2019

North Carolina Future City Program: Increasing a Statewide Program Mission, Presence, and Participation to Ensure Institutional Legacy

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Consultancy Project
Executive Summary

Organization: Gardner-Webb University School of Education

Project Title: North Carolina Future City Program: Increasing a
                            Statewide Program Mission, Presence, and Participation to
                            Ensure Institutional Legacy

Candidate: Lisa M. Thompson

Consultancy Coach: Jeff Hamilton, Ed.D.

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Authorized by: Jeff Hamilton, Ed.D.

Amendment History

Version	Issue Date	Changes
Version 1	May 7, 2019	Initial version.
Version 2	May 26, 2019	Incremental changes from previous version.
Version 3	May 28, 2019	Incremental changes from previous version.

Approval

This consultancy project was submitted by Lisa M. Thompson under the direction of the persons listed below. It was submitted to Gardner-Webb University School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Gardner-Webb University.

_____   _____
Jeff Hamilton, Ed.D., Faculty Advisor   Date
Gardner-Webb University

_____   _____
Nancy Shaw, Executive Director,   Date
Future City North Carolina Region

Acknowledgements

I don't need an advanced degree to know that no one gets to where they're going without those who inspire and support them. I have many to thank for being with me on this journey.

I would not have been so fulfilled in my learning had it not been for those with their eyes on the importance of higher education. Dr. Bingham, I'm glad you're a stellar recruiter; thank you for spurring me on and being a steadfast support. Dr. Hamilton, Dr. Jones, and all of the professors who shared your expertise and vision with our cohort–thank you for honoring us as learners and believing in us as individuals.

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Abstract

North Carolina Future City Program: Increasing a Statewide Program Mission, Presence, and Participation to Ensure Institutional Legacy, Thompson, Lisa M., 2019, Consultancy Project, Gardner-Webb University, Digital Commons/Ensuring Institutional Legacy/Building statements of Mission and Vision in an Organization/Creating a Communications Plan/Leveraging Social Media/Social Medial Policy Creation

The future was both the theme and purpose of this Consultancy Project (CP). Future City is an educational program supported by a national engineering organization. This program, with emphasis on engineering principles and activities, provides materials, processes, and structures that support a robust, project-based learning approach. Annually, students in sixth through eighth grade participate regionally, by creating cities of the future based on their solution to a challenge topic that changes yearly. The cycle culminates in a regional competition; regional winners compete in the national event in February. A group of engineers created a North Carolina chapter of the national Future City program in 2001–Future City North Carolina Region (FCNC). In 2013, FCNC became a partner of the North Carolina State University College of Engineering and is now an outreach program of The Engineering Place. The FCNC Steering Committee is made up largely of volunteers; volunteers run almost all aspects of the program. Members of FCNC are committed to the educational value of the program and want to ensure its future. How does FCNC grow in order to provide more students and teachers the opportunity to participate? How does the organization remain a relevant entity so as to promote this impactful learning enhancement? This CP provided a plan to answer those questions and included the following aspects: building a "band of participation" of counties across the state so as to spread awareness and program interaction, focusing on the purpose of the organization by creating mission/vision/values/belief (M/V/V/B) statements with aligned roles and responsibilities, and creating a comprehensive outward-facing communications plan leveraging social media platforms. Results that occurred from November, 2017 through May, 2019 were participation in the Regional Competition Cycle 18/19 increased 108% over the previous year in total number of counties participating; M/V/V/B statements were created and, as a result, a new organizational structure was created; last, a comprehensive communications plan and social media policy were created and implemented. A sustainment statement including analysis, data sets, and recommendations was submitted to the steering committee. It provided action steps and suggestions to continue building a presence and ensuring program legacy across the state of North Carolina.

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1 Introduction

1.1 Project Purpose

Future City North Carolina Region (FCNC) was established in North Carolina in 2001, by a voluntary and dedicated group of professional engineers and supporters, many of whom still serve on the current Steering Committee. FCNC is an organization that is affiliated with the national Future City Competition. National Future City is one of seven sponsored programs supported by DiscoverE. DiscoverE's Mission is "to sustain and grow a dynamic engineering profession through outreach, education, celebration, and volunteerism" ("Mission and History," 2014). Future City

> is a project-based learning program where students in 6th, 7th, and 8th grades imagine, research, design, and build cities of the future. Keeping the engineering design process and project management front and center, students work in teams and answer an authentic, real-world question: How can we make the world a better place? (Future City Program Handbook, 2018-2019, p. 2)

Students involved in the competition create cities that could exist at least 100 years into the future. Regions exist across the U.S. as well as in Canada, China, and Egypt.

