U.S. Department of Transportation
Federal Aviation Administration
Section 804 Collaborative Workgroup

Federal Aviation Administration
National Facilities Realignment and Consolidation Report
Parts 4 & 5 Recommendations

Response to U.S. Congress

Federal Aviation Administration Reauthorization Bill

Public Law 112-95

Section 804

Contents

Executive Summary

Pursuant to Section 804 of the Federal Aviation Administration (FAA) Modernization and Reform Act of 2012 (P.L. 112-95), a collaborative workgroup of representatives from the FAA, the National Air Traffic Controllers Association (NATCA) and the Professional Aviation Safety Specialists (PASS) labor unions was established to analyze the FAA's Terminal Radar Approach Control (TRACON) facilities for realignment.

The Section 804 collaborative workgroup conducts ongoing analysis of FAA Air Traffic Control facilities by gathering and reviewing operational and technical requirements for facilities undergoing analysis, considering existing Agency assets and inventory, considering workforce impacts, gathering and evaluating stakeholder input, and estimating costs and benefits of potential realignments.

The workgroup developed, validated, and presented its realignment recommendations to FAA and labor union leadership, and drafted this report for the FAA Administrator's review and submission to the Federal Register and Congress.

The following recommendations are contained in this report:

1. Realign Reading, PA (RDG) TRACON operations to Harrisburg, PA (MDT) TRACON
2. Realign Bakersfield, CA (BFL) TRACON operations to Fresno, CA (FAT) TRACON
3. Realign Waterloo, IA (ALO) TRACON operations to Des Moines, IA (DSM) TRACON
4. Realign Binghamton, NY (BGM) TRACON operations and Elmira, NY (ELM) TRACON operations to Wilkes-Barre/Scranton, PA (AVP) TRACON
5. Realign Terre Haute, IN (HUF) TRACON operations to Indianapolis, IN (IND) TRACON
6. Sustain/maintain Rochester, MN (RST) TRACON operations at current site
7. Sustain/maintain Clarksburg, WV (CKB) TRACON operations at current site
8. Sustain/maintain Huntington, WV (HTS) TRACON operations at current site

Per statutory requirements, the justification and details for the collaboratively-developed recommendations are provided in the sections below.

Introduction

Section 804 of the Federal Aviation Administration (FAA) Modernization and Reform Act of 2012 (P.L. 112-95) requires the FAA to develop a plan for realigning and consolidating facilities and services in an effort to support the transition to NextGen, and to reduce capital, operating, maintenance, and administrative costs, where such cost reductions can be implemented without adversely affecting safety.

To comply with Section 804 requirements, the FAA formed a collaborative workgroup with the National Air Traffic Controllers Association (NATCA) and the Professional Aviation Safety Specialists (PASS) labor unions. The workgroup developed a comprehensive process for facilities and service realignment analysis, and was chartered to conduct the analysis and to develop recommendations, taking the following factors into consideration:

- NextGen readiness of facilities
- Terminal Automation Modernization and Replacement (TAMR) program schedule
- Operational and airspace factors
- Existing facility conditions
- Existing Agency assets
- Workforce impacts
- Industry stakeholder input
- Costs and benefits associated with each potential realignment alternative
- Facilities and engineering planning and priorities
- Employee career development

Per statutory requirements, the workgroup develops realignment recommendations in coordination with the FAA's Chief NextGen Officer and the Chief Operating Officer of the Air Traffic Organization (ATO), and the FAA Administrator approves all recommendations.

Section 804 Collaborative Workgroup

The Section 804 collaborative workgroup developed the criteria and guiding principles for evaluating and analyzing existing Terminal Radar Approach Control (TRACON) operations, capturing recommendations, and outlining next steps.

The workgroup developed a repeatable and defensible process to:

- Evaluate facility TRACON operations and prioritize for analysis
- Determine realignment scenarios and develop a set of alternatives for each scenario
- Collect facility and operational data, and document system requirements
- Document facility, equipment, infrastructure, operational, and safety data
- Capture qualitative workforce considerations, including training, transition, facility, and potential workforce impacts of potential realignments

- Consider potential impacts on operations, airspace modifications, route/fix changes, arrival/departure procedures, intra/inter-facility coordination, and pilot community interaction
- Collect and consider industry stakeholder input
- Quantify benefits and cost of potential realignments
- Develop a recommendation for each realignment scenario

Four-Step Process for Facilities Realignment Analysis

The four steps of the process developed by the workgroup are outlined below:

Section 804 Process for Facilities Realignment Analysis

The process serves as the platform for analyzing Air Traffic Control (ATC) facilities and services for potential realignments. To evaluate the realignment scenarios, the workgroup conducts working sessions at FAA headquarters, followed by site surveys at all facilities under analysis. At each facility, the workgroup leadership facilitates sessions with facility management, labor representatives, and stakeholders. Stakeholders are briefed on the process, and meetings are held to answer questions and collect input.

The workgroup's technical and operational experts evaluate the airspace, equipment, facility, operational, and safety factors for each alternative in the analysis, and document the findings in Systems Analysis and Requirements Documents (SARDs), which serve as the basis for subsequent business case analysis. The workgroup captures, documents, and reviews workforce impact considerations, and future staffing and training requirements prior to making recommendations.

Throughout each step of the analysis, the workgroup interfaces with multiple FAA programs and organizations to fully inform its analysis and provide regular updates. The workgroup continually improves its processes by reviewing lessons learned from previous realignments, eliciting feedback from the facilities undergoing analysis, and refining working activities.

Goals of Realignment

The Section 804 collaborative workgroup operates in conjunction with the Agency's NextGen deployment initiatives. The goal of realignment analysis is to reduce costs and modernize TRACON operations by optimizing the use of existing infrastructure and technology, while creating a more robust and resilient National Airspace System (NAS).

The Agency currently operates 163 individual TRACONs. The workgroup uses a collaborative process to effect modernization by pairing aging TRACONs with newer ones that have adaptable space and equipment, thereby optimizing infrastructure. Recommended realignments are intended to provide the following benefits:

- Creation of larger areas of contiguous airspace that will allow more dynamic and flexible airspace adjustments, potentially reducing handoffs and other coordinated activities
- Reduction of currently-existing complexities by merging airspace between two or more facilities
- Full integration of operations, which could result in additional staffing efficiencies beyond those identified in Section 804 business cases
- Single site maintenance and upgrades of future automation systems
- Enhanced career progression opportunities for relocated workforces by positioning them for success at facilities with greater volume and complexity
- Placement of more employees in modern facilities with state-of-the-art equipment that meet current standards and building codes

The workgroup additionally identifies unique benefits of individual realignment scenarios where possible. Realignment recommendations made as part of the Congressionally-mandated National Facilities Consolidation and Realignment reports will better position the NAS for future modernization. The recommendations will allow the Agency to more effectively evolve as technology shifts and traffic demands dictate change.

