

NOTICE OF PROPOSED GUIDANCE DOCUMENT

DTIMBOA45

Pursuant to Wis. Stat. s. 227.112, the Wisconsin Department of Transportation is hereby seeking comment on DTIMBOA45, a proposed guidance document.

PUBLIC COMMENTS AND DEADLINE FOR SUBMISSION

Comments may be submitted to the Wisconsin Department of Transportation for 21 days by:

1. Department's website: <https://appengine.egov.com/apps/wi/dot/guidance-docs?guidDocId=DTIMBOA45>

2. Mailing written comments to:

Division of Transportation Investment Management
Wisconsin Department of Transportation
4822 Madison Yards Way
PO Box 7913
Madison, WI 53707-7913

WEBSITE LOCATION OF FINAL GUIDANCE DOCUMENT

The final version of this guidance document will be posted at wisconsin.dot.gov to allow for ongoing comment.

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Surveying and Mapping Guidelines

for

Land Acquisition

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Wisconsin Department of Transportation
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This guideline updates and supplements the Wisconsin Department of Transportation, Bureau of Aeronautics (BOA), *Airport Owner's Guide to Land Acquisition*, and supercedes the BOA *Land Surveys (Guide and Checklist)*.

❑ **Parcel Numbers**

Parcels are defined by common ownership, not by tax parcel descriptions. A parcel includes not only a single tract of land embraced within a particular conveyance document, but all contiguous tracts in common ownership. Contiguous lots in a platted subdivision, in common ownership, constitute a single parcel.

Parcel numbers used for airport land acquisition are managed by the BOA. Consultants should check with BOA as early as possible to obtain parcel numbers used for project maps, legal descriptions and other documents. Recorded legal descriptions and surveys cannot be completed and should not be recorded without verifying parcel numbers.

❑ **Coordinate Reference System**

Surveys and maps developed for Wisconsin airports should be based on the Wisconsin Coordinate Reference Systems (WISCRS) except where local ordinance codifies a different coordinate reference system. Coordinate data should be referenced to the North American Datum of 1983 (NAD83), 1991 or subsequent adjustment or to the North American Vertical Datum of 1988 (NAVD88), 1991 or subsequent adjustment. For detailed information on Wisconsin coordinate reference systems and datums, see *Wisconsin Coordinate Reference Systems* and other resources available from the Wisconsin State Cartographer's Office website: www.sco.wisc.edu/coordsys/index.php

❑ **Surveys**

Obstruction Surveys

Plan view and profile view of the approaches for the runway being developed are needed early in the plan preparation stages so that the full extent of land acquisition can be determined. When Obstruction Surveys are required for runways being developed or improved and for secondary runway(s), plan and profile maps should be prepared as follows:

Plan and Profile of Approaches

Note: Plan view and profile view of the approaches for the runway being developed are needed early in the plan preparation stages so that the full extent of land acquisition can be determined.

Plan View

- (1) Show enough detail of runway end to orient plan along with runway end number/s and North arrow and scales. Scale will depend on size of approach surface. Generally, a separate sheet for each approach will be needed. Show man-made and natural features laterally from runway centerline to a distance where 50' ground clearance is obtained in the 7:1 transverse slope.

- (2) Do the same within the approach slope outline to the outer limit of the approach surface as a minimum. Depending on circumstances, it may be necessary to show additional information.
- (3) Pay particular attention to roads and railroads, and show the critical clearances over same. Also give the centerline station of the runway at the intersection of the centerline of the road or railroad.
- (4) Show obstructions to be removed and key number each obstruction.
- (5) Include a legend when needed to keep plan from becoming cluttered.
- (6) Show property lines both existing and proposed for acquisition.
- (7) Show contours to the limits of the plan view information outlined above. Contour interval desired is 2 ft., however, in some cases 5 ft. or 10 ft. intervals will suffice. As noted above, scale will depend on size of clear zone, however, a scale of 1" = 100' or 1" = 200' will be best.