FCNC consists of and serves the entire state (100 counties) of NC. Additionally, some schools just across the state line into Virginia also periodically compete in the NC region due to the lack of a regional presence in VA. FCNC acts as a nonprofit, even though the organization is not yet a registered 501(c)(3) organization; but plans are in the works to file for that designation. The entire budget for the organization is provided through donations to the organization.

FCNC has a history of strong support and partnership with North Carolina State University (NCSU), specifically the College of Engineering. As of 2013, FCNC became an official outreach program of the College of Engineering within The Engineering Place, NCSU's K-20 education and resource headquarters for exploring engineering. The Executive Director (ED) of FCNC works in the College of Engineering in The Engineering Place. The ED is the only person with FCNC who has a paid position related to the work of the organization; everyone else who serves on the Steering Committee or is involved with the program is serving in the capacity of a volunteer.

The purpose and end result of this Consultancy Project (CP) with FCNC (the partnering organization) was initially outlined and shared with the Steering Committee in a Statement of Work (SoW), found in Appendix A, and was stated as such:

To assist in the building and creation of a framework for increased presence and participation of currently non-participating counties across NC. The plan will include collaboration with other members of the Steering Committee to facilitate the implementation of this strategic growth plan, including best practices for consistency in communication and timely information dissemination. A Mission and Vision statement will ensure clarity of purpose and a pathway moving forward to guarantee institutional legacy through best-practice actions.

Specific challenges to be addressed were

To increase participation in the Future City Program, and specifically, for increased numbers of represented counties containing schools that matriculate to the competition phase of the program. The challenge for this organization is to follow a clear and strategic plan to grow and sustain the FCNC program. Efforts to increase participation will be focused on increasing the numbers of counties represented at the regional competition in January. In order to grow the program's notoriety within the state, and therefore, to ensure institutional legacy, focusing on increasing the numbers of participating counties across the state is more effective than building numbers of unique participating schools within currently participating counties.

The reader needs to understand two important defining terms and the continuum between "participating/participation" and "matriculation." When participation terminology is used, it refers to schools that have, at the minimum, registered via the Contest Management System (CMS) provided through the national organization. FCNC waives the $25.00 registration fee that is normally charged by each region in order to encourage schools to register. Any school registering receives the program handbook for the year, which contains the challenge topic for that particular year; each school is also contacted by the ED. On one end of the participation continuum, schools may register solely to learn about the program by exploring the materials. In fact, the national organization encourages "educators, parents, and mentors … to adapt Future City to match their particular goals" ((Future City Program Handbook, 2018-2019, p. 7).

In other words, a school does not have to compete ("matriculate") to "do" Future City; in the eyes of the Steering Committee, this interest and minimal participation is important. As the ED noted, any new county that houses a school that is participating in this way now "knows about us." That "knowing" includes receiving and utilizing the materials, communicating with one or several Steering Committee members, and being *aware* of the program, no matter the stage of participation the school

reaches. Of course, schools are encouraged to work through the program; and if schools so choose, they may begin participating with the intent to matriculate to the competition, following all steps and submitting all deliverables through the CMS for judging and scoring. Many things can happen along that continuum, however, that do not result in full participation in all aspects of the actual competition. All schools are, nonetheless, given full support of the Steering Committee as if they were planning to compete. For example, the Steering Committee is responsible for procuring and matching the school with an engineer mentor and will still work to do so, as long as a school requests it. Teams that plan to matriculate sometimes fall short of the deliverable due dates and end up being partial participants in the competition. In late November, the ED begins confirming with schools as to if they are going to matriculate to the competition or if they will attend the competition as a participant. For many counties, there are multiple schools with multiple teams registered within each school; for other counties, it may be just one school participating. Since the focus of this project was to grow the program by numbers of *counties* participating rather than schools, the majority of the data are aligned with that goal.

