



Post-Tropical Cyclone Harvey

Event Report (Update #19)

REPORT TIME & DATE:	4:00 PM EDT Monday, September 4, 2017
INCIDENT START DATE:	Friday, August 25, 2017
PRIMARY LOCATION(S):	Gulf Coast (Texas and Louisiana)
REPORT DISTRIBUTION:	Public @ https://energy.gov/oe/downloads/hurricane-harvey-situation-reports-august-2017

EXECUTIVE SUMMARY

As of 10:35 AM EDT Monday, parts of Southeast Texas are under an extended Flood Warning until further notice. In the region, partly cloudy skies are expected today with highs in the upper 80s and lower 90s. According to the National Weather Service, the Neches River (not to be confused with the Nueces River) will slowly fall from a stage of 17.9 feet near 15.8 feet by Tuesday morning. Flooding continues along the river in Beaumont and Northwest Orange County. The Flood Warning for the Buffalo Bayou near Piney Point Village in Harris County is also in effect until further notice. The Buffalo Bayou is expected to fall from 59.5 feet to 59.1 feet by Tuesday morning.

Hurricane Irma continues to track 14 MPH westward in the Atlantic with sustained winds of 120 MPH (CAT 3). A Hurricane Watch has been issued for the U.S. Virgin Islands and Puerto Rico. According to the NWS, there is an increasing chance of seeing some impacts from Irma in the Florida Peninsula and the Florida Keys later this week and weekend. DOE will continue to monitor the track of Irma and potential impacts to U.S. energy infrastructure.

Oil and Natural Gas Sector Impacts (as of 2:30 PM EDT)

- Eight refineries have begun the process of restarting after being shut down; this is an increase of one refinery since the last report. These refineries have a combined capacity of 1,775,720 b/d, equal to 18.3% of total Gulf Coast (PADD 3) refining capacity, 9.6% of total U.S. refining capacity.
- At least four refineries in the Gulf Coast region were operating at reduced rates, according to public reports. No refineries had returned to normal rates since last report.
- Colonial Pipeline assessments are ongoing, and as such, the current estimated restart between Houston and Hebert remains for Monday, September 4 for Line 2 (distillates), and Tuesday, September 5 for Line 1 (gasoline). Colonial continues to ship as much gasoline and other refined products as available from Louisiana-based refineries and other refineries on the Colonial system east of Lake Charles, and will continue to do so as markets return to normal.
- Colonial restoration crews are assessing facilities and the pipeline right of way to ensure conditions are safe for a restart of operations from Houston and Pasadena. Work also continues to resume operations from other Texas injection points, which are expected to occur after Houston/Pasadena.
- The U.S. Coast Guard reports the Houston Shipping Channel is open to just past ExxonMobil's Baytown refinery to vessels up to a 40' draft. Ships exiting and entering the channel on 9/4.
- FEMA has established a "Rumor Control" website: <https://www.fema.gov/hurricane-harvey-rumor-control>

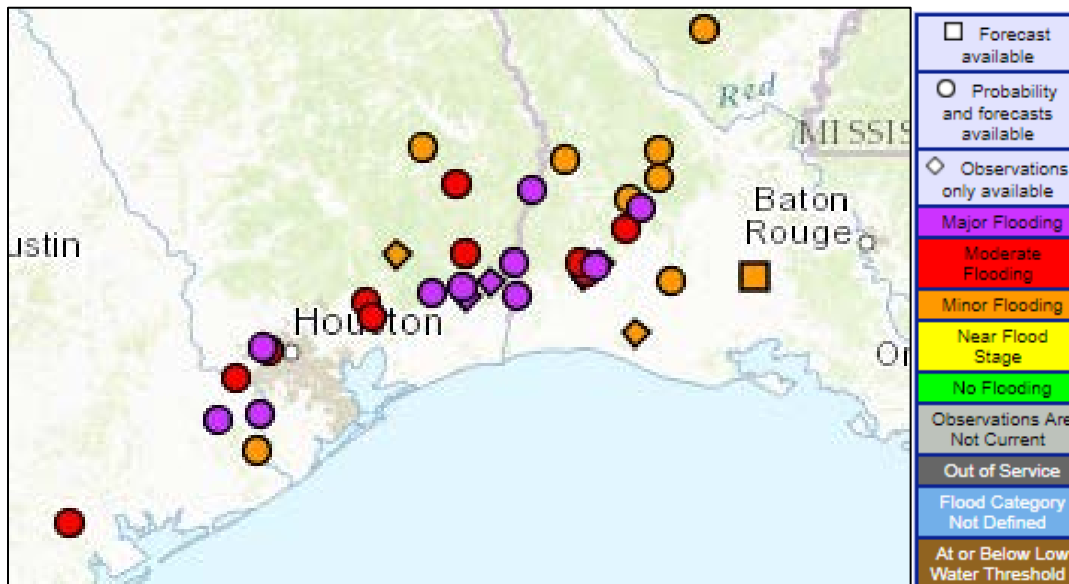
Electricity Sector Impacts – Texas (as of 2:30 PM EDT)

