



# Civil Engineering: Addressing Population Growth



**Kennedy/Jenks Consultants**  
Engineers & Scientists

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### Introduction

When a city grows, some things are certain. Land will be developed and resources will be utilized in order to fulfill the demands of the growing population. Kennedy/Jenks Consultants and Rick Engineering both work in ensuring San Diego County addresses the recently dominating population growth in many of its cities like Carlsbad and San Marcos. The Kennedy/Jenks firm specializes in ensuring that water and wastewater demand and treatment is properly met in these cities, while the Rick Engineering firm addresses multiple aspects of land development within these cities.

### Aim: Kennedy/Jenks Consultants

**Kennedy/Jenks:** Claudia's internship is primarily concerned with the designing of an upgrade to a trunk sewer line located within the city of San Marcos. With the increase of the population growth within San Marcos, it is important for the sewer lines to be diligently upgraded so that the sewer system is reliable and doesn't fail or overflow in areas of the city. In her internship, Claudia is able to experience engineering at the industry level. Her internship is concerned with many of the technical and business aspects of engineering, including contract documents, such as technical specifications, construction cost estimating, and the communication components of civil engineering.

### Aim: Rick Engineering

**Rick Engineering:** Brian's internship focuses primarily in the traffic development in Carlsbad. As more people move to live or work in Carlsbad, it is often found that there is an increase in demand for efficient road ways. Working closely with Rick Engineering's traffic division, Brian is able to establish a first-hand experience in the field. His internship is dominantly concerned with data collection at the field work level.

### Method: Kennedy/Jenks Consultants

- Claudia:**
- Reviewed and edited contract documents
  - Requested maps from local utility companies
  - Met with the client at the project site
  - Conducted design calculations



Claudia visiting with the client and experiencing field work by visiting the actual site.

Claudia checking for conflicts between utility companies and pipeline design..



### Method: Rick Engineering

- Brian:**
- Conducted vehicle data counts
  - Supervised the team of counters
  - Documented lane geometry
  - Calculated the level of service of specific intersections

Brian conducting a vehicle count at his assigned approach.



### Results

- Through Brian's vehicle counts, he is able to retrieve data from specific intersections and determine the level of service of each intersection. The data is crucial to city development.
- Through the requested and received as-built drawings, (utility maps), Claudia was able to review the design for the pipeline alignment and ensure that there were no conflicts between the sewer line and nearby utilities.

The vehicle count data manifested through a turning movement analysis.

### Conclusion

Rick engineering and Kennedy/Jenks Consultants provided great experiences for the both of us. As interns at these two companies, we experienced our future careers at the industry level, we networked valuably with crucial individuals within our field, developed our professional abilities, and acquired a feel for the engineering work environment. We also obtained a better understanding of how our coursework relates directly to situations that we face in the industry, and overall, enjoyed our internships to the fullest.

### Acknowledgements

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