Highlights from Schools

ACE Academy

For the past four years, students from ACE Academy (Architecture, Construction and Engineering) have been applying their academic learning through long-term, hands-on projects with the Sellwood Bridge team. During the first year, students created a 3-D model depicting the installation of the temporary Shoofly bridge, and the complicated translation of the bridge from its original location to its location during construction. This model was then kept on display at the Sellwood Bridge work site, and project engineers and contractors referred to the model to help explain and plan the complex bridge translation. The second year, ACE students studied the landslides and geotechnical conditions around the bridge and built a realistic model of the topography including the landslide.

During the third year of the school program, a team of ACE students designed and built a prototype for the four benches that will be a permanent fixture on the new bridge. These high school seniors were responsible for the architecture, engineering, procurement, and fabrication of the bench. After nearly 250 hours of research and fabrication, the students proudly presented and explained their resulting bench at a meeting of the Multnomah County Commission, following in the footsteps of their ACE predecessors, who also presented their bridge project work to the commission.

This year, a new group of ACE students is using the design of last years’ students to fabricate the four benches that will sit on the four overlooks of the new Sellwood Bridge.
Cesar Chavez

Third, fourth, and fifth grade students from Cesar Chavez school were given a special opportunity: a field study at the bridge site. Students walked onto the work bridge to see and learn about the construction firsthand with engineers and contractors.

Following the tour, students took turns mixing concrete with water in a wheelbarrow, and project team members talked with them about the importance and uses of concrete in bridge construction. Later, they placed their hands in the hardening concrete to leave hand-prints.

Teams of students were also presented with a bridge building activity. Each group received a limited budget to use at a mock building supply store, and with their chosen materials, they set out to build mini-bridges at least 45 cm long and strong enough to hold a toy car. The students excelled at the challenge by building creative, sturdy, and realistic structures.

Portland Youth Builders

At Portland Youth Builders, vocational students between the ages of 18 and 24 participated in several Sellwood Bridge learning experiences, including a tour of the bridge and two class projects. During one lesson, students participated in a mock county commission meeting with a real county commissioner, Diane Mckeel, serving as chair. The group was tasked with deciding on the final lane configuration of the bridge, accounting for the interests of commuters, pedestrians, bikers, business, and neighbors. Prior to the lesson, students had researched the positions of the interest group to which they were assigned.

During the mock meeting, students articulated the position of their group and provided oral, written, and pictorial evidence in support of their view. They also practiced basic engineering and problem-solving, by designing a solution that met the needs of diverse interests while adhering to strict guidelines. Perhaps most importantly, students began to appreciate the complexity of the decision-making responsibilities of public officials - as demonstrated by the many examples of legitimate concerns they provided, representing diverse and conflicting interests.
Later, these same students learned about the sustainability considerations of bridge design and construction. Jordan Henderson from David Evans Associates taught students about the Green Roads Certification, a sustainability endorsement for roadways and bridges. Next, we challenged teams of students to design the sustainability features of a new Sellwood Bridge that would earn Greenroads certification. Their unique bridges included intelligent transportation systems like dynamic speed-limit displays, solar paneled sidewalks, and permeable pavement that drains water to vegetation on the sides of the bridge.

**Faubion Elementary School**

Once again, representatives from the County (including County Chair Deborah Kafoury), T.Y. Lin International, Slayden-Sundt JV, and David Evans and Associates join staff from Lois D. Cohen Associates at the Faubion School to work with young students representing a range of elementary school grades. It was a beautiful day, so the program was delivered outdoors, where the students mixed concrete, built paper bridges and tested their strength, and learned about coffer dams by building their own model dams. In addition, each of the students was given the book, *Bridges!* and read it aloud with their assigned team members, paying particular attention to vocabulary, definitions, bridge types and job descriptions.

**Llewellyn School**

At Llewellyn Elementary School, fifth graders built and decorated bat boxes which will be placed underneath the new bridge upon completion. The bat boxes served as a vehicle to teach students about the importance of protecting local habitats that will be affected by construction; and as a way to give back to the animals whose habitat we are impacting. These students also worked on a geography project, mapping...
the places of origin of the materials used in bridge construction. Representatives of these two fifth grade classes were among the stars of the Sellwood Bridge Groundbreaking event, as they shared what they had learned from the School Program, explained their thoughts about the new bridge, and brought smiles to the faces of attendees.