- As of 2:30 PM EDT, September 4, Texas has 64,308 customer outages (<1% of total state customers).
 - AEP Texas has 39,709 customer outages, a 1.8% decrease from last report.
 - Entergy Texas has 18,224 customer outages, a <1% decrease from last report.
 - CenterPoint Energy has 5,695 customer outages, a 12% increase from last report.
- Customers in the Port Aransas area who have already had their power restored may see electric service interrupted from 8 PM EDT to 10 PM EDT Sunday evening. The service interruption will allow AEP Texas crews to safely move forward with the restoration of power. Most communities have Estimated Times of Restoration (ETRs) of 11 PM EDT Friday, September 8.
- Entergy expects to restore customers impacted by the flooding of the Amelia and Bevil substations by Thursday, September 7 and Friday, September 8, respectively.

INCIDENT OVERVIEW

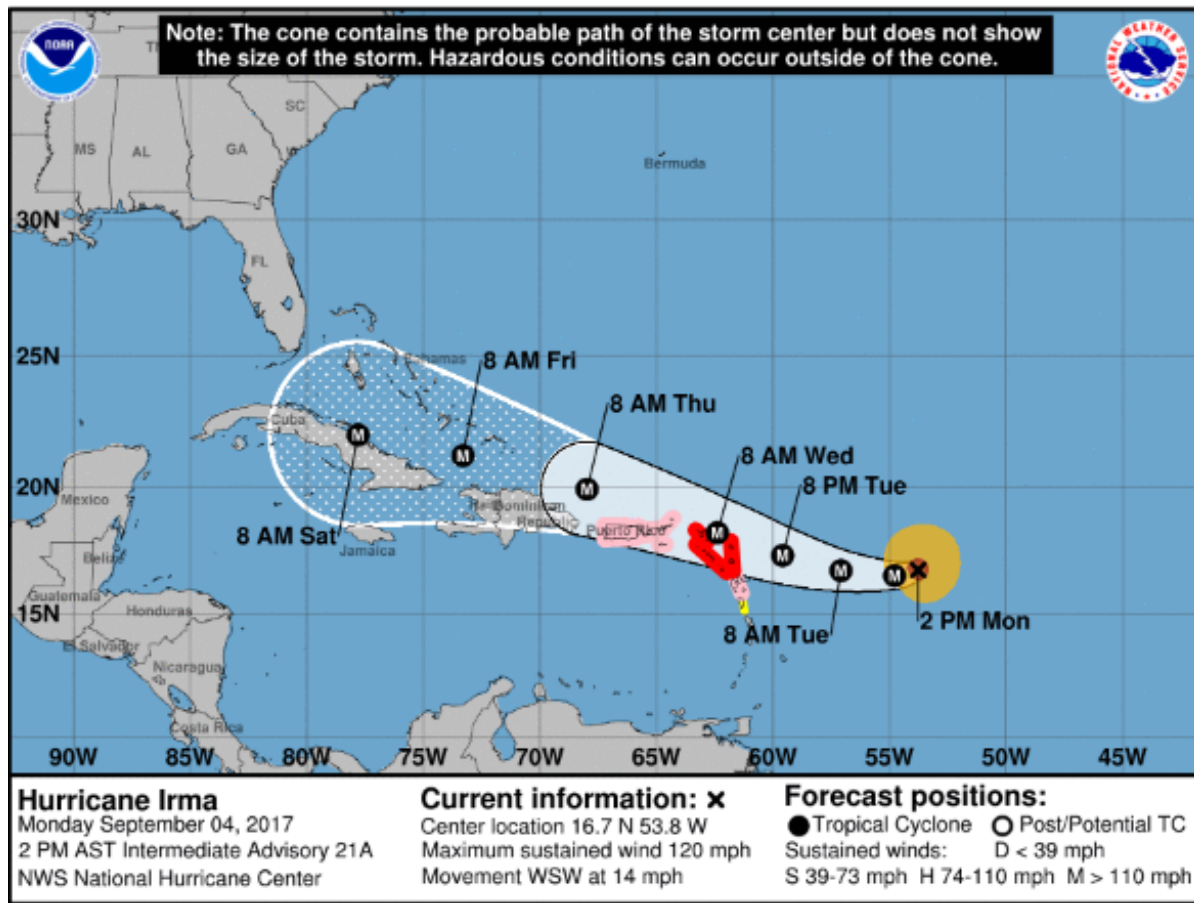
- As of 10:35 AM EDT Monday, parts of Southeast Texas are under an extended Flood Warning until further notice. In the region, partly cloudy skies are expected today with highs in the upper 80s and lower 90s. Earlier this morning, the Coastal Bend experienced scattered showers and thunderstorms. According to the National Weather Service, the Neches River (not to be confused with the Nueces River) will slowly fall from a stage of 17.9 feet near 15.8 feet by Tuesday morning. Flooding continues along the river in Beaumont and Northwest Orange County. The Flood Warning for the Buffalo Bayou near Piney Point Village in Harris County is also in effect until further notice. The Buffalo Bayou is expected to fall from 59.5 feet to 59.1 feet by Tuesday.

