

Rain Barrel and Gutters Project at McKinney Green Gardens

My name is Anik Maram, and I am a member of Troop 77. For my Eagle Scout project at the McKinney Water Gardens, I wanted to create something practical, something that would continue helping the space long after I was gone. That led me to focus on sustainability through water conservation, specifically by designing and installing a gutter and rain barrel system.

The Vision

The McKinney Water Gardens is more than just a green space. It is a place where people learn about native plants, ecosystems, and how small changes can make a big environmental difference. I saw an opportunity to make that mission more tangible by capturing and reusing rainwater instead of letting it go to waste. My goal was to build a system that felt simple to use but was carefully thought out behind the scenes.

How It Works

Gutters:

The gutters form the backbone of the entire system, and getting them right took far more planning than I initially expected. I began by studying the layout of the structures and observing how rainwater naturally moved during storms. From there, I measured each section multiple times to make sure everything would align properly, since even small miscalculations could cause water to pool or spill over. When installing the gutters, I had to maintain a consistent downward slope so gravity could do its job efficiently. That meant carefully positioning each bracket, checking levels repeatedly, and adjusting as needed rather than rushing through the process. I also had to think about durability by choosing materials that could handle heavy rain, heat, and long term exposure without warping or breaking down. At the same time, I did not want the system to look out of place, so I made sure it blended in with the natural design of the garden. By the end, the gutters were not just attached. They were aligned, tested, and refined to ensure water flowed smoothly from start to finish.

Rain Barrels:

The rain barrels collect and store the water directed from the gutters. I selected barrels that balanced capacity with usability. They needed to hold enough water to make an impact but still be easy for visitors and volunteers to access. Placement was just as important as size, so I positioned them where they could be reached easily while still capturing the maximum amount of runoff. The final setup allows water to be reused for irrigation, reducing waste and supporting the garden in a sustainable way.

Challenges and Adjustments

Not everything went according to plan. Weather delays forced us to reschedule workdays, and coordinating a group of volunteers meant constantly adjusting roles and timelines. There were

also moments where parts did not fit as expected or needed to be reworked on the spot. Instead of seeing those as setbacks, I started to view them as part of the process. Each problem forced me to slow down, rethink, and come up with better solutions.

What I Learned and Contributed

This project pushed me to be more precise, more patient, and more aware of the details that actually make something work. I contributed the initial idea, the planning, and the structure that guided the work, but I also learned how important it is to listen to others and adapt when better ideas come up. I realized that building something meaningful is not about doing everything yourself. It is about creating something that others can use, maintain, and improve over time.

What I Gained

By the end of the project, I did not just walk away with a finished system. I walked away with a different mindset. I started to think more about long term impact instead of short term results. I also gained a deeper appreciation for how much effort goes into even simple looking systems and how small design choices can have a big effect on how something performs.

Reflection

Looking back, this experience changed the way I approach both work and responsibility. Before, I might have focused on just completing a task. Now, I think more about how well something is built, how long it will last, and who it will help. The rainwater system at the McKinney Water Gardens is something people can actually see and use, but for me, it represents something more. It is proof that with enough thought and effort, even a straightforward idea can turn into something lasting.