Project phases originally written as, "Kick Off, Build Phase, Growth Analysis Phase, and Project Hand-Off Phase" within the SoW provided to FCNC at the start of this CP were rewritten into a SMART Goal format to more clearly define action steps for the project. The first SMART Goal addresses creating a strategic plan to increase participation in the FCNC program. The second SMART Goal addresses the creation of Mission, Vision, and Values/Beliefs (M/V/V/B) statements in order to guide the work of the FCNC Steering Committee. It was also important for the candidate to assist in building a comprehensive communications plan and social media policy to support the continued strategic growth of the program; this was Goal three. The last SMART Goal was created as a way to develop documentation of plan performance, so as to provide a hand-off back to the organization, which was developed as a Sustainment Statement, and is found in Appendix J.

1.2 Associated Documents
Associated documents not located within the body of this Executive Summary will be found within the Appendix, including but not limited to the aforementioned SoW for the partnering organization, the SMART Goals and associated progress (Appendix B), and other charts applicable to this CP, listed in Section 3.1.

1.3 Project Plan Maintenance
The project plan was updated as Milestones and SMART Goals were completed; any maintenance or changes took place within the following order:
- Complete Milestone and/or SMART Goal;

- Submit to ED for approval or needed assistance or corrections;
- Share with FCNC Steering Committee and gather feedback where needed and/or applicable; and
- Submit to Consultancy Coach; final copy shared with the partnering organization.

2 Project Scope

2.1 Outline of Partnering Organization's Objectives

2.1.1 Objectives

FCNC, as stated previously, consists of and is currently guided by the members of the Steering Committee. Three of the founding members of the program, along with other members of the Committee, have, for several years, been grappling with many of the organizational questions, challenges, and needs of the FCNC Program and the structure needed moving forward to answer the overarching questions of how to institutionalize and create long-standing structures for sustainability and growth.

When this CP was proposed to the Steering Committee members, they were enthusiastic about supporting a project that would help to answer those critical overarching questions in order to "increase a statewide program mission, presence, and participation to ensure institutional legacy." Additionally, due to the fact that all members, other than the ED, serve FCNC in a purely voluntary capacity, the time constraints inherent in this type of organizational architecture never allowed for a comprehensive study and plan in order to accomplish these objectives. This project allowed for these critical questions to be addressed, without requiring additional time on the part of any of the members of the Committee, other than the candidate. It created a platform for clarity of long-standing questions of organizational opportunity and a vehicle for the acceleration of goals in order to do so.

2.1.2 Success Criteria

Success criteria for the organization were designed by the candidate and agreed on by the Committee. The candidate possessed an intimate knowledge of the needs of the organization, due to serving over 8 years on the Steering Committee. Success was measured as to how thoroughly the four SMART Goals were being met within the scope of the project and how the metrics were furthering the goal of ensuring institutional legacy.

2.1.3 Risks

This CP was specifically designed to mitigate many of the risks that FCNC was facing. Some of the risks inherent within the challenges the organization was facing are as follows:

- Initiative/longevity fatigue; if new members are not recruited and sustained within FCNC, the program could falter as senior Committee members depart;
- Ensuring consistent clarity and understanding of commitments of Committee members in order to bring fidelity to their roles and associated goals; this can be a particular challenge when adding new members to the Committee or changing the roles of existing members;
- Other programs and initiatives also requesting financial support from current and future FCNC donors and sponsors, possible cuts in philanthropic budget line items within sustaining sponsors' organizations, both can create the same threats for FCNC; and
- Institutional/historical knowledge and networked relationships within the engineering community will be lost when founding/senior Steering Committee members leave the organization.

2.2 Outline of Candidate's Objectives

2.2.1 Objectives

As referred to above, the candidate has been working with this organization in some capacity for over 11 years and has served on the Steering Committee for over 8 years. This access allowed the candidate to tailor risk-mitigating objectives to meet long-standing needs of the organization as described in the introduction:

> To assist in the building and creation of a framework for increased presence and participation of currently non-participating counties across NC. The plan will include collaboration with other members of the Steering Committee to facilitate the implementation of this strategic growth plan, including best practices for consistency in communication and timely information dissemination. A Mission and Vision statement will ensure clarity of purpose and a pathway moving forward to guarantee institutional legacy through best-practice actions.

Specific foci of importance for the candidate were the SMART Goals relating to the creation of the M/V/V/B set of statements and implementing a Communications Plan and Social Media Policy.

