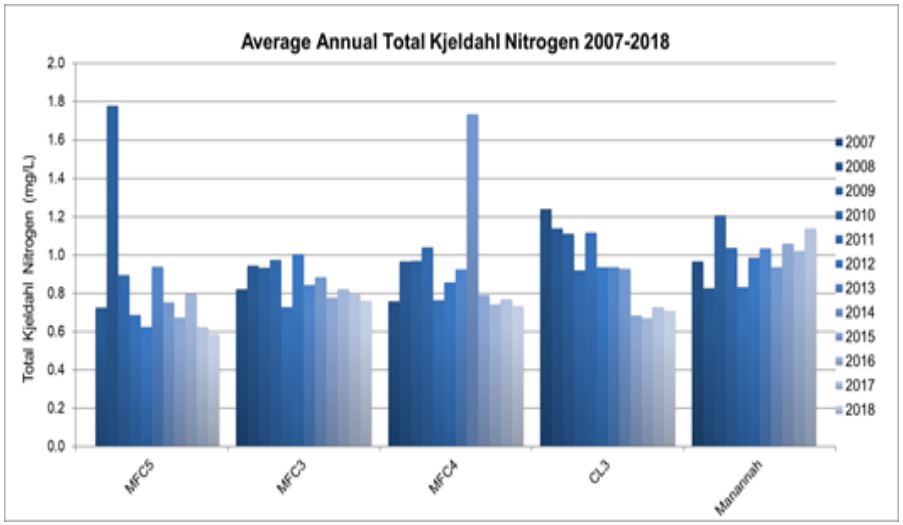
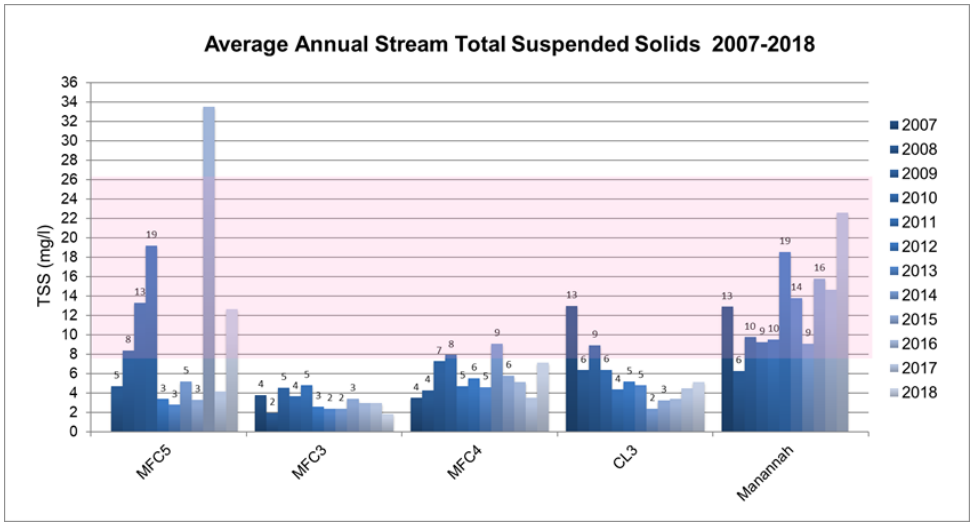