Report Scope

This report contains the details and results of analyzing 24 TRACON facilities (9 potential transfers and 16 potential receivers), which were identified for analysis using the collaboratively-developed process and criteria.

Analysis Scenarios

Initial analysis conducted by the workgroup encompassed TRACON facilities in the following scenarios:

- Realign Reading, PA (RDG) TRACON operations to Allentown/Lehigh Valley, PA (ABE) TRACON or Harrisburg, PA (MDT) TRACON, or sustain/maintain TRACON operations at the current site
- Realign Bakersfield, CA (BFL) TRACON operations to Santa Barbara, CA (SBA) TRACON or Fresno, CA (FAT) TRACON, or sustain/maintain TRACON operations at the current site

- Realign Waterloo, IA (ALO) TRACON operations to Des Moines, IA (DSM) TRACON or Cedar Rapids, IA (CID) TRACON, or sustain/maintain TRACON operations at the current site
- Realign Binghamton, NY (BGM) TRACON operations to Wilkes-Barre/Scranton, PA (AVP) TRACON or Syracuse, NY (SYR) TRACON, or sustain/maintain TRACON operations at the current site
- Realign Elmira, NY (ELM) TRACON operations to Binghamton, NY (BGM) TRACON, Rochester, NY (ROC) TRACON, or Syracuse, NY (SYR) TRACON, or sustain/maintain TRACON operations at the current site
- Realign Terra Haute, IN (HUF) TRACON operations to Indianapolis, IN (IND) TRACON or Champaign, IL (CMI) TRACON, or sustain/maintain TRACON operations at the current site
- Realign Rochester, MN (RST) TRACON operations to Minneapolis, MN (M98) TRACON or Waterloo, IA (ALO) TRACON, or sustain/maintain TRACON operations at the current site
- Realign Clarksburg, WV (CKB) TRACON operations to Pittsburgh, PA (PIT) TRACON or Charleston, WV (CRW) TRACON, or sustain/maintain TRACON operations at the current site
- Realign Huntington, WV (HTS) TRACON operations to Charleston, WV (CRW) TRACON or Covington, KY (CVG) TRACON, or sustain/maintain TRACON operations at the current site

Throughout the Section 804 analysis process, there are multiple decision points where the workgroup assesses each scenario and alternative for continuation in or removal from the process. Thus, some of the facilities listed above were removed from analysis. These facilities may be studied further in the future.

FAA Administrator's Recommendations

The following realignment recommendations are contained in this report:

1. Realign Reading, PA (RDG) TRACON operations to Harrisburg, PA (MDT) TRACON
2. Realign Bakersfield, CA (BFL) TRACON operations to Fresno, CA (FAT) TRACON
3. Realign Waterloo, IA (ALO) TRACON operations to Des Moines, IA (DSM) TRACON
4. Realign Binghamton, NY (BGM) TRACON operations and Elmira, NY (ELM) TRACON operations to Wilkes-Barre/Scranton, PA (AVP) TRACON
5. Realign Terre Haute, IN (HUF) TRACON operations to Indianapolis, IN (IND) TRACON
6. Sustain/maintain Rochester, MN (RST) TRACON operations at current site
7. Sustain/maintain Clarksburg, WV (CKB) TRACON operations at current site
8. Sustain/maintain Huntington, WV (HTS) TRACON operations at current site

Details for these realignment recommendations are provided in the sections below.

Recommendation #1: Realign Reading, PA (RDG) TRACON Operations to Harrisburg, PA (MDT) TRACON

The Section 804 workgroup evaluated RDG TRACON operations for realignment to Allentown/Lehigh Valley (ABE) TRACON or MDT TRACON.

Background

RDG tower/TRACON was constructed in 1966. It is owned and maintained by the FAA. RDG is an ATC level 6 facility and it operates from 0600-2400 each day. RDG TRACON operations in fiscal year (FY) 2016 were 88,421[1].

ABE tower/TRACON was constructed in 1995. It is owned and maintained by the FAA. ABE is an ATC level 7 facility and it operates 24 hours a day. ABE TRACON operations in FY 2016 were 122,275.

MDT tower/TRACON was constructed in 1989. It is owned and maintained by the FAA. MDT is an ATC level 7 facility and it operates 24 hours a day. MDT TRACON operations FY 2016 were 141,732.

Approach

The workgroup conducted a working session at FAA headquarters with representatives from the potential transfer and receiver facilities, followed by stakeholder meetings and site surveys at RDG, ABE, and MDT.

[1] FAA Air Traffic Activity System (ATADS) was the source for all FY 2016 facility traffic counts quoted throughout this document.

Recommendation and Administrator's Justification

Upon applying the agreed-upon process and analysis, the workgroup recommends realigning TRACON operations from RDG to MDT tower/TRACON.

The realignment is expected to result in operational efficiencies and other benefits by creating airspace efficiencies, reducing point-outs, and enhancing coordination. The realignment would result in reduced coordination and more efficient use of airspace along the boundary between Reading, PA, and Harrisburg, PA. Departures at RDG may be more efficient due to unrestricted climbs. Realignment will eliminate the need for handoff of New York Air Route Traffic Control Center (ZNY) Lancaster, PA area departures to a second terminal facility.

MDT currently assumes control of RDG airspace between 0000-0600 (local time). MDT controllers are certified on the RDG airspace and understand RDG operations.

Projected Costs and Cost Savings

The economic analysis indicates the realignment of RDG TRACON operations to MDT yields a benefit-to-cost (B/C) ratio of 1.5 ($9.9M/$6.6M), representing a positive and relatively high return on investment, with a Net Present Value (NPV) of $3.3M ($9.9M-$6.6M) over the analytical timeframe of 2017-2034. A B/C ratio of 1.5 means that for every $1 invested, the financial benefit or return is $1.5. In accordance with FAA and OMB guidance, costs have been risk adjusted to the 80% confidence level, which means there is an 80% probability that the project will be completed at or under the established baseline cost.

The results of the economic analysis are shown in the two tables below. Table 1 shows the costs of sustaining the current operations compared to realigning the facility. The costs in this table are presented in then-year (budget) dollars. Then-year dollars incorporate inflation to reflect the actual amount of money that will be required in the year it is needed. The Investment Facilities & Equipment (F&E) costs are $2.9M to modify/sustain RDG and $4.1M to realign RDG. Indirect F&E costs are listed separately in this table because they are paid by different FAA budgets instead of the facility realignment budget. They frequently reflect ongoing costs that may be paid later in the life cycle; for example, this estimate includes costs of technology refreshment 10 years after its initial purchase. The Operations and Maintenance Costs reflected in the cost summary show the difference in personnel compensation and relocation costs between the two options.

