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WV PURCHASING
DIVISION

March 27, 2019

Jessica Chambers
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

Subject: **Expression of Interest for West Virginia Airport Economic Impact Study**

Dear Jessica:

The CDM Smith team is pleased to submit this proposal to prepare the West Virginia Airport Economic Impact Study for the West Virginia Aeronautics Commission (WVAC). CDM Smith is a multi-disciplined consulting firm with a long-standing tradition of serving West Virginia's transportation needs by providing innovative solutions to all modes of travel. The firm is an industry leader in airport economic impact evaluations.

We have partnered with two outstanding firms that have well established relationships with both CDM Smith and WVAC. Mead & Hunt will enhance our team with their in-depth knowledge of, and contacts throughout, the West Virginia airport system. Their first-hand relationships with airport managers will prove invaluable in the extensive data collection effort that this study requires. French Engineering, a highly qualified DBE firm, will assist with data collection and possible optional tasks. Our well-seasoned team has partnered on successful airport projects and has the knowledge and experience to deliver a cost-effective, professional, and truly exceptional study.

This submittal shows that our team has the understanding and experience to provide WVAC with a successful economic impact study. Of relevance is our recent experience in West Virginia, where we successfully completed the Economic Impact Study for the Huntington Tri-State Airport, as attested to by the included letter of recommendation from the Airport Director. We are confident that the CDM Smith team can repeat this success for WVAC and provide a quality study that will benefit WVAC, West Virginia's airports, and airport stakeholders.

Sincerely,

Manuch Amir

Manuch Amir
Vice President
CDM Smith Inc.



1 | Background

The West Virginia airport system consists of 24 airports, 23 of which are part of the *2019-2023 National Plan of Integrated Airport Systems* report and eligible for federal aviation grants. Scheduled airline service is available at six of these airports, while general aviation aircraft operate at all 24 airports.

These airports enable the people and businesses of West Virginia to travel within and beyond the state, connecting them to a worldwide aviation network. For West Virginia, a state rich in tourist and outdoor adventures, this means visitors can fly in to partake in hunting, fishing, caving, rock climbing, whitewater rafting, and hiking activities.

Airports also enhance the efficiency of business operations by allowing managers, technicians, and salesmen to conveniently travel to clients and company facilities where their skills are needed. They also provide a system that moves packages and goods rapidly to and from where these products are needed. For example, Quest Diagnostics makes use of aviation to fly diagnostic tests between Huntington and Parkersburg.

In addition to the movement of people and goods, airports are a key component in supporting the aerospace industry in West Virginia. Within the state, there are several existing clusters of aviation and aerospace businesses operating at airports, such as the Mid-Atlantic Aerospace Complex at North Central WV Airport, Bombardier's aftermarket service center, Aurora's manufacturing center, and HQ Aero in Bridgeport, and FCX systems in Morgantown, among others.

Recognizing the importance of aviation, the West Virginia Aeronautics Commission (WVAC) is tasked with fostering the development of these airports and supporting air navigation facilities. WVAC accomplishes this, in part, by providing up to half the matching funds required for FAA Airport Improvement Program grants, making them much more affordable for airport sponsors. These matching funds are supported by the state tax on aviation fuel and from general revenue fund appropriations.

The West Virginia airport system requires investment in its capital infrastructure to maintain existing facilities and to continue improving its performance. Today, demand for aviation funding from airports across the U.S. is at an all-time high and far exceeds federal, state and local funding availability. One of the tools that WVAC can use to demonstrate the value of its airports and garner support for additional funding is an economic impact study.

CDM Smith and our team members have a long history working in West Virginia. This system understanding will aid in the formation of a targeted dynamic analysis that clearly articulates how West Virginia's airports benefit their communities.



A statewide economic impact study can be effectively used by airports across the state to communicate their individual contributions to the state economy when political leaders determine future budgets and balance the needs of their communities. State aviation groups, such as the West Virginia Airport Managers Association (WVAMA), can also leverage the results of the study to generate additional support from congressional representatives on state and federal levels.



2 | Project and Goals

This project seeks to conduct an economic impact study of the 24 West Virginia system airports. The study will quantify the direct and multiplier impacts associated with aviation activity related to each airport and the system as a whole. This will include activity of the airport management, on-airport businesses, on-airport government agencies, and spending by visitors using airports. The analysis will also assess the strengths and weaknesses of each airport, estimate airport revenue, and determine tax revenues generated by airport-related activity.

Proposed Methods of Approach

The CDM Smith team plans to accomplish this statewide economic impact study through a linear process encompassing the following nine tasks:

- Task 1 – Administration and Project Management
- Task 2 – Conduct Survey Effort and Collect Data for On-Airport Economic Impacts
- Task 3 – Conduct Data Collection for Visitor Impacts
- Task 4 – Estimate Multiplier Impacts
- Task 5 – Estimate Total Annual Economic Impacts
- Task 6 – Aviation-Generated Tax Assessment
- Task 7 – Assess Unique Aspects
- Task 8 – Airport Peer Assessment Tool
- Task 9 – Documentation, Outreach, and Coordination

These tasks are explained in more detail below, along with three optional tasks that West Virginia may want to consider if funding and resources are available.

Task 1: Administration and Project Management

Adherence to a project schedule is paramount to the success of the West Virginia Airport Economic Impact Study. With aviation funding demand at an all-time high, on-time completion of the study will assure that individual airports, as well as aviation groups such as the West Virginia Airport Managers Association (WVAMA) and the Aircraft Owners and Pilots Association (AOPA), can share the results with state and federal legislative leaders in a timely manner.

This project management task includes work items required to set up and manage the contract, budget, and invoicing, provide project oversight and management, and coordinate with WVDOT as required. Project coordination, in the form of regularly scheduled project conference calls and/or online communication, is outlined below.

Following this multi-pronged communication plan will ensure that all stakeholders and team members stay aware of project developments:

- **Client Project Calls** – A regularly scheduled conference call every other week will be attended by key CDM Smith team members and WV DOT staff, allowing for regular discussions on project progress and concerns. Other stakeholders will be invited to calls as appropriate. The frequency of these calls can be modified as appropriate. These calls will include videoconferencing and screen-sharing (via programs such as Skype) as appropriate to facilitate information transfer and hands-on project coordination.
- **Client Meetings** – During the project it is anticipated that up to five meetings will be scheduled between the CDM Smith team and client at a location of the client's choosing. It is envisioned that meetings will be held at the following milestones:
 - Project kickoff and advisory committee formation.
 - Completion of the data collection phase to review preliminary direct impact information.
 - Completion of draft multiplier impacts to review preliminary direct/multiplier/total impacts by airport.
 - Completion of draft technical report to review primary findings and review executive summary brochure/individual airport sheet layout concepts.
 - Final report presentation.

It is anticipated that advisory committee meetings can be held in concert with these client meetings. In the interest of cost-effectiveness, call-in protocols can be established so client/advisory committee members can call in as appropriate. Meeting materials will be sent out in advance to allow adequate time for client review prior to meetings and calls.

- **Team Project Calls** – Regularly scheduled calls will be scheduled between CDM Smith, Mead & Hunt, and French Engineering staff to track project progress, exchange information, and coordinate efforts.
- **Advisory Committee Meetings** – As mentioned above, it is envisioned that these meetings will correspond with the client meetings.

- **Email blasts** – CDM Smith will maintain an "interested party email list" that will be assembled during the inventory process. This list can include airport managers, airport board members, WVAMA members, interested government parties, pilots, and other stakeholders. The project website will also allow stakeholders to sign up for inclusion on this list. At key milestones in the schedule, email blasts will be sent to this group to direct them to check the project website for current information of the project, to advertise meetings and other outreach efforts, and to disseminate other important study information.

Develop Project Website

The preparation of the West Virginia Airport Economic Impact Study presents the opportunity for focused messaging regarding the value aviation and the system of airports provides. It is critical that all airport sponsors, aviation stakeholders, and the public at large have access to the study's inputs and final products, surveys, the project calendar, and materials such as draft and summary documents, press releases, presentation materials from advisory committee and public meetings, and other data that could be employed at the discretion of WV DOT. A project website will reduce paper products, provide a brand for the study, offer one-stop access for all aspects of the study, and support the project's internal and external relations by capturing a larger audience.



