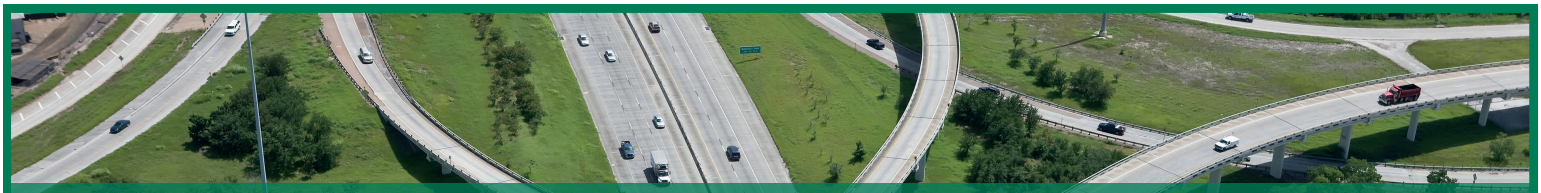
Transportation

FARM BITES



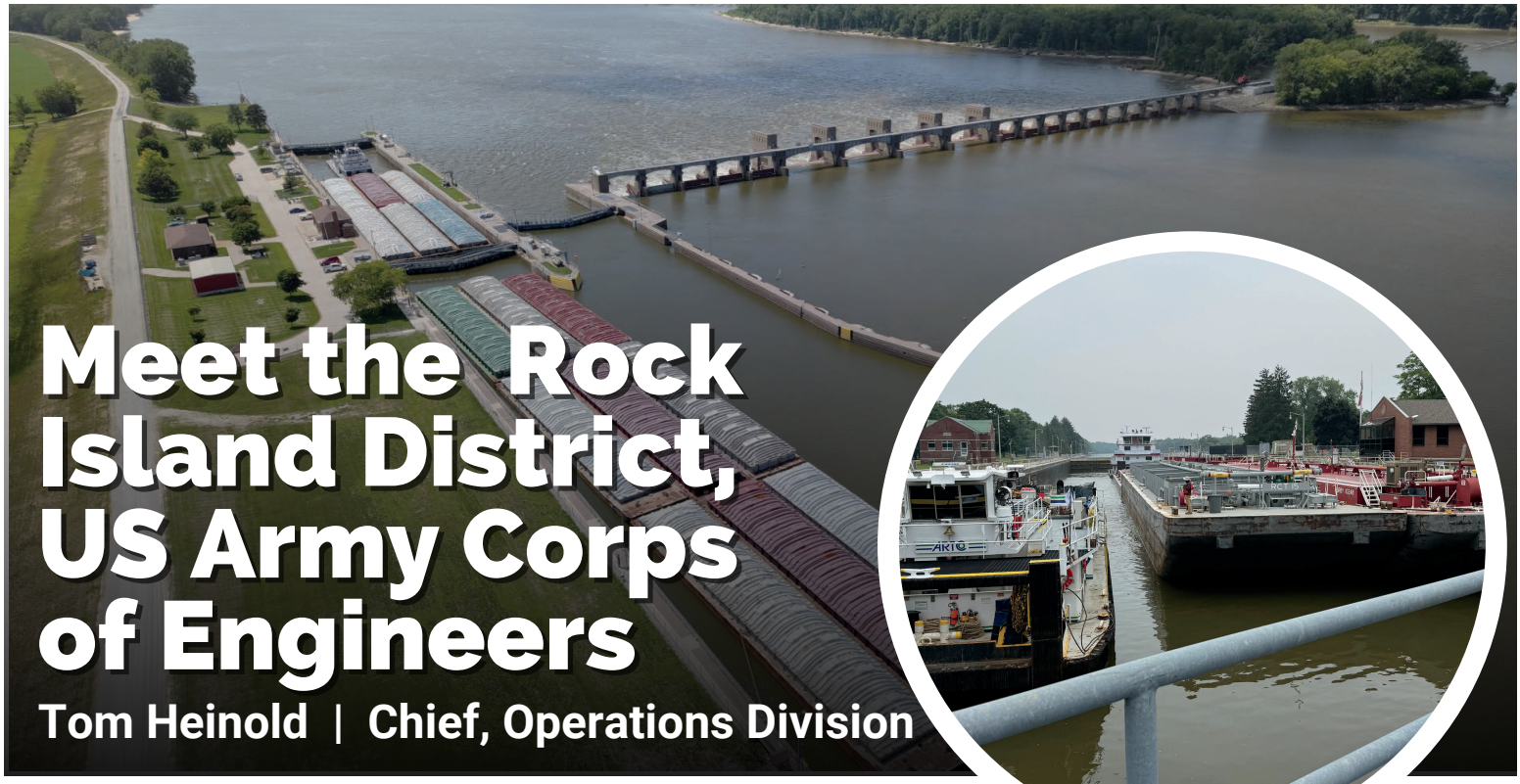
Transportation is the movement of goods and people from place to place. Farmers rely on transportation to get the food they produce to the people who need it. Illinois is located in the middle of the transportation system in the United States, creating a benefit for farmers.