2.2.2 Success Criteria

Success criteria were based on submitting the deliverables and/or meeting the SMART Goals by the dates published. Some success markers are inherent but not explicitly stated; for example, due to this CP, there is now a body of work and data sets to analyze that are specific to the goals of increasing the presence and ensuring the legacy of the FCNC program. Some of these data are already informing expansion discussions between Steering Committee members and external individuals and entities who were previously unaware of the organization. While this type of action was not written into any of the SMART Goals, it can certainly be considered a result of the work the candidate accomplished for the organization through this CP. As mentioned, SMART Goals and progress can be found in Appendix B.

2.2.3 Risks

The first and major risk for the candidate in undertaking a CP that spans 3 years is one of unforeseen circumstances that may happen with the partnering organization. This risk was actualized for the candidate, as the first five DEOL Milestones of the consultancy were initially undertaken with a different partnering organization. (The original partnering organization owner sold the company, and the candidate had to begin again with a new organization.) Thankfully, FCNC was willing and enthusiastic about having a comprehensive and collaborative study completed. The possible risks for the candidate were associated with the history of involvement in the organization. The possibility of a mismatch between the understanding of the stated goals by members of the Steering Committee and the actual data collected was a concern for the candidate, which fortunately never materialized. The other concern for the candidate was the risk of "scope creep"; but due to a thorough SoW at the beginning of the project and an understanding by the Committee of the scope outlined in that SoW, scope creep was not an issue.

2.3 Definitive Scope Statement

In collaboration with the FCNC organization, the candidate planned to

create a framework to strategically increase the number of unique counties participating in the Future City Program, as measured through school registrations; to increase the number of unique schools participating in the Future City Competition, as measured through registration, project deliverable completion, and participation in the Regional Competition; to create a Mission statement that aligns with the outreach and current Mission of the NCSU College of Engineering and The Engineering Place, the Mission of the National Engineers Week Future City Competition, as well as to create vision statements to align with the FCNC finalized

Mission; to outline a framework for enduring growth and sustainability of the program to ensure institutional legacy for the NC Future City Program.

3 Deliverables

3.1 To Partnering Organization from Candidate

All deliverables to FCNC were outlined within the SoW (Thompson, 2018a) submitted to FCNC at the inception of this CP within the context of SMART Goals 1-3 as well as the Sustainment Statement for the organization, which was created as part of SMART Goal 4 and can be found as part of the Appendices. All dates were "contracted" within the SoW; however, they were estimates of "windows" during which the deliverables would be produced. All charts and information following will be found as Appendices as well: Total Number of counties Participating Each Year, 2013-2019 (Appendix C); Total Number of Teams, Schools, and Counties Participating and Counties Representing Matriculating Schools Years 2013-2019 (Appendix D); Band of Participation Counties and Activities (Appendix E); Agenda for Future City Retreat (Appendix F); Mission, Vision, Values, and Belief Statements for FCNC (Appendix G); Social Media Policy FCNC (Appendix I).

4   Project Approach

4.1   Project Lifecycle Processes

The bulk of the work required and accomplished within the FCNC organization happens in preparation for the Regional Competition that takes place during a weekend day near the middle to end of January each year. This cycle, therefore, provides a clear delineation of where to begin analyzing metrics from the previous cycle and when to begin implementing any changes for the next cycle. This preparation includes all aspects of the work of the FCNC Steering Committee, including but not limited to recruitment of schools, volunteers, mentors, and judges as well as assessing needs and associated projected expenditures to inform fundraising goals. The project lifecycle took place through the dates aligned with the SMART Goals created for the project, which were purposefully aligned with the timeline of the FCNC Regional Competition cycle (Appendix H). For example, SMART Goal 1 was created to leverage the knowledge of the competition cycle in order to frame the build of the "strategic plan to increase participation in the Future City Program, NC Region" and the subheadings of that goal, including creating target counties, contacting county representatives, creating and facilitating an information session during the competition, presenting at a statewide conference for middle years educators, analyzing data from multiple events and sources, and creating a Quality Assurance Plan (see Section 11). SMART Goals 2 and 3 took advantage of "down time" in order to organize, discuss, and begin and/or complete the initiatives but also leveraged the knowledge of the cycle to put initiatives in place to affect the upcoming competition season. This particularly applied to the M/V/V/B statements and the Communications Plan/Social Media Policy.