Task 2: Conduct Survey Effort and Collect Data for On-Airport Economic Impacts

The CDM Smith team's methodology for accurate data collection is built around a simple yet highly effective effort that assures accurate direct impact information,

airport sponsor buy-in and participation, and a defined system of checks and balances to accurately benchmark base data sources. This task includes the following steps:

- Review existing data sources.
- Notify airports/users of the study and survey effort through multi-faceted outreach that may include, but is not limited to, mailed letters, posters, email blasts, newsletter, and website posts.
- Prepare airport management and tenant surveys that collect data on number of employees, annual revenues, expenses, payroll, and average capital improvement investments.
- Schedule and conduct airport visits at system airports. Members of our team with close working relationships with staff at system airports will leverage these relationships to enhance our team's data collection effort. Additionally, we will make use of the data collected from Huntington Tri-State Airport during the economic impact study that CDM Smith completed recently.
- Conduct the airport management survey effort to obtain data on each airport as well as the unique ways in which the airport benefits the health, safety and welfare of the market area it serves and role the airport plays in supporting activities such as search and rescue, law enforcement, and emergency medical needs.
- Conduct follow-up phone calls to verify and collect additional data.
- Verify and benchmark data using in-house databases and various online data sources (Dun and Bradstreet, Manta, etc.).

As with the management survey, existing CDM Smith data and our airport knowledge will be used to streamline this effort and make obtaining new and updated information as easy as possible. Surveys will be made available both electronically via editable PDFs as well as hard copies to expedite data collection efforts.

On-airport tenants and businesses, employment, payroll, average annual capital improvements, airport revenues, and total direct annual economic impacts will be calculated from survey information obtained from the airports and their tenants. For non-responding

tenants or for partial responses, the team will estimate missing data based on ratios from similar businesses in the state and through in-house databases developed from conducting aviation economic impact studies throughout the country.



CDM Smith has an extensive in-house database that will be used to benchmark survey responses and interpolate non-responses.

Task 3: Conduct Data Collection and Surveys for Indirect Impacts

Visitor impacts consist of expenditures by commercial service and general aviation visitors arriving at a West Virginia airport. For each system airport, the following will be estimated:

- Number of annual enplaned commercial passengers using each airport that are considered to be "visitors"
- Number of annual general aviation aircraft using each airport considered to be "visiting"
- Average number of passengers and pilots per visiting general aviation aircraft

These factors will be established through use of data collected from the following sources: airport-specific records, WVAC, the United States Department of Transportation, FAA databases, and information from the Task 2 surveys. Visitor travel patterns and spending currently available from various secondary data sources in the state will also be researched.

Commercial Service Passengers

A brief commercial service passenger survey will be conducted to estimate the impacts from visitors to each of West Virginia's six commercial service airports. In addition to the on-site survey, airline station managers will be asked to distribute surveys to passengers prior to their departure. Seasonal variation in enplanements as well as the associated variation in spending patterns at airports will be accounted for where appropriate. Data from sources such as state tourism officials and airport management will be used to refine the data gathered during the survey effort and develop an accurate picture of expenditures associated with commercial service visitor travel.

General Aviation Visitors

Visitors arriving by general aviation aircraft also contribute significantly to the economy through their expenditures. A visiting general aviation pilot/passenger survey will be developed to measure this impact. Airport Fixed Based Operator's (FBO) will be asked to distribute surveys to incoming pilots and passengers, while an online survey can be made as an additional option in participation. Surveys for this group will have a prepaid postage mailer, allowing for easy return to our team for analysis. Appropriate state and regional aviation organizations and associations (e.g. WVAMA, AOPA, National Business Aviation Association, etc.) will be contacted to promote and encourage survey responses.



Expenditures for general aviation visitors will then be grouped by airport classification to avoid a "one-size-fits-all" view of expenditure patterns. CDM Smith will work with WVAC staff to refine the airport classifications, as appropriate.

On-airport data collected as part of Tasks 2 and 3 will determine the number of direct jobs, direct annual payroll, and direct annual economic activity (output) associated with airport tenants/businesses, capital

improvements, and visitors who arrive in West Virginia via commercial carriers and/or general aviation aircraft.

Task 4: Estimate Induced Impacts (Multiplier Impacts)

Multiplier impacts are a result of the recirculation of direct and indirect impacts in the state economy. The Economic Impact Analysis for Planning (IMPLAN) model is an input-output model that provides multipliers for various industry sectors, allowing for the estimation of these induced impacts. The project team will obtain West Virginia-specific statewide IMPLAN multipliers to estimate this important component of the total economic benefit provided by aviation. A linear input-output spreadsheet model will be constructed that assesses the economic impact of each airport through the various employment categories that provide aviation benefits. This model will be comparable to previous studies so that changes by airport can easily be identified and explained.

Task 5: Estimate Total Annual Economic Impacts

The total economic impact is the sum of the on-airport, visitor, and multiplier benefits. The economic model developed as part of the West Virginia Airport Economic Impact Study will present total economic impacts in terms of the following three economic impact measures:

- Employment
- Earnings (payroll plus benefits)
- Economic activity or output

These three measures are interrelated but must be expressed separately. Once direct data is compiled, the CDM Smith team will distribute select direct information to each airport sponsor, as appropriate, for validation and confirmation.

Additionally, each airport's unique, or qualitative benefits will be identified and incorporated into individual summary reports. This information will be collected during airport visits and follow-up calls, and through our team's detailed knowledge of aviation in the state,

including intimate knowledge and understanding of each system airport.

Task 6: Aviation-Generated Tax Assessment

An analysis of tax impacts associated with aviation activities will be determined using West Virginia Department of Revenue data and ratios. Tax data will be calculated for the following revenue streams:

- Sales taxes generated by general aviation and commercial service visitor expenditures
- Sales taxes generated through expenditures by tenants
- Sales taxes generated through employee payroll expenditures
- Sales taxes generated through hospitality sector employment
- Airport tenant employee state income taxes income
- Taxes paid by hospitality industry employees
- Sales and excise taxes on the sale of avgas and jet fuel as appropriate
- Other potential revenue streams as identified by the project team

Task 7: Assess Unique Aspects

There are a variety of aviation sectors in West Virginia that provide residents with economic and qualitative benefits. This section will analyze industries that provide benefits both on-airport and off-airport. Possible sectors that would benefit from a case study may include air ambulance activity, firefighting, aerial application, unmanned aircraft systems, off-airport aerospace, and aviation education, among others. CDM Smith will work with WVAC to select appropriate sectors for evaluation.

Task 8: Airport Peer Assessment Tool

CDM Smith's outstanding reputation for conducting airport economic impact studies is built on years of

experience. As a result of this work history, we have an extensive repository of economic impact results from thousands of airports across the United States.

CDM Smith recently developed the Airport Peer Assessment Tool (APAT), a database of the many economic impact studies we have completed. Peer airports can be defined by a variety of factors, including enplanements, hub size, and geographic location. The APAT gives CDM Smith the ability to define a set of peer airports using numerous parameters and compare the economic impact results to West Virginia airports. For example, the APAT indicates that reliever airports such as Eastern WV Regional Airport have an average direct output per employee of approximately \$90,000. The peer comparison provides a method by which the economic impacts of West Virginia's airports are given context and meaning, so that the results can be better communicated and understood by stakeholders and the public. This also helps West Virginia identify each airport's strengths relative to similar airports, as well as those weaker areas that could use some attention. It is envisioned that CDM Smith will present the peer assessment in a matrix format, with appropriate technical backup, to allow for ease of comparison.

Task 9: Documentation, Outreach, and Coordination

This component is critical to the success of the study. A successful economic impact document, in concert with an outreach campaign, communicates the many economic benefits of the airport system. The West Virginia Airport Economic Impact Study would convey the importance of West Virginia airports to the economy as it works with government agencies such as the FAA, the general public, and the state legislature.

Documentation

All materials developed will be suitable for posting on the project website. All documentation will be submitted in draft form to WVDOT and the advisory committee for review. Comments will be addressed and a final draft version will be submitted for approval prior to production.

The results of the study will be presented within the following:

Web-based Messaging/Social Media – The preparation of the economic impact study presents the opportunity for focused messaging regarding the value that aviation and the system of airports provides to West Virginia. The CDM Smith team will create a web-based presentation application to summarize the importance of airport facilities to the business community. To gather this information, the team will reach out to aviation conference attendees and other target audiences. The social media campaign can include e-mail “blasts” using current WVDOT protocols. Press releases can be prepared, as necessary, during the study.

Our project deliverables will provide a tool kit that WVAC and airport managers can use to ‘tell each airport’s economic story’.

Technical Report – A technical report will be prepared that presents the findings from the study. Working papers will be submitted for review at key junctures throughout the study.

