

# WisDOT GPS on BM status

Map: <https://wisdot.maps.arcgis.com/apps/webappviewer/index.html?id=9f00da9c32da4e519bd035591abc09c9>

In the Wisconsin Height Modernization (WI-HMP) Program, there are approximately 5,288 Vertical only stations and 3,553 stations with a Horizontal component for a total of 8841 stations

WisDOT has performed many additional observations that do not yet appear on the NGS OPUS share map nor GPS on BM PRIORITY MARK LIST below

## OPUS Share Solutions per NGS OPUS share Dashboard

(Based on Observation Date)

Shared Observations prior to Sept, 2020	66
Shared Observations September, 2020	62
Shared Observations October, 2020	101
Shared Observations November, 2020	112 (Updated since last report)
Shared Observations December, 2020	145
Shared Observations January, 2021	102
Shared Observations February, 2021	100
Shared Observations March, 2021	235 (Updated since last report)
Shared Observations April, 2021	215 (Updated since last report)
Shared Observations May, 2021	246 (Updated since last report)
Shared Observations June, 2021	347 (Updated since last report)
Shared Observations July, 2021	344 (Updated since last report)
Shared Observations August, 2021	224

Total 2299

**WOW**, 547 observations processed last month

### Notes

All shared observations by WisDOT and Partners

- Includes non-WI-HMP stations

Date	Total Shared Observations
September 8, 2020	66
December 3, 2020	157
January 4, 2021	345
February 1, 2021	430
March 1, 2021	606
April 1, 2021	755
May 1, 2021	971
June 1, 2021	1143
July 6, 2021	1443
August 4, 2021	1752
September 1, 2021	2299

## 10 Km NGS GPS on BM Hexagons Completed

NGS has divided the entire nation into a series of 10 Km hexagons. One goal of the WisDOT's GNSS Observation on passive stations project is to get one observation in every Wisconsin 10 KM hexagon. There are 1833 hexagons in Wisconsin. Hexagons that are DONE are a result of either an OPUS share station observation or a station submitted to NGS via Bluebooking within a hexagon.

Date	10 KM Hexagons Completed	% Completed
September 8, 2020	447	24.4%
November 30, 2020	571	31.2%
January 4, 2021	584	31.9%
February 1, 2021	609	33.2%
March 1, 2021	718	39.2%
April 1, 2021	760	41.5%
May 3, 2021	897	49.0%
June 3, 2021	978	53.5%
July 2, 2021	1083	59.1%
August 3, 2021	1300	70.9%
September 2, 2021	1510	82.3%



February 1, 2021



March 1, 2021



April 1, 2021



May 3, 2021



June 3, 2021,



July 6, 2021

Aug. 3, 2021

Sept. 2, 2021



Aug. 3,  
2021



Sept. 2,  
2021

## GPS on BM PRIORITY MARK LIST (NGS)

NGS has produced a prioritized list of benchmarks where additional GPS data would be helpful to help define the new 2022 Geoid model. Providing GPS on stations with leveled elevations will help to relate the GPS derived ellipsoid height with the leveled elevation of these marks. The stations on the Priority List are chosen by computer generated algorithms based on station location and metadata without regard to its status as a WI-HMP station. Currently, there are about 15,000 NGS benchmarks (both WI-HMP stations and non WI-HMP) in Wisconsin. Most non WI-HMP stations have relatively little current survey value, but may have important older surveys tied to them.

Date	Number of stations on list	Number of stations Completed	Percent of NGS Priority Marks Completed	Percent Completed of 3553 Horizontal WI-HMP Stations
9/8/2020	2968	674	22.7%	19.0%
11/30/2020	3162	806	25.5%	22.7%
1/11/2021	3284	891	27.1%	25.1%
2/11/21	3395	949	28.0%	26.7%
3/1/21	3622	1054	29.1%	30.0%
4/1/21	3718	1107	29.8%	31.2%
4/28/21	4033	1272	31.5%	35.8%
5/24/21	4205	1397	33.2%	39.3%
6/29/21	4455	1565	35.1%	44.0%
7/30/21	4582	1646	35.9%	46.3%
8/23/21	5281	2134	40.4%	60.1%

