

This handout gives more detail about the requirements for obtaining credit under the Community Rating System of the National Flood Insurance Program for a community's maintenance of elevation reference marks and benchmarks. Additional copies of this handout are available by e-mailing NFIPCRS@ISO.com.

CRS Credit for Benchmark Maintenance

In the 2007 *CRS Coordinator's Manual*, the Community Rating System revised the credit for elevation reference marks and benchmarks (Section 441.b). The new credit is limited to permanent benchmarks that meet certain criteria. There are several reasons for this change.

- The old credit was based on the number of reference marks shown on the Flood Insurance Rate Map, but new FIRMs no longer list elevation reference marks.
- The old approach credited reference marks of dubious quality, such as fire hydrants, that could change over time without the knowledge of surveyors.
- There are new programs for ensuring quality benchmarks.

Prerequisites: The credit for benchmark maintenance is dependent on having one or more benchmarks that meet all of the following five prerequisites.

1. The benchmark must be a permanent monument with key data posted in a reference system readily available to local surveyors, such as the community's website. "Permanent monuments" are engraved metal discs at least 2 inches in diameter or similar markers that are recognizable, durable, and immovable and set in concrete or on steel rods driven to resistance. Chiseled squares in sidewalks, parts of fire hydrants, nails in telephone poles, "PK nails" in pavement, etc., are not permanent monuments. The key data must include the location and description of the benchmark, the elevation and datum, and when it was last recovered.
2. There must be a note that the benchmark has been set or recovered within the last five years. "Recovered" means that a benchmark has been located and that it appears to be undisturbed. A recovery note must be filed where it can be accessed by local surveyors. In some cases, the community or local surveyors may need to recover all credited benchmarks to maintain this credit at each cycle verification visit. Recovery can be reported by any local official—he or she does not have to be a licensed surveyor. Recovery can also be reported by surveyors in the private sector if the community maintains the recovery notes.
3. It must be a first- or second-order vertical control benchmark as defined by the National Geodetic Survey (NGS). The "order" tells how close the results were when the surveyor who set the benchmark completed a circuit back to the starting point. Lower-order vertical benchmarks are not as precise in elevation.
4. It must have a stability rating of A or B as defined by the NGS, i.e., whether it is likely to move over time. If the community has an alternative way to provide dependable elevation data over



Accurate elevation surveying starts from a dependable elevation reference mark.

time, it may submit a description of its alternative. An example would be a program that resurveys less-stable benchmarks every few years. The community must demonstrate that its alternative method achieves consistently accurate elevations over time.

5. It must be within one mile of some part of the community's regulatory floodplain. It does not matter if the benchmark is in the community or who owns or maintains it.

NSRS: The National Spatial Reference System (NSRS) is maintained by the National Geodetic Survey (NGS) in the U.S. Department of Commerce. It is a compendium of vertical and horizontal benchmarks for the country. Additional benchmark maintenance credit is provided if there are a sufficient number and density of benchmarks that meet the prerequisites in the NSRS. If there are not enough qualifying benchmarks in the NSRS, your community is encouraged to either survey new ones or submit the data necessary to add qualifying existing benchmarks to the national system.

To review the NSRS benchmarks for your area, go to the NGS datasheet website at <http://www.ngs.noaa.gov/cgi-bin/datasheet.prl>. The easiest way to locate posted benchmarks is to do a radial or rectangular search around the longitude and latitude of the center of your floodplain. Examples of a list of NSRS benchmarks and an NSRS data sheet are shown below.

Station List Results for: N301525-N301700-W0974346-W0974640

Help

Re-Sort-By Dist Pid H V Vert_Source Lat_approx Lon_approx Stab Designation

Dist	PID	H	V	Vert_Source	Approx.	Approx.	Stab	Designation
.....	BM0580	1	88	ADJUSTED	N301606	W0974439	B...	502.23 USGS=502.1=508
.....	BM0582	1	88	ADJUSTED	N301627	W0974420	B...	NORTH MERIDIAN
.....	BM0635	1	88	ADJUSTED	N301538	W0974524	B...	S 201
.....	BM0652	2	29	COMPUTED	N301538	W0974517	B...	T 328
.....	BM0653	1	88	ADJUSTED	N301537	W0974527	B...	T 328 RESET 1935
.....	BM0587	1	88	ADJUSTED	N301605	W0974637	A...	X 1222
.....	BM0583	1	88	ADJUSTED	N301650	W0974406	B...	X 804
.....	BM0585	1	88	ADJUSTED	N301606	W0974557	B...	Y 1222

Database retrieval time = 00:00:02

Select All

Get Datasheets (for the stations I've selected above)

Move (the above station list to a File->Print Window)

Reset

Return to [Datasheet Home Page](#)

Example datasheet on next page