Advanced Hydrologic Predictive Services (as of 2:30 PM EDT Monday)



*The National Weather Service prepares its forecasts and other services in collaboration with agencies like the US Geological Survey, US Bureau of Reclamation, US Army Corps of Engineers, Natural Resource Conservation Service, National Park Service, ALERT Users Group, Bureau of Indian Affairs, and many state and local emergency managers across the country. The most current version of this flood map can be found at <https://water.weather.gov/ahps2/index.php?wfo=shv>.

Hurricane Irma



- Hurricane Irma continues to track 14 MPH westward in the Atlantic with sustained winds of 120 MPH (CAT 3). A Hurricane Watch has been issued for the U.S. Virgin Islands and Puerto Rico. According to the NWS, there is an increasing chance of seeing some impacts from Irma in the Florida Peninsula and the Florida Keys later this week and weekend. DOE will continue to monitor the track of Irma and potential impacts to U.S. energy infrastructure.

ELECTRICITY SECTOR

ELECTRICITY OUTAGE DATA

ELECTRICITY OUTAGES AS OF 2:30 PM EDT 09/02/2017			
Impacted State	Current Confirmed Customer Outages	Percent of Confirmed State Customers without Power	24-hr Peak Customer Outages
Texas	64,308	<1%	78,639
Total	64,308	-	*

*There is no sum of the Peak Customer Outage column because peaks for individual utilities occur at different times; a total would not reflect peak outages.

