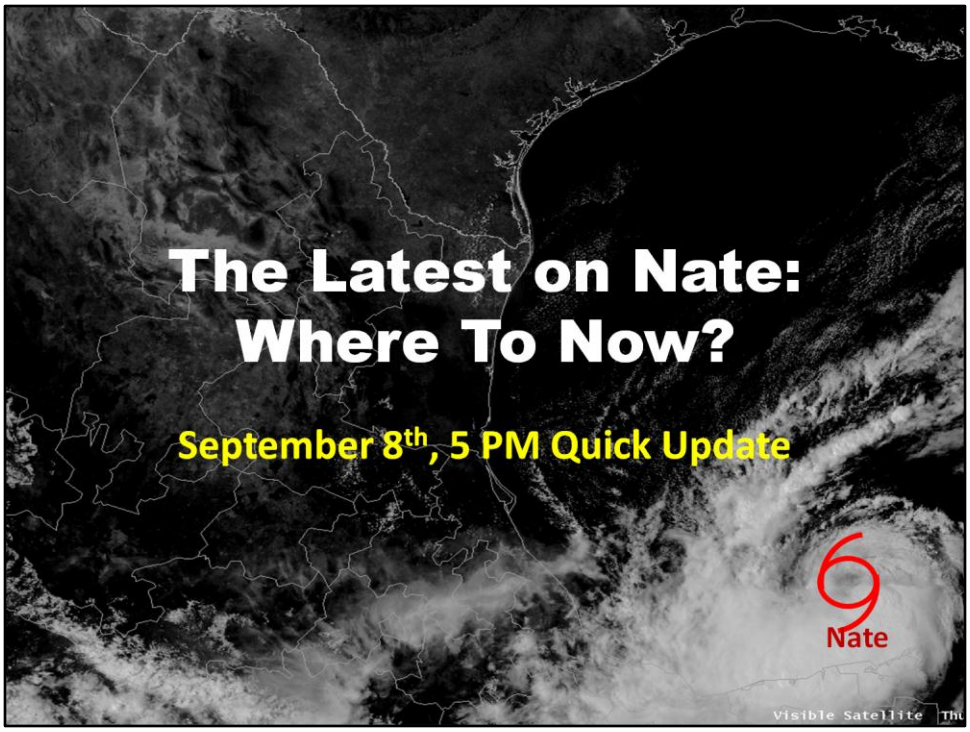
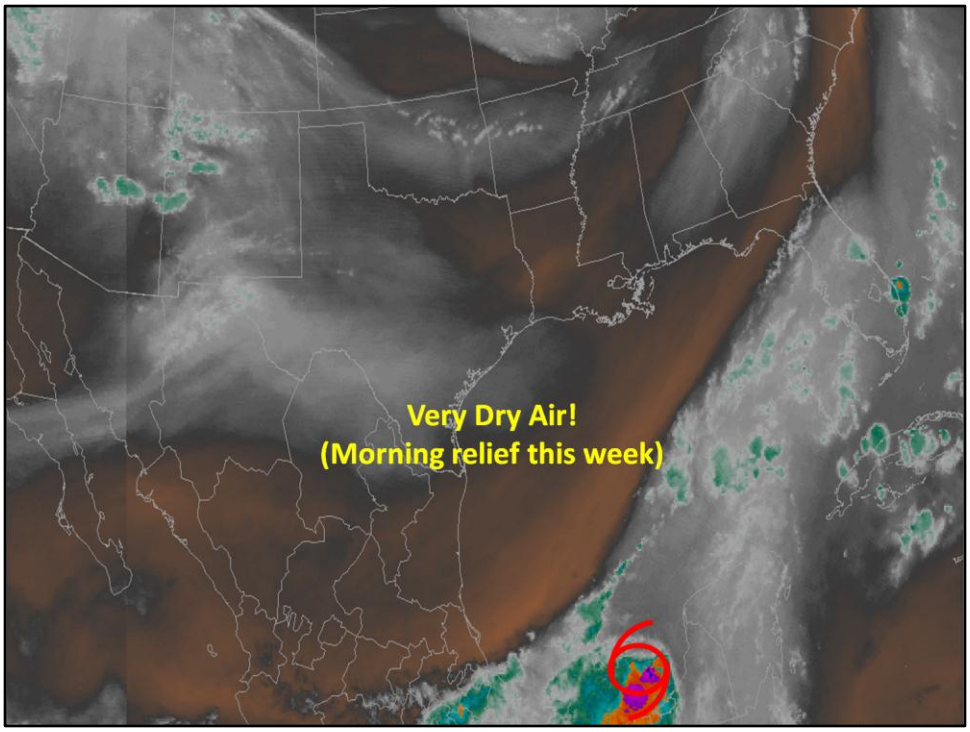