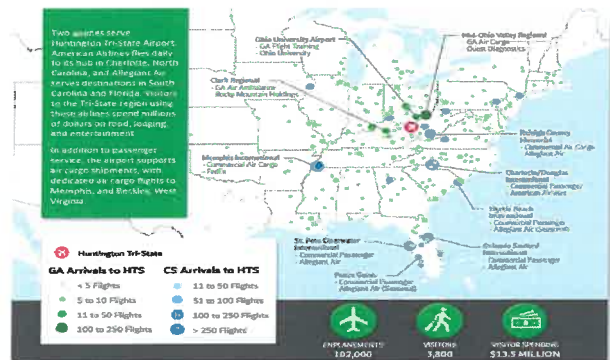
Executive Summary Report – A full color executive summary brochure will be prepared to highlight the economic activity associated with West Virginia’s airport system. An overview of public funds and tax revenue will also be included. It is envisioned that this document will match the branding effort used for all the outreach products.

Airport-specific Summaries – Individual airport summaries will be developed as communication tools for airport sponsors. These summaries will be designed to be updated as appropriate with current information and to be easily printed as needed. Elements of the individual airport summaries include the following:

- Direct, multiplier, and total economic impacts of the airport
- Summary of aviation activity and facilities
- Qualitative benefits that contribute to health, safety, and welfare. These benefits represent improvements to the quality of life for the citizens, even for those who never use an airport or the many aviation services offered. Known programs and facts will be validated and supplemented during site visits and

follow-up calls. This is where an airport gets to tell its “story.”

- **IFR Flight Maps** – IFR flight maps visually show how airports connect to the state, regional, and national airport systems. Data from sources such as FlightAware, or other suitable provider, will be obtained for each system airport and a visual display prepared. An example of such a map showing the analysis of Huntington Tri-State Airport is provided for illustration purposes.



Airport Managers Toolkit/Targeted Summary Material – To assist airports and airport sponsors with communicating the results of this study, CDM Smith will develop an Airport Economic Impact Toolkit. This toolkit will be tailored to multiple audiences and developed for the specific type and category of airport. Unique summary materials can be developed to convey results of the study to important decision-makers, state legislators, WVDOT leadership, regional pilot organizations, and other groups.

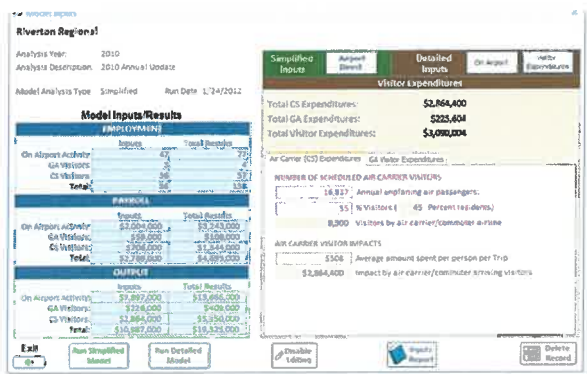
Prepare PowerPoint for Economic Impact Presentation – To properly explain the economic impact process in easily understandable terms, a PowerPoint presentation will be prepared for use by WVAC and airport management. A script will be developed to go with the presentation for the speaker to follow. The presentation will be designed such that various slides can be selected for use depending on the target audience.

Optional Tasks

OPTIONAL TASK 1 - Economic Benefits Calculator

This optional task would focus on the development of an easy-to-use calculator giving WVAC staff the ability to update an airport and/or the state's total economic impacts (employment, payroll, output) as conditions change. It is anticipated that the benefits calculator will have various input fields that will allow WVAC staff to update key data that may change from year to year. It is also intended that the calculator will consider "what if" scenarios such as changes in operations/enplanements or changes to existing businesses such as an FBO expanding its operations. The consultant team will develop an operator's manual for the calculator to facilitate its use. In the model, it will be possible to update aviation activity, reflect changes in employment at existing businesses, and account for inflation.

CDM Smith has developed easy-to-understand benefits calculators for San Diego International, Ohio, and South Carolina.



Optional Task 2 - FORECASTING AVIATION INDUSTRY ECONOMIC GROWTH POTENTIAL IN WEST VIRGINIA COMMUNITIES

The aerospace sector in the United States generated over \$131.2 billion in exports in 2017 as U.S. companies manufactured an expanding array of aircraft, parts, avionics, and unmanned aircraft systems for consumers around the world. West Virginia faces stiff competition for this market, especially from Kentucky where aerospace exports in 2018 exceeded \$11 billion, putting it second in the nation behind Washington. A proactive approach that analyzes market opportunities in West

Virginia can help the West Virginia airport system stay ahead of the competition.

The CDM Smith team will prepare a business case review of the aviation and aerospace industry sector in West Virginia to evaluate current challenges, and growth opportunities.

CDM Smith's approach to forecasting the potential for economic growth at each airport examines short-term factors and long-term factors. The short-term factors are items that indicate there is current unmet demand for aviation services, while long-term factors point to the potential for future demand for aviation services. CDM Smith would examine each of the following short-term factors:

- Hangar waiting lists
- Passenger leakage

Long-term factors to be analyzed include:

- Socioeconomic trends
- Tourism trends
- Expansion of businesses

CDM Smith would also investigate the following three additional factors for their mitigating effects on economic growth potential:

- **Airport footprint available for development**
 - Airports that have limited land available for expansion or development curtail their opportunities for growth.
- **Financial constraints** - Even those airports with land available for growth can face funding shortfalls. Based upon the airport's historic availability of capital funding, CDM Smith will assess whether the airport's overall financial condition could impact its potential for growth.
- **Environmental constraints** - Airports can often face environmental hurdles when trying to expand operations. CDM Smith will conduct a broad assessment of environmental issues such as noise concerns, wetlands, and other issues that could influence its growth potential.

Using the key aviation industry growth factors, the CDM Smith team will develop a high-level Aviation Industry Growth Matrix and compare these aviation

industry growth factors with selected communities in West Virginia. Based on our experience in aviation and economic development, these key aviation industry factors may include: proximity and access to multimodal transportation networks, specific technical skills training programs, and workforce and wages. We will use information from the business case review and matrix comparison along with interviews with 15 existing West Virginia aviation industries to prepare a forecast of aviation industry economic growth potential and a strategy for forecasting potential aviation industry economic growth in selected West Virginia communities.

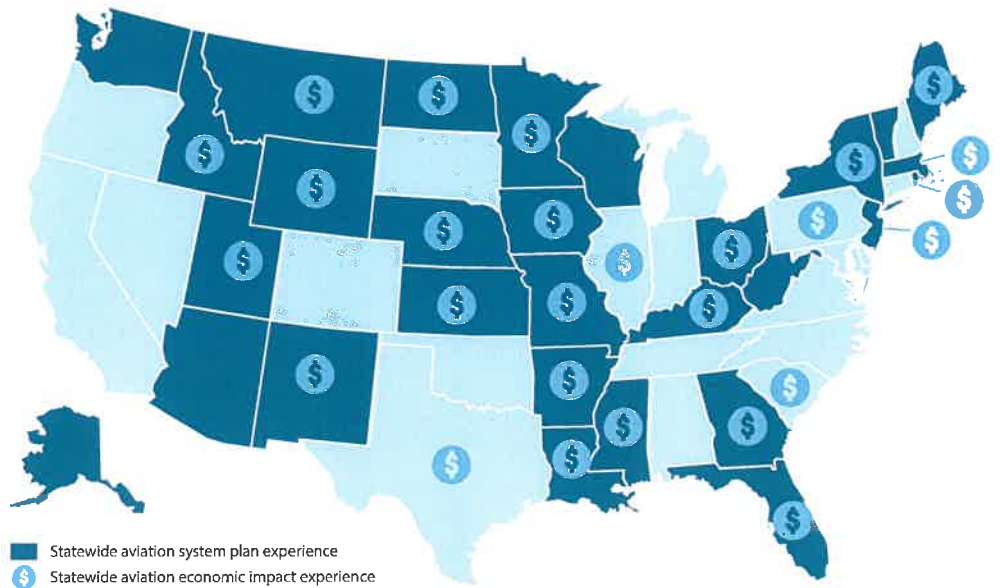
3 | Qualifications Experience & Past Performance

Company Background

CDM Smith and our team partners are the most qualified group of consultants to assist the West Virginia Aeronautics Commission (WVAC) with conducting the Statewide Aviation Economic Impact Study. We understand WVAC's priorities, expectations, and needs, and have strong working relationships with WVAC staff. Our team is eager to perform this important study, which will strengthen and promote the WVAC airport system and the state's economy as a whole.

