VI. METEOROLOGICAL SUPPORT

The National Weather Service (NWS) and the UDFCD private meteorological service (PMS) provide meteorological support to local governments participating in this flood warning plan. Following is the process by which NWS, PMS, Boulder County and the City of Boulder should coordinate, exchange information and gear up for potential flood situations along Boulder Creek, South Boulder Creek and other tributary streams:

1. PMS will prepare a daily heavy precipitation outlook (HPO) from April 15 through September 15. When warranted, a more detailed quantitative precipitation forecast (QPF) will also be developed by PMS. The current HPO and QPF are available from the Internet at http://f2p2.udfcd.org and may also be sent by email or fax to warning plan participants. Many NWS products are also available from the Internet at http://www.crh.noaa.gov/den including urban and small stream flood advisories, flash flood watches, and flash flood warnings. Email dissemination of NWS products is possible from a variety of sources like the Emergency Managers Weather Information Network (EMWIN). When a flood potential exists, NWS and PMS will carry out weather discussions as necessary to evaluate the situation.
2. When nuisance flooding rainfall is possible, PMS will issue **MESSAGE A** by phone and fax to Boulder Sheriff's (BCSO) Communications. The BCSO Communications dispatcher will disseminate **MESSAGE A** following standard protocol. Designated personnel will prepare to respond. When a **MESSAGE A** threat is considered imminent by PMS, it will be identified as a **RED FLOOD ALERT (RFA)** and a storm track (ST) prediction may be disseminated by PMS using the methods described in Item 1 above. A description of PMS messages is available at http://f2p2.udfcd.org along with examples of the forecast products referenced in this section.
3. NWS and PMS continue their weather discussion. If the flood potential increases one of the following actions will occur:
   a. NWS will issue a **Special Weather Statement** or **Urban and Small Stream Flood Advisory** through normal channels (NAWAS, weather wire, weather radio) and/or PMS will send a **MESSAGE UPDATE** to **MESSAGE A** (**RFA** if warranted) to BCSO Communications; or
   b. NWS will issue a **Flash Flood Watch** through normal channels (NAWAS, weather wire, NOAA weather radio) and PMS will send **MESSAGE B** to BCSO Communications; or
   c. PMS will send a **MESSAGE B** to BCSO Communications indicating an increase in flood potential.

   BCSO Communications will execute a Multi-Agency Coordinating System (MACS) page and recipients will respond according to internal procedures. Designated personnel will staff the Emergency Operations Center (EOC) and begin active monitoring of weather and flood conditions in support of field operations.
4. The senior dispatcher on duty or the EOC Situation Officer will assign field observers within each jurisdiction and collect all available rainfall and stream stage data. The person-in-charge will call PMS and/or NWS to report observations, exchange data and coordinate future actions. At this point,

consideration should be given to establishing alternative communications by requesting that volunteer Ham radio operators report to all critical locations including PMS and NWS.

5. Regular coordination between NWS, PMS and EOC personnel will continue. PMS will send **MESSAGE UPDATES** (**RFA** if warranted) by phone or Ham radio operator as required.
6. When conditions warrant, NWS will issue a **Flash Flood Warning** through normal channels and PMS will send a **MESSAGE C** to BCSO Communications. PMS may issue a **MESSAGE C** prior to the issuance of a NWS warning if PMS believes that a life-threatening flood is imminent.
7. EOC staff will continue to monitor the situation and begin public dissemination of warnings when necessary. PMS will continue to send **MESSAGE UPDATES** as warranted.
8. When the hazard has passed, PMS will send a **MESSAGE D** to BCSO Communications.

Throughout all of the above activities NWS and PMS will coordinate as necessary. It must be remembered that events may occur so rapidly that it may not be possible to carry out all of the above steps. Personnel on duty must be prepared for this possibility and pick up the process as best they can.

Also, when NWS determines very early that a high potential for flash flooding will exist later that same day, a **Flash Flood Watch** and corresponding **MESSAGE B** will likely be the first notice issued. In this case, the notices should be communicated well ahead of any heavy rainfall activity, thus allowing more time to make ready.

RFA is used when PMS believes that a flooding rainstorm is imminent. A storm track prediction may accompany the **RFA** (see Item 2 above). When **MESSAGE B** is in effect, **RFA** may be used with a **MESSAGE UPDATE** to indicate that nuisance or minor flooding is expected that does not warrant a **MESSAGE C**. When a **MESSAGE C** is in effect, **RFA** may be used with a **MESSAGE UPDATE** to indicate that an approaching storm may cause nuisance flooding outside the warning area. In summary, an **RFA** is typically short lead (0-30 minute) notification of an imminent flood threat not generally considered life-threatening. Flooding will likely be localized and not wide-spread. However, fast moving water even at relatively shallow depths of 2-feet or less should always be considered dangerous, particularly along rivers, streams, and normally dry gulches or drainageways. Given the short lead nature of an **RFA**, it should be disseminated as quickly as possible.

Standard message forms will be completed by PMS and faxed to BCSO Communications immediately prior to placing a phone call to BCSO Communications. This procedure is designed to insure the rapid flow of information with minimum chance for error or misunderstanding.

Boulder County is the only county within the UDFCD service area that currently uses letter codes **A, B, C and D** for PMS MESSAGES. All six other counties use numbers **1, 2, 3 and 4** respectively. This procedural change was made to avoid confusion between weather messages and operational MODE numbers (see Section VIII). PMS may inadvertently use MESSAGE numbers in their communication. BCSO Communications dispatchers should be aware of this possibility and make the proper adjustment when forwarding the weather information.