C1.07: Expansion of Wastewater Collection

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Problem Statement

San Marcos area is expected to have an increase in population of around 10,000 people which will increase the amount of wastewater flowing into the current wastewater treatment plant.

Reasoning

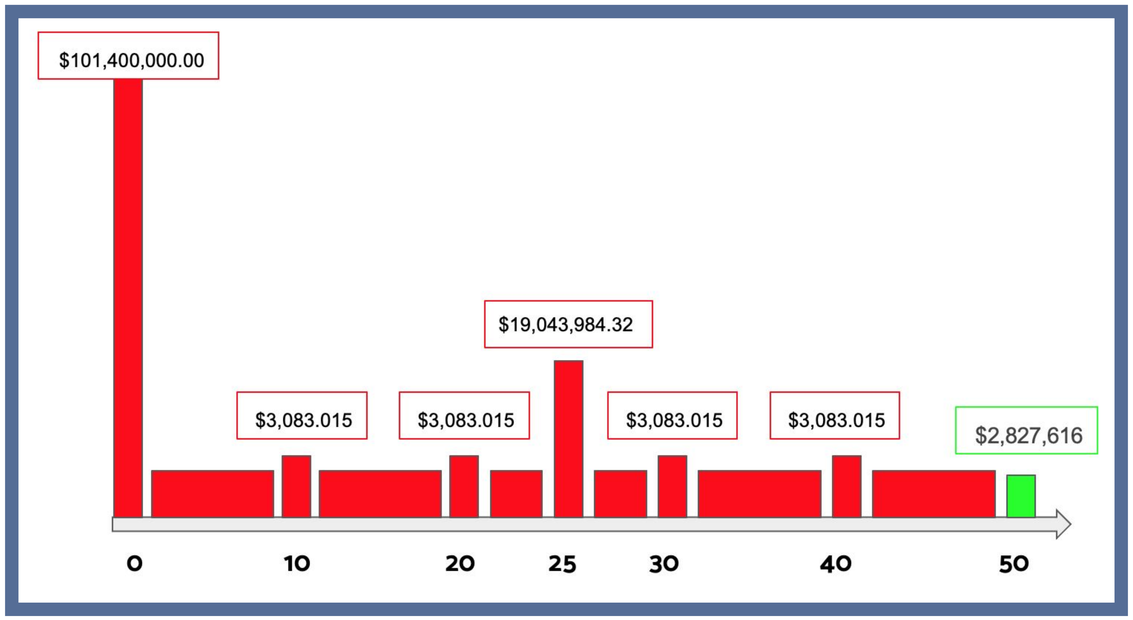
The current facility is at approximately 60% capacity. With an increase of 10,000 people the expected strain on the capacity will push capacity upwards of 75%. As per Texas Code §305.126 at 75% capacity WWTP are required to plan for the construction of a new treatment plant.

Selected Alternative

To increase capacity we will construct a new facility that will be in accordance to §305.126 and plan ahead of time to prevent any catastrophic failure to the existing plant from capacity.

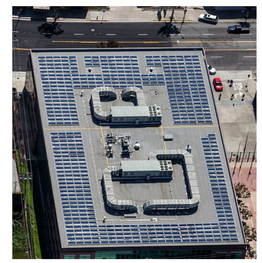
Location of New WWTP

Estimated Life Cycle Cost



Sustainability

After running our project through the Envision Sustainability Framework we decided to integrate both a solar farm and a 100 year storm collection system. We are aiming for the Solar farm to account for 50% of annual electricity consumption. The collection system will also have multi use.



Conclusion

In conclusion, to account for the increase in population in the city of San Marcos, building a new wastewater treatment plant will be the best solution.

Acknowledgement

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