level TRACONs, which provide air traffic control to different areas, into a single facility where controllers would only be certified to work a specific area (such as Boise) at a pay band appropriate for the area they are controlling.

2) Consolidation combines TRACONs for numerous airports within a common facility. Controllers assigned to a consolidated facility certify on all areas and are paid equally, regardless of how many aircraft for which their area is responsible.

Summary of Key Observations

- ▶ FAA’s business case for relocating the TRACON from Boise to Salt Lake City was flawed and lacks transparency based on a number of factors:
 - Key factors used in 2005 that drove FAA’s claims of nearly \$24 million in savings—81 percent from anticipated manpower savings—changed, but FAA did not adjust its 2009 business case accordingly. Specifically, FAA originally planned a TRACON “co-location” but in 2009 planned a “consolidation.”
 - FAA considered manpower and training costs as “neutral”; this was unrealistic since a consolidation of Boise TRACON to Salt Lake City would have generated a significant pay raise for controllers relocating to the Salt Lake City TRACON, and FAA would not have involuntarily relocated or fired any controller at Boise who did not agree to relocate.
 - Projected \$3.12 million investment costs for relocating the TRACON to Salt Lake City—the selected alternative—were understated.
 - Projected \$9.12 million investment cost for the option to keep the TRACON in Boise appear overstated—nearly \$7.4 million or 81 percent—were questionable.

FAA's 2009 Business Case Did Not Accurately Reflect Costs Based on Current Assumptions, Distorting any Projected Savings

- ▶ FAA realized it would not achieve the \$24 million in savings as originally expected when the TRACON was planned as a co-location, but did not adjust the 2009 business case to reflect manpower costs anticipated with a TRACON consolidation.
- ▶ Rather, FAA's business case considered manpower costs and savings as "neutral," which was unrealistic given the following:
 - Under a consolidation, all controllers are trained to work all sectors at the same pay grade, generating a significant pay raise for any new controllers assigned to the Salt Lake City TRACON.
 - FAA's manpower projections for the Salt Lake City consolidation of Boise controllers were as follows:
 - FAA will offer relocation options for to up to eight Boise controllers (FAA estimates possibly four may accept).
 - Controllers who elect not to relocate will not be fired or involuntarily reassigned. Excess controllers will remain at Boise to work in the tower and will eventually be eliminated through attrition (e.g., retirements, voluntary departures).
 - If none of the Boise controllers relocate to Salt Lake City, Boise will retain up to 8 excess controllers at level 8 positions (salary range of \$59,841 – \$80,785), and Salt Lake City will acquire 10 controllers at level 10 positions (salary range of \$73,103 – \$98,689).
 - In March 2010, FAA briefed NATCA that a total of 10 additional controllers will be needed in Salt Lake City (Level 10) to handle the Boise workload. That could equate to potentially more than \$986,890 in base salary costs alone per year and over \$19.7 million over 20 years in base personnel costs for Salt Lake City. In addition, up to eight current Boise TRACON (Level 8) controllers could remain at Boise as excess personnel at a cost of approximately \$646,280 per year in base salary and \$12.9 million over 20 years, for a potential total as high as \$33 million.

FAA's Projected \$3.12 Million Investment Costs for Relocating the TRACON to Salt Lake City Were Understated

- ▶ Our review shows a number of questionable investment costs involved with relocating the Boise TRACON operations to the Salt Lake City TRACON (that were not a part of the estimated \$3.12 million). Specifically, FAA's \$3.12 million in investment costs failed to address the following significant costs involved with the relocation:
 - Boise and Salt Lake City TRACONs are not located in airspace with adjoining sectors. This creates a number of problems for the Standard Terminal Automation Replacement System (STARS) at Salt Lake City, which would have required software modifications.
 - Modifications for the STARS system were not included in the investment cost for Salt Lake City but were instead put into the STARS national baseline.
 - These modifications range from \$2 million to \$8 million, depending on what source is used, and are not planned for use at any other STARS sites.
 - FAA based lifecycle costs on a 40-year model, which is the projected normal life span for an air traffic facility; however, Salt Lake City is already 11 years old, reducing its lifespan by one-fourth. Therefore, comparing costs over a 40-year span for both facilities was not appropriate.

FAA's Projected \$3.12 Million Investment Costs for Relocating the TRACON to Salt Lake City Were Understated (continued)

- Projected costs do not consider the impact on training at Salt Lake City. Our review found that:
 - According to the Salt Lake City coordinator for Air Traffic Control Optimum Training Solution (ATCOTS), controller training would have been severely impacted by the relocation. Unofficial cost estimates were between \$2 million and \$4 million. In addition, the nationwide ATCOTS contract has been already been reduced by 30 percent, further impacting the training of new controllers at Salt Lake City.
- Other opportunity costs associated with training that were not addressed include:
 - 19 developmental controllers at Salt Lake City, who have already been waiting 12 to 18 months for training slots to become certified, would be pushed to the back of the line to allow training for current TRACON controllers on Boise airspace and transferring Boise or replacement controllers on Salt Lake City airspace. Training for these controllers could take over 12 months to complete.
 - Extra unused STARS Terminal Controller Workstations are currently being used to train developmental controllers, which would have been reallocated back to live air traffic control to control Boise and Provo traffic. The ATCOTS Coordinator indicated that this would further delay training.