Profile View

- (1) Profile view is to be directly below plan view, stationing to coincide vertically.
- (2) Show existing ground profile to limits of the plan view. Show all objects from the ground up which have a height to within 5 feet below the approach surface or the 7:1 transition slopes. Also show all objects which penetrate higher than the above minimum.
- (3) Depict as closely as possible the object being shown, i.e., show a house shape for a house, a tree shape for a tree, if space permits, show a deciduous tree different from a coniferous tree. The highest point of structure should be shown, i.e., the chimney or TV antenna on a house. If an antenna is the highest, and it is an obstruction and the structure isn't, then that information is needed, and if the structure is also an obstruction, it needs to be so defined.
- (4) If there are so many objects which need to be shown that the profile view becomes cluttered and unreadable, then show only vertical lines to the correct height with the number above it.
- (5) Number each obstruction in the profile view as was done in the plan view to coincide with the "Schedule of Obstructions". Do not number objects if they aren't obstructions or below 5' of applicable slopes.
- (6) When an object penetrates the 7:1 slope or comes within 5 feet below it, show the point in the profile where the 7:1 slope is for that object.
- (7) Show all roads and railroads in the profile.
- (8) Vertical scale preferred is 1" = 5' or 1" = 10'

Property Surveys

Property surveys completed for the Bureau of Aeronautics must meet state statutes, administrative code and regulatory requirements of local authorities for filing and/or recording surveys. All surveys prepared and filed for the Bureau of Aeronautics must bear the Surveyor's stamp and signature. The surveyor will advise and recommend the appropriate survey type:

CERTIFIED SURVEY MAP (C.S.M)
 SURVEY PLAT
 PLAT OF SURVEY
 PROPERTY SURVEY
 EASEMENT SURVEY

Surveys should be made of each property to be acquired or released. The surveys will be the basis for appraisals, legal descriptions, relocation orders, conveyance documents, Exhibit A maps, ALP Land Inventory, and other airport maps. All surveys must be reviewed by BOA prior to recording.

Avigation Easement Surveys

In addition to general survey requirements, avigation easement surveys should:

- Show elevations to the nearest 1 foot of ground (terrain) at the property corners, and elevation and height above ground of avigation easement airspace intercept at the property and easement corners, runway centerline and other key points (see sample table below).
- Monument easement corners coincidental with fee simple property corners and lines.
- Show most the prominent features, structures and/or trees which constitute obstructions encroaching into avigation easement airspace. Show height above ground of obstructions (tops) and elevation of avigation airspace intercept at those obstructions.
- Show ground elevation of prominent land features such as knolls. Show height above ground of obstructions (tops) and of elevation of avigation airspace intercept at those which are obstructions.
- Show most prominent structures, land features, trees, etc. that are not obstructions, show their height above ground and elevation of avigation airspace above them.
- Include a contour diagram of the avigation easement elevations at 5 ft., 10 ft. or other appropriate intervals.

Avigation Easement Elevation Table

(sample format for use on sheet 2 of Avigation Easement Surveys)

Feature Identifier	Description of Feature	Ground Elev. (feet)	Top of Feature Elev. (feet)	Easement Elev. (feet)	Ease. height above or below feature (feet)	* Comments/ Recommendations [top, clear cut, remove or other disposition]
A	property corner	783.7	N/A	839.3	56.2 above ground	no obstruction
B	property corner	791.9	N/A	841.8	49.9 above ground	no obstruction
C	property corner	798.6	N/A	844.4	45.8 above ground	no obstruction
D	property corner	783.3	N/A	854.0	70.7 above ground	no obstruction
E	easement corner	783.1	N/A	864.5	30.8 above ground	no obstruction
F	top of roof	803.1	823.3	844.4	21.1 above roof	no obstruction
G	top of chimney	803.1	827.3	845.6	18.3 above chimney	no obstruction
H	top of sign	802.1	865.8	854.8	sign 11.0 into easement	sign to be lowered to below easement height
I	top of tree	802.3	859.7	852.1	tree 7.6 into easement	tree to be topped (or at option of owner, clear cut)
J	top of trees (group)	803.1	860.5	850.8	trees 9.7 into easement	trees to be topped (or at option of owner, clear cut)
K	antenna	802.2	870.2	853.0	antenna 17.2 into easement	to be removed
L	garage	801.9	824.5	849.9	25.4 above garage	no obstruction

* Note as either an obstruction (to be removed), or as no obstruction or clear of avigation easement airspace.

