

MEMORANDUM

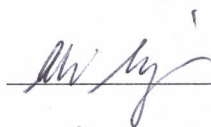
TO: Distribution

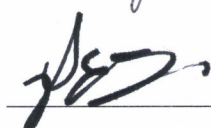
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Division of Planning and Engineering
GIS and Engineering Technology Section

APPROVED BY: Paul Shank, P.E., C.M.
Chief Engineer
Division of Planning and Engineering

DATE: September 18, 2018

SUBJECT: Design Standards Supplement
DST-18-002, MAA & FAA GIS Data Compliance Requirements





Effective immediately, the following modifications shall be made to the MAA 2018 Design Standards Manual:

- Volume 3: Appendix I - GIS Data Standards**
- Delete Existing Chapter 6, Electronic Deliverables, in its entirety
Insert New Chapter 6 – MAA GIS Data Compliance Requirements
 - Delete Existing Chapter 7, Glossary of Acronyms and Terms, in its entirety
Insert New Chapter 7 – FAA GIS Data Compliance Requirements

Consultants listed herein are required to distribute this design standard to their respective staff and subconsultants.

If you believe the attached design standards conflict with any other codes or regulations, or if you should have any questions regarding this matter, please contact the Manager, GIS and Engineering Technology Section at (410)859-7768.

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Volume 3: Appendix I - GIS Data Standards

Delete Existing Chapter 6, Electronic Deliverables, in its entirety
Insert New Chapter 6 – MAA GIS Data Compliance Requirements

Chapter 6: MAA GIS Data Compliance Requirements

6.1 Electronic GIS Data Deliverables to MAA

Projects which contain GIS components are required to have GIS data electronically submitted to MAA's GIS and Engineering Technology Section (GETS). As such, consultants must include the applicability and the requirements of MAA's GIS data standards and deliverables in their fee proposal to MAA. GIS Data Standards apply to all offices within the Division of Planning and Engineering.

Refer to [Section 6.4, MAA GIS Data Editing](#), for how to submit electronic GIS data to MAA.

6.2 Project GIS Staffing Requirements

For projects that require GIS deliverables, consultants must identify in their fee proposal qualified GIS staff who will be working on MAA GIS data. Proposed GIS staff must meet the following basic qualifications:

- Technical skills and experience with ESRI ArcGIS software, ArcSDE Enterprise geodatabases and ESRI Data Reviewer extension.
- Experience on past projects of similar nature and scope.
- Certification as a GISP is preferred.

MAA reserves the right to request the resume(s) of the proposed GIS Staff included in the fee proposal for review and approval. Furthermore, MAA reserves the right to require the removal and replacement of the proposed GIS staff at any time.

6.3 Project GIS Data Requirements

MAA is requiring consultants to deliver GIS data for all projects at BWI Marshall and Martin State Airports involving assets identified in the table below. The table below is intended to help determine which projects require GIS deliverables, although it is not an all-encompassing list.

ASSET TYPE	GIS DATA EXAMPLE	GIS COORDINATION ¹	GIS REQUIRED ²
Airfield Markings	Permanent		X
	Temporary	X	
Airfield Signs	Surface Painted Signs, Runway and Taxiway Guidance Signs		X
Buildings	Exterior: Footprint, Building Numbers		X
	Interior: Door Numbers, Interior Floor Plan, Etc.	X	