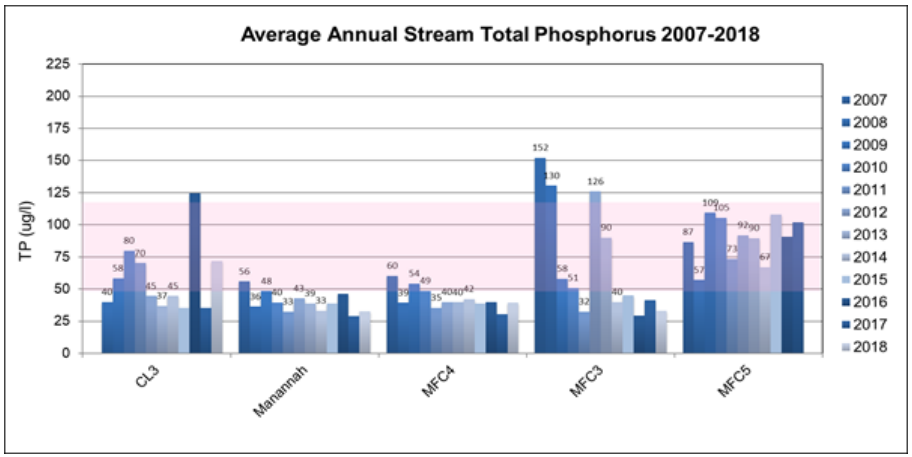
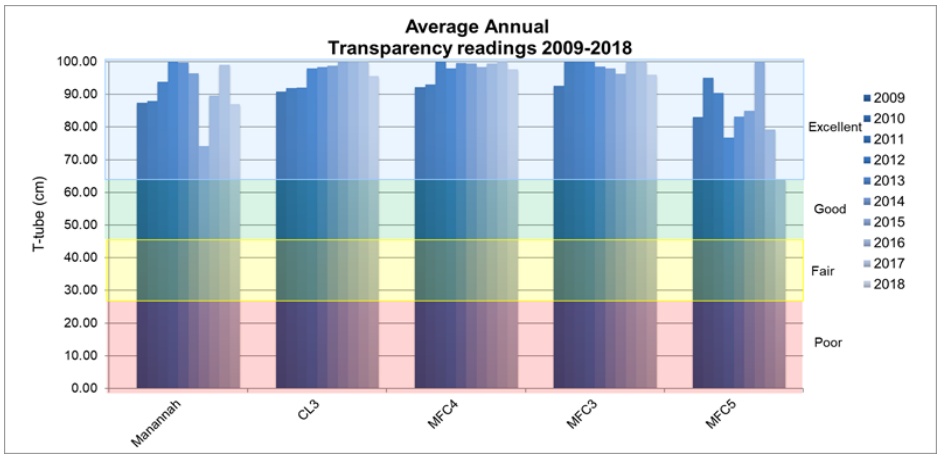
# STREAM CONDITIONS