Table 2 shows the lifecycle economic comparison of realignment costs to cost savings in realigning RDG to MDT in present value (discounted) dollars. The economic comparison that yields the net present value and benefit-to-cost ratio is calculated in present-value terms and identifies the cost of the investment in today's dollars. The realignment costs and savings in this table are the result of subtracting the modify/sustain case from the realignment case to yield either a cost or a benefit. The estimated $6.6M in costs of the realignment are primarily comprised of increased staffing costs due to moving from an ATC level 6 facility to an ATC level 7 facility, equipment, and staff training and relocation. The estimated $9.9M in cost savings expected from the realignment are due to staffing scheduling efficiencies, a reduction in staff locality pay, staffing savings achieved by a level adjustment of RDG Tower, and the avoidance of technology refreshment costs associated with RDG's automation system.

Cost Summary (Risk Adjusted, Then-Year Dollars, in Thousands)		
Type	**Mod-Sustain RDG**	**Realign RDG to MDT**
Investment Facilities and Equipment (F&E) Total	$2,851	$4,059
Indirect F&E Total	$3,964	$902
Operations and Maintenance (O&M) Total	$366,207	$362,633

Economic Analysis Summary (Risk Adjusted, Present Value Dollars, in Thousands)	
Type	**Realign RDG to MDT**
Realignment Costs	$6,579
Cost Savings or Avoidance	$9,877
Net Present Value (NPV)	**$3,299**
Benefit to Cost (B/C) Ratio	**1.5**

Tables 1 and 2: Economic Analysis Summary for RDG

Note: The Cost Summary is presented in Then-Year (Budget) Dollars; the Economic Analysis Summary is presented in Present Value (Discounted) Dollars.

Recommendation #2: Realign Bakersfield, CA (BFL) TRACON Operations to Fresno, CA (FAT) TRACON

The Section 804 workgroup evaluated BFL TRACON operations for realignment to Santa Barbara (SBA) TRACON or FAT TRACON.

Background

BFL air traffic control tower (ATCT) was constructed in 1974 and the TRACON was established in 1981. The facility is owned and maintained by the FAA. BFL is an ATC level 6 facility and its hours of operation are 0600-2300. BFL TRACON operations in FY 2016 were 82,146.

SBA tower/TRACON was constructed in 1998. It is owned and maintained by the FAA. SBA is an ATC level 7 facility and its hours of operation are 0600-2300. SBA TRACON operations in FY 2016 were 146,287.

FAT ATCT was established in 1961 and the TRACON was established in 1974. The facility is owned and maintained by the FAA. FAT is an ATC level 7 facility and it operates 24 hours a day. FAT TRACON operations in FY 2016 were 141,245.

Approach

The workgroup conducted a working session at FAA headquarters with representatives from the potential transfer and receiver facilities, followed by stakeholder meetings and site surveys at BFL, SBA, and FAT.

Recommendation and Administrator's Justification

Upon applying the agreed-upon process and analysis, the workgroup recommends realigning BFL TRACON operations to FAT TRACON. The realignment is expected to result in operational efficiencies and other benefits.

Because of water leaks from an underground irrigation system, the current BFL tower/TRACON facility leans approximately seven inches (or a 0.55-degree tilt) due to foundation settlement. As a result, BFL was entered into Section 804 realignment analysis as an alternative to a potential tower/TRACON replacement. Since that time, FAA has taken steps to assure the continued stability of the tower. Although the lean issue caused BFL to be a priority, the facility would have been reviewed during the normal course of business.

BFL tower/TRACON is currently located in the tower shaft with very limited space, which is a building practice no longer utilized by the FAA. There is no simulation capability at BFL, which means the site cannot comply with national orders to provide simulation training. There is no conference or classroom space available.

Limited radar coverage for BFL requires procedures for approaches into Porterville Municipal Airport (PTV), Visalia Municipal Airport (VIS), and Mefford Field Airport (TLR). If these two airspaces were combined, there would be a reduction in inter-facility boundary coordination and improved radar coverage for the BFL area.

Coordination with the Oakland (ZOA) and/or Los Angeles (ZLA) Air Route Traffic Control Centers could be improved for FAT arrivals after realignment.

Some currently restricted departures could be improved by realigning BFL TRACON operations to FAT, and there could be improvement to routing based on improved radar coverage.

The realignment would result in reduced coordination and more efficient use of airspace over Bakersfield and Fresno, CA. During cloud seeding, there is a constant need for point-outs, with one facility regularly working well into the other's airspace. Realignment would be a benefit, as it would require less coordination and there would be less confusion during these operations.

Projected Costs and Cost Savings

The economic analysis indicates the realignment of BFL TRACON operations to FAT yields a benefit-to-cost (B/C) ratio of 1.2 ($55M/$44.2M), representing a positive return on investment, with a Net Present Value (NPV) of $10.8M ($55M-$44.2M) over the analytical timeframe of 2017-2034. A B/C ratio of 1.2 means that for every $1 invested, the financial benefit or return is $1.2. In accordance with FAA and OMB guidance, costs have been risk adjusted to the 80% confidence level, there is an 80% probability that the project will be completed at or under the established baseline cost.

The analysis assumed that BFL tower and TRACON would be replaced for the reasons stated above; therefore, the legacy case includes costs for a new tower and an 11,500-square foot (s.f.) base building that houses BFL TRACON. The realignment option also includes a new tower for BFL, but a smaller base building of 9,500 s.f. for administrative use. Additionally, if the cost of replacing the tower is removed from consideration, the business case for realigning the TRACON to FAT remains positive with an NPV of $3.2M and a B/C ratio of 1.7.

The results of the business case are shown in the two tables below. Table 3 shows the costs of sustaining the current operations compared to realigning the facility. The costs in this table are presented in then-year (budget) dollars. Then-year dollars incorporate inflation to reflect the actual amount of money that will be required in the year it is needed. The Investment Facilities & Equipment (F&E) costs are $48.5M to modify/sustain BFL and $42.5M to realign BFL. Indirect F&E costs are listed separately in this table because they are paid later in the life cycle;

for example, this estimate includes costs of technology refreshment 10 years after its initial purchase. The Operations and Maintenance costs reflected in the cost summary show the difference in personnel compensation and relocation costs between the options.

Table 4 shows the lifecycle economic comparison of realignment costs to cost savings in realigning BFL to FAT in present value (discounted) dollars. The economic comparison that yields the net present value and benefit-to-cost ratio is calculated in present-value terms and identifies the cost of the investment in today's dollars. The realignment costs and savings in this table are the result of subtracting the modify/sustain case from the realignment case to yield either a cost or a benefit. The estimated $44.2M in costs of the realignment are the additional staffing costs caused by the facility level adjustment and staff training/transition. The estimated $55M in cost savings are expected from the realignment are equipment savings, the avoidance of refreshing the automation system at BFL, savings realized by construction of a smaller building, staffing efficiencies, and eventual savings of the tower level adjustment. The locality adjustment savings from moving TRACON operations moves from BFL 27.65% locality area pay to FAT 14.85% locality area.

