

# Watch Office



## Seasonal Hazard Outlook

*Winter 2016- 2017*

Current as of: October 21

Scheduled Update: December

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# Overview

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*Winter 2016-17*

*Seasonal Hazard Outlook*

- Executive Summary
- Seasonal Forecast
- Heating Fuel Supply
- Winter Driving Preparedness
- Scheduled High Profile Events
- Influenza



## **Bottom Line Up-Front**

- Ohio is forecast to experience near-normal winter temperatures.
- Most of Ohio is forecast to experience above-average precipitation. The remainder of Ohio is forecast to receive normal precipitation.
- Ohio is not projected to experience heating fuel shortages this winter.
- ODOT does not anticipate a shortfall in road salt or brine supply.
- Multiple planned events are scheduled for this winter, which are possible targets for terrorist attack.
- The post-election period in November may result in protests.
- CDC does not report any shortfalls in influenza vaccine production.



## Weather Summary

- The Climate Prediction Center issues seasonal temperature forecasts once a month, highlighting areas of expected above and below normal readings. Current expectations are that **Ohio will see near-normal temperatures, with an equal chance for slightly above and slightly below average readings** during December, January, and February.
- Seasonal precipitation forecasts are also issued by the Climate Prediction Center that are updated on a monthly basis. The most recent forecast indicates that **above normal precipitation can be expected across most of Ohio.**
- The Climate Prediction Center monitors El Niño and La Niña conditions. Forecasts for these phenomenon are updated weekly. The most recent update included the issuance of a La Niña Watch as **conditions are favorable for La Niña to develop this fall and last through the winter months.** For more details on what this means for weather impacts in Ohio, see the La Niña slide.



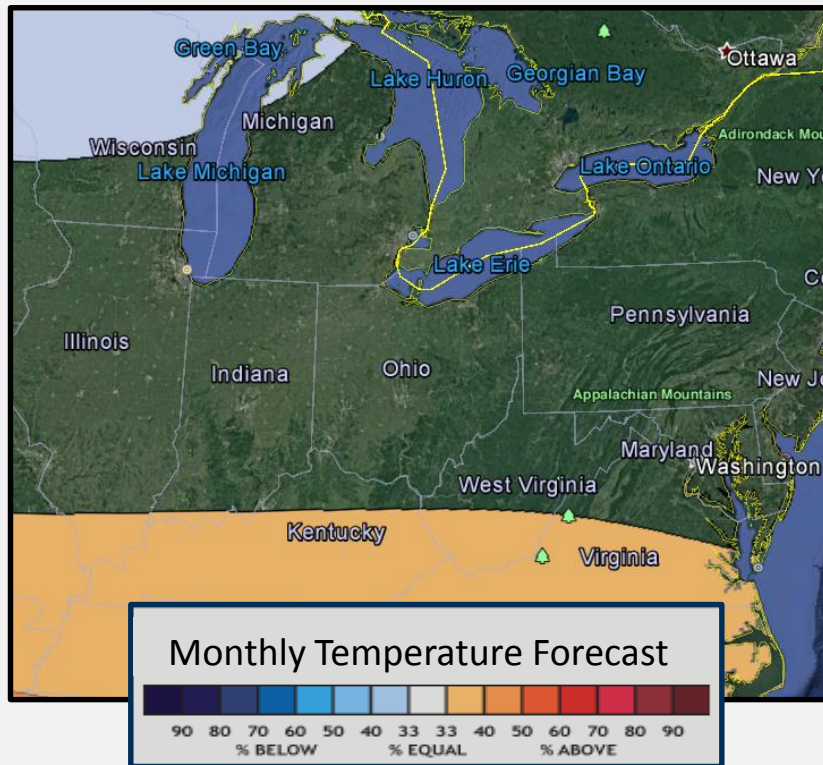
# Weather Forecast

Winter 2016-17

## Seasonal Hazard Outlook

### Temperature Outlook for December 2016- February 2017

Source: National Weather Service's Climate Prediction Center



### Average Temperature (1981-2010)

Source: National Climatic Data Center

City	Average High Temperature		
	December	January	February
Columbus	39.3	36.0	39.6
Cleveland	38.3	34.4	37.5
Cincinnati	43.2	40.1	44.7
Akron	37.1	33.9	37.2
Toledo	36.4	32.6	36.0
Athens	41.0	37.4	41.6
Dayton	38.1	34.7	38.9
Portsmouth	44.4	41.0	45.0

