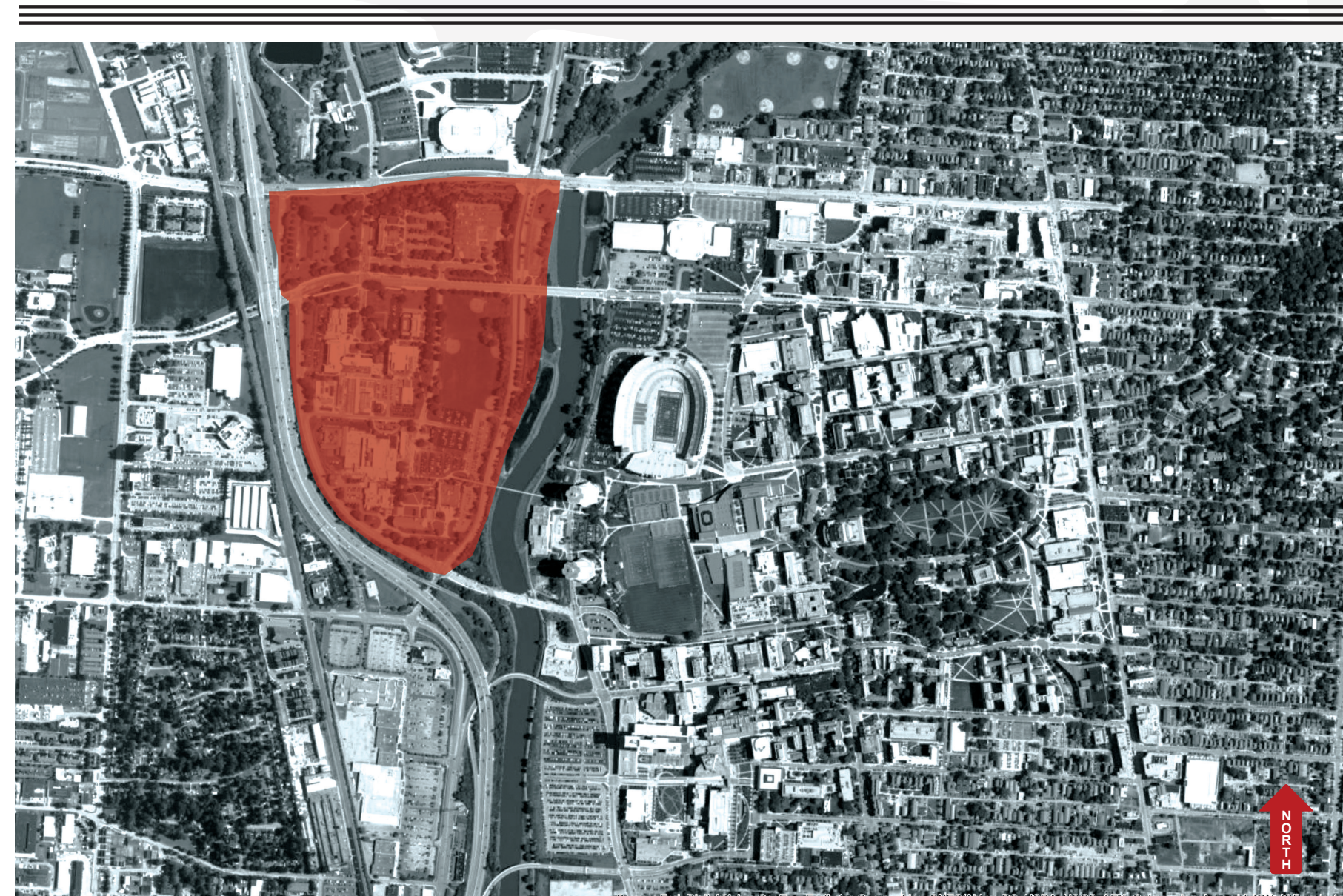


WEST CAMPUS

AT THE OHIO STATE UNIVERSITY









Location of focused West Campus in relation to the Ohio State University. Map courtesy of Google Maps.

SITE ANALYSIS

Our vision includes an ecological overhaul of West Campus at The Ohio State University to effectively manage and redirect urban runoff through best management practices to filter out pollutants and slow the flow of water into Columbus' combined sewer systems. The overarching goal of the city and university is to design an innovative green infrastructure plan that effectively manages stormwater runoff while benefitting the OSU community and nearby environment. The study site experiences both a humid and temperate climate with an average annual rainfall of 39 inches and average annual snowfall of 25 inches. In addition to common pollutants from cars, rock salt used during the winter in response to ice washes into the waterbodies, disrupting the equilibrium. By reducing impervious pavements, centralizing and increasing vegetation near highly polluted areas, and increasing our urban tree canopy, we can effectively redirect stormwater from the sewers to the ground, naturally filtering and slowing the rate of polluted runoff.

LEGEND

-  New Roads per Framework 2.0
-  Tree and Foliage Cover
-  New parking structure per Framework 2.0
-  Remaining surface parking per Framework 2.0
-  New bioswales
-  New bioretention area



UNIVERSITY GOAL:

Double the overall campus tree canopy from 12.3% in 2016 to 24.6% in 2025.



FRAMEWORK 2.0:

In order to ensure a cleaner Olentangy River, the Riverbank North and South surface lots will be removed - a total of 332 parking spaces.

RETENTION POND

A new retention pond will have a volume of 103,000-foot³ for runoff stormwater. The positioning of the 8-foot retention pond will allow for 80-90% of polluted runoff to enter the pond instead of the Olentangy River. Ultimately, drains will lead directly to the pond where water can be processed before infiltrating groundwater and the river.

RAIN GARDEN

With a similar goal as the retention pond, the bioretention rain garden will help to treat rainwater at the source as well as reducing standing water in the area during heavy precipitation seasons.

GREEN ROOF GARAGE

With the removal of the 332 spaces from the riverbank surface lots, the new parking garage will have a green roof to help reduce riverbank erosion by slowing down the speed of stormwater by 65%. Additionally, the green roof will provide an educational experience for students to compliment the Howlett Rooftop Garden.

OUTCOMES

- Reduce impervious surface area by 5%
- Reduce stormwater runoff into the Olentangy River
- Reduce total maximum daily load (TMDL) for the Olentangy River
- Increase educational value
- Increase aesthetic value of West Campus

United States EPA Campus Rainworks Challenge, 2016

Kyle Depperman, Christopher Donohue, Jerry Chamberlain, Alaina Parrish, Taylor Price, Alexander Woolledge