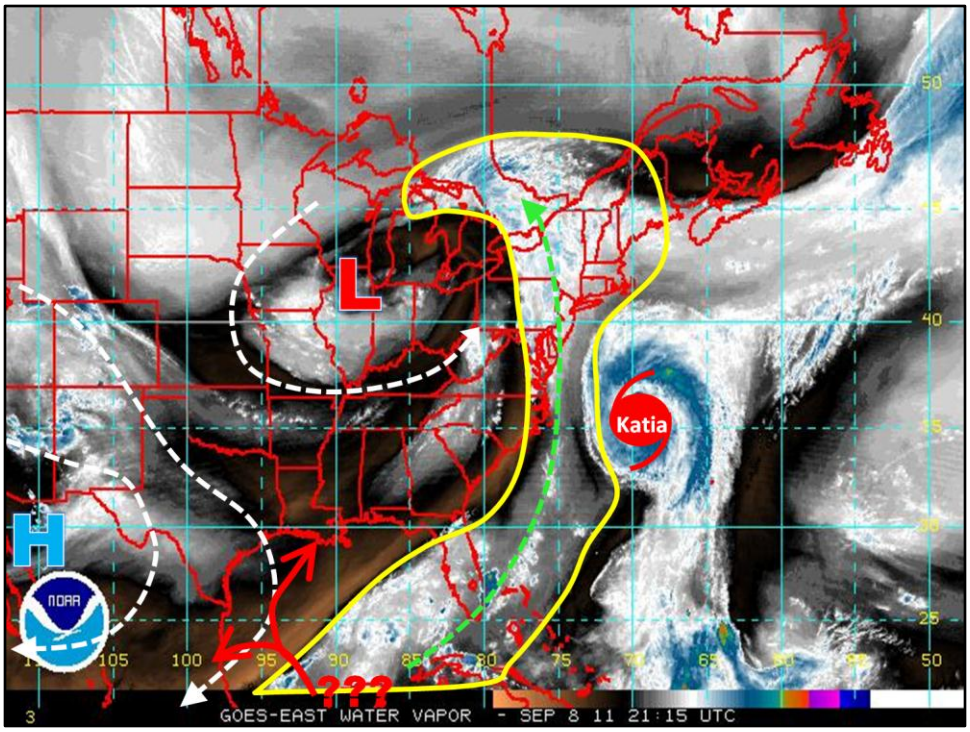