About CDM Smith

The aviation planning group at CDM Smith has helped airports and airport sponsors including commercial service, general aviation, and air cargo airports, as well as regional planning agencies and state DOTs throughout the United States and around the world, anticipate future trends, create strategies to increase funding, prioritize resources, and incorporate new technologies. CDM Smith creates well researched, award-winning statewide airport plans to assist agencies in determining future needs and develop comprehensive multimodal planning strategies. CDM Smith understands the importance of general aviation airports and how to support this important industry segment. Recognizing that airports are a vital component of a city, region, or state's overall transportation infrastructure, CDM Smith's planners help agencies understand economic impacts and take advantage of opportunities to support development activity and job creation.



Today, CDM Smith is recognized nationally as the leader in successfully completing innovative aviation economic impact assignments. Our aviation service lines include economic impact studies, state/regional system planning, master planning, environmental planning, demand forecasting, sustainability, financial and business planning, air cargo and freight, and site selection/feasibility planning. CDM Smith has completed economic impact studies for more than 30 states. With over 4,000 staff nationwide, our 20 aviation professionals are routinely supported by other disciplines within the firm to provide innovative, full-service consulting.

CDM Smith has led the nation in its ability to document and effectively communicate the economic value airports have on state, regional, and local economies. CDM Smith has conducted detailed economic impact analyses on 3,100 airports—300 with commercial airline service and 2,800 general aviation airports. In addition to the quantification and documentation of these impacts, many also addressed air cargo activity, the implications of a major capital project, impact allocation among various districts or counties and business sectors, impacts associated with manufacturing, military and aviation services, tax revenues generated by aviation activities, unmanned aerial systems, and the benefit to the airport sponsors stemming from increased passenger traffic.

Together with our team partners, we offer the full suite of services needed to address all elements of this project — or any other work that the Aeronautics Commission may desire throughout, or as a result of, this effort.

CDM Smith Project	Key Staff	Award
Ohio Airport Focus Study (Economics and System Plan)	Eric Laing David Clawson	ACEC Honor Award
Ohio Airport System Plan and Economic Impact Analysis	Eric Laing	ACEC Honor Award
Kansas Aviation Economic Impact Study	Eric Laing	Kansas ACEC Excellence Award
Idaho Airport System Plan	Eric Laing	ACEC State and National Award, Consulting Services
Texas Economic Impact of General Aviation	Eric Laing	ACEC Engineering Excellence Silver Medal
Columbus Regional Airports Economic Impact Study	David Clawson	ACEC Honor Award

The quality of our previous aviation planning efforts can easily be validated by contacting our past and/or current clients. In addition, many of CDM Smith's aviation system plans and economic impact studies have received state and national awards attesting to their innovative and in-depth approaches and successful results. We are particularly proud of these in that they are awarded by our peers in the consulting and engineering industry. It should be noted that the staff assigned to the West Virginia Airport Economic

Impact Study have been involved with these award-winning projects.

Our Team Partners

For this project, CDM Smith proposes to team with Mead & Hunt and French Engineering.

Together, we offer the WVAC an integrated team that can begin work on this project immediately. No other firm or group of firms can match our combined knowledge and experience working in economic studies, and nationwide experience of delivering similar services to state DOTs.

Mead & Hunt

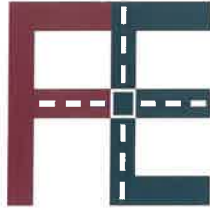
Mead & Hunt (MH) is an employee-owned firm with more than 600 planners, engineers, architects, scientists and support staff



in offices nationwide, including West Virginia. Serving aviation clients for over 75 years, Mead & Hunt brings nationwide aviation system planning and economic impact assessment experience and expertise coupled with extensive local knowledge of the West Virginia aviation industry. They have developed more than 150 planning projects at airports nationwide over the past five years, combined with their aviation system planning expertise at both the state and regional level. This gives them a depth of experience that will greatly benefit this study. Mead & Hunt has completed economic impact studies as part of state aviation system plans for Oregon, South Dakota and, most recently, Michigan. In Michigan, they completed the data collection effort for 114 of the 226 public-use airports and handled all the presentation of the findings once the analysis was completed. Their system plan update included the economic impact study and a standalone tool that WVAC can use to calculate continued impacts as airports or activity change in the system. They will bring their national experience and passion for aviation to support the assessment of the economic impact of West Virginia airports. Their staff has a desire to maintain a strong, efficient and productive aviation system for the State of West Virginia and they recognize that a defensible, transparent EIS for each airport will support the overall system.

French Engineering, LLC

French Engineering, LLC (FE) is a DBE firm specializing in traffic engineering, with a history of success in small, simple traffic studies, to larger, more complex, corridor-wide signal designs. Their role for this project involves data collection at system airports. FE strictly adheres to project schedules and coordinates closely with clients to ensure successful and on-time projects time and again. FE has the expertise, experience and available "on-call" staff to perform data collection services for a variety of projects. FE typically uses experienced long-term staff for data collection to ensure data quality and validity. FE is well versed in gathering data from airports, having collected passenger survey data from Huntington Tri-State Airport while working with CDM Smith to complete the successful economic impact study for the airport.



Relevant Project Experience

The CDM Smith team has the depth of resources, the right experience, and state-of-the-art tools to deliver projects on schedule and on budget. We have the available, experienced, full-time staff to address unexpected project complexities and accelerated project schedules. Our project team has an unprecedented understanding of WVAC's goals, procedures and airport system.

Massachusetts Statewide Airport Economic Impact Study, MassDOT Aeronautics (2011, 2014, 2018)

Key Staff: Dave Clawson, Eric Laing

CDM Smith has prepared the last three studies for MassDOT. Massachusetts has an extremely diverse system ranging from Boston Logan Airport, one of the country's largest commercial service airports, to an important network of privately owned general aviation airports. Additionally, the system has unique character elements, such as multiple, smaller sub-systems including one of the most active commuter airline networks in the



Final products have included a future benefits calculator, videos and various high-quality brochures highlighting "unique airport stories" to disseminate information to a wide range of stakeholders. These studies have been instrumental in increasing funding levels for MassDOT Aeronautics.

world. The economic impact analysis used social media outreach in concert with extensive airport visits and face-to-face surveys to collect data from a variety of stakeholders. Detailed modeling was accomplished with IMPLAN to assess the overall benefit of the system. Specialty analysis included a detailed assessment of tax impacts related to aviation. Online data and multiple project videos were prepared to "get the word out" on the value of aviation. CDM Smith worked with a project management team that consisted of various planning and aviation entities throughout the state to develop final products and ensure project buy-in from the various stakeholders.

Multimodal Economic Impact Study for Huntington Tri-State Airport (2017)

Key Staff: Eric Laing, Greg Sanders

The KYOVA Interstate Planning Commission selected CDM Smith to conduct an economic impact study of the Huntington Tri-State Airport to quantify the important benefits that the airport provides to the Tri-State area. CDM Smith also examined how other intermodal developments in the region, such as the Pritchard Intermodal Facility, could enhance economic prosperity.



Working closely with KYOVA and airport staff, CDM Smith gathered data from the on-airport businesses and organizations. The firm also interviewed more than 400 airline passengers and general aviation users to determine typical spending patterns of visitors to the Tri-State area. CDM Smith compiled all of this information into an economic linear input-out model that was used to estimate the multiplier effects from all of the aviation activity that could be related to the airport. Throughout the process, CDM Smith kept KYOVA and the airport informed of the progress through regular reports and periodic in-person presentations. This collaborative communication effort ensured that KYOVA

and the airport understood the study and were able to guide it as needed to its desired outcome.

The resulting overall economic impacts were published in an executive summary, and in a technical report that provided detailed explanations on the process used to estimate the economic impacts. Additionally, the report included background on the Huntington area's economy and a qualitative assessment of several multimodal projects in the region. CDM Smith delivered these products on time and within budget.

The Economic Impact of Commercial Aviation, Airports Council International-North America (2010, 2013, 2017)

Key Staff: Eric Laing, Greg Sanders

Airports Council International-North America (ACI) represents the interests of commercial service airports throughout the U.S. and North America. To better understand their clients, ACI engaged CDM Smith to conduct an economic impact study of the 2010 impacts of commercial airports in the U.S. ACI was pleased with the results and requested a 2013 update to the original study and again in 2017. Using a variety of data sources, CDM Smith collected the most current data for on-airport jobs, on-airport payroll, and on-airport output for more than half of these airports. Data was also collected for capital expenditures and commercial airline visitor spending tied to these airports. After making adjustments for inflation, CDM Smith used this data to find correlations that could be used to estimate the direct on-airport impacts and visitor spending for the airports with missing data. Using this regression analysis, we developed direct impact estimates and

These studies involved developing estimates of direct economic impacts at 485 U.S. commercial service airports.