4.2   Project Management Processes

As stated previously in Section 1.3, the candidate's work followed a clear plan:
-create process/product to answer the SMART Goals;
-share and discuss with the ED for any needed changes;
-share with the FCNC Steering Committee for the same needs; and
-amend/edit if/as needed and submit to Consultancy Coach.

Within the steps discussed with the partnering organization, any needed assistance with project goals or resources was advocated for and supported by the ED and the sponsoring founding member, whose current role on the Steering Committee is that of Director of Judge Recruitment. All results were reported back to the partnering organization as SMART Goals were accomplished.

4.3   Project Support Processes

The need and format of support throughout the CP varied depending on the SMART Goal and components. Sometimes, such as in SMART Goal 1, support came from the archived documents within the collaborative environment in which all the information for previous years is contained. Other times, support

for the project required collaboration and support from key members of the Steering Committee, such as the ED, the founding members, and the Treasurer. For example, interviews were conducted with key members (discussed later in the project). Help was needed from the Treasurer when securing a venue and lunch for the M/V/V/B retreat. Support requests were informal and happened via email, phone, and/or in person.

4.4 Organization

4.4.1 Project Team

The CP was managed through a SMART Goal benchmark structure. The Project Team consisted of the candidate, who, within the FCNC Steering Committee Organizational Chart (Figure 1), serves as the Education Liaison/Advocate. The primary members of the team who were first points of contact, the ED and the Director of Judge Recruitment described in Section 3, are also found in Figure 1.
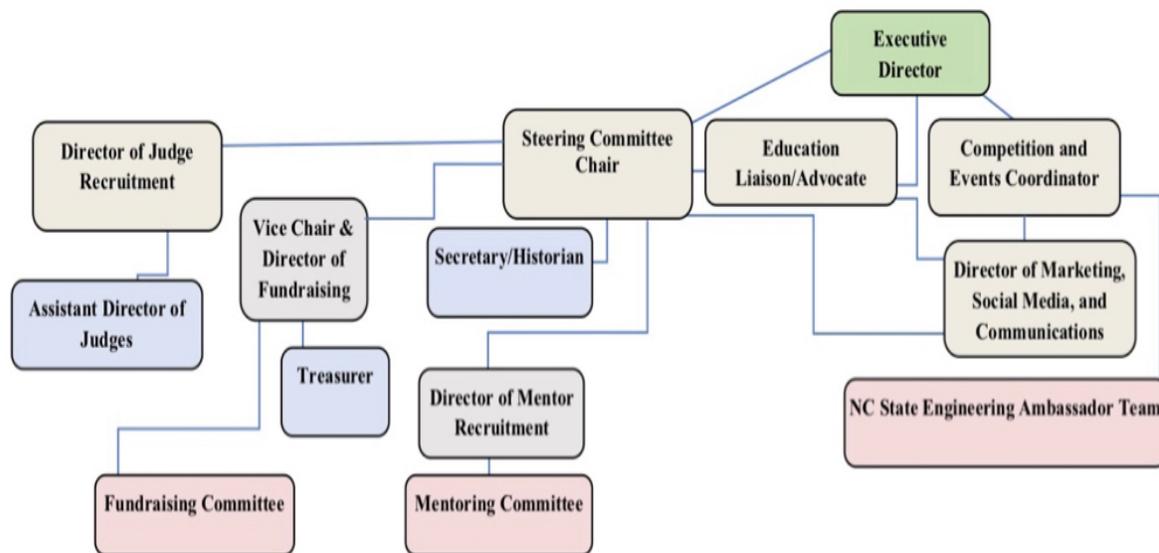
Figure 1. FCNC Steering Committee Organizational Chart.