The Latest on Nate:
Where To Now?
September 8th, 5 PM Quick Update
9
Nate
Visible Satellite

Tale of the Tape

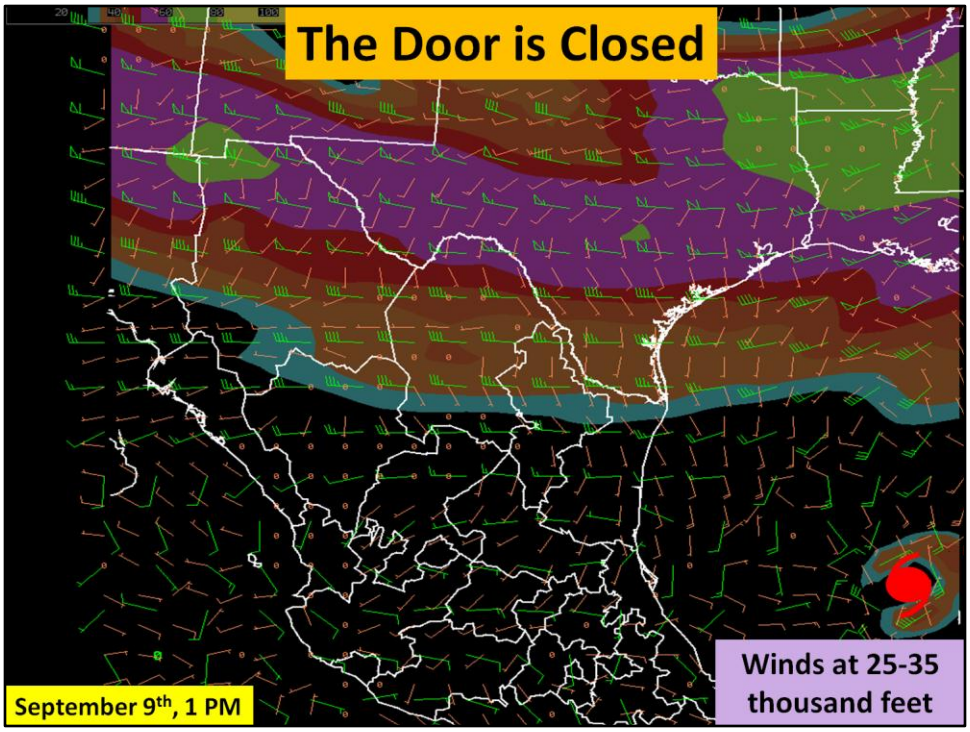
- At 4 PM September 8th:
  - Center Located 250 miles east northeast of Veracruz
  - Winds 70 mph but only in **small area of southern semicircle** extending no more than 50 miles out
  - **Barely moving**
  - Has separated from low pressure trough that extends all the way to northeastern U.S. (see next slides)
  - Hostile environment north of the Bay of Campeche
  - Is forecast to remain **a small storm through its life.** *Not "Lee" or "Irene",* at least for many days to come.
  - Three possible movement outcomes (see next slides)



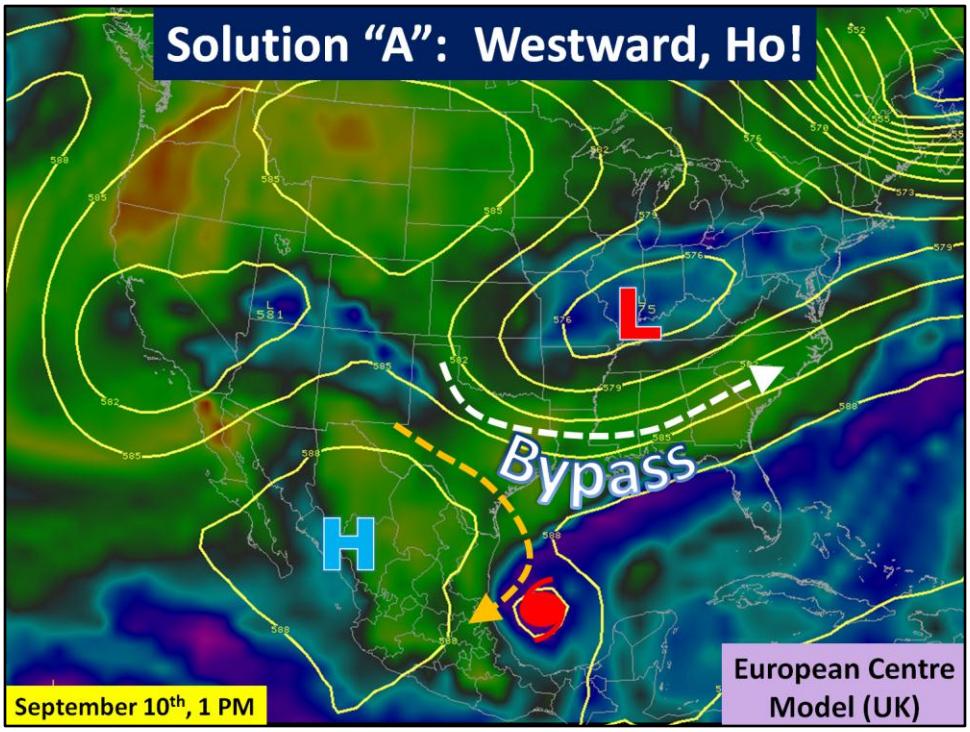
Nate can only develop in the very small “window” it is living in now – a window with deep tropical moisture and low wind shear. Any significant “nudge” to the north or west will impart dry air into the system; a nudge to the northeast would bring additional wind shear despite ample moisture.



