To LET or Not to LET

Cedric Keitt

South Carolina Department of Transportation

February 1, 2021

Background

To LET or not to LET is the question of the day. I chose this title for my project because every month at the South Carolina Department of Transportation (SCDOT) a decision has to be made on if a project will be released (LET) and assigned a construction contract to be built or moved (not LET) to a later date. It is my desire to review the project delivery process that deals with my working environment.

I am South Carolina's State Utility Engineer. I am charged with managing the utility and the railroad aspect of the project delivery process. Either I or my team of designees assists in the review, approval, and administration of Utility Agreements for highway and bridge projects across the state. As State Utility Engineer, I am also responsible for creating and conveying SCDOT Utility Accommodation policies on SCDOT projects. I review utility inventory lists for projects, determines if projects have major utility impacts, provide information for project scoping and extinguish fires throughout the State.

To assist with project development, my office issues Utility Introduction Letters to utility companies located on the project corridor after the project scoping meeting to notify utilities of the upcoming project and provide project contact information. We coordinate with the Project Development Team (PDT) to make recommendations on Subsurface Utility Engineer (SUE) Quality Level for the project and provides guidance to the Project Development Team on the determination of prior rights for utilities located in the project corridor. My office provides guidance on preliminary utility relocation cost estimates for anticipated impacts for budget considerations and provides direction to utility companies, department staff, and department consultants during the design, plans and specifications development, and construction of highway projects. In the assigned regional production group, we process all utility agreements

with the utility companies for the relocation and/or adjustment to utilities in conjunction with highway project for review. The utility office reviews and provides recommendations to department staff and utility companies on utility encroachments on department's right of way. We assist the utility coordinator and design manager with the identification of potential utility conflicts and coordinates with other sections of the department (Program Management, Hydrology, Road Design, SUE, District staff, etc.) on recommended design changes for conflict avoidance solutions.

In the coordination process we provide recommendations for in-contract utility relocations, coordinates with the utility companies and other sections of the department to implement the utility relocation process. We review the utility company construction plans, special provisions, and approve their inclusion in highway contracts. We also perform various duties such as preparing correspondence and reports, representing the SCDOT at various meetings regarding utility related issues. I issue the final approval for all project utility submittals and makes a recommendation to the program manager on the Utility Certification.

What all this means is my staff and I review and approve the relocation plans of the utilities impacted by SCDOT highway projects and manage the agreements associated with them. If all the utility companies impacted by the projects turn in their relocation package and agreements and we find no issue with the relocation plan, I can sign the certification that the project is ready to go to LETTING. "LETTING by definition is to award a contract, such as for the erection of public works, to one of several bidders." (West's Encyclopedia of American Law, edition 2. Copyright 2008 The Gale Group, Inc.). SCDOT's task over the next 10 years and beyond is to repair and rebuild our transportation network to ensure the citizens and businesses can travel safely on a reliable system.

One of SCDOT's main responsibilities is to effectively and efficiently use taxpayer funds to improve the transportation network. I chose my topic to Let or Not to Let to draw attention to the number of projects not going to construction because of a utility or railroad issue. It will bring to light the importance of teamwork and finding solutions to why we have the delays. It is my hope that delays can be eliminated or reduced in the project delivery process. The process of identifying the delays will help to create new means and methods to combat and reduce the number of projects that get eliminated or delayed. Projects not going to letting affects the SCDOT funding sources, creates new project demands, lowers overall morale, and breaks trust with the citizens of South Carolina. The SCDOT started the utility certification process for highway projects in October 2016. Federal Highway Administration for South Carolina came in and told the senior leadership at SCDOT that we had to start a utility certification process. The objective with the certification process was to not allow a project to hit the street if the project specific utility issues were not resolved and turned in by the due dates assigned. In the past prior to 2016, some projects were LET without the utility issues being resolved which cost a tremendous amount of time and money to construct a project. The Hard Scrabble Road Project here in Columbia is a highly traveled road, and it ignited federal highway to make the utility certification process mandatory for all projects with federal funds. The reason federal highway made it mandatory is because the project LET and the relocation plans for all the utility involved were not properly reviewed, collected, and phased into a construction schedule to ensure the contractor could build the road on his projected critical path. The result put the project behind by years, cost the SCDOT more money, and gave off the public perception of no work being done along a highway that SCDOT is working on.

Data Collection

Construction jobs are very expensive and requires a lot of coordination. To put things in prospective, for large construction jobs the delay per day has a cost range between $8,000 to $10,000 dollars per day. Utility and railroad related delays can ruin a construction budget. The SCDOT Standard Specifications Manual section 105.16.5 discusses how extra cost is calculated.

