Big Sky High School Mini-Grant Story Maps

Summary by Michael Ginster

Map links sourced from grant reporting by Gretchen Watkins

Through the mini-grant funding they received in the FY2022 cycle, Big Sky High School developed a curriculum for educating its students about various river health & stability issues through the lens of ArcGIS. The students created ArcGIS Story Maps outlining potential engineering solutions to existing erosion problems that existed in the surrounding watershed. The final report for this grant included multiple links to the final projects created by the students, three of which have been included in this document.

Storm Water by Dylan Satchel: This story map shows the high rate of runoff into Grant Creek as a problem within that watershed and proposes the replacement of non-permeable surfaces with permeable surfaces as a potential solution. Satchel shows the current composition of permeable & non-permeable surfaces in the watershed and outlines potential limitations to replacing non-permeable surfaces with more permeable alternatives.
https://storymaps.arcgis.com/stories/db85cb4ee5764a8f8a09e5c2d0bf6fed

Storm Water Management Plan by Oliver Long: This story map depicts escalating storm frequency & intensity as a problem for watersheds near the school, as these events can inundate these watersheds with excess runoff. Long proposes installing garden & rain harvesting infrastructure on the school roof as a solution to this excess runoff problem. The document also contains calculations by Long, which he uses to make the argument that his proposed solution would lead to significant improvements in water retention on-site, reducing runoff as a result.
https://storymaps.arcgis.com/stories/1625846896aa4eea9cc14a92d4e795c3

Water on the Move Revisited 4.3.4 by Eleyna Kellum: This story map shows the extent of impervious surfaces at the school and identifies ways that this surface area can be reduced. Kellum proposes the addition of rain gardens in the parking lots and green roof infrastructure, which she estimates would reduce the percentage of impervious surfaces on-site from 44% to 10%.
https://storymaps.arcgis.com/stories/f6cf8b3a5025430383ced2c5894b881f