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Environmental	Ponds, Assessment Area, Contamination Areas, Investigation Areas		X
External Above Ground & Underground Utilities	Stormwater, Wastewater, Water, Gas, Electrical, Fueling Systems, Communications, Fire Hydrants, Light poles, Etc.		X
Fire Protection Devices	Exterior and Interior	X	
Geotechnical Exploration	Boring and Coring Locations, Reports		X
IASS/CDC	Security Cameras, Card Readers, Etc.	X	
NAVAIDs	Shelters, Equipment, Instruments, Etc.		X
Pavement	Runways, Taxiway, Shoulder, Apron, Etc.	X	
Passenger Boarding Bridges	Type, Fleet Mix, Photos, Other attributes	X	
Structures	Fences		X
	Bridges, Parking Garages, Space Frames, Retaining Wall, Roadway Signs	X	
Subsurface Utility Engineering	Grids Impacted, GIS data, Etc.		X
Real Estate	Properties acquired, Properties sold		X
Topographic Surveys	Data of all surface features surveyed		See Note 3
¹ GIS Coordination = Project Manager should discuss the scope of their task with the GIS & Engineering Technology Section (GETS) staff to determine if the project requires GIS data.			
² GIS Required = The project must produce GIS data per MAA standards. GIS Editors should discuss the procedure for editing GIS data with GIS & Engineering Technology Section (GETS) staff.			
³ Data Required = If survey is performed, a CAD ".dwg" file shall be provided to MAA via ADM submission. Refer to Volume 1, Section 7.1.2.3.b.			

Consultants are responsible for both spatial/geometry updates and data attributes. In a case where GIS geometry does not change spatially, consultants are still responsible for updating data attributes with current information.

6.3.1 ArcGIS Online

MAA utilizes ArcGIS Online to improve spatial collection of data for the State of Maryland. ArcGIS Online allows users to collaborate and share spatial data with ease and access maps and data from any device. Data can be updated in the field and viewed real-time online.

If a project requires the use of ArcGIS Online, consultants are required to use their own company's ArcGIS Online Organization to create individual user accounts. After the account is created, the consultant must provide the username(s) to GETS. GETS will then invite the user(s) to join a group on

MAA's ArcGIS Online Account for that specific project. MAA requires that all groups and data created for BWI Marshall and Martin State Airports be hosted on MAA's ArcGIS Online Account.

GETS can assist with user setup in ArcGIS Online.

6.4 MAA GIS Data Editing

Projects that require updating GIS data for MAA shall utilize ArcSDE Enterprise Database via checkout file geodatabase. The checkout will be given to the Consultant's GIS Editor for the duration of the editing session. During that time, no other entity will be permitted to edit data that is included in the checkout. Consultant's GIS Data Editor shall discuss the scope of each project with GETS staff to determine the best distribution method for editing the GIS data.

Following the discussion with GETS staff, consultants must fill out and submit a Digital Data Request Form to request the checkout. The Digital Data Request Form can be found at the following location in AIRPortal: **AIRPortal->Planning and Engineering Guidelines & Standards->AIRPortal tab->Requesting Digital Data.**

Once the data request is approved, MAA will deliver the requested data to the consultant electronically via email or secure FTP site, on-line document repository, or other systems pre-approved by GETS staff.

Since the data that is included in the checkout is locked for the duration of the editing session, the checkout editing period will be limited to the minimum amount of time possible. GETS staff will determine the duration the data can be checked out.

Volume 3: Appendix I - GIS Data Standards

Delete Existing Chapter 7, Glossary of Acronyms and Terms, in its entirety
Insert New Chapter 7 – FAA GIS Data Compliance Requirements

Chapter 7: FAA GIS Data Compliance Requirements

7.1 Electronic GIS Deliverables to FAA

Consultants must consider and address the applicability and the requirements of FAA Advisory Circular [FAA AC 150/5300-18B](#), prior to submitting a fee proposal to MAA for planning and/or design of projects at BWI Marshall and Martin State Airports. If a project contains GIS components, GIS files must meet the requirements of [FAA AC 150/5300-18B](#) for submitting to the FAA Airports GIS (AGIS) System. This requirement must be clearly defined in the project scope and fee proposal. In order for the GIS files to be submitted to the FAA, consultants must follow the requirements below:

1. Must have first gone through the MAA GIS data update process. See [Chapter 6, MAA GIS Data Compliance Requirements](#).
2. Must be an exported shapefile of MAA data using ESRI's ArcGIS for Aviation extension.
3. Must be provided in a compressed ZIP file that is ready and error free for upload to the FAA AGIS web site.