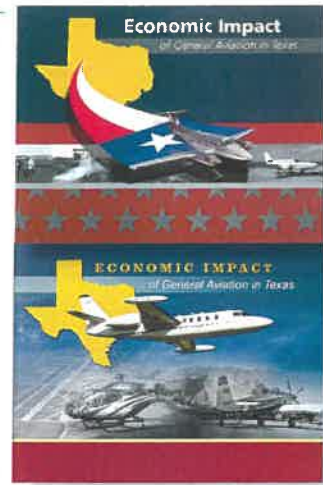
used this data as input for an IMPLAN input-output economic model that estimated the total economic impact. Results were summarized by state and reported as total employment, payroll, and economic output. ACI created a web page (airportsfor-thefuture.org) to highlight the findings of the study and make the report available.

Economic Impact of Airports in Texas, TxDOT (2001, 2005, 2011, 2018)

Key Staff: Eric Laing, Greg Sanders

CDM Smith has conducted the last four statewide airport economic impact studies for Texas. The initial project in 2001, which won an ACEC award for excellence, quantified the economic benefit of nearly 300 general aviation and commercial service airports. Each study included visits to scores

of system airports to collect information on tenants and activities. All airports were surveyed in person or via telephone and mail to collect a complete picture of aviation. Study results were used to sustain state funding for public airports. All studies included use of the IMPLAN model and the development of brochures for each system airport and summary material targeted towards the general public.



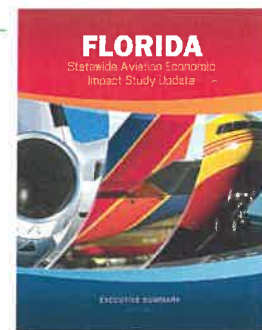
Each of the four studies considered the unique role airports play in Texas in supporting access to remote areas of the state and in supporting their important agricultural industry.

Florida Economic Impact of Aviation, FDOT (2004, 2010, 2014)

Key Staff: David Clawson, Eric Laing

Florida is fortunate to have an annual aviation state budget in excess of \$180 million. FDOT wished to be accountable for its investments in their airport system, ensuring investments made in airports and projects had the greatest potential

to provide economic return. Since 1999, CDM Smith has served as the primary consultant for statewide aviation system planning efforts for the 120 public commercial and general aviation airports in Florida. In 2004, CDM Smith worked with economic development interests throughout the state to identify more than 10 quantifiable factors that attracted businesses to



Florida. An estimate of the state's airports economic contribution was prepared in 2010 and again in 2014. A three month survey was required to visit each airport and included meeting with airport managers, major tenants, and other stakeholders. Statistically, significant passenger data from key commercial service airports was gathered. Detailed evaluations were prepared for new airports, military impacts, cargo activities, aviation-related manufacturing, and aviation-related education. The information collected was entered into an online, multilevel database for review and analysis. Florida-specific multipliers were applied and the total impacts calculated. Final products included individual airports documents, summary brochures, various presentations, and a technical document. Stakeholder outreach throughout the state was accomplished on several levels.

Kentucky Statewide Aviation System Plan, KYTC, (2017)

Key Staff: Eric Laing, Dave Clawson

The Kentucky Department of Aviation (KDA) engaged CDM Smith to conduct a state-



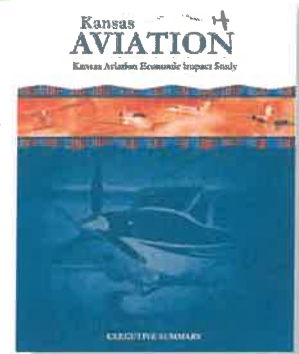
wide aviation system plan. The system plan sought to inventory and categorize the facilities and assets at the state's 59 airports, and help KDA assess how well the airport system performed operationally and economically. It also made recommendations for improving the system so that it can better serve the citizens of Kentucky. The study involved a large-scale survey effort, where the team visited every general aviation airport in the system. Information from each airport was collected regarding facilities, aircraft activity, environmental compliance, and safety and security aspects of the airport. Additionally, data related to the direct economic impact of each airport was collected and analyzed. From this data, the CDM Smith team analyzed individual airports and the airport system as a whole. We produced a technical report explaining the process, methodology, and assumptions used in developing the system plan and its recommendations. Standalone summary brochures and an executive summary brochure summarized the contributions of all 59 airports. An interactive website

disseminated information to various stakeholders and allowed a direct line of communication to the project management team. A statewide web meeting was held to collect final comments and inform the public and stakeholders.

Kansas Economic Impact Study, KDOT - Aviation Division (2010, 2016 Update)

Key Staff: Eric Laing, Dave Clawson

In 2009 and again in 2016, CDM Smith prepared a study measuring the economic impact of commercial and general aviation airports. These studies included visits to most airports and considered unique aviation activities in Kansas. Because aerospace manufacturing plays a large role in the state's economy, an analysis determining the impact of both on- and off-airport aerospace companies was conducted. Statewide



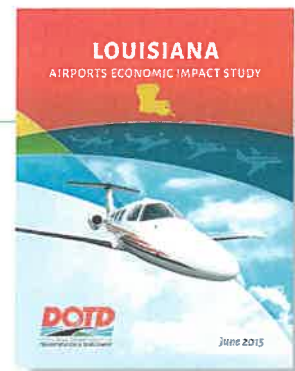
Air ambulance operators and hospitals were surveyed to ascertain their dependence on aviation, and aerial applicators (agricultural spraying) were evaluated to determine their impacts at public-use airports, as well as related to privately owned airports.

surveys of visiting pilots and aviation-related businesses were used to support the economic analysis. In addition, FAA data was used to identify specific businesses using and benefiting from Kansas' airports. Economic impact results were summarized in an executive summary and presented in a technical report and individual brochures for each of the airports.

Louisiana Aviation System Plan and Economic Impact Analysis, LDOTD (2014)

Key Staff: Eric Laing

The Louisiana airport system plays a vital role in the state's economy. Seven commercial service airports provide air links throughout the state. In

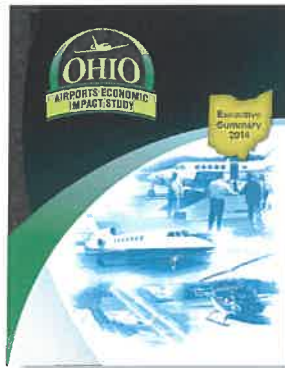


addition, 61 general aviation airports provide access and aviation services across the state. The project inventoried the existing airport system and classified each airport into one of five classifications. Data on each airport's economic impact in Louisiana was gathered and compiled in an economic input-output model that estimated how many jobs, how much payroll, and what economic output was attributable to each airport. Technical reports explained the process, methodology, and assumptions used in developing the system plan and its recommendations, as well as the economic model. The results were presented for each individual airport in standalone summary. An executive summary was produced that summarized the combined contributions of all 68 airports. CDM Smith was again selected to update this effort in 2017.

Ohio Airports Focus Study: System Plan and Economic Impact, ODOT (2015)

Key Staff: Eric Laing, Dave Clawson

The Ohio Airports Focus Study aided both the FAA and ODOT in resource allocation so that the system can continue to function in a safe and efficient manner. The study included an aviation system plan and an economic impact study. The system plan examined each airport's role in the system by building on the FAA's Asset Study, measured how it was functioning against performance benchmarks based on that assigned role, and evaluated the system performance, overall and by airport role. The economic impact study quantitatively assessed each airport's economic contribution to the state's economy on an annual basis. Additionally, the study undertook several



This study won the Ohio ACEC Honors award for "Planning" and resulted in the Office of Aviation receiving an increase in \$6 million annually for capital projects from the state legislature.

supplemental analyses, including an estimate of aviation's contribution to Ohio's tax base and the value of the replacement cost of the Ohio airport system. Specialized case studies provided detailed anecdotal evidence of how aviation benefits the people of Ohio.

From the very beginning, public involvement was a key component. The results were presented for each individual airport in standalone summary brochures that described the economic output of each airport. An executive summary was produced that summarized the combined contributions of all 104 airports.