Cost Summary (Risk Adjusted, Then-Year Dollars, in Thousands)		
Type	**Replace BFL**	**Realign BFL to FAT**
Investment Facilities and Equipment (F&E) Total	$48,541	$42,519
Indirect F&E Total	$14,212	$7,824
Operations and Maintenance (O&M) Total	$337,111	$332,421

Economic Analysis Summary (Risk Adjusted, Present Value Dollars, in Thousands)	
Type	**Realign BFL to FAT**
Realignment Costs	$44,218
Cost Savings or Avoidance	$54,970
Net Present Value (NPV)	**$10,752**
Benefit to Cost (B/C) Ratio	**1.2**

Tables 3 and 4: Economic Analysis Summary for BFL

Note: The Cost Summary is presented in Then-Year (Budget) Dollars; the Economic Analysis Summary is presented in Present Value (Discounted) Dollars.

Recommendation #3: Realign Waterloo, IA (ALO) TRACON Operations to Des Moines, IA (DSM) TRACON

The Section 804 workgroup evaluated ALO TRACON operations for potential realignment to DSM TRACON or Cedar Rapids, IA (CID) TRACON.

Background

ALO tower/TRACON was constructed in 1987. It is owned and maintained by the FAA. ALO is an ATC level 5 facility and its hours of operation are 0600-2000. ALO TRACON operations in FY 2016 were 25,928.

DSM tower/TRACON was established in 1976. It is owned and maintained by the FAA. DSM is an ATC level 7 facility and it operates 24 hours a day. DSM TRACON operations in FY 2016 were 98,589.

CID tower/TRACON was constructed in 1981. It is owned and maintained by the FAA. CID is an ATC level 6 facility and its hours of operation are 0500-2330. CID TRACON operations in FY 2016 were 60,741.

Approach

The workgroup conducted a working session at FAA headquarters with representatives from the potential transfer and receiver facilities, followed by stakeholder meetings and site surveys at ALO, DSM, and CID.

Recommendation and Administrator's Justification

Upon applying the agreed-upon process and analysis, the workgroup recommends realigning ALO TRACON operations to DSM TRACON. The realignment is expected to result in operational efficiencies and other benefits.

Realignment may increase the efficiencies of arrivals to DSM from the northeast and allow for smoother coordination due to the combined airspace.

ALO currently coordinates with DSM for arrivals into Marshalltown Municipal Airport (MIW), which is a satellite airport.

Projected Costs and Cost Savings

The economic analysis indicates the realignment of ALO TRACON operations to DSM yields a benefit-to-cost (B/C) ratio of 1.2 ($8.8M/$7.2M), representing a positive return on investment, with a Net Present Value (NPV) of $1.6M, over the analytical timeframe of 2017-2034. A B/C ratio of 1.2 means that for every $1 invested, the financial benefit or return is $1.2. In accordance with FAA and OMD guidance, costs have been risk adjusted to the 80% confidence level, which means there is an 80% probability that the project will be completed at or under the established baseline cost.

The results of the business case are shown in the two tables below. Table 5 shows the costs of sustaining the current operations compared to realigning the facility. The costs in this table are presented in then-year dollars. Then-year dollars incorporate inflation to reflect the actual amount of money that will be required in the year it is needed. The Investment Facilities & Equipment (F&E) costs are $2.9M to modify/sustain ALO and $4.4M to realign ALO. Indirect F&E costs are listed separately in this table because they are paid by different FAA budgets instead of the facility realignment budget. They frequently reflect ongoing costs that may be paid later in the life cycle; for example, this estimate includes costs of technology refreshment 10 years after its initial purchase. The Operations and Maintenance costs reflected in the cost summary show the difference in personnel compensation and relocations costs between the two options.

Table 6 shows the lifecycle economic comparison of realignment costs to cost savings in realigning ALO to DSM in present value (discounted) dollars. The economic comparison that yields the net present value and benefit-to-cost ratio is calculated in present-value terms and identified the cost of the investment in today's dollars. The realignment costs and savings in this

table are the result of subtracting the modify/sustain case from the realignment case to yield either a cost of a benefit. The estimated $7.2M in costs of the realignment are equipment acquisition, staff training and relocation, and staffing cost adjustments for moving from an ATC level 5 facility to an ATC level 7 facility. The estimated $8.8M in cost savings expected from the realignment are staffing scheduling efficiencies, savings from the eventual facility level adjustment of DSM tower, and the avoidance of tech refresh costs associated with refreshing ALO's automation system.

Cost Summary (Risk Adjusted, Then-Year Dollars, in Thousands)		
Type	**Mod-Sustain ALO**	**Realign ALO to DSM**
Investment Facilities and Equipment (F&E) Total	$2,931	$4,396
Indirect F&E Total	$3,244	$709
Operations and Maintenance (O&M) Total	$288,732	$287,182

Economic Analysis Summary (Risk Adjusted, Present Value Dollars, in Thousands)	
Type	**Realign ALO to DSM**
Realignment Costs	$7,182
Cost Savings or Avoidance	$8,792
Net Present Value (NPV)	**$1,610**
Benefit to Cost (B/C) Ratio	**1.2**

Tables 5 and 6: Economic Analysis Summary for ALO

Note: The Cost Summary is presented in Then-Year (Budget) Dollars; the Economic Analysis Summary is presented in Present Value (Discounted) Dollars.

Recommendation #4: Realign Binghamton, NY (BGM) TRACON Operations and Elmira, NY (ELM) TRACON Operations to Wilkes-Barre/Scranton, PA (AVP) TRACON

The Section 804 workgroup evaluated BGM TRACON operations for potential realignment to AVP TRACON or Syracuse, NY (SYR) TRACON.

The Section 804 workgroup simultaneously evaluated ELM TRACON operations for potential realignment to BGM TRACON; Rochester, NY (ROC) TRACON; or SYR TRACON.

Background

BGM tower/TRACON was constructed in 1951. It is owned by the local airport authority and operated by the FAA. BGM is an ATC level 5 facility and its hours of operation are 0600-2400. BGM TRACON operations in FY 2016 were 30,805.

ELM tower/TRACON was constructed in 1958. It is owned and maintained by the local airport authority and leased and operated by the FAA. ELM is an ATC level 5 facility and its hours of operation are 0600-02400. ELM TRACON operations in FY 2016 were 39,925.

AVP tower/TRACON was constructed in 2012. It is owned and maintained by the FAA. AVP is an ATC level 6 facility and it operates 24 hours a day. AVP TRACON operations in FY 2016 were 80,706.

ROC tower/TRACON was constructed in 1983. It is owned and maintained by the FAA. ROC is an ATC level 7 facility and it operates 24 hours a day. ROC TRACON operations in FY 2016 were 91,782.

SYR tower/TRACON was constructed in 1999. It is owned and maintained by the FAA. SYR is an ATC level 6 facility and it operates 24 hours a day. SYR TRACON operations in FY 2016 were 91,090.