☐ Legal Descriptions

Fee simple and easement acquisitions should be completed using approved BOA conveyance document forms and include a map as part of the recorded document. Maps should follow general mapping guidelines for coordinate reference system, format and content. All conveyance documents must be reviewed by BOA prior to obtaining signatures. All conveyance documents must be recorded with the county register of deeds.

Wisconsin statutes provide that owners and any party of interest, even after signing a conveyance, have six months to appeal for greater compensation. The notice of their appeal rights must be included in the conveyance document. All conveyances **MUST** have the following language:

“Any person named in this conveyance (deed, easement) may make an appeal from the amount of compensation within six months after the date of recording of this conveyance as set forth in ss. 32.05(2a) Wisconsin Statutes. For the purpose of any such appeal, the amount of

compensation stated on the conveyance shall be treated as the award, and the date the conveyance is recorded shall be treated as the date of taking and the date of evaluation.”

☐ **Maps and Exhibits**

All maps and plans shall be developed using as a guide the Bureau of Aeronautics *Airport Layout Plan Development Check List* (ALPDCL Manual) and *Surveying and Mapping Guidelines for Land Acquisition*.

Unless otherwise specified, maps and exhibits prepared for BOA should be prepared at the size indicated below and include, as appropriate, the following content:

- Title block: airport name, project number, map title, map producer (firm/agency), map drafter, map reviewer, filename, and date.
- Vicinity Map showing subject property in reference to nearby highway(s), major street intersections, or other permanent landmarks.
- A legal description of each parcel.
- Public Land Survey System corners, and ties to corners, used to establish property lines.
- Geodetic control stations, and coordinate values, for stations used to establish horizontal control or elevations, including WISCORS¹ station and airport control stations.
- The subject land and all contiguous lands held by the same owner.
- Identify each boundary crossing a runway centerline or extended centerline as two legs with individual bearings and distances. Provide the WISCRS² coordinate values of the intersection point and runway station.
- The WISCRS coordinate value of at least one corner of the survey as tied to a point within the existing airport lands. Show the station and WISCRS coordinate values of the end of the runway.
- Monumented property corners and property line/runway center-line intersection points (if directed to monument survey points).
- Existing easements of record including: utility easements, existing aviation easements, and access or other easements.
- Land areas in both square feet to nearest hundredth and acres to nearest thousandth. Show gross land areas including highway or railroad right-of-way lands and net lands excluding right-of-way lands.
- Improvements such as buildings, wells, septic fields, underground storage tanks (if known) and prominent land and landmark features.
- Per Trans 233 (WI Admin Code) for the division of land abutting a state trunk highway or connecting road, show the minimum setbacks for new improvements.

Types of maps acceptable for land acquisition, reimbursement, release or concurrent use agreements include:

¹ WISCORS: Wisconsin Continuously Operating Reference Stations network

² WISCRS: Wisconsin Coordinate Reference Systems

Property Sketches (8-1/2"x11" or 11"x17")

Requests for federal assistance for airport improvement projects, including land acquisition, must be accompanied by a property sketch that depicts and identifies the limits of the proposed project, and distinguishes other airport development from the development proposed in the grant. For land acquisition projects, the sketch should show the boundaries of currently owned land and the boundaries and proposed property rights of each parcel of land or easement to be acquired. (FAA Order 5100.38C, 1011.b)

Property sketches used at the time of findings or application for assistance should be clearly labeled as "Property Sketch". Property sketches are generalized graphics and need not be spatially referenced.

Exhibit "A" Maps (11"x17")

The Exhibit A map identifies land designated airport property, whether in fee or easement. Exhibit A maps are used to depict changes to airport property, including proposed land acquisition, final land acquisition, reimbursements, releases, and concurrent use. Maps for other purposes should not be labeled "Exhibit A".

The title block for Exhibit A maps should clearly identify the project number and type of Exhibit A map prepared for the project: **Proposed Land Acquisition, Final Land Acquisition, Reimbursement, or Land Release.**

The Exhibit "A" map should:

- Show the outside airport property boundary.
- Delineate the existing runway protection zones, runway configuration, building restriction lines, and airport approach areas.
- Show property interests to be acquired as part of the project.
- For each subject property, include a property schedule noting the property owner's name, acreage, and parcel number as assigned by BOA.
- Show the location of the easements or other encumbrances which are tangible, with a brief descriptive note.
- Show any approved land release or consent to use for non-airport purposes.
- Include an approval block and be signed by the airport sponsor when prepared for land acquisition or reimbursement.