7.2 Test Upload (Consultant Responsibility)

- a. The consultant, submitting as an authorized FAA AGIS user, shall perform a test upload of the zip file to the FAA AGIS. All critical errors identified must be resolved. All non-critical errors must either be resolved or have a valid written explanation for each type of error (e.g. "out of scope"). Where required by the FAA, the consultant shall prepare a project final report and supporting data as defined in [FAA AC 150/5300-18B](#), as well as, any supporting documentation published by the FAA and NGS.
- b. The test upload process can be completed with CAD data, provided FAA continues to accept it.

7.2.1 Test Upload Procedure

1. Log onto at <https://airports-gis.faa.gov/>
2. Click "Test Survey File"
3. Enter the Airport Code.
4. Specify that the feature schema is [FAA AC 150/5300-18B](#) compliant.
5. Point to the ZIP file stored on a local or network drive.
6. Specify that the file format is ESRI SHP.
7. Specify the coordinate system is MD83F.
8. Check the box indicating that the data meets [FAA AC 150/5300-18B](#) accuracy requirements or indicate alternative horizontal and vertical accuracies that were achieved at the 95% confidence level.

9. Click submit.
10. After the data is uploaded, which can take several minutes, translation and automated validation will commence.
11. After validation is complete, an error report will be provided. All errors identified must be addressed before providing to MAA for final upload. Critical errors must be resolved. Non-critical errors must either be resolved or have valid written explanation provided to MAA. If a final report is required, it must be provided by the consultant to MAA for final upload. Data is not retained by FAA for test uploads.
12. If applicable, after addressing errors, repeat this process until 95% confidence level achieved.
13. Submit to MAA for final upload.

7.3 Final Upload (MAA Responsibility)

- a. GETS is the designated Airport Sponsor at MAA for FAA AGIS. GETS is responsible for and will perform the final upload of the data to the FAA AGIS site.
- b. Consultants shall submit the .zip file to GETS, which has been tested to 95% confidence level, to MAA for final upload. If the file is rejected by FAA, MAA will return the file to the consultant to address the issues found. Consultant shall address and provide an updated file at no additional cost to MAA.

7.3.1 Final Upload Procedure

The process for performing Final Upload is described below:

1. Log onto at <https://airports-gis.faa.gov/>
2. Click "My Survey Projects"
3. Select the desired project
4. Click the "Survey" tab
5. Specify that the feature schema is [FAA AC 150/5300-18B](#) compliant.
6. Point to the ZIP file stored on a local or network drive.
7. Specify that the file format is ESRI SHP.
8. Specify the coordinate system is MD83F.
9. Check the box indicating that the data meets [FAA AC 150/5300-18B](#) accuracy requirements or indicate alternative horizontal and vertical accuracies that were achieved at the 95% confidence level.
10. Add a relevant description that would help the FAA or NGS understand what data is being provided.
11. Click submit.
12. After the data is uploaded, which can take several minutes, translation, and automated validation will commence.
13. After validation is complete, an error report will be provided. If no critical errors are found, then the data can be submitted. If a final report is required, it must be uploaded as well before the data can be submitted.

14. After data is submitted, safety critical data will be verified by the FAA and/or NGS. If issues are found, the data submittal will be rejected and a detailed Quality Review Report (QRR) will be provided indicating the issues that must be resolved. MAA will return the file to the consultant to resolve issues.
15. Once resolved, the consultant will resubmit the data to MAA to repeat the process.
16. Once accepted, the data will be available for use in eALP and other FAA AGIS modules by authorized FAA personnel, as well as, airport staff and consultants that the Airport Sponsor has authorized.

7.4 FAA GIS Staffing Requirements

Refer to [Section 6.2, Project GIS Staffing Requirements.](#)