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**Operations and Services**

**Hydrologic Services Program, NWSPD 10-9**

**Weather Forecast Office Hydrologic Products Specification, NWSI 10-922**

**ALASKA WEATHER FORECAST OFFICE HYDROLOGIC PRODUCTS**

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**SUMMARY OF REVISIONS:** This supplement supersedes NWS Alaska Region Supplement (ARS) 08-2003, dated February 18, 2008, applicable to National Weather Service Instruction (NWSI) 10-922. This supplement provides information on differences in the Alaska Region generation and distribution of hydrologic products. Changes are as follows:

- (1) It emphasizes the rarity of actual flash floods in Alaska and the procedures to be used if a flash flood extends beyond 6 hours (Sections 5 and 6).
- (2) The key difference is the use of point observed and forecast river data as indices of surrounding ungaged rivers and areas rather than solely as representations of limited reaches of the gaged river. This results in use of areal products rather than point-specific products (Sections 3, 4, 7, 8, 9, 10, 11, and 12).

Section numbers in this supplement correspond to the section numbers in NWSI 10-922.

          /SIGNED/          

          April 30, 2010          

Frank P. Kelly  
Regional Director

Date

## Alaska Region Weather Forecast Office Hydrologic Operations

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1. Introduction. This supplement establishes guidelines for Alaska Region offices for the 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. This supplement will also identify areas in which implementation in Alaska will differ from the national standard. Examples of these products are found in National Weather Service Instruction 10-923.

### 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 is 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.

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 can be extended in time, but must be issued as a new warning if it includes new areas. Policy indicates that a flash flood warning that is expected to continue above flood stage for an extended duration should be replaced by a new areal flood warning (FLW) and the flash flood warning will be canceled using a flash flood statement (FFS), unless there is still a critical urgency to the flood event.
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. If stage data are available in the area of a flood warning, it should be included in the flood statement.
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.

Flood stages defined at some gages have been based on the percentage annual chance to flood at given stages 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

when the forecast stage approaches the stage for which the percentage annual chance to flood is very small.

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 will be issued as 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).

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 encroach on road crossings 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.

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, to place lives at risk, or is based on a very low percentage annual chance to flood, such as a 1% annual chance (this corresponds to what has been called a 100-year flood), 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. River and Lake Forecast Product (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.