San Diego International Airport Economic Impact Study, SDCRAA (2013, 2018)

Key Staff: Dave Clawson, Eric Laing, Greg Sanders

The San Diego County Regional Airport Authority (SDCRAA) selected CDM Smith to conduct their last



two economic impact studies. The airport is a critical economic catalyst and an important transportation resource that supports the air travel needs of the San Diego region's residents, businesses, and visitors. These studies quantified the annual employment, payroll, and output impacts associated with on-airport businesses and government organizations (on-airport tenants), visitors who arrive via commercial airlines and privately-owned general aviation aircraft, and off-airport parking and air cargo facilities with ties to San Diego International Airport. In addition, the study highlighted the economic impacts associated with on-airport construction projects, including the SDCRAA's \$1.0 billion Green Build, the largest capital improvement project in the airport's history. The study also presented a future scenario calculator that estimated the economic impacts with a completed development as well as impacts from future flights to key markets. The study's findings and methodology were documented in a technical report and a high-quality executive summary brochure.

Washington Airports Investment Study, WSDOT (2015)

Key Staff: Eric Laing

Through its grant program, WSDOT Aviation has leveraged millions of dollars in federal grants by using a relatively minimal amount of state and local match contributions. To better manage its grant program, WSDOT Aviation selected CDM Smith to conduct a

study that would evaluate the need for preservation, safety, and other capital projects at the state's 136 public use airports. The study evaluated the current funding for airport preservation and safety projects, assessed short- and long-term airport improvement needs, identified the funding gap over a 20-year period, determined the consequences of doing nothing in terms of economic and aviation system impacts, and developed funding options to address airport investment needs. Thirteen solutions were analyzed to determine how they addressed the funding gap, their impact on stakeholders, the ease with which they could be implemented, and their level of sustainability. This information was provided to WSDOT in a comprehensive report, as well as in a summarized format suitable for quickly informing decision makers.

Illinois Statewide Aviation Economic Impact Study, Illinois Department of Transportation (2012)

Key Staff: Eric Laing, Dave Clawson

The Illinois airport system plays a vital role in the state's economy. Twelve commercial service airports provide air links to numerous parts of the state, including Chicago's O'Hare International Airport, one of the busiest airports in the world. In addition, 106 general aviation airports and heliports provide access and aviation services in many other parts of the state, and contribute significantly to the economic benefit that Illinois and its residents enjoy from aviation. The project quantified the employment, payroll, and economic output from tenants and visitors at each of the 118 airports and heliports included in the study, using Illinois-specific multipliers. Data was gathered from each facility, the tenants, and visitors (arriving via commercial airline and general aviation aircraft) through on-site visits, mail, and phone surveys. Extensive efforts were taken to estimate impacts



An interactive web site was also designed and hosted to collect data and inform the public. CDM Smith held regional public outreach meetings throughout the state.

associated with O'Hare, Midway, and the other air carrier facilities. The results were presented for each individual airport in standalone summary brochures and an executive summary was produced that summarized the combined contributions of the 118 airports and heliports.

Michigan Department of Transportation - Office of Aeronautics, Michigan Aviation System Plan (MASP) (2017)

Key Staff: Stephanie Ward

Michigan's update of their aviation system plan was focused on making the overall document more transparent and user friendly. Many of the data sets for the previous plan were either not available or were not able to be replicated, therefore Mead & Hunt had to develop new criteria for several goals that would support the transparency and the specific intent of the goals. It also included an update to their aviation economic impact assessment. This includes an electronic deliverable called the Community Benefits Assessment (CBA) tool that allows MDOT to generate new economic impact reports on an as-needed basis as situations change at each airport. This included outreach to 114 airports of the 226 in the system, to collect user data. This was accomplished through airport manager surveys, passenger surveys and one-on-one phone calls with the airport managers to identify economic activity. Four public meetings were held around the state to collect comments on the draft document, which were led by Ms. Ward. Mead & Hunt was able to develop the entire project and provide the final draft report for the Michigan Aeronautics Commission (MAC) review in just twelve months.



South Dakota State Aviation System Plan (SDSASP) - South Dakota DOT (2010-2030)

Mead & Hunt completed the SDSASP 2010-2030, which establishes a guide for maintaining the investment



of existing aviation infrastructure and identifies future development within South Dakota's aviation system. Goals for this project included safety and security, maintenance and development of infrastructure, and accessibility to users. Mead & Hunt lead the public involvement effort.

As part of the SDSASP, Mead & Hunt provided significant support to conduct an economic impact study (EIS) that documents the value of aviation to the state of South Dakota, especially as it relates to particular activities such as pheasant hunting, the Sturgis Motorcycle Rally, and the impact of the State's largest industry — agriculture. Multiple survey instruments were used to collect economic data. The economic analysis included measuring the economic impacts of public use airports within the state, including commercial and general aviation travelers, airport administration and on-airport businesses. In addition, the study was developed on three levels, including customized catchment regions for each airport from South Dakota's four established economic development regions and statewide. The EIS provides a tool that local communities and State officials can use in their support for aviation.

Georgia Statewide Airport Economic Study (2011)

Key Staff: Eric Laing

Georgia is served by one of the most comprehensive and progressive aviation systems in the United States.

Georgia's aviation system of 104 public-use airports is served by a diverse mixture of airports ranging in size from small general aviation airports to Hartsfield-Jackson Atlanta International, the world's busiest commercial airport. In 2010, as part of a multi-year On-Call Aviation System Planning Services Contract, GDOT Aviation Programs initiated a Statewide Airport Economic Impact Study to quantify the economic contribution of the state's airport system. Using an FAA-approved methodology of survey data and modeling estimates, economic impacts were developed and categorized by on-airport, visitor, and multiplier impacts.



In addition to the traditional economic impact analyses, several special elements were also conducted including a Revenue Study, Airport Case Studies, and Business Profiles on how business relies on and benefits from using aviation.

Experienced Staff

The Best Qualified Firm



The CDM Smith team is composed of full-time professionals with unprecedented expertise in airport systems and assessing the economic impacts and linkages associated with them. We have a well-established team with strong working relationships with each other and with WVAC. We also possess an in-depth understanding of the West Virginia airport system and its beneficial effects on the state's economy. Our past and current work for West Virginia's Department of Transportation and familiarity with your standards and policies will enable the CDM Smith team to effectively exceed your expectations.



Eric A. Laing II – Project Manager

Education: BS - Chemistry, U.S. Naval Academy; MS - Journalism, Northwestern University; MS - Aeronautical Science, Embry-Riddle Aeronautical University

Mr. Laing has 20 years of aviation consulting experience, focused on airport system planning and financial studies. He has served as a lead analyst or project manager on more than 20 system plans and economic impact studies, as well as master plans and other airport financial studies. He brings a pilot's perspective to every project. He started flying in 1991 and is a commercial-rated pilot with an instrument rating. In 2003, he added a commercial seaplane rating to his certificate. He is also a certified ground instructor. Mr. Laing was the project manager for the economic impact study of Huntington Tri-State Airport. The success of this project is documented in the letter of recommendation from the airport's director, included in this submittal.

Recent Comparable Projects

Project Manager, Multimodal Economic Impact Study for Huntington Tri-State Airport, KYOVA

Interstate Planning Commission. The KYOVA Interstate Planning Commission selected CDM Smith to perform an economic impact study of Huntington Tri-State Airport and compare the results to the previous economic impact study. The study made use of a linear economic input-output model to estimate the widespread impacts of the airport across three states – West Virginia, Ohio, and Kentucky. Mr. Laing was responsible for coordinating the data gathering, analysis, and coordination between KYOVA and the airport. The study involved surveys of Huntington's commercial airline and general aviation visitors. Mr. Laing was also responsible for overseeing the creation of the technical report, executive summary, and slide presentation used for briefing local decision makers.