- There is an **equal chance for above and below normal temperatures** for December, January and February.
- Essentially, this equates to near average temperatures that could be a **few degrees above or below normal**.
- This graphic depicts forecasts over the whole period (December-February) and daily or weekly temperatures may fluctuate from this prediction.



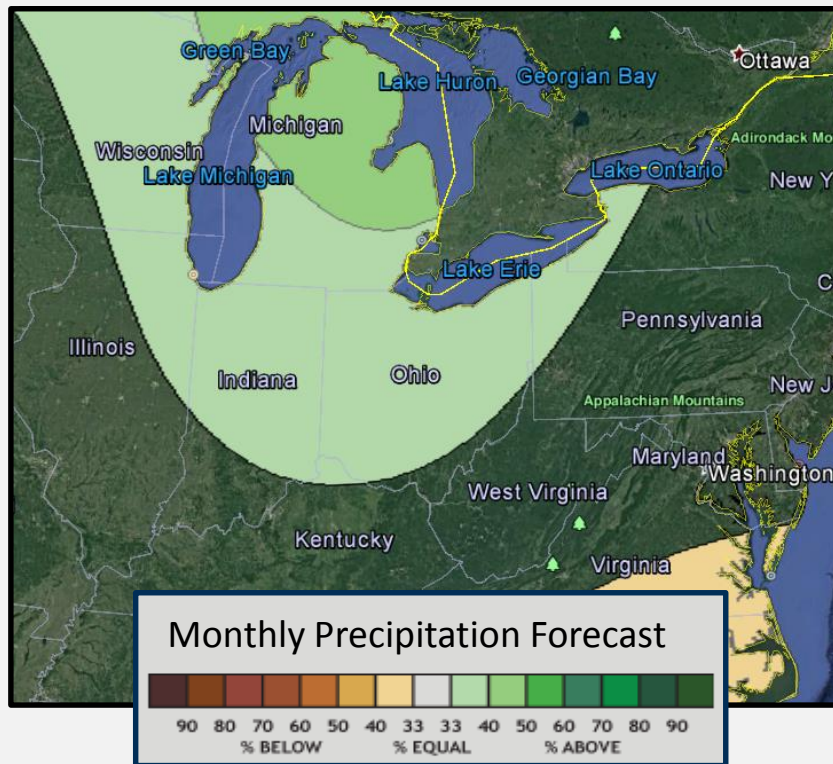
# Weather Forecast

Winter 2016-17

## Seasonal Hazard Outlook

### Precipitation Outlook for December 2016- February 2017

Source: National Weather Service's Climate Prediction Center



### Average Liquid Precipitation (1981-2010)

Source: National Climatic Data Center

City	Average Liquid Precipitation (inches)		
	December	January	February
Columbus	2.81	2.53	1.97
Cleveland	3.10	2.72	2.34
Cincinnati	3.15	2.82	2.54
Akron	2.58	2.18	1.95
Toledo	2.68	2.05	2.07
Athens	3.00	2.60	2.59
Dayton	3.12	2.71	2.24
Portsmouth	3.23	3.05	2.78

- December, January, and February are expected to have **above average precipitation across much of the state.**
- With higher than normal rain and snow, the state could face the threat of flooding in the spring when any accumulated snow melts.