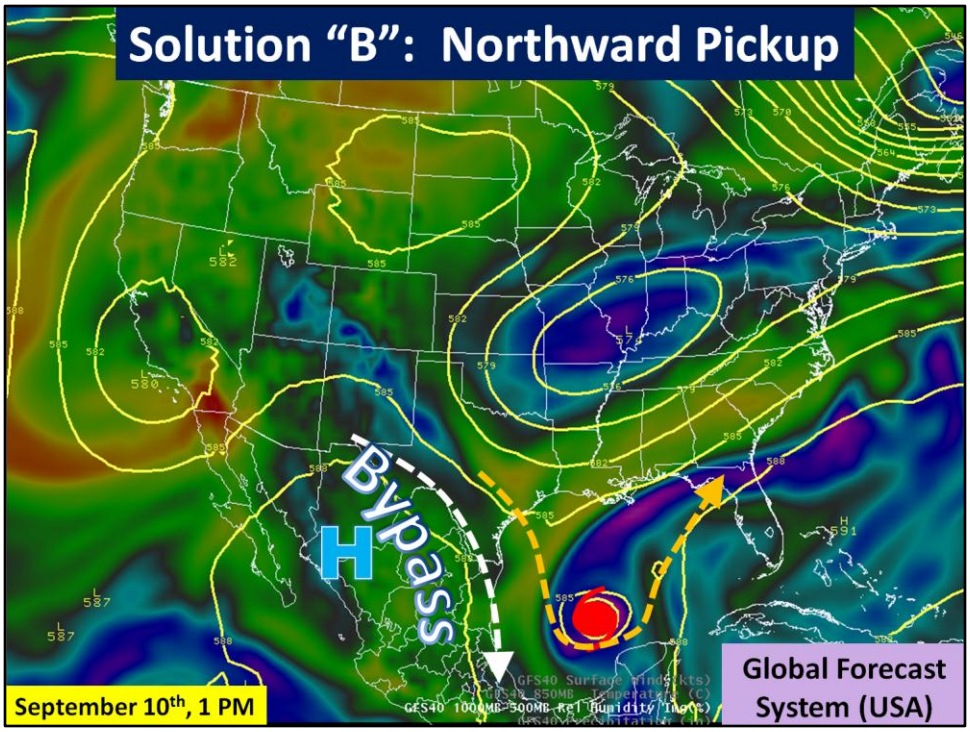
The bigger picture: Yellow area shows breadth of tropical moisture drawn from atmospheric low pressure (red L) which "captured" the remnants of Lee. Green dashed arrow shows the flow of the tropical moisture today, which has caused major flooding in Pennsylvania and New York on the 8th. White dashed arrows show flow around the low pressure system near Chicago, and the persistent, "Canícula" High across northern Mexico/southwestern U.S. Red arrows and ??? Are the two possible tracks in the short term. NEITHER AFFECTS THE RGV ON LAND.