FAA's Projected \$9.12 Million Investment Costs for Keeping the TRACON in Boise Were Questionable

- ▶ Our review found that approximately \$7.4 million, or 81 percent, of the investment costs for the alternative to keep the TRACON in Boise were likely overstated:
 - FAA's 2009 business case reassessment added additional building construction costs that were already funded as part of the \$15.5 million ATCT/TRACON replacement that Congress provided. Specifically, we identified \$4.15 million in investment costs for parking lots, driveways, security fencing, and internal building renovation, all of which are already incorporated into the facility construction costs.
 - Additionally, \$3.25 million was included in the investment costs to acquire and install a STARS system for the Boise TRACON. However, FAA does not have any additional STARS systems available or under contract at this time. A Common Automated Radar Terminal System (CARTS) IIE system is available in FAA inventory that can be installed and could be upgraded under segment 1 of FAA's Terminal Automation Modernization Replacement Phase 3 modernization program. This would cost significantly less than purchasing a new STARS system.
- ▶ In addition, conditions on the ground at the new Boise facility were not reflected accurately in the business case or relooks. For example, FAA Headquarters believed that the space identified on the plans as future TRACON space in the new base building did not include the necessary infrastructure to function as a TRACON. Our visit and interviews with site engineers indicated that this assumption is incorrect.

Concluding Observations

- ▶ As FAA transforms the Nation's air transportation system, facility consolidations and realignments—a controversial and sensitive effort—will assume greater importance and urgency, as evidenced by provisions in the Senate version of the FAA reauthorization bill which call for an “Air Traffic Control Modernization Oversight Board” to oversee FAA's consolidation and realignments efforts.

- ▶ We briefed FAA officials on the results of our review, which are intended to provide insight into FAA's business case, not to provide guidance on if, when, or how FAA should proceed with any realignment. In addition, given FAA's recent decision to cancel the TRACON transfer, we make no specific recommendations to FAA but identified some lessons learned to help improve the soundness and overall transparency of future business cases. These include:
 - Establish a reasonable timeline for automatic/periodic reassessments of business cases, and any underlying memorandums of agreement, to ensure that key assumptions that drove the projected costs/benefits are still valid. Based on these assessments, be willing to adjust the course of action as appropriate.
 - Improve coordination between FAA Headquarters and air traffic control facilities in the field, including periodic visits to local facilities.
 - Keep affected employees involved and informed and communicate any changes in the business case and underlying assumptions to those directly affected by the outcome.

- ▶ If the driving factor behind consolidations is cost savings, then it is important to be as transparent and accurate as possible in the business cases. To do otherwise erodes confidence in the business decisions made and raises questions as to whether they are in the best interest of the taxpayers.

Boise – Gowen Field



Old Tower



New Tower



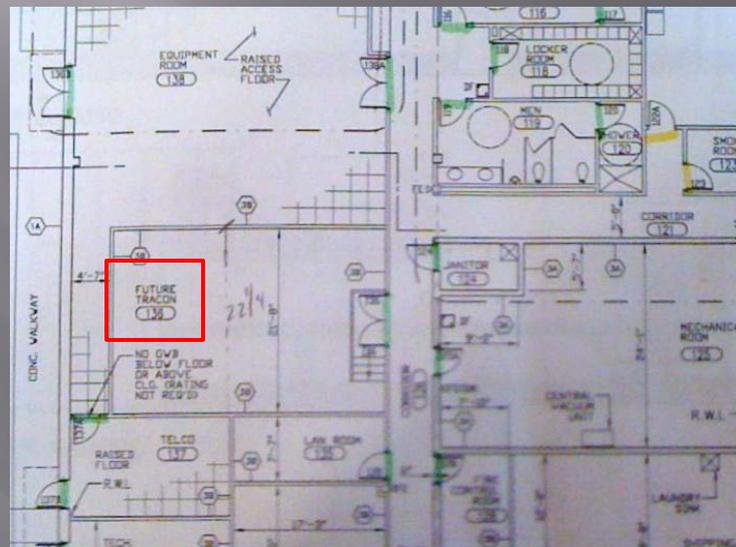
New Tower/Base Building



TRACON Space
In New Facility



Old Tower viewed from New Tower



New Tower / Base building Blueprint showing "Future TRACON" Space



New Tower UPS Back-up



New Tower / Equipment Room



New Tower Admin Space



New Tower / Back-up Generator