



## Alaska Region Weather Forecast Office Hydrologic Products

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1. Introduction. This supplement establishes guidelines for Alaska Region offices for generation of hydrologic products for which the Weather Forecast Office (WFO) is responsible, including a discussion of factors to be considered when selecting which product to issue. Hydrologic warnings, watches, and advisories will not be issued by the Alaska-Pacific River Forecast Center (APRFC) or Weather Service Offices (WSOs) without coordination with the responsible WFO. The WFO should not cancel a warning initially issued by the APRFC without coordination.

This supplement will also identify areas in which implementation in Alaska will differ from the national standard. At the time of implementation of the 2006 version of NWSI 10-922, none of the three required software programs were used in Alaska for the generation of event-driven hydrologic products. Alaska will move toward the national standard through a timed implementation of software components identified in the directive. In addition, these programs were not designed to support generation of event-driven products by a river forecast center or WSOs. These issues will impact full adherence to national formats. The APRFC will occasionally issue flood or flash flood watches, warnings, statements, or advisories for Alaska WFOs when it is providing service backup, when the detailed hydrologic information associated with the event is complex and difficult to convey, or when timeliness of the product is critical. Properly trained and equipped WSOs are allowed to issue necessary flash flood warnings and statements for local events if communications with the associated WFO have been lost and timeliness of the warning is critical.

Hydrologic Warning and Forecast Products.

2. Hydrologic Outlook (ESF). Hydrologic outlooks provide information on hydrometeorological conditions which could cause flooding or impact water supply. The Spring Breakup Outlook for Alaska, issued by the APRFC, focuses on the statewide spring flood potential from snow melt and ice jams. The Spring Breakup Outlook will be the most common hydrologic outlook issued in Alaska Region; it is normally issued from mid March through early May. WFOs should coordinate generation of a hydrologic outlook if flooding is expected beyond 36 hours. The APRFC forecast guidance and information about the confidence of the precipitation forecast should be included in the product issued.

3. Areal Flood Watch (FFA). A Flood Watch or Flash Flood Watch will be issued for the possibility of flooding typically 6 to 48 hours prior to the onset of a flood event. During spring breakup, flood watches may be issued by APRFC in association with ice jams outside of the Fairbanks North Star Borough. Flood watches issued by APRFC with software other than GHG will conform to the standard format identified in NWSI 10-922 to the degree possible. This may not include H-VTEC even after the official implementation of H-VTEC.

4. Flood Watch for Forecast Points (FFA). Flood watches for forecast points will not be issued due to the limited number of forecast points and the areal nature of most floods in Alaska. The observation point on any river is often representative of ungaged areas on other, nearby rivers. Any available information about the impact at a forecast point on gaged rivers will be added to the impact bullet in the areal flood watch (see Section 3).

5. Flash Flood Warning (FFW). Flash flooding is defined as a rapid and extreme flow of high water into a normally dry area, or a rapid water level rise in a stream or creek above a predetermined flood level, beginning within 6 hours of the causative event (NWS Manual 10-950). Flash flood warnings may be warranted in the event of a dam break or heavy rains in steep terrain. A flash flood warning that is expected to continue beyond the initial 6 hour time frame will be canceled using a flash flood statement (FFS) and replaced by a new areal flood warning (FLW). Flash flood warnings issued by APRFC or WSOs with software other than Warngen will conform to the standard format identified in NWSI 10-922 to the degree possible. Products are not required to include latitude-longitude coordinates or H-VTEC if the issuing office does not have the product generation application needed to provide them.

6. Flash Flood Statement (FFS). Flash flood statements are issued to supplement information on an existing flash flood warning or to correct or cancel it. Flash flood statements issued by APRFC or WSOs with software other than Warngen will conform to the standard format identified in NWSI 10-922 to the degree possible. Products are not required to include latitude-longitude coordinates or H-VTEC if the issuing office does not have the product generation application needed to provide them.

7. Flood Warning for Forecast Points (FLW). Flood warnings for forecast points will not be issued due to the limited number of forecast points and the areal nature of most floods in Alaska.

There are few gaged river reaches, so each gage is expected to represent both the reach of the river it is on and the surrounding ungaged rivers. The average area represented by any gage is approximately 6,000 square miles. When a flood warning is expected to impact one or more forecast points or the surrounding streams and rivers, the specific information about a forecast point will be combined into an areal warning (see section 9). This may include those events that normally affect only the gaged reaches of the river, such as ice jams or glacier dammed lake outbursts.

8. Flood Statement – Follow-up to Flood Warning for Forecast Points (FLS). Flood statements for forecast points will not be issued due to the limited number of forecast points and the areal nature of most floods in Alaska. Specific warning information about a forecast point will be included in an areal flood follow-up statement (Section 10).