Only the following items may be recovered for damages by the Contractor with respect to delay claims or other claims. “The Department has no liability for damages beyond the following items:

A. Additional job site labor expenses.

B. Documented additional costs for materials.

C. Equipment costs, as determined in accordance with this subsection.

D. Extended Job site overhead as determined by the formula set forth below:

D=AxC/B

Where: A=Original Contract Amount

B=Original Contract Time

C=6%

D=Extended Jobsite Overhead rate per calendar day for compensable delays.

E. An additional 10% of the total of items A, B, C, and D above, for home office overhead and profit; however, this amount will not exceed the anticipated margin for home office overhead and profit provided for in the Contractor's original bid. Additionally, home office overhead margins paid to the Contractor included in Change Orders are considered as partial or final compensation for these costs.

F. Bond costs.

G. Subcontractor costs determined by and limited to those items identified as payable under items A, B, C, D, E, and F above.

For purposes of computing extra equipment costs, rates used are based on the Contractor's actual costs for each piece of equipment. These rates must be supported by equipment cost records furnished by the Contractor. Equipment rates will not be allowed in excess of those in the Rental Rate Blue Book with the appropriate adjustments noted in Subsection 109.5. The stand-by rate is 50% of the operating rate."(SCDOT 2007 Standard Specifications Manual).

I did an internal gathering of thoughts through my office and coordinators in the district to come up with a list of the most common delays for our projects. I performed interviews on the phone and by email to gather the needed information from different parts of the state. This list is all the items that we came up with:

List of most common delays

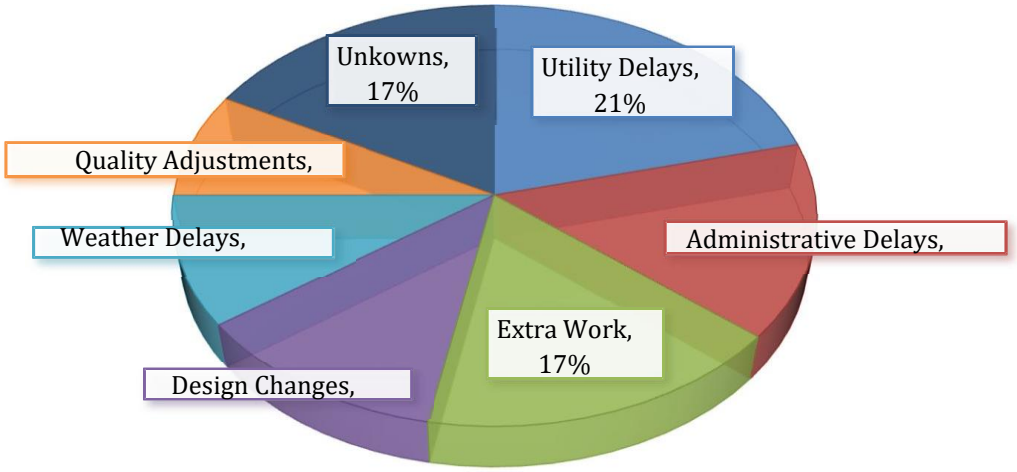
1. Delivery time for equipment…fiber optic, etc.
2. Utility having unlimited time to prove their prior rights documentation. (we have no minimum timeframe)
3. Scheduling delays
4. Utility companies not attending scoping meetings
5. Slow or no response from utility companies
6. No as-built drawings, unsure of what's in project area or where it's located
7. Prior rights issues (mostly power companies)

8. Lack of funding (smaller companies)
9. Incomplete utility deliverables (no-cost, no conflict and agreements)
10. Utility companies not attending utility progress meetings
11. Utility subcontractors not getting relocations completed on time
12. Relocations not placed in designed locations causing problems with other utilities
13. Existing utilities discovered after project construction has begun
14. Lack of urgency by utility companies to complete relocations
15. Projects where there is no SUE or limited SUE and the location of existing utility lines are vague. This causes delays in identifying utility conflicts, due to more field work, such as pot holing by utility companies. This can take several months out of the planning stage. It creates problems in pinpointing relocation corridors, and relocation plan development. It contributes to field delays when locations are different than anticipated, and a redesign is necessary.
16. Power Transmission, Gas Transmission, Larger Water Lines, and Larger Sewer Lines take a minimum of 1.5 years to relocate due to design time, permitting (DHEC etc.), obtaining materials and /or shop fabrication, and acquiring easements.
17. Last minute drainage changes.
18. Limited ROW with drainage taking up the entire shoulder causing utility relocations to be more extensive and complicated
19. Clearing, cut and fill issues – especially when early clearing-cutting and filling is not provided.
20. Boring / Drilling issues where there are steep slopes or rock.
21. Environmental constraints.