### Notes

- Not all WI-HMP stations are currently on the BM PRIORITY MARK LIST
- The vast majority of observations are on WI-HMP horizontal stations, but not all.
- NGS adds additional stations to the BM PRIORITY MARK LIST after certain stations are observed
- BM PRIORITY MARK LIST Spreadsheet typically updated once a month

# OPUS SHARE Maps

(Includes WisDOT and partner observations)

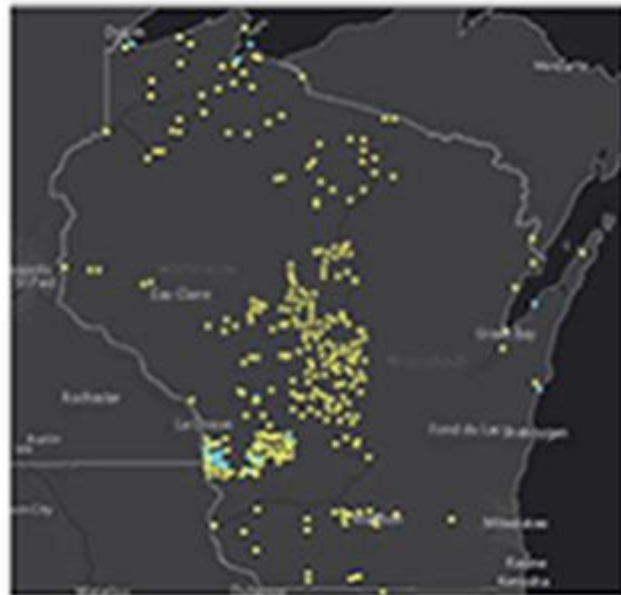
September 1, 2020



November 30, 2020



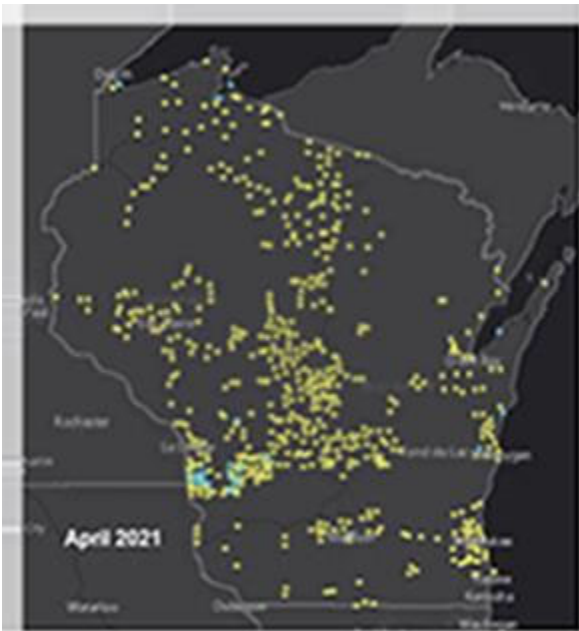
January 1, 2021



February 1, 2020



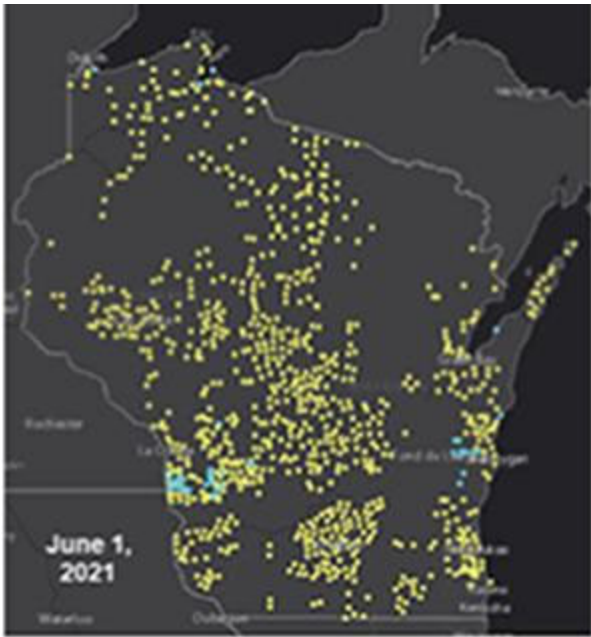
March 1, 2021



April 1, 2021



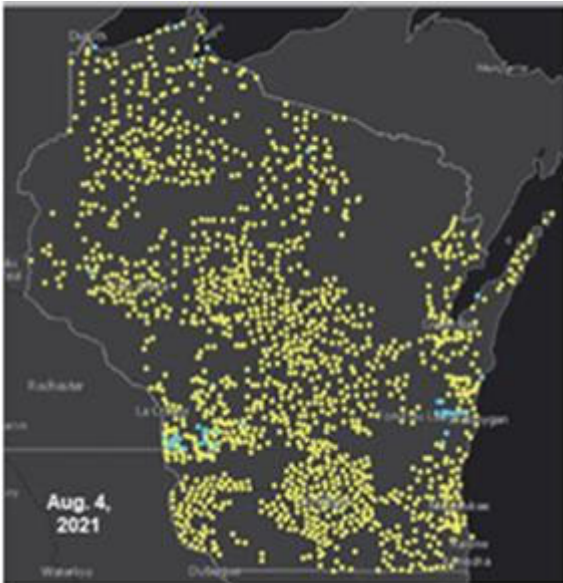
May 3, 2021



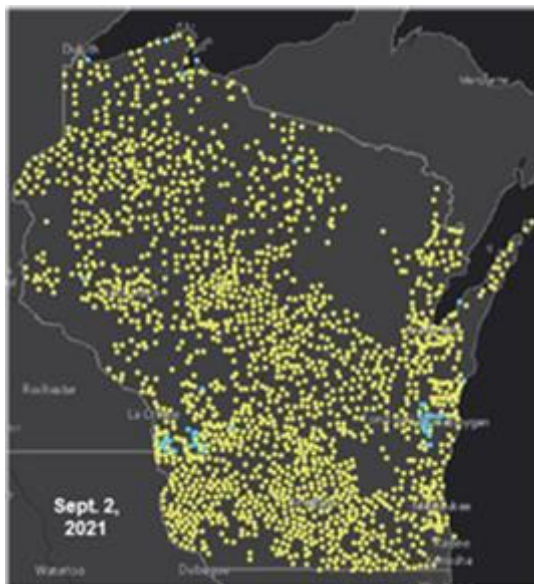
June 1, 2021



July 6, 2021



August 4, 2021



Sept 2, 2021

## ORIGINAL HARN STATIONS (OR REPLACEMENTS) DONE

One goal of the WisDOT's GNSS Observation on passive stations project is to get two observations on all original HARN stations or their replacements in Wisconsin. There are 80 Stations in total. The original HARN stations are a higher accuracy station and provided the initial control from which all other horizontal stations in Wisconsin were surveyed from.

Date	HARN Stations Completed	% Completed
March 1, 2021	49	61.3%
April 1, 2021	53	66.3%
May 3, 2021	59	73.8%