9. Areal Flood Warning (FLW). Areal flood warnings are issued when flooding is expected to threaten life and property throughout an identifiable geographic area, such as a forecast zone, portion of a forecast zone, or river basin. When the flood warning is expected to impact one or more forecast points as well as the surrounding streams and rivers, the bulleted areal warnings will include information on the impact at the gaged stream(s) in the impact bullet for that geographic area. Flash flood events that continue beyond the expected interval for a flash flood will be replaced with an areal FLW. Flood warnings issued by APRFC with software other than Warngen will conform to the standard format identified in NWSI 10-922 to the degree possible. Products are not required to include latitude-longitude coordinates or H-VTEC if the issuing office does not have the product generation application needed to provide them. Many flood stages defined at gages have been based on recurrence intervals because the impact to the area the gage represents may not be evaluated easily. Minor flood stage may not involve significant threat to life or property, so flood warnings will most commonly be associated with events for which moderate or major flooding is expected or for which the recurrence interval is high.

10. Flood Statement – Follow-up to Areal Flood Warning (FLS). A flood statement is used to correct, continue, cancel, or expire any or all segments included in a flood warning. If the warning is expanded in time or area, the follow-up must use an FLW product. When flooding is expected to impact one or more forecast points as well as the surrounding streams and rivers, the statement will include specific information about conditions at the forecast point(s). Flood statements issued by APRFC with software other than Warngen will conform to the standard format identified in NWSI 10-922 to the degree possible. Products are not required to include latitude-longitude coordinates or H-VTEC if the issuing office does not have the product generation application needed to provide them.

11. Flood Statement – Areal Advisories (FLS). A flood advisory should be used to advise the public that a flood event is expected to occur but that its impact is expected to be minor. A flood advisory may be issued to identify geographic areas in which small or ungaged streams or rivers are expected to rise out of banks, causing minor or nuisance flooding or impacting activities near the streams, without presenting substantial risk of loss of lives or property damage. It may also be used to provide information on elevated stream flows or ponding of water in populated areas when these events warrant public notification, or if no flood stage or

flood impacts have previously been identified. It may be issued when water is expected to cover road crossings slightly without resulting in actual road closures or presenting a significant hazard. When flooding is expected to impact one or more forecast points as well as the surrounding streams and rivers, the statement will include specific information about conditions at the forecast point(s). Where gage data are available, a flood advisory may be issued for stages above the identified flood stage if the expected impact of the event over the area may impose a public nuisance without presenting substantial risk of loss of lives or property damage. Flood statements issued by APRFC or WSOs with software other than WarnGen will conform to the standard format identified in NWSI 10-922 to the degree possible. Products are not required to include latitude-longitude coordinates or H-VTEC if the issuing office does not have the product generation application needed to provide them.

If flooding for the event is likely to exceed a defined moderate or major flood stage with known impacts in the area, to cause significant property damage, to necessitate evacuations, to result in road closures or damage, or to place lives at risk, or is based on a high recurrence interval, such as a 50-year event, then a flood warning (FLW) should be issued rather than a flood advisory (FLS).

12. Flood Statement – Flood Advisory for Forecast Points (FLS). Flood statements for forecast points will not be issued due to the limited number of forecast points and the areal nature of most floods in Alaska. Specific advisory information about a forecast point will be included in a flood advisory statement for the area (Section 11).

13. Hydrologic Statements (RVS). This product is used to provide hydrologic forecasts and related information to local users. The river ice statement, river statement, and river recreational forecast are examples of this product. A river statement could be issued to cover events such as an increased risk of bank erosion on the Matanuska River in Palmer, ponded water caused by high water tables in the area around Piledriver Slough, cautionary forecasts about travel on thin ice at the onset or end of the winter, or rises caused by a glacier-dammed lake outburst that are not expected to result in flooding. If an ice-affected river gage provides unrepresentative readings for stages above a defined flood stage, a hydrologic statement may be issued to explain that flooding is not expected to occur for the area in question. When a hydrologic statement includes information for more than one WFO hydrologic service area the APRFC will issue this product using its own WMO header.

14. Hydrologic Summary (RVA). This product is used to provide hydrologic observations and other information to the local users. Routine summary stage and forecast products will be issued under the WFO header. These products will be issued by the APRFC for the responsible WFOs. A statewide breakup summary is issued during the period from mid April through June using the APRFC WMO header.

15. Daily River and Lake Summary (RVD). This product is used to provide hydrologic observations and other information to both local and national users using a standard hydrologic exchange format (SHEF). These products will be issued by the APRFC for the responsible WFOs.

16. Hydrologic Data Products (RRx). RR1 should be used for collection and distribution of local observations such as the supplemental snow water equivalent observations made using the snow board kits. These data are distributed within the Region only. RR3 should be used for collection and distribution of observations by cooperative observers or other daily supplemental sources. This could include observations entered through the WFO or APRFC web pages. This product can be generated automatically on AWIPS. RR5 should be used to report hourly hydrometeorological data such as that collected from Handars, LARCs, and the Meteorburst system. This product can be generated automatically on AWIPS. RR6 should be used when ASOS precipitation rates on an ASOS report exceed a threshold. This may include information provided by the WSOs. This product can be generated automatically on AWIPS. RR7 should be used for hourly ASOS precipitation reports. This may include information provided by the WSOs. This product can be generated automatically on AWIPS.