WATER QUALITY MONITORING



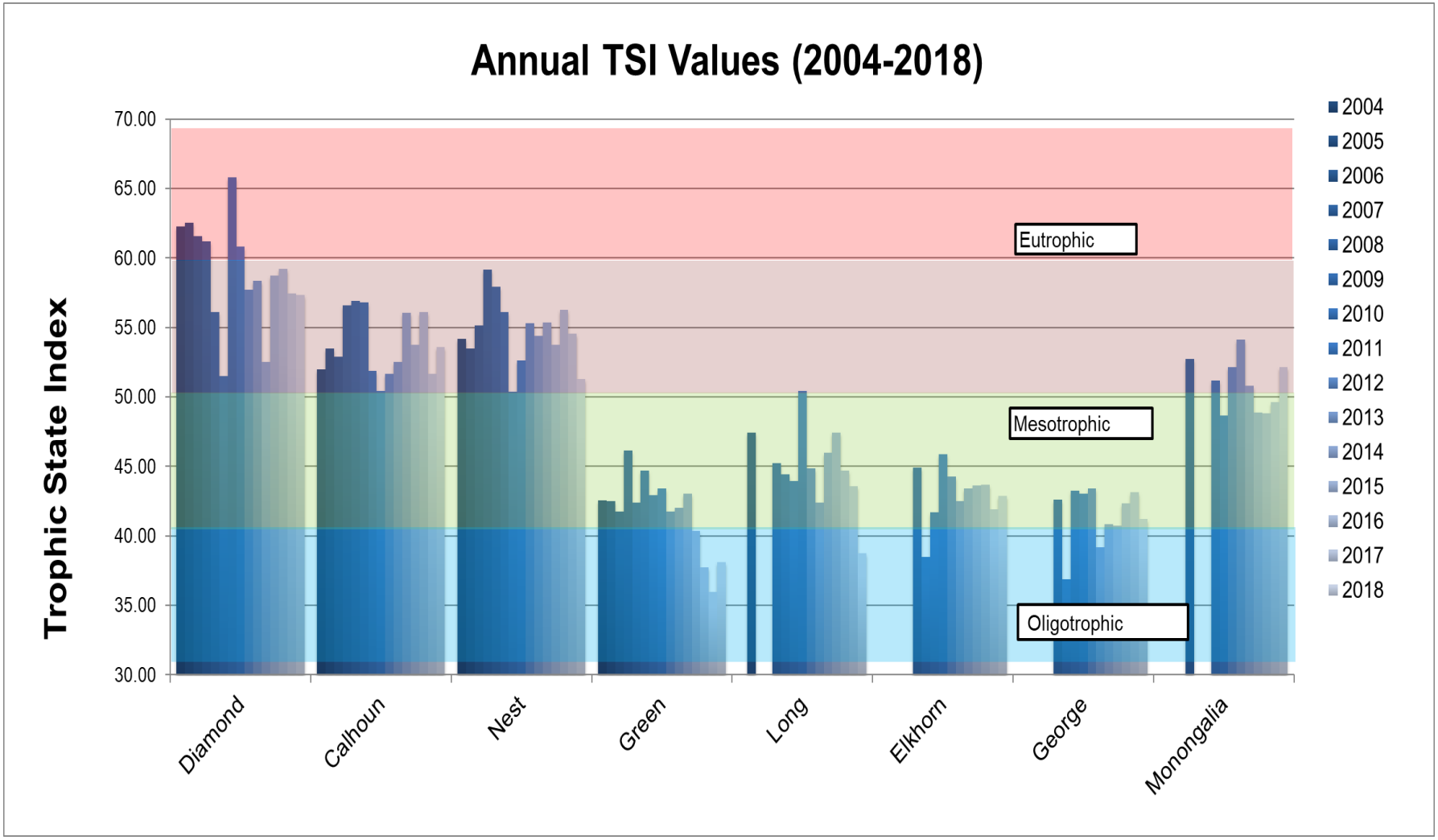




- Total Kjeldahl Nitrogen determines both organic and inorganic forms of nitrogen. In large concentrations it can indirectly increase oxygen demand thus depleting available oxygen and creating harmful conditions for aquatic life.
- Phosphorus is an essential for plant growth and many times the limiting nutrient in ecosystems. So the more phosphorus the more plants such as algae. It comes from a variety of sources, many of which are related to human activity. This includes human and animal waste, soil erosion, detergents, septic systems and runoff from farmland or lawns.
- Chlorophyll-a is the pigment that makes plants and algae green. This pigment is what allows plants and algae to photosynthesize. Chlorophyll-a is tested in lakes to determine how much algae is in the lake.
- Secchi depth is a measurement of water clarity. Water transparency directly affects the amount of light penetration into a lake. Algae and suspended particles from erosion make the water cloudy and decrease the Secchi transparency in a lake; therefore, the lower the Secchi depth, the higher the algal concentration and lake productivity.

# LAKE CONDITIONS






**TSI 30-40 Oligotrophic** – clear water, hypolimnion (Lower layer of water in a stratified lake) is oxygenated throughout the year (except in shallow lakes).

**TSI 40-50 Mesotrophic** – Water moderately clear, but anoxia becoming more likely in hypolimnion during the summer.

**TSI 50-70 Eutrophic:** Decreased transparency, anoxic hypolimnion during the summer, dominance of blue-green algae, algal scums probable, extensive aquatic plant problems possible.

## MONITORING IN THE MIDDLE FORK

Monitoring helps us fulfill our mission of protecting and preserving water quality in the Middle Fork Crow River Watershed. The information we gather from monitoring helps us assess water quality trends and provides insight as to where to implement projects. We have a number of historic sites that allow the District to track long-term changes.