

Suffern Paul

From: [REDACTED]
Sent: Sunday, February 2, 2020 10:53 PM
To: [REDACTED] ul
Cc: [REDACTED]
Subject: RE: NTSB request for information

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Hello Paul: In checking with our team, we can remove the CONFIDENTIAL tag for use in the way you described. Below is a new version – thanks Jon

How are the weather Alert Criteria developed for Union Pacific (UP)?

Weather Alert Criteria is requested by Union Pacific. Because of our long-standing partnership and changes in technology through time, there have been collaborations between Union Pacific and AccuWeather from time to time in order to optimize the alert criteria based upon Union Pacific business needs.

How was the flash flood warning criteria determined “(Defined as 1"/hr or greater rainfall with 3" or more expected within three hours or less. The West Region, defined as Del Rio, Tx. to Midland, Tx., to the Texas Panhandle/New Mexico stateline straight North, is 1"/hr rates with more than 1" expected.)”?

This flash flood warning criteria has been in place from early in the partnership at Union Pacific’s request. Industry experience suggests railroads set and adjust flash flood criteria based upon recognition of the differences in topography from the western half of the United States and the eastern half of the United States relative to the amount of rainfall and rainfall rates typically required in order to create impacts from flash flooding. Railroads also may conduct engineering studies from time to time to determine such criteria based on railroad infrastructure and watershed runoff related to flooding impacts.

Are the weather Alert Criteria for UP able to be adjusted? If so, what would be the process to update weather Alert Criteria for UP?

The weather Alert Criteria for UP can be adjusted. The process to update Alert Criteria would generally follow this pattern. UP would come to AccuWeather with an idea or concern they would want to address with a potential weather Alert Criteria change. Depending upon the request, additional information may need to be gathered by either UP or AccuWeather. Additional meetings would occur to discuss possible solutions considering all potential aspects of a change in Alert Criteria. Then, a meeting to discuss roll-out of the new Alert Criteria (as rules and procedures may be affected on Union Pacific’s side and any changes in AccuWeather’s warning software). Finally, Alert Criteria implemented on the agreed upon date and time.

How does Accuweather monitor for flash flood warnings?

AccuWeather meteorologists monitor for flash flood warnings for Union Pacific through a variety of capabilities. This would include but not be limited to, NEXRAD dual polarization radar (estimated rainfall totals and estimated rainfall hourly rates), surface observations in the immediate area of concern not only to determine the current amount of rain that has fallen but also comparing the observation data amount to the estimated radar amount to understand if the radar is either under or over estimating actual rain amounts, enhanced satellite data, rainfall estimated by satellite to help cover the areas without radar data, flash flood guidance to understand how much rain an area can currently take given ground conditions, whether or not the railroad track is in a flood prone area, using watershed data to determine

where the rain is falling and whether water may move toward or away from track, local storm reports, and information from National Weather Service warnings, advisories, special weather statements and NWS Chat.

What is the process for Accuweather providing UP with flash flood warnings?

Once an AccuWeather meteorologist identifies an area of concern for flash flood, the area is circled on our warning software, enters the start time and ending time of the warning, enters the appropriate text into the comments section and then sends the warning. The warning emitted is specific to UP subdivisions and mileposts. Once the warning is sent, it is electronically transmitted to Union Pacific through a computer interface between AccuWeather and Union Pacific. Union Pacific has a software workflow which among other tasks, delivers the alert to the dispatcher at Union Pacific that is responsible for the section of track alerted. The Union Pacific dispatcher, once they have received the warning, provides an electronic acknowledgement of the warning which is communicated back to AccuWeather. If AccuWeather doesn't receive the acknowledgement of the warning within about 5 minutes (depending upon the specific situation), AccuWeather follows a standard operating procedure arranged with Union Pacific to follow-up to confirm warning receipt – including contacting the dispatch center via phone.

How do flash flood warnings differ from mainstream river flood warnings?

Flash flood warnings are issued through our warning software and go directly to the dispatcher. Most often mainstream river flooding is currently handled through a separate product as requested by Union Pacific - AccuWeather's River Flood Forecast. If an immediate situation (ice jam, over topped or failed levee) occurs, a flash flood warning may be issued for Union Pacific track.

How are mainstream river flood warnings when the height of the river could reach the roadbed using elevation database from UP (where available) determined? Where would these types of warnings be available along UP corridors (map or imagery)? Are there locations where Accuweather would like more UP elevation data so that Accuweather could provide more comprehensive mainstream river flood warnings?

In the current River Flood Forecast as requested by UP, there are specific river levels given as trigger points for initiation of River Flood Forecasts by UP for specific mileposts along UP track. This information is provided to keep UP personnel aware of potential flooding issues.

From: [REDACTED]
Sent: Wednesday, January 29, 2020 3:04 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: NTSB request for information

Thanks Jon! Please keep me updated as the factual information provided below helps us keep things straight and correct.

Have a good day,

Paul

From: [REDACTED]
Sent: Wednesday, January 29, 2020 3:01 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: NTSB request for information