Federal FY 2014 Projects

Project 1: Air Cargo Element Update– Phase 2

Phase 2 of this project will complete the update of the Ground Access/Air Cargo Element, the first phase of which resulted in the completion of a supply analysis. Phase 2 will continue the analysis of demand, needs analysis and identification of policy recommendations including the preparation of the final report. The purpose of this project is to examine the existing demand for air cargo at the region's airports, and analyze how current and future traffic congestion affects truck traffic traveling to and from regional air cargo facilities. This project focuses on the goods movement portion of airport access, examines the estimated potential demand for air cargo facilities and compares this demand with current and planned facilities, to determine what air cargo facilities are needed in this region to meet future demand. It includes a network analysis to determine the impact of traffic congestion on goods movement.

Specific tasks to be completed in this phase include: undertaking a review of forecasted demand for airport ground access, identifying ground access needs of the region's air passengers and cargo, documenting issues and problems, highlighting key issues to be addressed in the CLRP, and coordination with relevant agencies to identify policy issues. In addition, for cargo, it will examine the estimated potential demand for air cargo facilities and compare this demand with current and planned facilities to determine air cargo facility needs in this region.

The products of Phase 2 will be a final report outlining key policy issues and recommendations pertaining to the ground access to the region's airports. This plan element will also integrate airport system ground access and facility planning into the overall regional transportation planning process for the National Capital Region and include recommendations for improving ground access and cargo for the region's airports. The work will be coordinated with any facility master planning efforts and air cargo facility inventories at the region's airports.

Project Schedule

The draft project schedule for this effort is shown in Figure 11 on the following page. Note: the schedule is subject to refinement through further coordination with the Aviation Technical Subcommittee.

Deliverables

Draft Report: hard and digital copy to be provided to the ATS for review

Final Report: hard and digital copy to be submitted to FAA and provided to ATS, TPB Technical Committee, and TPB upon request. Digital copy will be made available for download on the COG website.

Figure 11: Project 1 – Air Cargo Element Update, Phase 2 – Project Schedule

Table 4: Project 1 – Air Cargo Element Update– Phase 2, Proposed Budget

Project 2: Process 2013 Air Passenger Survey – Phase 2

Phase 2 of this project provides for the continued processing of data collected in the 2013 Regional Air Passenger Survey. In Phase 1, data collected as part of the survey was corrected and the 2013 Air Passenger Survey database was finalized in preparation for data analysis. The General Findings Report was issued as part of Phase 1.

Specific tasks to be completed in Phase 2 are: geocoding, data expansion, data tabulation, and data analysis. During this process detailed statistical analysis of the survey is conducted, which ultimately results in summarization of the survey findings. Findings are summarized by the various characteristics of the air passengers, characteristics of their ground access trips (work vs. non-work, resident vs. non-resident, mode of access, airport preference, etc.) as well as the geographic characteristics of ground access trips. As part of the geocoding process, staff will check for updates to the air systems regional TAZ boundaries.

Analysis concludes with the production of summary tables and charts, and GIS-based maps that are incorporated in the final survey report. The products for this phase will be the preparation of the Geographic Findings Report and two final geocoded survey files: a complete file for use by MWAA and MAA only, and a public use file where confidential and sensitive data are suppressed.

Project Schedule

The draft project schedule for this effort is shown on the following page. Note: the schedule is subject to refinement through further coordination with the ATS. A quarterly status report documenting percentage of work complete by project budget and a short narrative describing work completed during the reporting period will be submitted to FAA.

Deliverables

Draft Report: hard and digital copy to be provided to the ATS for review

Final Report: hard and digital copy to be submitted to FAA and provided to ATS, TPB Technical Committee, and TPB upon request. Digital copy will be made available for download on the COG website.

Figure 12: Project 2 – Process 2013 Air Passenger Survey, Phase 2 – Project Schedule

Table 5: Project 2 -- Process 2013 Air Passenger Survey, Phase 2 – Proposed Budget

Project 3: Ground Access Forecast and Ground Access Element Update

In response to an anticipated decreased availability of funding, the ground access forecast update and ground access element update, which were previously two separate projects performed over two separate phases, are being combined into a single project with a single phase. Combining these two similar projects into one will allow the full realization of project efficiencies built up over several years; furthermore, it will bring both projects onto the same cycle, eliminating some of the confusion in the overall CASP program cycle that occurred when the ground access element was being updated at the same time that the next air passenger survey was getting underway. Going forward, both the ground access forecasts and ground access element update will be prepared at the same time, using the same survey year as their base data. For this first iteration of the combined update, the work will be based on the 2013 Air Passenger Survey. Subsequent updates will be based on the next survey completed on an every-other-year basis (2015, 2017, etc.)