Approach

The workgroup conducted a working session at FAA headquarters with representatives from the potential transfer and receiver facilities, followed by stakeholder meetings and site surveys at BGM, ELM, AVP, ROC, and SYR.

Following the working session and site surveys, the Section 804 workgroup determined additional operational benefits could be derived if both transfer sites were realigned together and decided to add several realignment alternatives to the analysis. To this extent, BGM TRACON operations and ELM TRACON operations were considered for realignment together to ROC, SYR, or AVP TRACONs.

Recommendation and Administrator's Justification

Upon applying the agreed-upon process and analysis, the workgroup recommends realigning BGM TRACON operations and ELM TRACON operations to AVP TRACON. The realignment is expected to result in operational efficiencies and other benefits.

AVP is a new facility and currently an underutilized Agency asset. The realignment will allow the Agency to use AVP TRACON more efficiently and allow more employees to work in a newer, larger, NextGen-enabled, state-of-the-art facility that meets current facility standards and building codes.

Jointly realigning BGM and ELM TRACON operations to AVP would create a significantly larger area of airspace worked by a single facility. This would lead to a reduction in handoffs and more efficient coordination for controllers. Combining ELM and BGM airspace will reduce coordination in and around the Penn Yann, PA (PEO) airport. In addition, the realignment is expected to alleviate the current challenges related to servicing the ASR infrastructure at ELM.

Airspace would no longer be transferred to New York Air Route Traffic Control Center (ZNY) overnight, improving operations conducted at ZNY for the area. The expanded AVP facility will service up to 10,000 ft. altitude for the entire airspace creating additional operational efficiencies.

Input from BGM workforce indicated that the realignment of BGM and ELM TRACON operations to AVP would benefit from already closely tied operations across those three facilities.

Projected Costs and Cost Savings

The economic analysis indicates the realignment of BGM and ELM TRACON operations to AVP yields a benefit-to-cost (B/C) ratio of 1.1 ($14.1M-$13.2M) over the analytical timeframe of 2017-2034. A B/C ratio of 1.1 means that for every $1 invested, the financial benefit or return is $1.1. In accordance with FAA and OMB guidance, costs have been risk adjusted to the 80% confidence level, which means there is an 80% probability that the project will be completed at or under the established baseline cost.

The results of the business case are shown in the two tables below. Table 7 shows the costs of sustaining the current operations compared to realigning the facility. The costs in this table are presented in then-year (budget) dollars. Then-year dollars incorporate inflation to reflect the actual amount of money that will be required in the year it is needed. The Investment Facilities & Equipment (F&E) costs are $5.4M to modify/sustain BGM and ELM and $8.2M to realign BGM and ELM. Indirect F&E costs are listed separately in this table because they are paid by different FAA budgets instead of the facility realignment budget. They frequently reflect ongoing costs that may be paid later in the life cycle; for example, this estimate includes costs of technology refreshment 10 years after its initial purchase. The Operations and Maintenance costs reflected in the cost summary show the difference in personnel compensation and relocation costs between the two options.

Table 8 shows the lifecycle economic comparison of realignment costs to cost savings in realigning BGM and ELM to AVP in present value (discounted) dollars. The economic comparison that yields the net present value and benefit-to-cost ratio is calculated in present-value terms and identifies the cost of the investment in today's dollars. The realignment costs and savings in this table are the result of subtracting the modify/sustain case from the realignment case to yield either a cost of a benefit. The estimated $13.2M cost of the realignment is comprised of equipment, training, staff relocation, and the cost of the facility level adjustment for BGM and ELM to increase from ATC level 5 facilities to an ATC level 6 facility. The estimated $14.1M in cost savings expected from the realignment are comprised of the avoidance of tech refreshing the automation systems at BGM and ELM, staffing savings resulting from scheduling efficiencies, and savings resulting from the eventual tower level adjustments at both BGM and ELM.

Cost Summary (Risk Adjusted, Then-Year Dollars, in Thousands)		
Type	**Mod-Sustain BGM & ELM**	**Realign BGM & ELM to AVP**
Investment Facilities and Equipment (F&E) Total	$5,365	$8,234
Indirect F&E Total	$6,538	$1,554
Operations and Maintenance (O&M) Total	$550,463	$550,256

Economic Analysis Summary (Risk Adjusted, Present Value Dollars, in Thousands)	
Type	**Realign BGM & ELM to AVP**
Realignment Costs	$13,166
Cost Savings or Avoidance	$14,076
Net Present Value (NPV)	**$910**
Benefit to Cost (B/C) Ratio	**1.1**

Tables 7 and 8: Economic Analysis Summary for BGM and ELM

Note: The Cost Summary is presented in Then-Year (Budget) Dollars; the Economic Analysis Summary is presented in Present Value (Discounted) Dollars.

Recommendation #5: Realign Terre Haute, IN (HUF) TRACON Operations to Indianapolis, IN (IND) TRACON

The Section 804 workgroup evaluated HUF TRACON operations for potential realignment to IND TRACON or Champaign, IL (CMI) TRACON.

Background

HUF tower/TRACON was established in 1951. It is owned by the local airport authority and maintained by the FAA. HUF is an ATC level 5 facility and it operates 24 hours a day. HUF TRACON operations in FY 2016 were 46,425.

IND tower/TRACON was established in 2006. It is owned and maintained by the FAA. IND is an ATC level 8 facility and it operates 24 hours a day. IND TRACON operations in FY 2016 were 252,756.

CMI tower/TRACON was constructed in 1960. It is owned and maintained by the local airport authority. CMI is an ATC level 6 facility and its hours of operation are 0600-2300. CMI TRACON operations in FY 2016 were 51,765.

Approach

The workgroup conducted a working session at FAA headquarters with representatives from the potential transfer and receiver facilities, followed by stakeholder meetings and site surveys at HUF, IND, and CMI.

Following the working session and site surveys, CMI was removed from further consideration as a potential receiver. This decision was based on the following factors:

- Age and condition of facility
- Lack of administrative, operational, and technical support space

The decision to remove CMI as a receiver for this scenario was communicated to the facilities involved, and analysis of CMI was discontinued.

Recommendation and Administrator's Justification

Upon applying the agreed-upon process and analysis, the workgroup recommends realigning HUF TRACON operations to IND TRACON. The realignment optimizes FAA assets, and is expected to result in operational efficiencies and other benefits.

Realignment would allow operational benefits, but, more importantly, would facilitate modernization of the NAS through making use of existing Agency assets by operating radar services from IND, which is a modern, state of the art facility that meets current FAA standards, and which has existing capacity, a facility backup engine generator, redundant HVAC, and a facility UPS.

HUF was built in 1951 and is beyond GSA guidelines for facility design life. HUF is not currently on the tower/TRACON replace list; however, it is one of the oldest facilities in the NAS and it will need to be replaced in the near future. Relocating TRACON operations will allow the Agency to build a smaller facility at a lower cost.