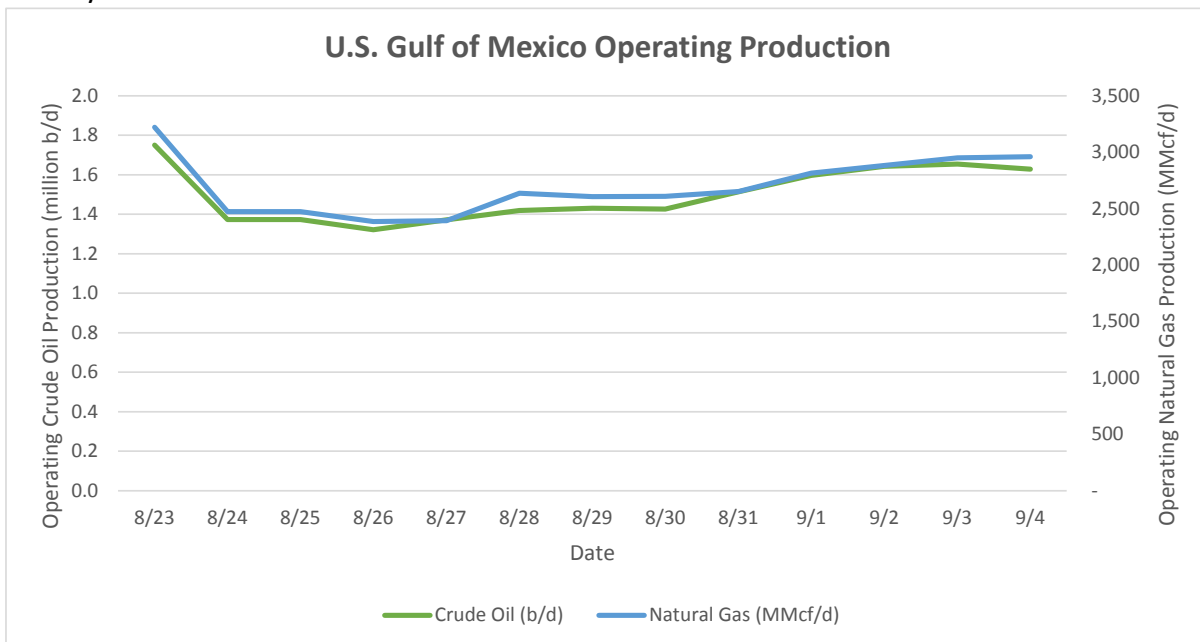


- Texas
 - As of 2:30 PM EDT, September 4, Texas has 64,308 customer outages (<1% of total state customers).
 - AEP Texas has 39,709 customer outages, a 1.8% decrease from last report.
 - Entergy Texas has 18,224 customer outages, a <1% decrease from last report.
 - CenterPoint Energy has 5,695 customer outages, a 12% increase from last report.
 - AEP Texas has restored service in the City of Corpus Christi, as well as the Sinton, Beeville and Kenedy areas, to all customers who lost service as a result of the storm and can take power. Customers in the Port Aransas area who have already had their power restored may see electric service interrupted from 8 PM EDT to 10 PM EDT Sunday evening. The service interruption will allow AEP Texas crews to safely move forward with the restoration of power. Most communities have Estimated Times of Restoration (ETRs) of 11 PM EDT Friday, September 8.
 - Entergy expects to restore customers impacted by the floodings of the Amelia and Bevil substations by Thursday, September 7 and Friday, September 8, respectively.
 - CenterPoint Energy is reporting 99.75% of customers have power. Of those customers still affected, about 6,600 are without lights due to extended flooding concerns.

OIL & GAS SECTOR

PRODUCTION

- As of 1:00 PM EDT, September 4, 121,484 b/d (6.94%) of the oil production and 259.19 MMcf/d (8.05%) of the natural gas production in the federally administered areas of the U.S. Gulf of Mexico are shut-in, according to estimates by the Bureau of Safety and Environmental Enforcement (BSEE).
- BSEE indicated that the September 4 update would be the final update related to Tropical Storm Harvey.



Source: BSEE

PETROLEUM REFINERIES

- As of 02:00 PM EDT, September 4, eight refineries in the Gulf Coast region were shut down, according to public reports. These refineries have a combined refining capacity of 2,110,229 b/d, equal to 21.8% of total Gulf Coast (PADD 3) refining capacity and 11.4% of total U.S. refining capacity.
- Eight refineries had begun the process of restarting after being shut down. This process may take several days or weeks to start producing product, depending whether any damage is found during restart. One refinery was identified as having begun restart operations since the last report. These refineries have a combined capacity of 1,775,720 b/d, equal to 18.3% of total Gulf Coast (PADD 3) refining capacity and 9.6% of total U.S. refining capacity.
- At least four refineries in the Gulf Coast region were operating at reduced rates, according to public reports. No refineries had returned to normal rates since last report. The refineries operating at reduced rates have a combined total capacity of 1,338,776 b/d, equal to 13.8% of total Gulf Coast (PADD 3) refining capacity and 7.2% of total U.S. refining capacity. (NOTE: Actual crude throughput (production) reductions are lower than the total combined capacity).

PORTS

- The U.S. Coast Guard has set the following conditions for ports and waterways in the U.S. Gulf Coast region as a result of Harvey. Eleven ports are closed or open with restrictions. Crude imports at these ports averaged 2,077,000 b/d from January through May 2017.