# Weather Forecast

Winter 2016-17

## Seasonal Hazard Outlook

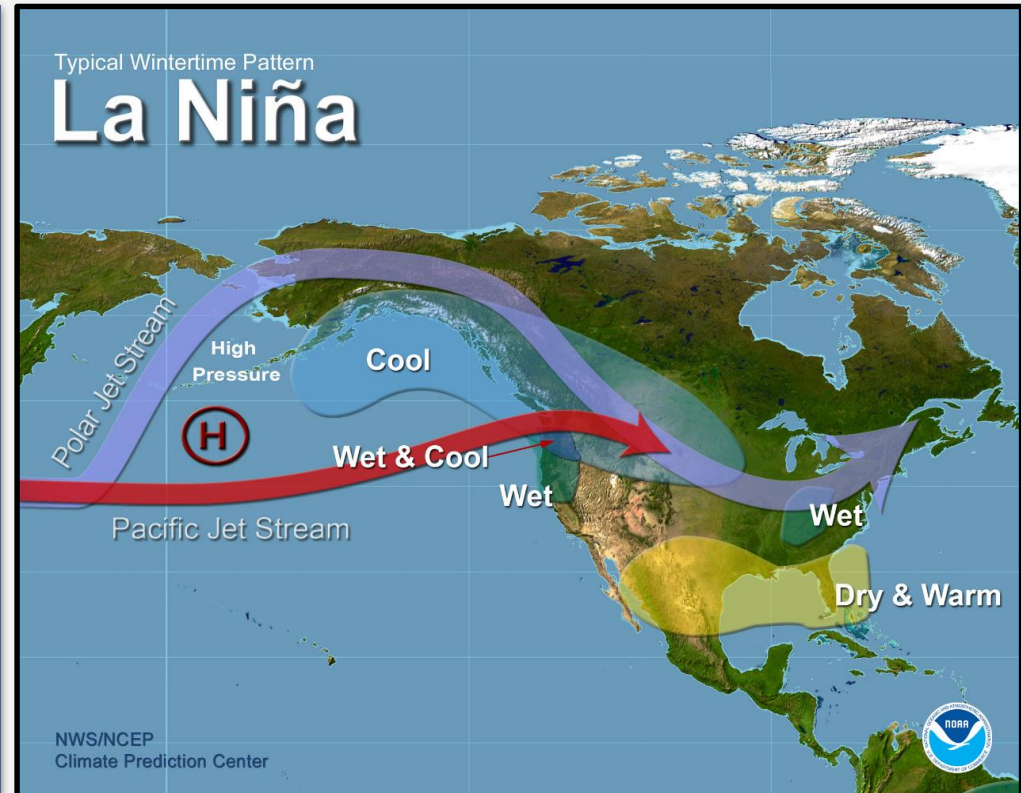
### La Niña Outlook for December 2016- February 2017

Source: Pacific Maritime Environmental Laboratory

#### La Niña Outlook

- Climate Prediction Center has issued a La Niña Watch.
- Climate Prediction Center forecasts a 70% chance for La Niña conditions to develop this fall and last through winter.
- **La Niña winters generally result in above average precipitation and near-normal temperatures in Ohio.**