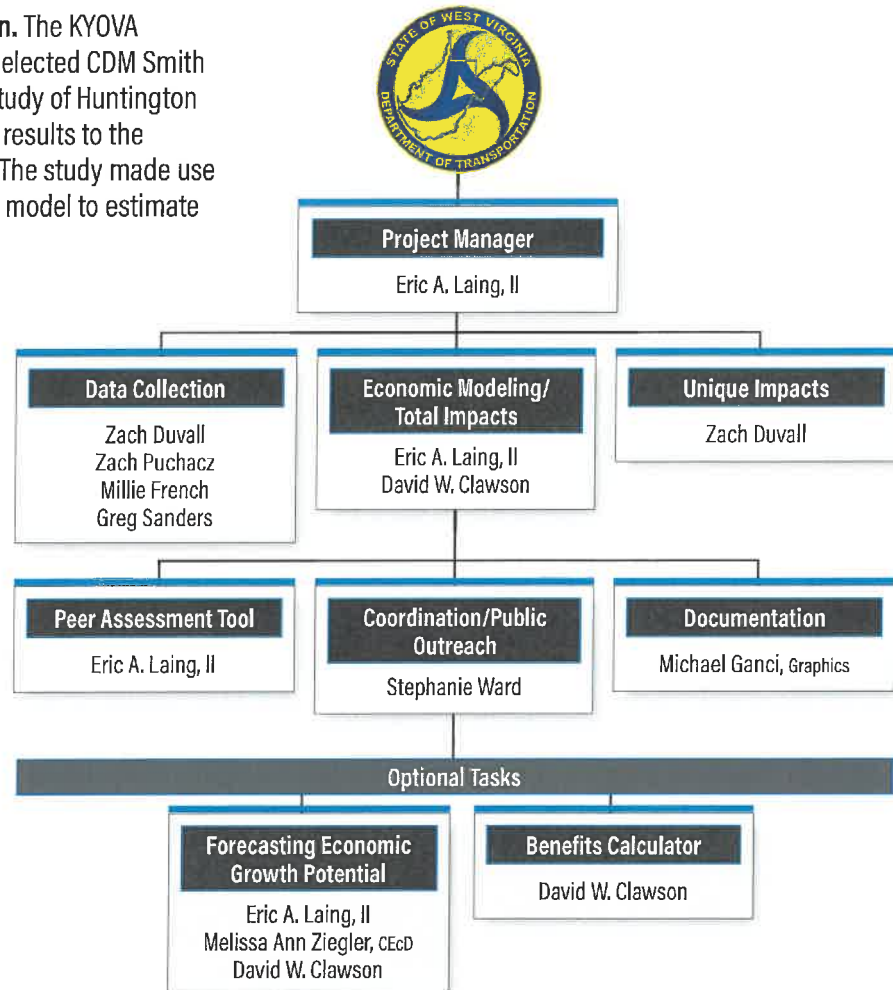
Lead Analyst and Deputy Project Manager, Ohio Airport Focus Study/ Economic Impact Study.

This robust system plan and economic impact analysis required coordinated data gathering from 104 airports, developing airport roles, assessing maintenance needs and conceptual priorities. Mr. Laing oversaw the development of the economic impact model and evaluated many unique impacts associated with Ohio's airport system. He assisted in report development, client coordination, and public outreach.

Lead Analyst, Washington DOT Airports Investment Study. This study evaluated the financial need for preservation, safety, and other capital projects at the state's 136 public-use airports. The study identified the funding gap over a 20-year period, and developed funding options to address airport investment needs. Mr. Laing headed up a team that evaluated the solutions that raised existing aviation taxes to cover the funding gap. Analysis included the degree to which

solutions addressed the funding gap, their impact on stakeholders, the ease with which they could be implemented, and their level of sustainability.

Project Manager, The Economic Impact of Commercial Airports in 2017; Airports Council International – North America. ACI – NA requested CDM Smith conduct an update to the successful study CDM Smith completed in 2010, and again in 2013. This analysis calculated the economic impact for each air carrier airport in the country using best available data and a unique regression analysis. Mr. Laing again served as the project manager, building on the proven methodology he developed in the prior project. The final report detailed the steps taken, and compared the results with the economic impacts of the previous study. He refined the process, which allowed CDM Smith to deliver a superior product at reduced cost to the client.



Lead Analyst, Illinois Statewide Aviation Economic Impact Study; Illinois Department of Transportation.

CDM Smith was selected to prepare an economic impact of Illinois' aviation system, one of the most diverse systems in the country. This study assessed the impacts of 118 public use airports, including Chicago-O'Hare. Detailed survey efforts were undertaken to collect data at each airport. Public outreach was accomplished via a SharePoint site, regional meetings, and production of high quality documents for each system airport. Mr. Laing served as the lead analyst and deputy project manager, responsible for coordinating the data gathering efforts and the creation of the economic impact model that tabulated all of the benefits associated with the 118 Illinois airports. Mr. Laing supervised the efforts of two subconsulting companies that gathered data from the airports and surveyed commercial airline passengers throughout Illinois. Mr. Laing also was responsible for the creation of the technical report and high-quality project summary documents that Illinois uses to communicate the value of aviation in the state.



David W. Clawson – Economic Modeling/Benefits Calculator

Education: MA - Geography, University of Cincinnati, Ohio 1998; BA - Geography, Bowling Green State University, Ohio 1995

Mr. Clawson is a Senior Aviation Planner with 18 years of experience performing airport economic impact studies. Mr. Clawson has recent experience developing similar economic impact models of aviation for multiple studies for Ohio and Florida as well as standalone efforts for San Diego International, Pittsburgh International, and Columbus International. He has also developed financial spreadsheet models to evaluate the benefits and costs of various transportation improvements nationwide.

Recent Comparable Projects

Lead Analyst, Kansas Aviation Economic Impact Study Update, 2017. The Kansas Department of Transportation's Division of Aviation desired to update the statewide economic impact study of the Kansas airport system last completed by CDM Smith in 2010. In the study update, CDM Smith analyzed data collected from airport sponsors, on-airport businesses, and

commercial service and general aviation visitors to estimate the economic impacts of the state's 80 system airports. Additional areas of economic benefits were also examined, including hospital use of aviation, off-airport aerospace manufacturing impacts, aerial agricultural application, value added benefits from off-airport aviation dependent businesses, Kansas City International Airport benefits to the state of Kansas, and qualitative airport benefits. Mr. Clawson's duties as lead analyst included survey development, data analysis, economic modeling, and technical report preparation.

Lead Analyst, Florida Statewide Aviation Economic Impact Study Update, 2013 - 2014.

The Florida Department of Transportation's Aviation and Spaceports Office contracted with CDM Smith in 2013 to update the 2010 Florida Statewide Aviation Economic Impact Study, also conducted by CDM Smith. This evaluation of 122 airports in the Florida airport system included a detailed on-site and online survey effort to collect airport management, airport tenant, and general aviation visitor data. The study assessed aviation maintenance and manufacturing, air cargo, military aviation, aviation education, and FAA involvement in the state. Mr. Clawson supervised the efforts of two sub-consultants responsible for gathering data from the airports. He organized and analyzed economic data collected through the fieldwork and survey effort, which he used to design and build a spreadsheet model for tabulating the impacts of aviation in terms of employment, payroll, and output.

Lead Analyst, Massachusetts Statewide Airport Economic Impact Study Update, 2014 and 2018.

To help assess the overall economic value that 39 public-use airports and their associated aviation-related activities bring to Massachusetts, the Massachusetts Department of Transportation (MassDOT) contracted with CDM Smith in 2014 and again in 2018 to conduct a statewide airport economic impact study. The study update quantified the annual employment, payroll, and output impacts associated with airport business operations, on-airport construction, and visitors who arrive via commercial airlines and general aviation aircraft. In addition, the study summarized other benefits attributed to airports in the Commonwealth which are not typically captured by a traditional economic impact study. These included qualitative

airport benefits, tax impacts, and case studies of unique segments of aviation in Massachusetts, including aviation education and charter activity. As the lead analyst, Mr. Clawson developed surveys for the data collection process, analyzed data, built the economic impact model, and authored a detailed technical report documenting the study's findings and methodology. He also authored sections of the public relations-oriented brochure summarizing the study's results.



**Melissa Ann Ziegler, CEcD –
Forecasting Economic Growth
Potential**

*Education: MBA - Management,
University of Tennessee, 1989; MPA
- Finance, University of Tennessee,*

*1981; BS - Philosophy/ Political Science, University of
Tennessee, 1975*

Ms. Ziegler's broad, yet integrated professional experience spans public, private, and non-profit sectors in the areas of economic development, innovative funding and financing, community livability and redevelopment, multi-jurisdictional planning and development, and public involvement. She has developed integrated solution strategies for many development challenges, including economic development-transportation-trade-land use issues, and is a frequent speaker at national conferences. She was a key contributor to the Pennsylvania Long Range Transportation Plan, and led the development of an innovative project prioritization process tool, which helps clients decide which projects should be prioritized for investment. Her greatest strengths are her essential understanding of multi-jurisdictional dynamics and her national experience in emerging trends and issues, multimodal transportation, and economic development. She excels in engaging diverse stakeholders in collaborative processes, and building consensus that leads to implementation. Ms. Ziegler has a crucial understanding of transportation and development dynamics along with the national experience needed to lead successful community, regional, and multi-jurisdictional planning and implementation projects.