Data Analysis

Historical data backs the concern of delays that were mentioned above. Utility relocations are a significant cause of delays in transportation construction projects. Many types of utilities including but not limited to potable water, sewer, gas, telecommunications, and power lines are commonly allowed to use the right of way of public roads as permitted by the highway law described in Title 23 of the United States Code. The right of way, especially in urban and sub-urban regions, is becoming increasingly congested with a number of buried and aboveground utility infrastructure. Many transportation construction projects have conflicts with existing utilities and subsequently require them to be relocated. These conflicts are typically not recognized until about 60% of the transportation project design is completed, and at that stage, it may be difficult to revise the design to avoid utility conflicts. Many times, these conflicts are resolved by relocating the utilities, which could delay the delivery of transportation projects. In the cases where the transportation agency has the prior right of way, the utility relocation work has become a burden to the utility owner due to unscheduled work and unplanned expenses (FHWA 2002). With the changing policies related to reimbursement, many relocation costs are transferred to the transportation agency, especially in the case of public water and sewer utilities. There are several uncertainties often associated with the whole relocation process right from the identification of conflicting utilities to having the utility owners complete the relocation work within scheduled time. As a result, transportation construction projects often get delayed resulting in higher project costs.

Figure 1. *Construction Project Delay Factors* (Gwinn 2006)



Utility relocations are ranked the top cause of construction project delays in a survey of transportation agencies and highway construction contractors (Ellis, Jr. and Lee 2005). A study on delays caused by the relocation of utilities on federal-aid highway and bridge projects found that 20 states reported delays for 0-10 percent of their projects, 8 for 11-20 percent, 6 for 21-30 percent, and 8 for above 30 percent in the fiscal years 1997-98 (El-Rayes et al. 2017; USGAO 1999). As can be observed from Figure 1, the most significant cause of delays to construction projects in South Carolina is utility related, representing 21% of all delays (Gwinn 2006). This is a staggering statistic that merits deeper investigation into the specific causes for those delays and measures to mitigate those delays.

In thinking through the process of finding where SCDOT data is tracked on project lettings, it showed me a valuable lesson on the importance of connecting with everyone in the building. The findings were great to study and review once I received the data. At SCDOT the fiscal year starts July 1st. The letting prep team is tracking the number of proposed lettings, the amount of federal funded proposals, the amount of proposals awarded, the amount of federal proposals rewarded, the amount of proposals rejected, the amount of proposals withdrawn, and the amount of proposals removed from the letting due to not having a utility/ railroad certification. There are other factors that could determine if a project goes to letting, but I'm

focusing only on the utility and railroad aspect. Keep in mind the utility certification started being a requirement in fiscal year 2016-2017. December 2017 is the 1st month that we started requiring the utility certification. In studying the data for fiscal year 2016-2017 the first thing I noticed is there seemed to be a lot more projects removed from the letting each month after the certification was first implemented in December. This data told me a lot of the proposed projects that seemed to have a LET date that initially looked good were flagged and taken out of the letting until all the utility and railroad issues where taken care of. I believe the data started to show the importance of not going to LET if we have not dotted all the I's and crossed all the T's. The removal of the projects from LET probably cost SCDOT less money in the construction phase. See Table 1 below:

TABLE 1

FY 2016-2017

Letting Month	Proposed Projects for Letting	Amount Proposals Let	Amount of Federal Funded Proposals	Amount Proposals Awarded	Amount of Federal Funded Proposals Awarded	Amount Proposals Rejected	Amount Proposals Removed from Letting - No Utility/Railroad Certification
July 2016	62	37	21	30	14	7	7
August 2016	61	36	14	29	8	7	4
September 2016	48	39	13	28	9	9	3
October 2016	41	25	14	20	9	8	5
November 2016	54	43	35	21	15	9	12
December 2016	40	31	19	27	17	4	8
January 2017	62	42	41	34	34	7	12
February 2017	52	29	19	25	18	4	19
March 2017	43	38	30	28	21	10	10
April 2017	42	17	9	16	9	1	15
May 2017	56	37	16	30	13	7	15
June 2017	44	32	6	24	4	8	10