Source: Climate Prediction Center





# Heating Fuels Overview

Winter 2016-17

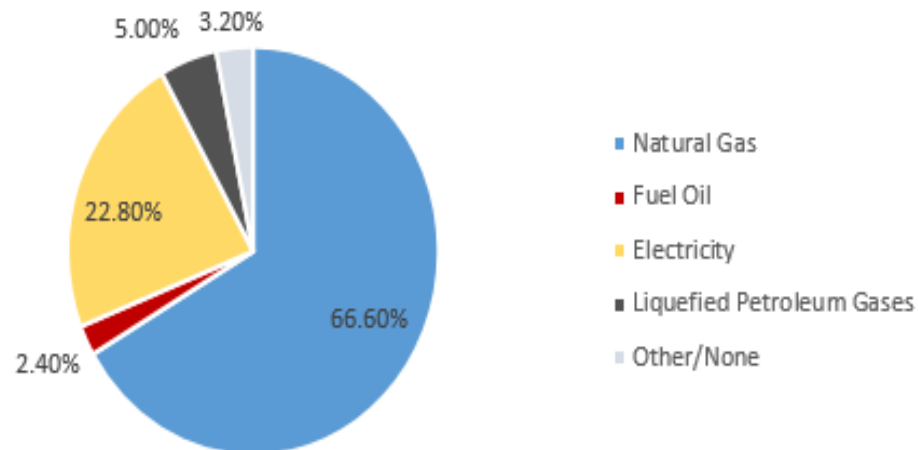
Seasonal Hazard Outlook

## Winter Heating Fuel Forecast

- Heating fuel shortages are not anticipated.
- Heating fuel prices for homes that heat with natural gas, propane, and heating oil are forecast to be 10% - 40% higher than last winter. However, expenditures are still expected to be below long-term averages.
- Residential electricity prices are forecast to be slightly higher (1%-5%) than last winter.

Source: US Energy Information Administration (EIA)

### Ohio Energy Source for Home Heating (Share of households)



Source: EIA government state energy profile data (Ohio) 2014 survey





# Heating Fuels

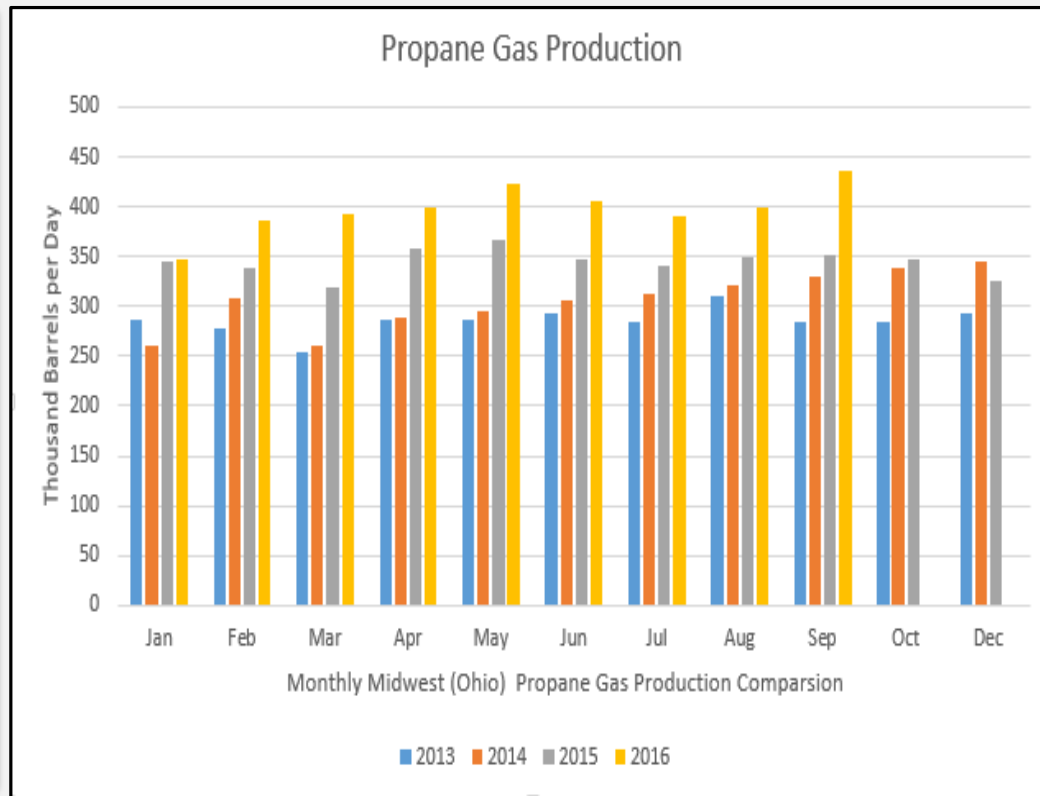
Winter 2016-17

## Seasonal Hazard Outlook

### Winter Fuels Outlook

- US inventories of propane and propylene reached 104 million barrels during the 1<sup>st</sup> week of October.
- **This is one of the highest levels ever recorded and 19 million barrels more than the same period in 2014.**
- Prices are expected to be below-market levels for all heating fuels.
- EIA reports that higher inventory levels and improved rail delivery should support a more robust supply chain.