Recent Comparable Projects

**Project Leader, Port Bienville Economic
Development Benefits and Opportunity Analysis**

**for the Federal Rail Administration and Mississippi
Department of Transportation.** The multimodal transportation network serving the Mississippi Gulf Coast includes two interstate highways, Stennis International Airport, Stennis Space Center, ports and waterways, and Class I rail service. This study evaluated industrial transportation needs and future demand, economic development benefits from existing business operations, alternative multimodal corridor alignments, and revenue sources. Ms. Ziegler led the economic evaluation and development strategy including industrial demand analysis and economic competitiveness assessment, and recommended financing and funding strategies for the project.



**Zachary Duvall, AICP - Data
Collection, Unique Impacts**

Mr. Duvall is an aviation planner with nine years of experience in aviation planning. His experience includes work on statewide system plans, economic

impact studies, airport master planning, air service studies, and air cargo studies. His work involves geographic information systems (GIS), economic modeling, field works, statistical analysis, forecasting, graphic design, and document preparation. Mr. Duvall's well-rounded skill set can be applied to all types of aviation planning projects and studies.

Recent Comparable Projects

**Aviation Planner, Aviation Economic Impact,
MassDOT, Massachusetts, 2010-2011.** CDM Smith was selected to assess the economic impact of the Massachusetts public airport system. Mr. Duvall's duties included data collection, economic data analysis and modeling, document creation, internet research, and GIS.

**Aviation Planner, Illinois Statewide Aviation
Economic Impact Study, Illinois, 2010 - 2011.** CDM Smith was selected to prepare an economic impact of Illinois' aviation system, one of the most diverse systems in the country. This study included assessing the impacts of 118 public use airports, including Chicago-O'Hare. Detailed survey efforts were undertaken to collect data at each airport. Mr. Duvall's duties included on-site economic impact data collection at Illinois airports, economic data analysis and modeling, document creation, internet research, and GIS.



Gregory W. Sanders – Data Collection

Education: BS University of Cincinnati

Mr. Sanders' primary responsibilities include supporting and assisting in the completion of airport economic impact studies and system plans. In addition to his aviation planning experience at CDM Smith, Mr. Sanders has over a year of full-time work experience as a planner with the City of Colorado Springs, CO. Other experience includes time with Landrum & Brown, Cuyahoga County Planning Commission, and the U.S. Environmental Protection Agency.

Recent Comparable Projects

Planner, Texas DOT Statewide Airport Economic Impact Study, (2018). The Texas aviation study consisted of analyzing the economic impacts of all public-use airports in Texas, including their visitors, user-base, and tenants. Mr. Sanders assisted in data collection through surveys and site visits, including survey follow-up to achieve maximum participation. In completing the study, Mr. Sanders also assisted in writing airport narratives, illustrating the economic drivers and unique contributions each airport makes to the Texas system, as well as contributions to the completion of the executive summary and technical report.

Planner, Multimodal Economic Impact Study for Huntington Tri-State Airport Economic Impact Study, KYOVA Interstate Planning Commission (2018). The KYOVA Interstate Planning Commission selected CDM Smith to perform an economic impact study of Huntington Tri-State Airport and compare the results to the previous economic impact study. The study made use of a linear economic input-output model to estimate the widespread impacts of the airport across three states – West Virginia, Ohio, and Kentucky. Mr. Sanders conducted data entry and analysis of general aviation impacts at the Huntington Tri-State Airport.



Zachary Puchacz, CM, ACE - Data Collection

Zachary Puchacz brings a combined total of 16 years of airport management and aviation consulting experience to the team. He has been involved with many airfield and airport planning and construction

projects including the planning stages of the terminal expansion at Kalamazoo/Battle Creek International Airport, construction of a taxiway system reconfiguration/expansion at Teterboro Airport, and a runway extension at the Capital Region International Airport. Mr. Puchacz extensive knowledge of airports will greatly enhance the team's capabilities, especially in terms of his experience in West Virginia. He is currently serving as the deputy project manager for a master plan at the North Central West Virginia Airport in Clarksburg, West Virginia.

With a broad range of experience in airport operations, Mr. Puchacz applies knowledge and experience from many areas of airport management when working on a project, including administration, finance, marketing, planning, construction, operations, security, maintenance, and aircraft rescue and firefighting.

Sample of Project Experience

- Master Plan
Bradford Regional Airport - Bradford, Pennsylvania
- Runway Incursion Mitigation Study
Kalamazoo/Battle Creek International Airport - Kalamazoo, Michigan
- Runway Protection Zone Analysis
Northeast Alabama Regional Airport - Gadsden, Alabama
- Runway 6/24 Runway Safety Area Improvements Report
Capital Region International Airport - Lansing, Michigan
- Master Plan
Willow Run Airport - Ypsilanti, Michigan



Stephanie Ward, ACIP – Public Outreach Lead

Education: MS, Parks and Recreations Resources Emphasis in Tourism, Michigan State University; BS, Urban Planning, Michigan State University

Ms. Ward has more than 27 years of experience conducting planning studies for aviation-related projects. She has extensive experience developing community support and understanding of airports within their host communities. Developing strong public relations with governmental agencies and the general public is one of her many strong points.

Ms. Ward has played a key role in developing more than 100 studies for air carrier airports, GA airports, and state and national aviation agencies. Her passion for the continued development of aviation is manifested in her goal to educate local community members on the value of their local airports to the surrounding community. With a strong background in urban planning coupled with her aviation and private pilot experience, Ms. Ward combines the aviation perspective with community and personal aspects of planning to create comprehensive studies.

Ms. Ward's most recent work has focused on state aviation system plans (SASP) and economic impact studies. She just completed the SASP updates for Wyoming and Michigan. Michigan's update included a robust economic impact study that included an extensive public outreach. Wyoming included a robust return-on-investment study for the provision of commercial air service related to their essential air service operations and the state funding that subsidizes those operations.

Ms. Ward has also been heavily involved in more than 15 ACRP projects serving as principal investigator (PI), Co-PI, subject matter expert and as a panel member. She was a key team member on the ACRP Report 132 The Role of U.S. Airports in the National Economy.

A sampling of Ms. Ward's relevant system planning and economic impact studies includes:

- Michigan Aviation System Plan*, 2017 – project manager
- Wyoming State Aviation System Plan, 2016 – subject matter expert
- North Dakota State Aviation System Plan, 2014 – project manager
- Indiana State Aviation System Plan, 2013 – subject matter expert
- South Dakota State Aviation System Plan*, 2011 – project manager
- Iowa Aviation System Plan, 2011 – project manager
- Oregon Aviation Plan*, 2007 – project manager

*Project included Economic Impact Study



Jim French, PE (FE)

Mr. French is a professional engineer with 25-plus years of experience on data collection, traffic studies, and engineering projects in and around West Virginia. He has a PhD in civil and environmental engineering and brings in-depth knowledge of the software and design tasks needed to successfully analyze and complete traffic projects. He has completed traffic access studies for a commercial development at the WV 68/WV 2 intersection near Parkersburg, as well as for casino access at Beaver Avenue between the casino and Juniata Street in the North Shore/Chateau area of Pittsburgh.

Project References

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Multimodal Economic Impact Study for Huntington Tri-State Airport

May 2018

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Massachusetts Statewide Airport Economic Impact Study Update

January 2019

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Texas Aviation Economic Impact Study

September 2018

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Ohio Airports Focus Study: System Plan and Economic Impact Study

December 2014

Brad Brandt

Louisiana Department of Transportation and Development, Aviation Division

Director of Aviation

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Louisiana Airports Economic Impact Study

June 2015



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March 18, 2019

Subject: CDM Smith Work on the Huntington Tri-State Airport Economic Impact Study

To Whom It May Concern:

I am writing to recommend CDM Smith based on their performance on an economic impact study for the Huntington Tri-State Airport. They accomplished this 2018 assignment on schedule and within budget. As a result of the quality of their work and findings, I would be pleased to have them perform work on future projects at my airport.

Their analysis examined the economic impact of my airport by gathering data from airport staff, on-airport tenants, and surveying passengers prior to their departure. They reported their findings in a detailed technical report that explained their process. I especially appreciated their comparison of our economic impact results with those of our past study and with similar airports. Providing this context greatly aided our understanding of our performance.

CDM Smith also provided us with a fact sheet that I have found extremely useful. It highlights our economic impact, as well as calling attention to the many destinations served by both our commercial air carriers and general aviation users. It also features our plans for future development, allowing me to easily communicate our ideas for growth and expansion.

CDM Smith is a solid, reliable consultant with which to work. They communicated well, executed as promised, and delivered a high quality product within a timetable as the airport needed. I would highly recommend them for any airport planning assignments.

Sincerely,

Brent Brown
Airport Director
Huntington Tri-State Airport