APPROVAL BY AIRPORT SPONSOR	
Approval by:	_____
	(signature) (date)
Title:	_____
	(sponsor official)
*Airport sponsor acknowledges its obligation to preserve airport property in accordance with TRANS 55, Wis. Admin. Code, "Conditions of State Aid for Airport Improvement".	
*Airport sponsor also acknowledges that no airport property as depicted on this map is to be sold or otherwise conveyed without prior release approval by BOA and/or FAA.	

Relocation Order Maps (8-1/2"x11" or 11"x17")

The Exhibit A Map, Proposed Land Acquisition, should be used as the Relocation Order map. The Relocation Order map must be updated and current prior to any condemnation.

Fee Simple and Easement Maps (8-1/2"x11" or 11"x17")

All conveyance documents must include a map of survey.

ALP Land Inventory Maps (see ALPDCL Manual)

The Land Inventory Map depicts how, when, and under what Federal grant or other Federal assistance program the airport land was acquired. A property table should be used to show information pertinent to land acquisitions. At a minimum, the following information should be included in the table: parcel number, property owner, date the property was acquired, recorded document reference, and federal grant project number. Like property interests acquired with federal funds under the same project may be grouped together and shown as one tract. The Land Inventory Map should be updated in coordination with related ALP sheets, such as the Ultimate Airport Layout Plan. ALP maps are prepared using BOA's *Airport Layout Plan Development Check List* (ALPDCL Manual).

☐ Access To Properties And Right Of Entry

Surveying and related inspections of privately held lands, by municipalities or their agents, is authorized under one or more of the following Wisconsin statutes:

- 84.01(10) Right of entry
- 114.31(2) Studies, investigations, airport development plan
- 114.32(5) Local projects and funds, Secretary of Transportation functions

The Consultant shall notify the landowner that entry will occur, when it will occur, and why it will occur. Efforts should be made to accommodate the landowner if they wish to be present while the survey is performed. Although the Statutes allow the right of entry on private lands, the exercise of this right may require a Special Inspection Warrant when a landowner steadfastly refuses entry. If entry is denied, politely explain to the landowner the statutory authority to enter private lands by citing section 84.01(10) of the Wisconsin Statutes. If the landowner still denies entry, withdraw from the scene and inform the Bureau.

For more detailed information on "entry on private lands", review the State of Wisconsin Department of Transportation Facilities Development Manual Procedure 9-10-5.

❑ CADD and GIS

When CADD or GIS systems are utilized to develop maps and plans and the contract is completed or terminated, an electronic copy (compatible with the DOT CADD system and the DOT ArcGIS system) of the maps and files shall be delivered to and become the property of the Bureau of Aeronautics.

CADD Requirements

CADD map requirements and standards are the same as for manually prepared documents except as follows:

- Lines and Art Work - Line weights and symbols for CADD development will conform to the ALPDCL Manual.
- Lettering - Lettering size is based on the final product. Minimum size lettering desired on the final product is to be equal to 100 Leroy on a 22" x 34" drawing, whenever possible, lettering shall be vertical gothic. Font type shall be Type 1 (MICROSTATION).
- Reference Files - DO NOT DETACH any reference file(s) used in the creation of any design file, even if copied to the Active Design File. Include all reference files when submitting digital project files.

GIS Requirements

GIS data should be delivered in ESRI ArcGIS shapefile format with complete metadata. Parcel geodatabases developed for airport projects must include a parcel identifier field corresponding to BOA parcel numbers, and include, at a minimum:

<u>Data Element</u>	<u>Fieldname</u>
Airport Site Code	SITE_CD
BOA Parcel Number	BOA_PRCL_NB
County parcel identifier(s)	CNTY_PRCL_NB
Property owner name(s)	PROP_OWNR_NM
Parcel address	PRCL_ADDR
Property interest*	PROP_INTR
Acreage	ACRG
Date of acquisition	DT_ACQS
Recorded Document Reference**	RECD_DOC_REF
Purchase price	PRCH_PRC

*Fee simple, clear zone & avigation easement, or avigation easement

**Document number or volume/page