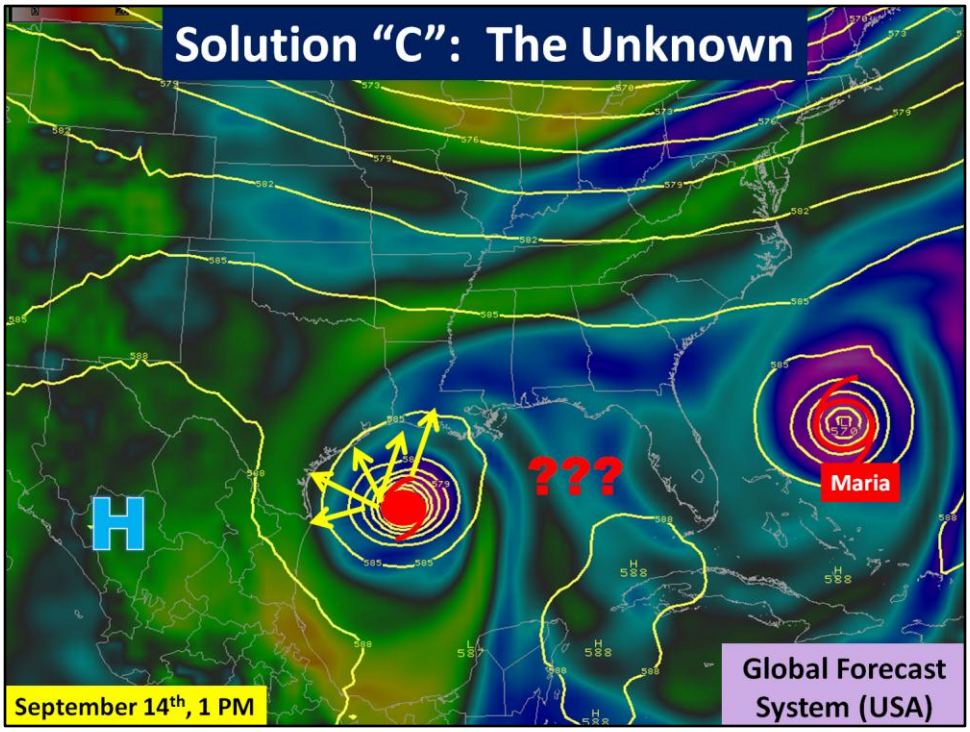
The pretty colors show increasing speed of the jet stream between 25 and 35 thousand feet above the ground. Each color shows an increase of 5 knots. Blue Is 30 to 35 knots, Orange of 35 to 40 knots, dark orange 40 to 45 knots, red 45 to 50 knots, etc. Combined with the very dry air, this flow pattern is like a locked door to any significant northward movement of the cyclone, and if anything were to push it a bit farther north, the shear would turn the cyclone into something like Lee (elongated).



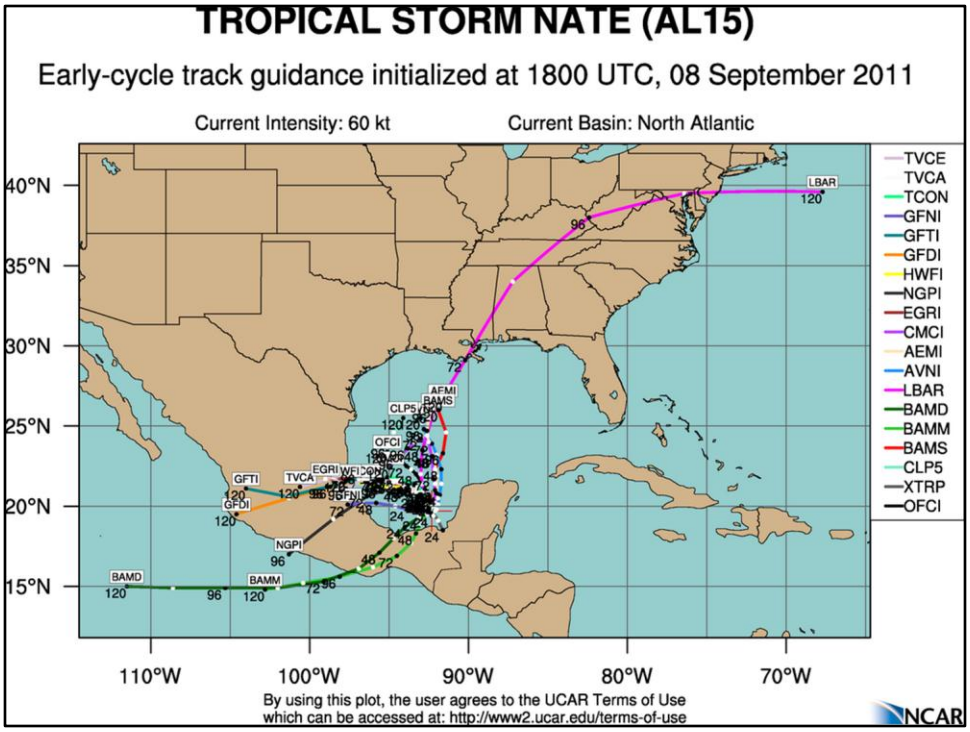
This solution, which has occurred at other times this summer (Harvey), has the persistent high pressure ridge (blue H) dominating. The orange arrow shows flow around this system, which would dominate and push Nate west, then southwest, into Mexico between Tampico and Veracruz (State). In this case, the midwestern low pressure area (red L) would not "dig" far enough south to pick up Nate. Exactly how far north Nate gets before the westward turn would determine if the Lower Valley could see *some* rain. The farther south into Mexico, the chance of rain goes to zero.