Status of Texas and Louisiana Gulf Coast Ports as of 2:30 PM EDT 09/04/2017			
Port	Crude Imports Jan-May 2017 (b/d)	Status	Date Stamp
Sector Corpus Christi			
Brownsville	--	Open.	08/31/17
Corpus Christi	245,000	Port Condition Recovery. Open with restrictions. Allowing vessels up to 43' draft to transit during daytime hours only. Larger vessels allowed one-way transits during daylight hours only. Ship channel also open with restrictions. Working to reopen completely 09/04.	08/31/17
Sector Houston and Galveston			
Freeport	133,000	Open.	09/01/17
Galveston	114,000	Port Condition Recovery. Open with restrictions. Ship channel also open with restrictions. Galveston Bay Entrance Channel, Outer Bar Channel, Bolivar Roads Anchorages, Bolivar Roads Channel, and Galveston Harbor open. 37' draft max, 24/7.	09/04/17
Houston	646,000	Port Condition Recovery. Open with restrictions. Houston Shipping Channel is open to just past ExxonMobil's Baytown refinery to vessels up to a 40' draft. Ships exiting and entering the channel on 9/4.	09/04/17



Texas City	134,000	Port Condition Recovery. Open with restrictions. 37' draft max. No vessel movements on Texas City harbor channel between Texas City Dock 38 and Dock 50 on 9/4 from 8 am to 4 pm. 24/7 for other.	09/04/17
Sector Port Arthur and Lake Charles			
Beaumont	33,000	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	08/31/17
Lake Charles	218,000	Port Condition Recovery. Open with restrictions. 37 feet draft restrictions of the Calcasieu Ship Channel.	08/31/17
Nederland	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	08/31/17
Orange	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway.	08/31/17
Port Arthur	687,000	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway. Daylight hours only.	09/03/17
Port Neches	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway. Daylight hours only for vessels > 500 gross tons.	09/03/17
Sabine Pass	--	Port Condition Recovery. Open with restrictions. 30' draft restriction for all waters of the Sabine-Neches Waterway. Daylight hours only for vessels > 500 gross tons.	09/03/17

Source: U.S. Coast Guard

RAIL

- Rail is critical for the delivery of ethanol to petroleum product terminals for gasoline blending and for the movement of refinery byproducts, including propane, butanes, and sulfur out of refineries.
- As of September 1, as many as 500 railcars carrying ethanol were still halted around Houston after railroads including Union Pacific and BNSF stopped traffic.
- The following rail lines have reported disruptions:

Status of Texas and Louisiana Gulf Coast Rail Infrastructure as of 02:30 PM EDT 09/04/2017		
Rail Company	Status	Date Stamp
BNSF	Major disruptions due to washouts. Houston Subdivision has resumed service, as well as greater portion of Galveston Subdivision, along with other smaller Subdivisions. Beaumont remains closed. Train loading and unloading resumed at Pearland Intermodal Facility.	09/01/17
CSX Corp.	Closely watching weather conditions in Louisiana and the southwestern portion of its operating network.	08/30/17
Kansas City Southern Railway	Force majeure and an embargo on network in Texas remains in effect. Assessments have indicated a few areas where maintenance will be required before reopening the line. When transit resumes,	09/01/17

