Through February 21, coronavirus (COVID-19) impact on municipal bonds was indirect, flowing through the macroeconomy as opposed to specific regions. With community spread more likely, we are monitoring the effects it may have on credit quality. Some of our observations follow.

- Broadly speaking, a sharp decline in economic activity within a region raises the potential for a decline in transactions and, in particular, sales tax, motor fuels tax, tolls, and mass transit farebox revenue.

- For most issuers, the impact would likely mirror that of a natural disaster. Munis have a strong history of surviving natural disasters. However, post-pandemic there would likely be little uptick in reconstruction activity as is common after a hurricane, for example.

- Traditional credit factors that mitigate against declines in cashflow would be important. We believe that highly essential issuers with strong reserves, frequent revenue collection, access to bank lending, and strong financial management would be best positioned.

- While U.S. law is highly protective of individual liberty, state and federal authorities will almost certainly mandate the quarantine or isolation of Americans with coronavirus, just as was done in Asia and Italy. U.S. law permits quarantine and isolation when necessary to protect the public health and safety. A pandemic plainly meets that standard. Addressing a pandemic will generally involve coordination among federal, state and local governments. The federal government will generally be in charge of providing emergency funding, loosening restrictions on certain health laws (such as lifting restrictions on the provision of telemedicine) and quarantining Americans or others who are entering the country from abroad. State and local governments may have broader powers to mandate limits on residents’ movement and travel.

On a sector specific basis, key considerations are as follows:

- **Dedicated tax bonds.** We believe that credits with modest coverage and relatively small tax bases are most vulnerable to a local outbreak of the virus. Credits with monthly (as opposed to quarterly or biannual collections) are likely to prove more resilient. The presence of a debt service reserve fund may also be helpful if a community is affected by the virus for a period of months.

- **Motor fuels tax bonds.** A sharp decline in car trips or a fall-off in goods orders could reduce miles travelled and impact coverage on motor fuels tax bonds. Here, again, size matters. State-level gas tax bonds are likely to prove more resilient than local gas tax securities.

- **Tollroads and mass transit.** Toll collections might fall in areas where quarantines are imposed. Larger toll systems are likely to be more resilient than smaller, regional ones, as well. Mass transit credits could be negatively impacted.

- **Hospitals.** Inpatient admissions might rise in significantly affected areas, which could be a credit positive. However, higher-margin outpatient admissions might fall if people limit visits to the doctor’s offices. Hospital systems with a pharmacy component or an insurance arm might benefit. In sum, the hospital sector is likely to exhibit system-specific credit impacts.

- **States.** Larger states are probably better credit risks than smaller ones. If coronavirus spurs an outright recession, some states with low fund balances might have to borrow to finance emergency spending. A prolonged coronavirus impact might lead to a downgrade.

- **Airports and ports.** Airline traffic and port traffic will very likely decline. Airports and ports have shown resilience through economic downturns before, and that would
likely be the case, again. However, an extended downturn could lead to downgrades. We note that the Port of Los Angeles expects a 25% decline in February container volumes as of February 25th.

- **Local general obligation (GO), water-sewer, housing bonds, essential service leases, and electric revenue bonds.** We believe that all of these essential service bonds are well positioned to withstand a lengthy pandemic. General obligation bonds are typically backed by property tax levies that derive their value from assessments measured in prior years. In many jurisdictions, it would take several years for assessed values to adjust downwards as a result of a pandemic. Likewise, essential service utility bonds are typically designed to permit rate hikes, as needed, to offset declines in water or energy usage.