Source: EIA *Winter Heating Fuels Outlook*



Source: U.S. Energy Information Administration-PADD 2 Propane Production data (Ohio) 2013-2016



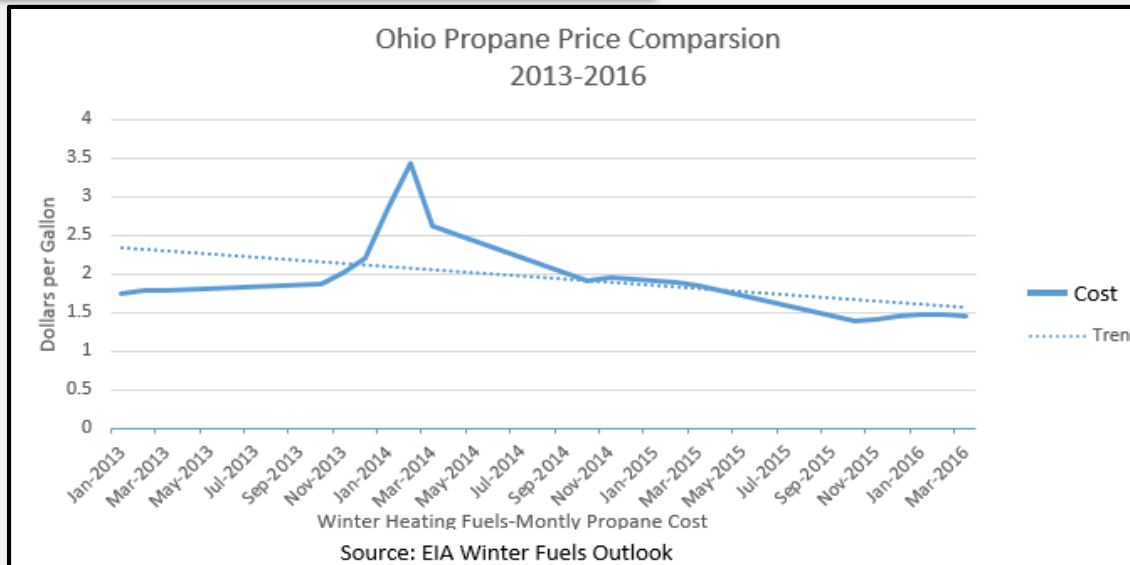
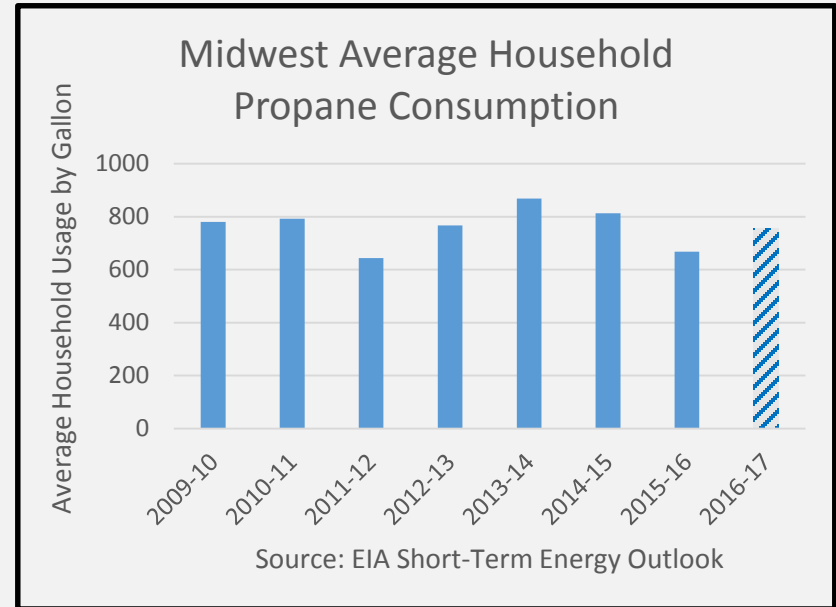
# Heating Fuels

