

Team 5: Project Statement

Our group has decided to focus on improving the water quality of the stormwater runoff from staff parking lot 53 on campus as well as decreasing the erosion on the adjacent bank of Waller Creek. The lot is currently paved with impervious asphalt and is bound between Speedway and San Jacinto Boulevard with a downward slope towards the bordering Waller Creek. During heavy rain situations, the stormwater will flow from Speedway over the parking lot and will be expelled into Waller Creek. Due to the high pedestrian as well as vehicle traffic in the surrounding areas, large amounts of sediment and other pollutants are expelled into the creek, which degrade the water quality. We would like to propose a low impact design system that would increase the quality of effluent from the parking lot in order to contribute to a healthier aquatic ecosystem in the city. Another positive externality of our low impact design is that the rate and quantity of stormwater discharged into Waller Creek can then be reduced and managed, which will help prevent channel degradation.

One low impact method for improving the stormwater quality would be to implement a pervious pavement parking lot. We will be doing research on the cost and feasibility of introducing the pervious pavement onto the lot as well as the expected water quality improvement. This option could also lower the amount of stormwater runoff that originates from the parking lot through infiltration in order to prevent flooding.

Another method would be to introduce bioretention strategies between the paved lot and the outlet to Waller Creek. An overview of the parking lot reveals that there are other possible configurations of the parking spots that would allow for bioretention structures along the border of the lot, so we will be looking into ways to optimize the amount of spots around the new construction. The bioretention structures would also act as small detention basins that would decrease the flow rate from the parking lot and thus also be beneficial in preventing channel degradation.