Farmers use 75% of Illinois land for agriculture. Over 2,000 miles of interstate highways and 34,500 miles of state highways, connect all parts of Illinois. Farmers use these roadways to move their farm vehicles and haul their crops to store or sell them.

Illinois is home to the largest railway junction in the United States with over 7,000 miles of railroad tracks. A railway junction is the place where two or more railway lines meet or cross. Trains carry corn, soybeans, livestock, and other products. Trains carry those products to other locations to be made into animal feed and other products. One train can carry the same number of products as hundreds of trucks.

The Illinois Waterway connects Lake Michigan with the Mississippi River system. This connection of rivers, channels, and canals is essential for Illinois agriculture. Along the Illinois Waterway are many operations that assist in transporting agricultural products. A river barge is a huge flat-bottomed vessel that carries products through a canal. A towboat pushes the barges down the river, with multiple barges usually traveling together. One 15-barge tow can hold about 1,050 semis worth of cargo.

Illinois AGRICULTURE in the Classroom℠



Meet the Rock Island District, US Army Corps of Engineers

Tom Heinold | Chief, Operations Division

What is a lock and dam?

A dam is a structure that holds back water. We operate large flood risk management dams (like Saylorville Lake, Lake Red Rock and Coralville Lake) which protect lives and property from flooding. The dams we operate on the Mississippi River and Illinois Waterway hold back enough water to ensure that vessels up to nine feet deep can operate continuously. When navigation dams are constructed to create “stair steps” of water, locks are required to get vessels past those dams. A lock consists of a chamber, upstream and downstream gates, and a system of valves and culverts to empty or fill the chamber.

How does a lock and dam work?

The navigation dams are operated to control the water upstream of each dam by adjusting gates depending on the flow of the river. As the river flows increase, dam gates are opened and likewise as flows decrease, gates are closed accordingly. When there has been rainfall to provide 9 feet of water without the need for the dam, the dam gates are pulled up out of the water.

A downbound lockage starts with the upper lock gates open. A barge enters the lock chamber at the upper water level (above the dam), and the gates close. The upper (filling) valve is then closed, and the lower (emptying) valve is opened. This allows the water in the chamber to drain out, lowering the barge in the chamber. Once the lock chamber’s water elevation is equal to the lower pool (below the dam), the lower lock gates are opened, and the barge continues on its way downstream. The process is reversed for an upbound lockage as pictured to the right.

How do locks and dams help agriculture?

America enjoys a very high standard of living, due in large part to the fact that we have the world’s most fertile farmland with an ideal river transportation system running right through the middle of it. The system of locks and dams on the Upper Mississippi River System (UMRS) allows safe, reliable transportation throughout the year, especially during low water periods which typically happen during harvest season. Transporting bulk goods such as fertilizer, corn, soybeans, petroleum products and other commodities by river is by far the safest, most environmentally friendly, and most cost-effective method when compared to road or rail. The efficiencies gained by inland navigation result in a significant decrease in transportation costs, which not only benefits farmers, but also all consumers.