Winter 2016-17

## Seasonal Hazard Outlook

### Consumption Forecast

- EIA forecasts that there will be an increase in heating fuel consumption from last year.
- Heating fuel consumption is still below long-term averages.
- Residential heating costs are expected to increase slightly (October-March) compared to last winter.
- The U.S. Department of Agriculture (USDA) forecasts a light to moderate crop drying demand for propane.





# Winter Driving Safety

Winter 2016-17

## Seasonal Hazard Outlook

### Winter Driving Safety

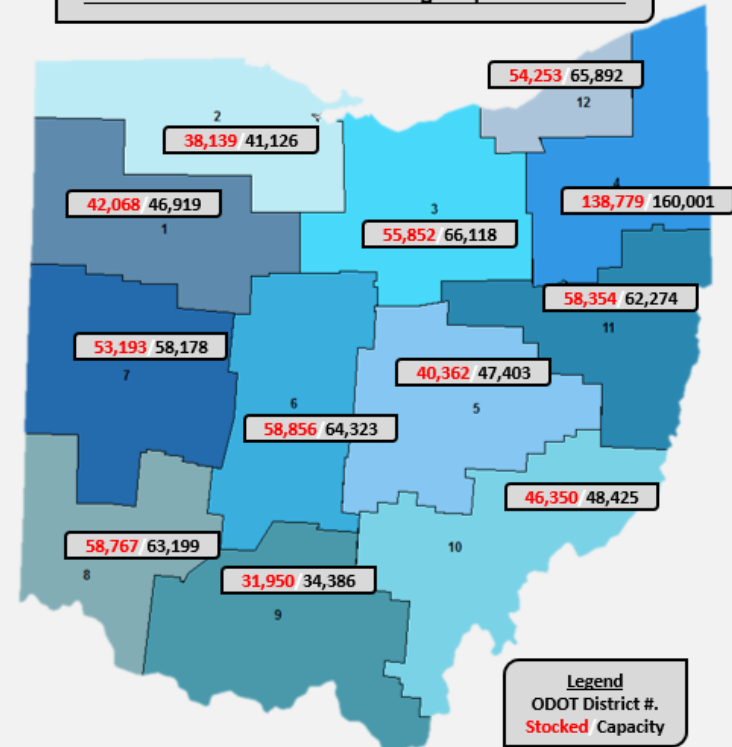
#### Winter Driving Preparation Efforts

- Contracts in place to replenish salt stockpiles as they are used.
- Diversification of salt vendors to avoid regional shortages.
- Individual counties can monitor and place orders to maintain adequate levels of salt.
- Increased use of brine which can reduce salt usage by up to 75%.

#### Salt and Brine Availability

- ODOT stand at 90% salt capacity with 677, 665 tons available.
- ODOT has 1,248,281 gallons of brine on hand.

ODOT District Salt Stock and Storage Capacities in Tons



### Economic Effect of Winter Driving Preparedness

ODOT manages 43,000 miles of roadways. Interstates are highest priority, followed by four-lane non-interstates, then two-lane roads. A snowstorm stopping travel for one day would cost Ohio \$11.4 million in state and local taxes, \$15 million in federal taxes, and \$205 million in lost wages and paychecks. On average, winter operations cost ODOT \$50 million.





# High Profile Events

Winter 2016-17

## Seasonal Hazard Outlook

### Terrorism Outlook

- The Department of Homeland Security continues to see a threat from homegrown violent extremists who could strike with little or no notice.
- Additionally, organized protests announced via social media platforms are likely depending on the election outcome and the response of the candidate who failed to gain the necessary electoral votes to win.