IND is a newer, underutilized facility with available space and unused positions. The realignment will allow the Agency to use IND TRACON more efficiently. Upon realigning, relocated HUF employees will operate in a NextGen-enabled, state-of-the-art facility that meets current standards and building codes.

Consolidation of the HUF and IND TRACON airspaces would allow for greater utilization of RNAV Optimum Profile Descent (OPD) procedures into the IND airport. The Runway 14 transition on the KOLTS TWO RNAV procedure was deleted because it required transition through the HUF airspace.

The airspace over the Bloomington, IN airport (BMG) is currently vertically divided between IND and HUF, creating inefficient use of this airspace. Consolidation of this vertically fractured airspace would result in reduced coordination and more efficient use of the airspace.

The IND ASR-9 radar system provides reliable and redundant coverage of both the HUF and BMG airports as well as much of the HUF TRACON airspace. The IND ASR-9 simultaneously provides six-level weather depiction to controllers on the STARS platform. HUF airspace is covered by an older ASR-8 Surveillance Radar system, which currently does not have the ability to simultaneously display all six levels of weather on the STARS platform. Controllers are required to manually switch between linear and circular polarization mode in order to view three levels of weather at a time. Consolidation would enable IND to gain access to the Huntingburg long range ARSR-4 surveillance radar.

Tech Ops closed the HUF Systems Support Center (SSC) several years ago and moved their personnel to IND. Tech Ops personnel currently commute to the HUF area to perform required periodic maintenance and when necessary equipment restoration. By moving the HUF TRACON operations and its associated equipment to IND, the need for Tech Ops personnel to commute to HUF would be reduced.

Due to their greater operational impact on the NAS, IND receives higher priority for equipment restoration when outages occur than HUF. By combining the HUF TRACON operations to IND, the HUF TRACON operations would enjoy the same priority of restoration as IND.

Projected Costs and Cost Savings

The economic analysis indicates the realignment of HUF TRACON operations to IND TRACON yields a benefit-to-cost ratio of 0.7 ($7.8M/$10.4M), representing a negative return on investment, and a Net Present Value (NPV) of -$2.6M ($7.8M-$10.4) over the analytical timeframe of 2017-2034. In accordance with FAA and OMB guidance, costs have been risk-adjusted to the 80% confidence level, which means there is an 80% probability that the project will be completed at or under the established baseline cost.

The results of the economic analysis are shown in the two tables below. Table 9 shows the costs of sustaining the current operations compared to realigning the facility. The costs in this table are presented in then-year (budget) dollars. Then-year dollars incorporate inflation to reflect the actual amount of money that will be required in the year it is needed. The Investment Facilities & Equipment (F&E) costs are $3.0M to modify/sustain HUF and $4.6M to realign HUF. Indirect F&E costs are listed separately in this table because they are paid by different FAA budgets instead of the facility realignment budget. They frequently reflect ongoing costs that may be paid later in the life cycle; for example, this estimate includes costs of technology refreshment 10 years after its initial purchase. The Operations and Maintenance costs reflected

in the cost summary show the difference in personnel compensation and relocation costs between the two options.

Table 10 shows the lifecycle economic comparison of realignment costs to cost savings in realigning HUF to IND in present value (discounted) dollars. The economic comparison that yields the net present value and benefit-to-cost ratio is calculated in present-value terms and identified the cost of the investment in today's dollars. The realignment costs and savings in this table are the result of subtracting the modify/sustain case from the realignment case to yield either a cost or a benefit. The estimated $10.4M cost of the realignment is comprised of increased staffing costs caused by moving from an ATC level 5 facility to an ATC level 8 facility, additional equipment costs, and staff training and relocation. The estimated $7.8M in cost savings expected from the realignment are staffing scheduling efficiencies and cost avoidance of tech-refreshing the automation system 10 years after its installation.

Cost Summary (Risk Adjusted, Then-Year Dollars, in Thousands)		
Type	**Mod-Sustain HUF**	**Realign HUF to IND**
Investment Facilities and Equipment (F&E) Total	$ 3,008	
Indirect F&E Total	$ 3,337	$ 609
Operations and Maintenance (O&M) Total	$ 169,860	$ 173,932

Economic Analysis Summary (Risk Adjusted, Present Value Dollars, in Thousands)	
Type	**Realign HUF to IND**
Realignment Costs	$10,434
Cost Savings or Avoidance	$7,788
Net Present Value (NPV)	**-$2,647**
Benefit to Cost (B/C) Ratio	**0.7**

Tables 9 and 10: Economic Analysis Summary for HUF

Note: The Cost Summary is presented in Then-Year (Budget) Dollars; the Economic Analysis Summary is presented in Present Value (Discounted) Dollars.

Recommendation #6: Sustain/Maintain Rochester, MN (RST) TRACON Operations at Current Site

The Section 804 workgroup evaluated RST TRACON operations for potential realignment to Minneapolis, MN (M98) TRACON or Waterloo, IA (ALO) TRACON.

Background

RST tower/TRACON was constructed in 1960. It is owned by the local airport authority and maintained by the FAA. RST is an ATC level 5 facility and its hours of operation are 0500-2300. RST TRACON operations in FY 2016 were 42,594.

M98 TRACON was constructed in 1996. It is owned and maintained by the FAA. M98 is an ATC level 11 facility and it operates 24 hours a day. M98 TRACON operations in FY 2016 were 525,247.

ALO tower/TRACON was constructed in 1987. It is owned and maintained by the FAA. ALO is an ATC level 5 facility and its hours of operation are 0600-2000. ALO TRACON operations in FY 2016 were 25,928.

Approach

The workgroup conducted a working session at FAA headquarters with representatives from the potential transfer and receiver facilities, followed by stakeholder meetings and site surveys at RST, M98, and ALO.

Recommendation and Administrator's Justification

Upon applying the agreed-upon process and analysis, the workgroup recommends sustaining and maintaining RST TRACON operations at the current location.

While the workgroup can identify many operational benefits for realignment to M98, it is impossible to overcome the financial ramifications of realignment. Operational benefits of realignment of RST to M98 include reduced coordination and improved efficiencies for aircraft utilizing the BLUEM arrival to M98. RST tower operations would also be enhanced through the increased radar inputs being provided through M98, and more efficient use of airspace along the boundary between Rochester, MN, and Minneapolis, MN.

Additionally, because RST is a Terminal Approach Control in Tower Cab (TRACAB), and no TRACON space exists, no benefit would be achieved if the RST ATCT is eventually replaced.

Projected Costs and Cost Savings

The economic analysis indicates the realignment of RST TRACON operations to ALO provides a negative return-on-investment, with a B/C ratio of 0.9, and an NPV of -$443K, given the analytical timeframe of 2017-2034. However, the aforementioned recommendation to realign ALO TRACON operations to DSM eliminates ALO as a potential receiver site for RST.