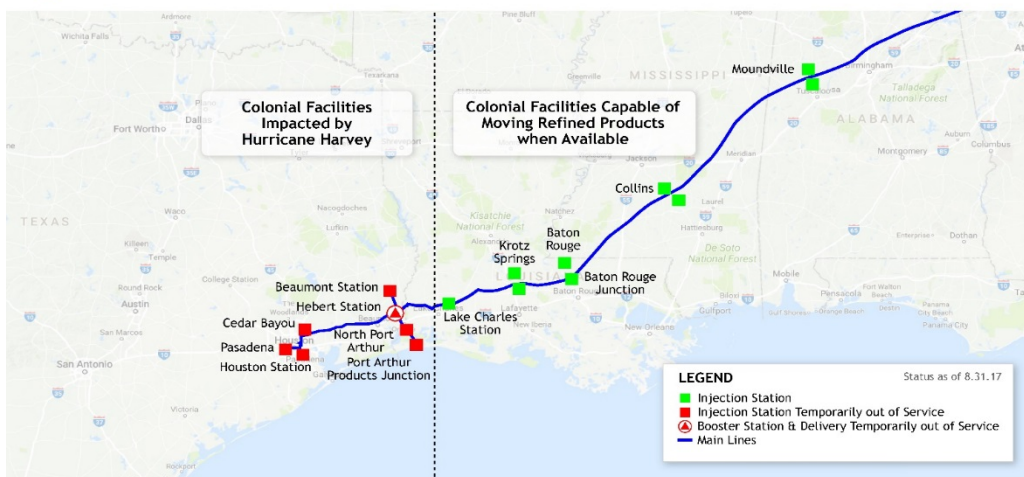


	delays should be expected on all routes while backlogs are reduced and speed restrictions are imposed given the conditions and repair work.	
Union Pacific	Routes through San Antonio opened up allowing for trains to be run both north and south between San Antonio and Hearne, TX. Reorganizing major rail yards at Settegast, and Englewood. Repairs complete on some infrastructure in Houston and South Texas. Cleanup operations underway at Houston yards 8/31. Repaired track between Houston and Bryan, Texas and between Houston and Angleton, Texas. Currently working on Houston-San Antonio track repairs.	09/03/17
YRC Freight	Houston terminal closed.	08/29/17
ABF Freight	Service in Houston, Dallas, Little Rock, and San Antonio interrupted.	09/01/17

COLONIAL PIPELINE

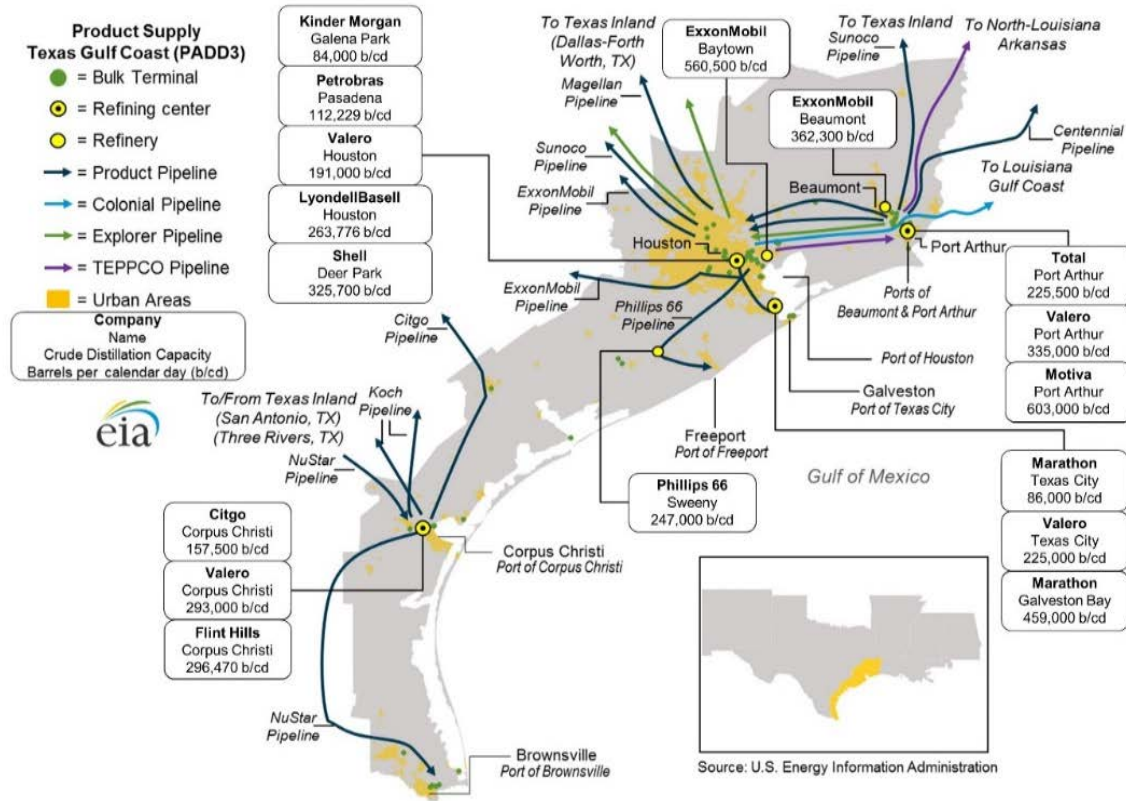
- Colonial’s priority remains the safety of its employees, the environment and the communities where it operates. Lines 1 and 2 continue to operate from Lake Charles east. Deliveries will be intermittent and dependent on terminal and refinery supply.
- Colonial continues to work to complete final repairs to its facilities damaged by the storm, and to assess its lines and right of ways to ensure the integrity of the system between Houston/Hebert.
- Colonial Pipeline assessments are ongoing, and as such, the current estimated restart between Houston and Hebert has been updated to Monday, September 4 for Line 2 (distillates), and Tuesday, September 5 for Line 1 (gasoline).
- Colonial continues to ship as much gasoline and other refined products as available from Louisiana-based refineries and other refineries on the Colonial system east of Lake Charles, and will continue to do so as markets return to normal.
- Of the 26 refineries that connect to the Colonial system, 13 are located between Houston and Lake Charles. Colonial is one part of the fuel delivery system, and there are multiple means of supplying the market to mitigate concerns with supply, including other pipelines, trucks, and barges. For more updates: <https://harvey.colonialresponse.com/>