### High Profile Events Schedule

- The Watch Office identified seasonal events taking place this winter where 10,000 or more people are likely to gather at one time and could present a target for a high profile attack.
- There are many outdoor festivals in Ohio which are not listed which could also qualify, especially due to the lack of physical security, screening, and barriers.

High Profile Event	Date (s)	Location
Election	Nov. 8	Statewide
Columbus International Festival	Nov. 12-13	Ohio Expo Center
Presidential Inauguration	Jan. 20	Washington DC
Arnold Sports Festival	Mar. 3-5	Columbus Convention



# Influenza

Winter 2016-17

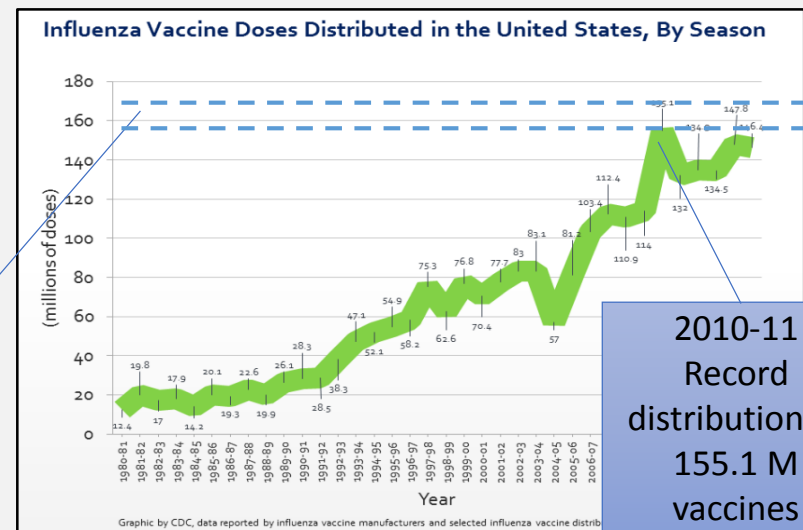
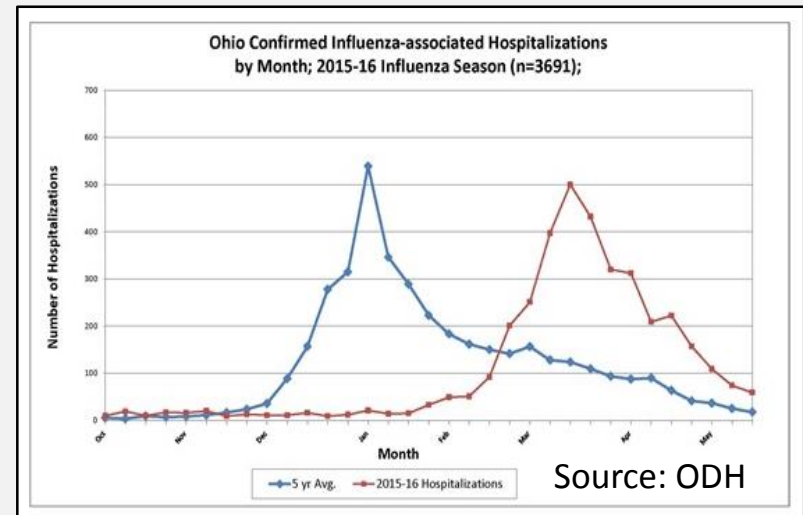
## Seasonal Hazard Outlook

### Influenza

- Ohio's influenza season occurs from October until the end of April.
- Influenza tends to peak in early to mid January, although this can vary.
- Influenza vaccine stocks are at their highest level ever. No shortages are expected at this time.**
- CDC/ODH do not provide regular seasonal influenza forecasts.
- ODH will provide weekly influenza forecasts during the influenza season.

Sources: CDC, ODH

Vaccine manufacturers estimate production of between 157 to 168 million doses nation-wide.



2010-11 Record distribution of 155.1 M vaccines

Source: CDC

Watch Office





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