The economic analysis indicates the realignment of RST TRACON operations to M98 provides a negative return-on-investment, with a B/C ratio of 0.6 and an NPV of -$6.6M, given the analytical timeframe of 2017-2034. A B/C ratio of 1 or above is considered positive. Costs have been risk adjusted to the 80% confidence level in accordance with FAA and OMB guidance.

Several operational benefits may result from a realignment to M98; however, economic analysis indicates a significantly negative NPV for this realignment alternative. Substantial costs are associated with increasing the facility level and locality pay from RST (ATC level 5; 14.35% locality pay) to M98 (ATC level 11; 21.30% locality pay).

Table 11 shows the costs of sustaining the current operations compared to realigning the facility. The costs in this table are presented in then-year (budget) dollars. Then-year dollars incorporate inflation to reflect the actual amount of money that will be required in the year it is needed. The Investment Facilities & Equipment (F&E) costs are $2.8M to modify/sustain RST nearly $4M to realign to ALO, and $4.1M to realign to M98.

Table 12 shows the lifecycle economic comparison of realignment costs to cost savings in realigning RST to ALO or M98 in present value (discounted) dollars.

The primary costs of the RST TRACON realignment to ALO are equipment, training, staff relocation, and staffing. Staffing inefficiencies between RST and ALO require adding a certified professional controller.

The cost drivers of the realignment to M98 include equipment, training, staff relocation, and staffing increases arising from increased facility level, increased locality, and an addition of a frontline manager.

The primary cost benefits and cost savings expected from the realignment to either ALO or M98 are the avoidance of tech refreshing the automation system at RST and the eventual staffing savings from the RST tower level adjustment. In addition, realignment to M98 yields some staffing efficiencies in the controller workforce and the traffic management unit.

Cost Summary (Risk Adjusted, Then-Year Dollars, in Thousands)			
Type	**Mod-Sustain RST**	**Realign RST to ALO**	**Realign RST to M98**
Investment Facilities and Equipment (F&E) Total	$2,836	$3,984	$4,116
Indirect F&E Total	$3,447	$727	$725
Operations and Maintenance (O&M) Total	$523,087	$524,767	$533,083

Economic Analysis Summary (Risk Adjusted, Present Value Dollars, in Thousands)		
Type	**Realign RST to ALO**	**Realign RST to M98**
Realignment Costs	$6,053	$16,394
Cost Savings or Avoidance	$5,610	$9,783
Net Present Value (NPV)	**-$443**	**-$6,611**
Benefit to Cost (B/C) Ratio	**0.9**	**0.6**

Tables 11 and 12: Economic Analysis Summary for RST

Note: The Cost Summary is presented in Then-Year (Budget) Dollars; the Economic Analysis Summary is presented in Present Value (Discounted) Dollars.

Recommendation #7: Sustain/Maintain Clarksburg, WV (CKB) TRACON Operations at Current Site

The Section 804 workgroup evaluated CKB TRACON operations for potential realignment to Pittsburgh, PA (PIT) TRACON or Charleston, WV (CRW) TRACON.

Background

CKB TRACON was constructed in 1986. It is owned and maintained by the FAA. CKB is an ATC level 5 facility and its hours of operation are 0700-2300. CKB TRACON operations in FY 2016 were 42,491.

CRW TRACON was constructed in 1956. It is owned by the local airport authority and maintained by the FAA. CRW is an ATC level 5 facility and it operates 24 hours a day. CRW TRACON operations in FY 2016 were 67,873.

PIT TRACON was constructed in 1985. It is owned and maintained by the FAA. PIT is an ATC level 9 facility and it operates 24 hours a day. PIT TRACON operations in FY 2016 were 260,171.

Approach

The workgroup conducted a working session, site surveys, and stakeholder meetings with representatives from the potential transfer and receiver facilities at CKB, CRW, and PIT.

Recommendation and Administrator's Justification

Upon applying the agreed-upon process and analysis, the workgroup recommends sustaining and maintaining CKB TRACON operations at the current location.

Projected Costs and Cost Savings

The economic analysis indicates the realignment of CKB TRACON operations to either CRW or PIT provides a negative return-on-investment, with a B/C ratio of 0.3 and 0.4, respectively, and an NPV of about -$8.8M and nearly -$6.0M, given the analytical timeframe of 2017-2034. A B/C ratio of 1 or above is considered positive.

The largest cost of realignment in both scenarios is associated with staffing pay raises due to facility level adjustments. If CKB moves to CRW (both ATC level 5 facilities), CRW's level would increase to ATC level 6, thereby causing both facilities to experience pay increases. CKB (ATC level 5) moving to PIT (ATC level 9) would result in a significant increase. Additionally, CKB personnel moving to PIT would also be entitled to additional locality pay (15.06% to 17.78%). Neither realignment option is expected to result in any staffing scheduling efficiencies to offset these increases.

Table 13 shows the cost of sustaining the current operations compared to realigning the facility. The costs in this table are presented in then-year (budget) dollars. Then-year dollars incorporate inflation to reflect the actual amount of money that will be required in the year it is needed. The Investment Facilities & Equipment (F&E) costs are $0 for the modify/sustain alternative, approximately $2.0M to realign to CRW and more than $2.2M to realign to PIT.

Table 14 shows the lifecycle economic comparison of realignment costs to cost savings in realigning CKB to CRW or PIT, in present value (discounted) dollars.

The primary benefits and cost savings expected from the realignment to either PIT or CRW are the avoidance of tech refreshing the automation system at CKB and the eventual minor staffing savings from the CKB tower level adjustment.

Cost Summary (Risk Adjusted, Then-Year Dollars, in Thousands)			
Type	Mod-Sustain CKB	Realign CKB to CRW	Realign CKB to PIT
Investment Facilities and Equipment (F&E) Total	-	2,045	2,262
Indirect F&E Total	3,879	1,736	1,691
Operations and Maintenance (O&M) Total	471,418	479,659	484,725

Economic Analysis Summary (Risk Adjusted, Present Value Dollars, in Thousands)		
Type	Realign CKB to CRW	Realign CKB to PIT
Realignment Costs	9,964	14,142
Cost Savings or Avoidance	3,225	3,225
Net Present Value (NPV)	**-$6,739**	**-$10,917**
Benefit to Cost (B/C) Ratio	**0.3**	**0.2**

Tables 13 and 14: Economic Analysis Summary for CKB

Note: The Cost Summary is presented in Then-Year (Budget) Dollars; the Economic Analysis Summary is presented in Present Value (Discounted) Dollars.

Recommendation #8: Sustain/Maintain Huntington, WV (HTS) TRACON Operations at Current Site

The Section 804 workgroup evaluated HTS TRACON operations for potential realignment to CRW or Covington, KY (CVG) TRACON.