The update of forecasts of ground access trips to the region's three commercial airports is an important step in the airport systems planning process. This project will use the results of the most recent regional air passenger survey together with the latest available airport terminal area forecasts and land activity forecasts of future growth in the Washington-Baltimore region to update forecasts of ground access trips from local area Aviation Analysis Zones (AAZ) to each of the region's three commercial airports. The deliverables will be updated ground access trip generation rates by aviation analysis zone and updated base year and horizon year forecasts of ground access trips from all local area aviation analysis zones to each of the region's three commercial airports by time of day and major mode of travel used to reach the airport, as well as a technical memorandum documenting the trip generation rate and forecast update methodology.

Specific tasks to be completed for the forecast update are: the update of annual local originating passenger forecasts, conversion of base year and forecast annual local originating air passenger trips to average weekday passenger trips, review and analysis of average weekday ground access trips by mode, trip origin and resident status for each AAZ and transportation analysis zone; the review and refinement of the AAZ area system, and calculation of weekday ground access trip generation rates by trip origin and resident/non-resident status for each AAZ. Further work tasks include (1) determination of the time of day distribution of base year and forecast weekday ground access trips to each airport from each Aviation Analysis Zone (AAZ), (2) calculation of base year and forecast average weekday ground access trips to each airport from each AAZ by time of day and major arrival mode, (3) determination of average vehicle occupancy for base year and forecast ground access auto trips and (4) calculation of base year and forecast average weekday auto driver trips to each airport from each AAZ by time of day. These ground access forecasts will then be used as inputs for the update of the TPB's Constrained Long Range Plan (CLRP) and will serve as the basis for updating the Ground Access Element of the Regional Airport System Plan.

This project entails no new data collection activities because all data needed to prepare these forecasts have been obtained through previous CASP projects or are already available from existing COG databases. An exception to this may be updated total enplanement forecasts, if available, and would be provided to COG in a usable format directly by MWAA and MAA staff for their respective airports. As a result, no further surveying activities will be conducted as part of this effort. Only currently-available data will be used to prepare these forecasts, which are

developed by processing data through a series of complex statistical calculations and operations.

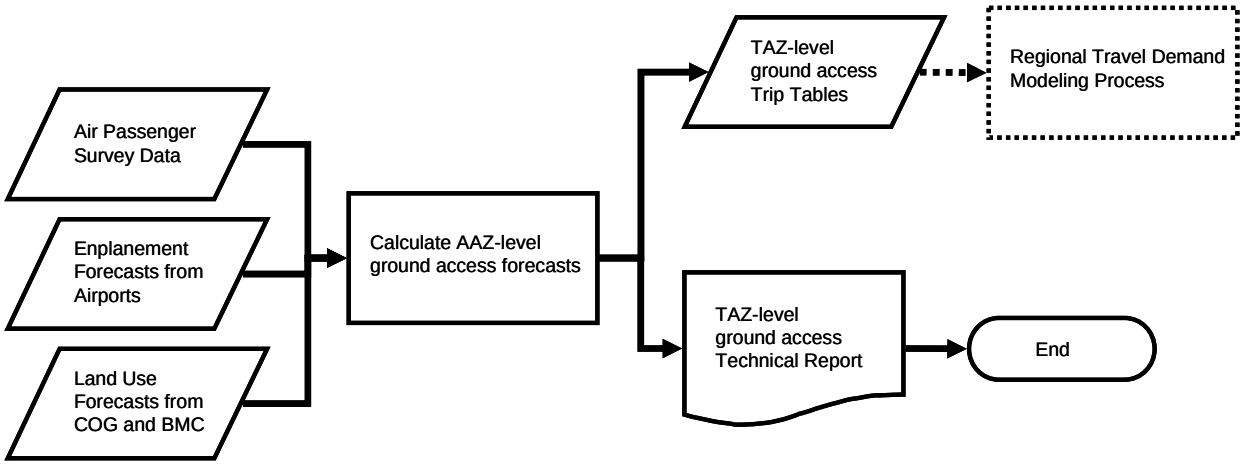
Three principal datasets to be used in the preparation of these forecasts are as follows:

1. The most recently completed Washington-Baltimore Regional Air Passenger Survey used to develop home and non-home trip generation rates by mode and time-of-day by AAZ.

2. Base year and forecasts of enplanement through 2040 for BWI, DCA and IAD provided by the airports. These enplanement forecasts will be used as base year and forecast years enplanement control totals.