 **Colonial Pipeline Gulf Coast Status Map**



OTHER PRODUCT PIPELINES

- Below is a map of refineries and petroleum product pipelines in the Texas Gulf Coast for awareness.



Source: EIA: <https://www.eia.gov/analysis/transportationfuels/padd1n3/>

WAIVERS

- The table below lists fuel-related waivers issued by the U.S. Environmental Protection Agency (U.S. EPA) and State agencies.
- On August 30, U.S. EPA issued a multi-state (13 states) waiver for requirements of low-RVP conventional gasoline and reformulated gasoline (RFG). Later in the day, the waiver was expanded to include 38 states and Washington, DC.

State Fuel Waivers as of 02:30 PM EDT 09/04/2017					
State	Waiver	Issued By	Effective Dates		Status
			Start	End	
Multi-state waiver	RVP standard waived for gasoline sold in affected counties where low-RVP gasoline is required (9.0 RVP or lower). Allows sale of gasoline up to 11.5 psi RVP in all states located in PADD 1, PADD 2, and PADD 3. The waiver supersedes and expands the areas covered by the August 30 waiver.	U.S. EPA	08/30/17 Expanded: 08/31/17	09/15/17	Active

State Fuel Waivers as of 02:30 PM EDT 09/04/2017					
State	Waiver	Issued By	Effective Dates		Status
			Start	End	
	RFG standard is also waived in the designated regions. Also waived are provisions prohibiting the blending of RFG blendstock with conventional gasolines or blendstocks.				
TX	RFG requirement waived in Houston-Galveston-Brazoria areas. Waiver expanded to four-county Dallas-Fort Worth RFG area 8/26. Allows the sale or distribution of conventional gasoline.	U.S. EPA	08/25/17	09/15/17	Active
TX	7.8 psi RVP standard waived for gasoline sold in 20 counties where low-RVP gasoline is required and are also under the Governor's Disaster Declaration. Waiver expanded to 98 counties required to use low-RVP fuel 8/26. Allows sale of gasoline up to 9.0 psi RVP.	U.S. EPA	08/25/17	09/15/17	Active
LA	RVP requirements of 7.8 psi and 9.0 psi waived in applicable areas. Permits the sale or distribution of winter gasoline with an 11.5 psi RVP.	State of Louisiana	08/29/17 Expanded: 08/30/17	09/15/17	Active
MI	RVP regulations waived. Permits the transportation and sale of motor fuels 9.0 psi RVP in Wayne, Oakland, Macomb, St. Clair, Livingston, Washtenaw, Monroe, and Lenawee counties, and up to 11.5 psi RVP elsewhere in Michigan.	State of Michigan	08/31/17	09/15/17	Active
MS	RVP standards of 9.0 psi waived. Permits the sale or distribution of winter gasoline with an 11.5 psi RVP.	State of Mississippi	08/30/17	09/15/17	Active
VA	Waived the RVP limit for gasoline ethanol blends prescribed by regulations.	State of Virginia	09/01/17	09/15/17	Active

Sources: [U.S. Department of Transportation](#); Governor Office Websites

- Nine states have declared state emergencies due to Harvey. Note that Kansas has not declared a State of Emergency, however is using its resources to assist other states. These declarations automatically waive select Federal Motor Carrier Safety Regulations (FMCSRs), including hours-of-service (HOS) regulations, for motor carriers hauling resources to aid in restoration efforts. The declarations exempt FMCSR in every state along the motor carrier's route as long as the final destination is with the declared disaster areas in Texas or Louisiana.
- In addition, the Federal Motor Carrier Safety Administration (FMCSA) declared that issued a Regional Emergency Declaration exempting FMCSRs in the States of Texas and Louisiana. On



August 31, the FMCSA expanded the Regional Emergency Declaration to additional states and Washington, DC.

