

## AGGREGATES IN ACTION: SUSTAINABILITY

**What do wind turbines, levees, and stream restoration all have in common? The answer may surprise you...**

Crushed stone, sand and gravel – commonly referred to as aggregates – are essential in the development of a resilient and sustainable world. Without these materials, it would be impossible to build a supply of clean energy, restore natural environments that support rich biodiversity or build communities that can withstand a changing climate and keep people safe.

### SUPPORTING CLEAN ENERGY

**Wind turbines, solar panels, and substations that generate, transmit and distribute electricity all require strong, stable concrete bases made largely of aggregates.** Without a sturdy foundation none of the sources of clean energy required to fuel the future could exist – not to mention the infrastructure required to manufacture, transport and install everything from electric vehicles to charging stations.

### ENRICHING THE ENVIRONMENT

A key part of stream restoration is bank stabilization, which helps add strength and prevent future erosion along waterways. **Riprap — large boulders of a similar size — are used not only to armor stream banks against erosion, but also to support beach and lake shorelines from erosion due to waves.**

Additionally, when restoring a streambed, gravel is an essential ingredient for many aquatic species, such as salmon, which spawn in gravel substrates. Aggregates also play an important role in protecting the health of rivers and streams by filtering stormwater and keeping excessive sediments from entering waterways.

When aggregate pits end their lives as quarries, they are returned to a beneficial use through the process of reclamation. **Many former quarries become ponds and wetlands that offer refuge for migratory birds, turtles, and fish,** but their overall impact on the environment goes much farther. Reclaimed quarries support the whole ecosystem by enhancing biodiversity.

### BUILDING COMMUNITIES

**Reclaimed aggregate quarries can provide many community benefits.** Parks, recreation opportunities, ponds, open space, and newly planted forests are all common forms of reclamation. Frequently, gravel trails are added so local communities can enjoy the natural wonders created by former aggregate sites.



### DID YOU KNOW?

**Each wind turbine requires 700 cubic yards of concrete for its base, which includes 650 tons of aggregates and 500 tons of sand.**