Background

HTS TRACON was constructed in 1986 (the building was built in 1952). It is owned by the local airport authority and maintained by the FAA. HTS is an ATC level 5 facility and it operates 24 hours a day. HTS TRACON operations in FY 2016 were 37,907.

CRW TRACON was constructed in 1956. It is owned by the local airport authority and maintained by the FAA. CRW is an ATC level 5 facility and it operates 24 hours a day. CRW TRACON operations in FY 2016 were 67,873.

CVG TRACON was constructed in 1998. It is owned and operated by the FAA. CVG is an ATC level 8 facility and it operates 24 hours a day. CVG TRACON operations in FY 2016 were 230,738.

Approach

The workgroup conducted a working session, site surveys, and stakeholder meetings with representatives from the potential transfer and receiver facilities at HTS, CRW, and CVG.

Recommendation and Administrator's Justification

Upon applying the agreed-upon process and analysis, the workgroup recommends sustaining and maintaining HTS TRACON operations at the current location.

Projected Costs and Cost Savings

The economic analysis indicates the realignment of HTS TRACON operations to either CRW or CVG provides a negative return-on-investment, with a B/C ratio of 0.3 or 0.4, respectively, and an NPV of -$8.8M and nearly -$6.0M given the analytical timeframe of 2017-2034. A B/C ratio of 1 or above is considered positive.

Table 15 shows the costs of sustaining the current operations compared to realigning the facility. The costs in this table are presented in then-year (budget) dollars. Then-year dollars incorporate inflation to reflect the actual amount of money that will be required in the year it is needed. The Investment Facilities & Equipment (F&E) costs are $0 for the modify/sustain alternative, nearly $2.0M to realign to CRW and about $2.3M to realign to CVG.

Table 16 shows the lifecycle economic comparison of realignment costs to cost savings in the realigning HTS to CRW or CVG, in present value (discounted) dollars.

Additionally, the workgroup considered the alternative of realigning both CKB and HTS to CRW, which has the space for both operations, but the economic analysis indicates realignment of CKB and HTS TRACON operations to CRW provides a negative return-on-investment, with a B/C ratio of 0.5 and an NPV of -$8.5M, given the analytical timeframe of 2017-2034. Costs have been risk adjusted to the 80% confidence level in accordance with FAA and OMB guidance.

Table 17 reflects the costs in then-year (budget) dollars. The Investment Facilities & Equipment (F&E) costs are $0 for the modify/sustain alternative, nearly $4.0M to realign both CKB and HTS to CRW.

Table 18 shows the lifecycle economic comparison of realignment costs to cost savings in realigning both CKB and HTS to CRW, in present value (discounted) dollars.

The primary costs of the HTS TRACON realignment to CRW or CVG, or of the combination realignment of CKB and HTS to CRW are equipment, training, staff relocation, and staffing. The largest cost of realignment in these scenarios is associated with staffing pay raises due to facility level adjustments. If HTS moves to CRW (both are ATC level 5 facilities), CRW's level would increase to ATC level 6, thereby causing both facilities to experience pay increases. The same applies for CKB in the combination option. HTS (ATC level 5) moving to CVG (ATC level 8) also results in a significant increase. Additionally, HTS personnel moving to CVG would also be entitled to additional locality pay (15.06% to 19.52%).

The primary benefits and cost savings expected from the realignment to either CRW or CVG are the avoidance of tech refreshing the automation system at HTS. Additionally, there are some staffing scheduling efficiencies associated with HTS realigning to CVG.

Cost Summary (Risk Adjusted, Then-Year Dollars, in Thousands)			
Type	Mod-Sustain HTS	Realign HTS to CRW	Realign HTS to CVG
Investment Facilities and Equipment (F&E) Total	-	1,945	2,327
Indirect F&E Total	3,896	1,800	1,794
Operations and Maintenance (O&M) Total	467,145	478,107	474,028

Economic Analysis Summary (Risk Adjusted, Present Value Dollars, in Thousands)		
Type	Realign HTS to CRW	Realign HTS to CVG
Realignment Costs	12,039	10,867
Cost Savings or Avoidance	3,211	4,885
Net Present Value (NPV)	**-$8,828**	**-$5,982**
Benefit to Cost (B/C) Ratio	**0.3**	**0.4**

Tables 15 and 16: Economic Analysis Summary for HTS

Note: The Cost Summary is presented in Then-Year (Budget) Dollars; the Economic Analysis Summary is presented in Present Value (Discounted) Dollars.

Cost Summary (Risk Adjusted, Then-Year Dollars, in Thousands)		
Type	Mod-Sustain CKB and HTS	Realign CKB and HTS to CRW
Investment Facilities and Equipment (F&E) Total	-	3,972
Indirect F&E Total	6,423	2,904
Operations and Maintenance (O&M) Total	333,144	342,683

Economic Analysis Summary (Risk Adjusted, Present Value Dollars, in Thousands)	
Type	Realign CKB and HTS to CRW
Realignment Costs	15,871
Cost Savings or Avoidance	7,420
Net Present Value (NPV)	**-$8,451**
Benefit to Cost (B/C) Ratio	**0.5**

Tables 17 and 18: Economic Analysis Summary for the CKB and HTS Combination Realignment

Note: The Cost Summary is presented in Then-Year (Budget) Dollars; the Economic Analysis Summary is presented in Present Value (Discounted) Dollars.

Proposed Timing for Implementation of Recommendations

The implementation of facility and operational realignments and staff moves are subject to current labor and FAA collective bargaining agreements, which require notification to the workforce of up to 12 months, as well as other FAA policies, and regulations. The FAA currently plans to notify the workforce of the recommendations in 2019, initiate project implementation in 2019, and begin cutovers in 2021. Implementation of each realignment is contingent on funding and resource availability.

Federal Register Publication

In accordance with Section 804 of P.L. 112-95, the FAA plans to submit the National Facilities Realignment and Consolidation Report, Parts 4 & 5, to Congress and publish it in the Federal Register for public review and comment. This report will be available for review on the Federal Register docket and the FAA website.

After the 45-day public comment period and subsequent comment review period, the FAA plans to submit the final report to Congress, with collected public comments.

Conclusion

The realignment recommendations outlined in this report are the result of a collaborative process which involves a multi-disciplinary workgroup of representatives from FAA management, labor, field facilities, finance, and subject matter experts.

The repeatable and defensible process developed by the workgroup serves as a stable foundation for realignment analyses and recommendations that may be developed in the future. The workgroup uses the process to maximize operational, administrative, and maintenance efficiencies, support transition to NextGen, and deliver the highest value to stakeholders.

Through continuous analysis and assessment of facilities through this process, the FAA supports its goal of ensuring safe and secure operations across the nation.

The FAA's success in conducting realignment analysis, continuing to develop realignment recommendations, and implementing those realignments is contingent upon stable multi-year funding, continued collaboration with labor unions, and coordination with industry stakeholders.