3. Most currently-available forecasts of households and employment by TAZ prepared by COG and the Baltimore Metropolitan Council (BMC) for their respective jurisdictions included in the air system planning area.

The following flowchart illustrates a generalized conceptual design of the process and how data from the three datasets are used to prepare the forecasts. The process concludes with finalized TAZ-level ground access forecasts by ground access mode and time of day from each TAZ to each of the planning area's three commercial airports.



Detailed ground access forecasts are calculated by manipulating the input data through a series of statistical operations performed in sequential steps using the SAS statistical software package. The principal steps involved include:

1. Update land use data for the Washington-Baltimore region, and develop household and employment summary by AAZ for the Washington/Baltimore Air System Region using latest COG and BMC land use forecast data.

2. If available, obtain updated enplanement forecast data for BWI, DCA and IAD from airport staff.

3. Using factors obtained from the most recent Washington-Baltimore Regional Air Passenger Survey, develop mode split and auto occupancy models to determine base and

future modal splits of air passengers. Calibrate to the base year (year of the survey) and forecast years' air passenger ground access trips from 161 Aviation Analysis Zones to each of the three airports by mode of access, using the latest land use data.

4. Calibrate base year and forecast years' air passenger ground access trips from 161 Aviation Analysis Zones to each of the three airports by mode of access and time-of-day, using the latest land use data available from COG and BMC.

5. Calibrate base year and forecast years' air passenger ground access trips from 161 Aviation Analysis Zones into the 2,671 TAZs composing the combined Washington-Baltimore Air System Region, and extract those from the COG modeled region to each of the three airports by mode of access and time-of-day as an input to the regional travel demand model.

Extensive data review and cleaning will be performed on all input datasets to ensure data compatibility in the statistical operations. For each of the datasets used in this effort, substantial time will be used to perform data cleaning, which entails confirming geocoding accuracy, file-format and data field compatibility, accuracy in the number of records, and running statistical tests on the datasets to confirm the records are collectively consistent with anticipated control totals.

Once complete, the forecasts will be used in the regional transportation modeling process and documented in a technical report. The report will be presented to the Aviation Technical Subcommittee (ATS), which includes staff members from both MAA and MWAA. The ATS will receive a briefing on the draft report and have the opportunity to review and provide comments on the draft. COG staff will address comments received through the ATS review and prepare a final report, which will also be presented to the ATS before it is considered final.

The final report and forecast data will be provided to MAA and MWAA staff at the conclusion of the process for their use in future planning studies, conducted either in-house or with consultant support, as well as for their use in preparing publications or other materials containing aviation data for their respective airports. Moreover, these data will be readily available to other stakeholders, upon request. All such data requests will be fulfilled in accordance with the COG Department of Transportation Planning information request procedures.

Updating the Ground Access Element of the Regional Airport System Plan uses the results of the most recent Regional Air Passenger Surveys and the latest Updated Ground Access Forecasts. Ground access and landside congestion constraints are expected to increase in the future. In turn, these ground access constraints could adversely affect airport use in the Washington-Baltimore region. This update will provide an analysis of current and forecast ground access constraints at Ronald Reagan Washington National (DCA), Washington Dulles International (IAD), and Baltimore-Washington International Thurgood Marshall (BWI) airports. This plan element will also integrate airport system ground access and facility planning into the overall regional transportation planning process for the National Capital Region and include recommendations for improving ground access to the region's airports.

The update requires completion of both a supply analysis and demand analysis and production of a final report. Work performed for the supply analysis update will entail an extensive review and

evaluation of existing planning studies, ground access data, and transportation plans and programs to identify problem areas in ground access systems and propose recommendations to address these constraints. As such, no new studies, such as curbside access studies, or inventories will be conducted. Rather, this study will rely on existing information and will follow a general sequence of steps outlined in the text box that follows. All steps are to be extensively coordinated with airport sponsors through the Aviation Technical Subcommittee.

Specific steps to be performed in the supply analysis are as follows:

1. Review information on existing facilities and services providing ground access to the region's three major commercial airports. Identify major highways, transit, paratransit, HOV and other ground access facilities to the region's airports. For major ground access facilities, review and document current travel times to the airports using the results from latest Ground Access Travel Time Study, and/or current Travel Demand Model output from both COG and BMC.

2. Review and document existing and proposed ground access projects and service improvements as contained airport master plans, transit agency plans, and local, state and regional plans. Coordinate with these and other agencies to identify existing and planned ground access projects serving any of the three airports and to identify locations where inadequate ground access exists.