- The table below summarizes emergency declarations and HOS waivers issued by states.

State Emergency Declarations and HOS Waivers as of 02:30 PM EDT 09/04/2017				
State	Details	Effective Dates		Status
		Start	End	
Regional (Multi-State)	Regional Emergency Declaration and FMCSR waiver issued by FMCSA. Applies to Alabama, Arkansas, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Texas, South Carolina, Virginia, Washington, D.C. and West Virginia	08/25/17 Expanded 08/31/17	10/26/17	Active
Texas	State of Disaster declared for 61 counties in Texas.	08/23/17 Expanded: 08/30/17 09/01/17	TBD	Active
Louisiana	State of Emergency.	08/23/17	TBD	Active
Kentucky	State of Emergency/HOS waiver issued for transporters of food, water, medicine, fuel and other commodities within the affected areas to aid in emergency response of affected areas. All economic requirements normally associated with interstate motor transportation for all vehicles providing relief supplies to affected areas.	08/28/17	09/27/17	Active
Alabama	State of Emergency/HOS waiver issued for petroleum products and petroleum-related supplies, goods, and services in and through the State.	08/30/17	09/29/17	Active
Georgia	State of Emergency/HOS waiver issued for petroleum products through the State.	08/30/17	09/20/17	Active
Kansas	Governor acknowledged state of emergency in Texas and declared that licensing rules, registration and fuel tax permits, and oversize vehicle permit fees are waived for motor carriers and persons operating motor vehicles directly participating in the relief and restoration effort.	08/30/17	09/20/17	Active
North Carolina	State of Emergency/HOS waiver issued for petroleum products, and emergency relief supplies and services through the state.	08/31/17	09/30/17	Active



State Emergency Declarations and HOS Waivers <i>as of 02:30 PM EDT 09/04/2017</i>				
State	Details	Effective Dates		Status
		Start	End	
South Carolina	State of Emergency/HOS waiver issued for petroleum products through the state.	08/31/17	09/30/17	Active
Michigan	State of Emergency/HOS waiver issued for petroleum products through the state.	08/31/17	09/15/17	Active
Virginia	State of Emergency/HOS waiver issued for petroleum products through the state.	09/01/17	09/15/17	Active

- On September 1, PHMSA issued an Emergency Stay of Enforcements for operators affected by Hurricane Harvey. The declaration states that PHMSA does not intend to take any enforcement action relating to their noncompliance with certain operator qualification requirements, or pre-employment and random drug testing requirements, arising from the use of personnel for pipeline activities related to response and recovery.

DOE Strategic Petroleum Reserve Status (from the Office of Fossil Energy)

- In response to the impacts from Hurricane Harvey, the U.S. Secretary of Energy has authorized the Strategic Petroleum Reserve (SPR) to negotiate and execute and execute an emergency exchange agreements with three refiners to provide 5.3 million barrels of crude oil. Authorized exchanges are summarized in the table below.

SPR Authorized Exchanges		
Requesting Refinery	SPR Draw Down Site	Amount Authorized (up to)
Phillips 66 Lake Charles Refinery (First Request)	West Hackberry	200,000 barrels sweet crude; 300,000 barrels sour crude
Phillips 66 Lake Charles Refinery (Second Request)	West Hackberry	200,000 barrels sweet crude; 300,000 barrels sour crude
Marathon Petroleum Company	Bayou Choctaw	3,000,000 barrels sweet crude
Valero Marketing and Supply Company (First Request)	Bayou Choctaw	500,000 barrels sweet crude
Valero Marketing and Supply Company (Second Request)	Bayou Choctaw	500,000 barrels sweet crude
Placid Refining Company LLC	Bayou Choctaw	300,000 barrels sweet crude