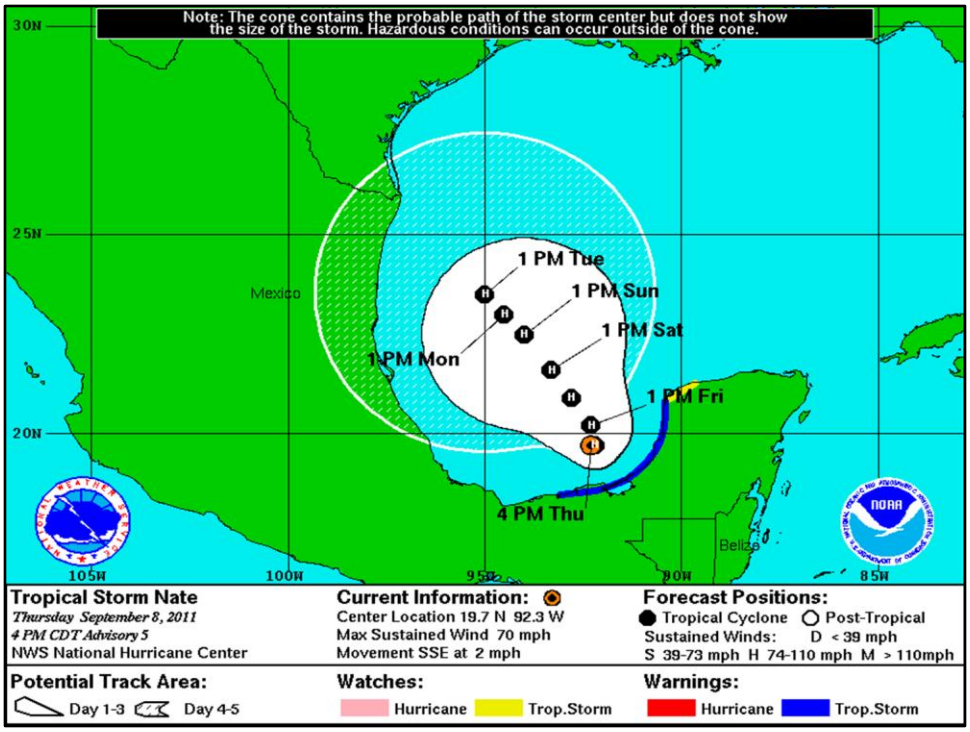
In this case, flow around the midwestern trough (red L) digs into the northern Gulf just far enough to "tug" on Nate, bringing it northward . While Nate would bypass the slightly southward displaced ridge in northern Mexico, dry air flow between the ridge and the Hurricane would bring another round of very hot, dry weather (with some increase in surface humidity) to the Valley for the weekend and beyond.



This is the "anything goes" solution, and the most annoying of them all. Note the date – September 14th, 6 days from now. In this case, the midwestern trough has lifted away, while the southwest U.S./northern Mexico ridge remains in place and a weaker ridge develops near Cuba. Everything gets stuck "on hold". The fact that westerly flow at 18,000 feet would exist just north of the location of Nate would "lean" toward movement toward the Louisiana coast. Not good for us (more dry) or them (more wet).



"Spaghetti" shows the uncertainty.



The Hurricane Center Forecast. Note the circular shape of the 5 day cone, showing how low the confidence is for this particular storm at this particular time.

Bottom Line

- Low confidence on final track, but…
- Strength of Ridge, Dry air aloft, and Speedy West winds well above the surface favor "locking" the system in the tropics (south of 23.5°N latitude)
- Potential Impacts:
  - Some increase in rip currents, waves, and tide. How much dependent on if storm moves north (more) or west (less) – and how much it can intensify ***and*** grow.
  - Rain free and hot weather the most likely outcome for the next week for most areas
  - The drought worsens