Table 2 shows an increase throughout the entire fiscal year of projects being pushed or rescheduled from the original let date because of utilities. The highest month on table 2 is March of 2018 with 28 projects pushed/ rescheduled for a different let. Table 1 for fiscal year 2016-2017 had a total of 120 projects with a change in the letting because of utilities and railroads. Table 2 had 161 projects with a change for fiscal year 2017-2018 because of utilities and railroad not being certified. That is an increase of 41 projects between fiscal years that were changed. I believe the increase went up mainly because of the slow change in mindsets. The program managers still wanted their projects to remain in the letting based on their original assigned LET date, but with the added requirement of the utility certification of when the plans, specifications, and design criteria had to be turned in was not met the projects had to be removed due to the coordination issue. See Table 2 below:

TABLE 2

FY 2017-2018

Letting Month	Proposed Projects for Letting	Amount Proposals Let	Amount of Federal Funded Proposals	Amount Proposals Awarded	Amount of Federal Funded Proposals Awarded	Amount Proposals Rejected	Amount Proposals Removed from Letting - No Utility/Railroad Certification
July 2017	67	25	13	19	11	6	16
August 2017	49	24	8	9	5	1	12
September 2017	61	35	18	30	16	5	10
October 2017	61	38	16	36	16	2	13
November 2017	52	41	35	23	17	5	5
December 2017	53	21	6	21	6	0	22
January 2018	57	22	5	15	5	0	17
February 2018	26	12	3	12	3	0	10
March 2018	83	37	9	31	6	6	28
April 2018	40	32	5	31	5	1	6
May 2018	63	41	3	37	3	4	10
June 2018	45	27	11	22	8	5	12

After reviewing the data on table 3, I found that it seems the certification process is starting to take root. When I added up all the projects that were pushed from the original letting date in fiscal year 2018-2019 it only added up to a total of 82 projects. The change between projects that needed to be pushed from the lettings from fiscal year 2018-2019 was a total of 79 projects fewer from the letting list of the previous fiscal year. If you study the data, it shows that more consideration has been shown to the importance of utility and railroad coordination for a project in order to have a more accurate let date. It is important to note we offered training statewide in 2018 on utility and railroad coordination to all our internal staff, contractors, consultants, and utility companies in SC. See Table 3 below:

Table 3

FY 2018/2019

Letting Month	Proposed Projects for Letting	Amount Proposals Let	Amount of Federal Funded Proposals	Amount Proposals Awarded	Amount of Federal Funded Proposals Awarded	Amount Proposals Rejected	Amount Proposals Removed from Letting - No Utility/Railroad Certification
July 2018	48	33	10	27	5	6	7
August 2018	32	19	9	17	7	2	9
September 2018	41	27	5	25	4	1	6
October 2018	42	30	11	29	11	1	6
November 2018	41	31	14	30	13	1	5
December 2018	47	31	9	22	7	10	8
January 2019	25	16	2	15	1	1	4
February 2019	45	37	8	35	6	0	3
March 2019	45	29	7	29	7	0	8
April 2019	25	13	5	13	5	0	8
May 2019	35	22	5	21	5	0	6
June 2019	24	7	4	5	2	2	12

The last set of data is from this past fiscal year 2019-2020. I did see an increase in projects that had to be changed because of utility and railroad not being certified. If you add up all the projects pushed from the lettings because of not having the utility and railroad certification it adds up to 148 projects. This increase I believe can be attributed to a change in the law that allows for water and sewer relocations to be included in the SCDOT contracts. I saw firsthand that some of the program managers moved their projects out to a different letting to give the utilities time to get their relocation information to our contractor so it can be done in-contract. Also, COVID-19 contributed to projects not receiving the utility and railroad certification because a lot of the companies had to adapt to changes to staff and working conditions. The changes slowed down their normal ability to get plans, specifications, and project information to SCDOT in a timely fashion. But I have included the Table for review. See Table 4:

TABLE 4

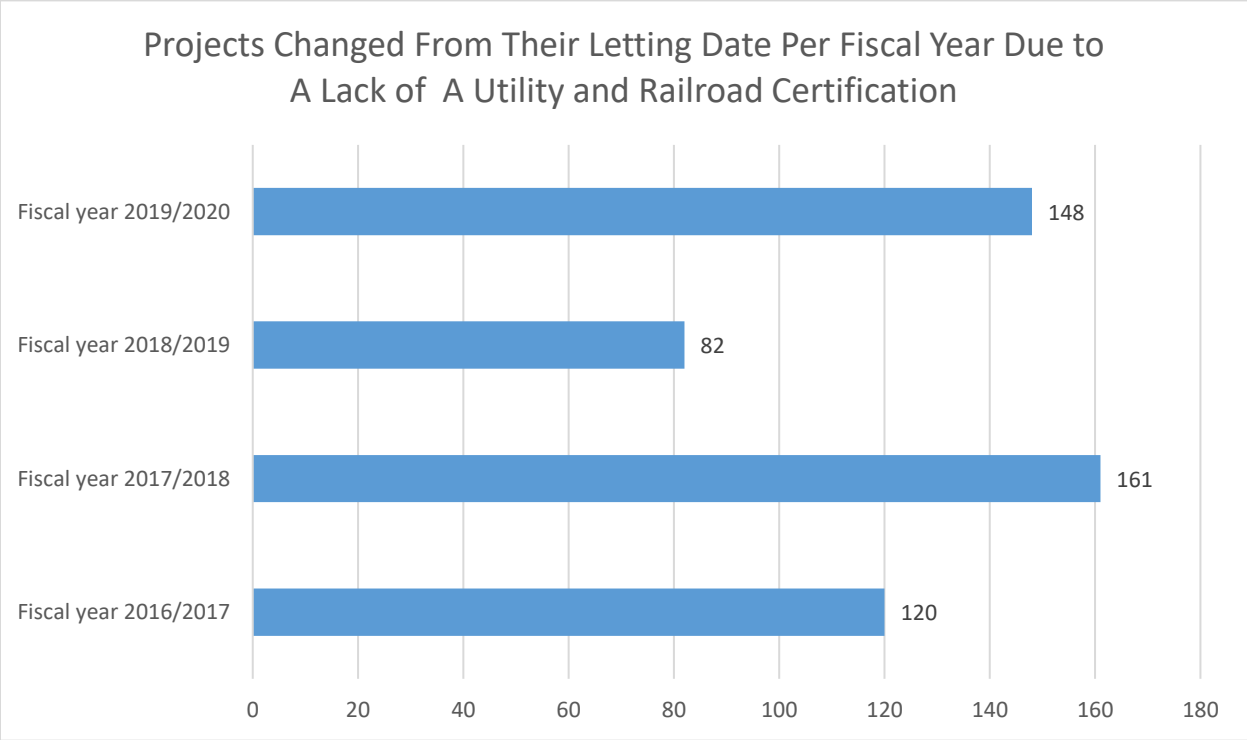
FY 2019/2020

Letting Month	Proposed Projects for Letting	Amount Proposals Let	Amount of Federal Funded Proposals	Amount Proposals Awarded	Amount of Federal Funded Proposals Awarded	Amount Proposals Rejected	Amount Proposals Removed from Letting - No Utility/Railroad Certification
July 2019	40	26	8	24	6	0	9
August 2019	37	15	4	15	4	0	13
September 2019	40	20	9	16	7	2	13
October 2019	39	17	4	16	3	0	15
November 2019	58	45	28	35	20	4	13
December 2019	30	12	1	12	1	0	11
January 2020	36	24	2	23	2	1	11
February 2020	46	32	6	29	5	3	8
March 2020	48	26	4	26	4	0	15
April 2020	35	17	8	17	8	0	12

May 2020	46	25	6	25	6	0	12
June 2020	33	8	4	7	3	0	16

Below you will see a bar chart that summarizes the data per fiscal year. The graph specifically focuses on the number of projects changed from their original let date because of a utility or railroad issue. The goal in all of this is to eventually find that balance of a realistic let date that works with the demands of the state and also take into account what our utility partners can actually handle so we don't have to remove projects from the letting and forecast what projects are actually going to be built correctly. See Graph 1:

GRAPH 1



Conclusions

The idea for this research project was to shed light on changing the mindset and process at the SCDOT to see the value of creating realistic let dates which will lead to more on time

schedules and proper planning. I have already put into action a plan where after this project, I will have a research team made up of graduate students, SCDOT employees, and consultants to use this project and information to implement and find the best ways to have more on time project delivery. They will focus on exploring possible incentives for utility providers to go in-contract which will help with some of the construction delays, they will study other contracts, statutes, regulations, and policies at other states, identify best practices and remedies for the most common delays, identify the best ways of partnering methods with utilities, and provide recommendations for increasing project delivery effectiveness. Once their information and recommendations are in, I will vet their findings with the steering committee I will put together. We will then select a SCDOT project as a pilot project to start turning SCDOT in a direction that will be more cost-effective and more efficient at delivering projects from a utility and railroad standpoint. We will also offer statewide training throughout the course of the year once we have installed our new approach for every district in the South Carolina and answer any questions our industry partners may have.