June 3, 2021	60	75.0%
July 6, 2021	69	86.3%
August 2, 2021	71	88.8%
September, 2, 2021	74	92.5%

Remaining (6): FOND DU LAC GPS (FdL Co), MANITOWISH WATERS GPS (Vilas Co), RHINELANDER GPS AZ MK (Oneida Co), SHEBOYGAN FALLS GPS RESET (Sheb Co), WEST BEND GPS (Washington Co). MILWAUKEE GPS has been destroyed.

## List of Non-WisDOT Partners (that I am aware of) that have or are planning to submit OPUS Share observations

J.W. Austin Associates of Minocqua, Vernon County, LaCrosse County, Dodge County, Dunn County, Brown County, Sheboygan County, Washington County, Burnett County, Manitowoc County, Jackson County, Clark County, Sawyer County, Washington County, Oneida County, Washburn County, Lincoln County, City of Madison, Landtech Surveying of Oconomowoc, Seiler Instruments, Leica Geosystems, Milwaukee Metropolitan Sewerage District, Northeast Wisconsin Technical College (NWTC),

Mick

*Mick Heberlein, PLS, PS, CFedS*  
*WisDOT, Office of Surveying & Mapping*  
*3502 Kinsman Blvd*  
*Madison, WI 53704-2549*  
*Ph. 608-243-5994 FAX 608-245-8959*  
*Personal E-mail: [mick.heberlein@dot.wi.gov](mailto:mick.heberlein@dot.wi.gov)*

**To report disturbed or destroyed geodetic monuments**

*Tel. 1-866-568-2652*

*email: [mailto:geodetic@dot.wi.gov](mailto:mailto:geodetic@dot.wi.gov)*