

## Appendix H – 2-Year, 24-Hour Storm Frequencies

Part 2.2.12 of the permit indicates that if you install a sediment basin, one of the design requirements is to provide storage for either (1) the calculated volume of runoff from a 2-year, 24-hour storm, or (2) 3,600 cubic feet per acre drained. This appendix is intended to provide a guide to permittees to determine the volume of precipitation associated with their local 2-year, 24-hour storm event.

The permittee should start out by determining their local 2-year, 24-hour storm volume. The rainfall frequency atlases, technical papers, and the Precipitation Frequency Data Server (PFDS) developed by the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) serve as national standards for rainfall intensity at specified frequencies and durations in the United States. Table H-1 identifies methods for determining precipitation frequency based on permit area. EPA notes that permittees may also use alternative peer-reviewed data sources not listed in Table H - 1 to determine the 2-year, 24-hour storm for their site.

**Table H -1 – Method to Determine Precipitation Frequency Based on Permit Area**

| PERMIT AREA                            | METHOD TO DETERMINE PRECIPITATION FREQUENCY  |
|--|--|
| District of Columbia                   | PFDS; NOAA Atlas 14, Vol. 2                  |
| Idaho                                  | NOAA Atlas 2, Vol. 5; Technical Paper 40     |
| Massachusetts                          | Technical Paper 40                           |
| New Hampshire                          | Technical Paper 40                           |
| New Mexico                             | PFDS; Technical Paper 40                     |
| Selected Pacific Islands               | PFDS; Technical Paper 40                     |
| Puerto Rico and the U.S Virgin Islands | PFDS; Technical Paper 40                     |
| Other                                  | PFDS; Technical Paper 40; NOAA Atlas 2 or 14 |

### How to Determine Your Local 2-year, 24-hour Storm Size

Projects located in the **District of Columbia, Massachusetts, New Hampshire, New Mexico, Puerto Rico, U.S. Virgin Islands, or Pacific Islands** can use the PFDS at <http://hdsc.nws.noaa.gov/hdsc/pfds/index.html> or the appropriate NOAA's Atlas 14 Volume at <http://www.nws.noaa.gov/oh/hdsc/currentpf.htm> to determine their precipitation frequency.

The PFDS is an easy to use, point-and-click interface to official U.S. precipitation frequency estimates and intensities. The opening PFDS screen is a clickable map of the United States. Upon clicking on a state, a state-specific interface appears. From this page the user selects the following:

- A location: Either via clicking on the map or manually entering a longitude/latitude coordinate;
- Data type: precipitation depth or precipitation intensity
- Units: english or metric; and
- Time series type: partial duration or annual maximum.

Additionally, PFDS also serves as a tool for providing references and other information for other current precipitation frequency standards that are not yet updated.

Projects located in **Idaho** can use the NOAA Atlas 2, Vol. 5 to determine their precipitation frequency. NOTE: Precipitation Frequencies on the NOAA Atlas 2, Vol. 5 are in tenths of an inch and will have to be converted to inches to determine precipitation frequency. NOAA Atlas 2, Vol. 5 can be accessed at [http://www.nws.noaa.gov/oh/hdsc/PF\\_documents/Atlas2\\_Volume5.pdf](http://www.nws.noaa.gov/oh/hdsc/PF_documents/Atlas2_Volume5.pdf). (See also attached map of NOAA Atlas 2, Vol. 5)

Projects located in areas not covered by the PFDS or NOAA Atlases will need to use TP-40 to identify the precipitation frequency. TP-40 provides a map of the continental U.S. for the 2-year, 24-hour rainfall. TP40 can be accessed at [http://www.nws.noaa.gov/oh/hdsc/PF\\_documents/TechnicalPaper\\_No40.pdf](http://www.nws.noaa.gov/oh/hdsc/PF_documents/TechnicalPaper_No40.pdf). (See also attached map of TP-40)