3. Review and document existing and proposed ground access projects and service improvements identified in the regional transportation planning documents: the 30-year Constrained Long Range Plan (CLRP) and 5-year Transportation Improvement Program (TIP).

4. Review and evaluate other regionally-significant access studies that have been completed as well as any other research conducted at the national level or in other metropolitan areas regarding airport accessibility, policy matters and/or technological issues that may affect ground access.

5. Document major ground access issues and constraints that could be addressed in this planning effort, including intermodal connectivity, jurisdictional responsibilities, system gaps, choke points, additional system capacity needs, and funding concerns.

For this study, ground access is quantified in terms of travel time to the region's three airports using standards defined in previous studies that will be used in this effort. Ground access will also be qualitatively defined in terms of availability of different modes of travel (auto, transit, paratransit, etc.).

Specific tasks to be completed in the demand analysis include:

1. Review and evaluate airport ground access forecasts. This process involves:

    a. Review and evaluate updated ground access forecasts of local originating air passenger trips from each aviation analysis zone to each of the three major commercial airports in the region.

b. Review and analyze results of the COG/TPB travel forecasting model runs using updated air passenger ground access forecasts for 2010 (or the most recently validated model base year), 2015, 2020, 2030, and 2040.
c. Perform accessibility analyses showing the forecast change in air passenger travel times from regional activity centers to the region's three commercial airports.
d. Evaluate the ability of the transportation system to serve the needs of the region's air passengers and document major ground access issues and problems identified.

2. Through the ATS, discuss results of the airport accessibility analysis and future ground airport access needs and identify any gaps in existing plans, programs, and projects that should be addressed with this plan update. This task will identify ground access needs and projects at each of the region's three commercial airports.

3. Prepare the regional airport ground access element update highlighting key issues to be addressed in the update of the Constrained Long Range Plan (CLRP) for the National Capital Region.

4. Coordinate with airport sponsors and regional/state/county/local land use and transportation planning agencies to identify policy issues and make transportation improvement recommendations to improve ground access to the region's airports. Include these recommendations in the Regional Airport System Plan Ground Access Element, such as highway, rail, taxi, bus, and paratransit projects.

5. Prepare and present draft and final findings to the ATS and to the TPB Technical Committee.

The study area for this effort is the air system planning region shown earlier in Figure 1. This study area will be used for all three airports, BWI, DCA, and IAD, because the analysis is conducted at the *regional* level and linked to the regional transportation planning process. It is intended to provide a regional perspective. Nevertheless, ground access to *each* of the three airports will be evaluated and specific recommendations will be made for future ground access to each airport, as appropriate.

This plan element will also integrate airport system ground access and facility planning into the overall regional transportation planning process for the National Capital Region and include recommendations for improving ground access to the region's airports. This is accomplished in several ways. First, projects and programs contained in the adopted regional CLRP and five-year Transportation Improvement Program (TIP) are evaluated as part of the effort, along with key data included in the regional travel demand model used in the regional planning process. Secondly, and more significantly, the recommendations resulting from this effort are then used by MWAA and MAA in identifying and submitting projects and programs to be included in future CLRP and TIP documents. Both MWAA and MAA are transportation implementing agencies that participate in the regional transportation process. As two of the primary stakeholders and recipients of this effort, MWAA and MAA use the recommendations contained in this update to identify future projects needed to support the regional ground access system.

Because of the number of materials to be reviewed and issues/opportunities/constraints to be

identified in the performance of this work, the ATS, which includes members from MAA and MWAA, will receive briefings at every one of its bi-monthly meetings on the progress and status of the project. During these briefings, staff will consult with subcommittee members, seeking input on preliminary findings and interim products and seeking concurrence / direction on the project's next steps.

The ATS will receive a briefing on the draft report and have the opportunity to review and provide comments on the draft. COG staff will address comments received through the ATS review and prepare a final report, which will also be presented to the ATS before it is considered final. Also, because of the policy implications inherent in this study, briefings may also be made to the TPB Technical Committee and the TPB itself, at either of their requests.

Project Schedule

The draft project schedule for this effort is shown on the following page. Note: the schedule is subject to refinement through further coordination with the ATS. A quarterly status report documenting percentage of work complete by project budget and a short narrative describing work completed during the reporting period will be submitted to FAA.

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Figure 13: Project 3 – Ground Access Forecast and Ground Access Element Update – Project Schedule

Table 6: Project 3 – Ground Access Forecast and Ground Access Element Update, Proposed Budget