4.4.2 Mapping Between FCNC Steering Committee and Candidate

As seen in the organizational chart in Figure 2, the candidate, who serves on the Steering Committee in the role of Educational Liaison/ Advocate, is duplicated and then mapped onto particular roles to illustrate the main points of interaction with, and/or support from, the FCNC Steering Committee.
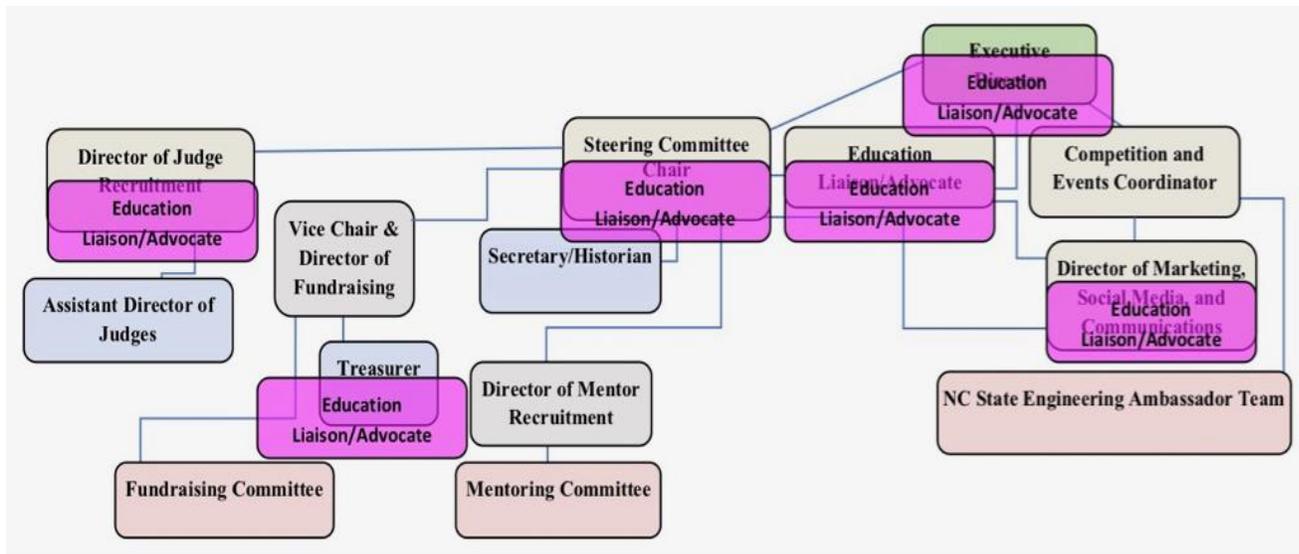
Figure 2. Candidate Mapped onto the FCNC Steering Committee Organizational Chart.

The ED was the main point of contact for the project, as that role is not only primary over the entire Steering Committee, but it is connected to NCSU and the College of Engineering; the Future City Program, as stated in Section 1.1, is an outreach program within that College. The program also currently has freedom to function much as it always has before it was part of the College of Engineering outreach programming. Due to the historical background of the program and Committee within the state of NC as well as the ability for the Steering Committee to continue making independent decisions, it was imperative to have the support and agreement of one of the founding members of the Steering Committee. All functions of the project were also shared with the Steering Committee Chair, as during SMART Goal completion, the candidate needed to ensure time on meeting agendas to discuss current project status and next steps. Interfacing with the Treasurer was also vitally important when analyzing fiscal needs, financial goals, and fundraising status.

5 Communications Plan

Stakeholder	What information do they need?	Why do they need it?	When will they get it?	How will they receive it?
FCNC ED	All findings and metrics within each DEOL Milestone, and any action steps designed to respond to the date discovered	To check for accuracy and adherence to university policies, FC National and local policies, and to correct and/or ask for additional information, if needed, prior to submission to candidate's Consultancy Coach (CC)	2 weeks prior to each DEOL Milestone due date	Via email; discussion scheduled
FCNC Steering Committee	All findings and metrics within each DEOL Milestone; all planned action steps described above	In order to provide feedback, gain clarity, and assist in planning and carrying out next steps	Following discussions with the ED and any needed additions/changes, and prior to submission to CC	In person
Director of Marketing, Communication, and Social Media	Access to platforms and accounts: Website, Twitter, Instagram, YouTube, etc.; Social Media Policy	To market the organization and regional competition effectively	November-December, 2018	In person meetings and email

Figure 3. CP Communications Plan.

6 Work Plan

6.1 Work Breakdown Structure
The work structure for the CP can be found outlined in the SoW, found in Appendix A. The breakdown was originally written in phases: Kick Off, Build Phase, Growth Analysis Phase, and Project Hand-Off Phase. In order to clearly delineate the work and progress, these were rewritten and detailed as SMART Goals, which, as previously mentioned, can be found, along with their corresponding progress statements, within Appendix B.

6.2 Resources
The Gantt chart in Figure 4 illustrates the breakdown and aligned resources.

Future City North Carolina Region Consultancy Project Timeline and Resources					
TASK NAME	Start Date	End Date	Start on Day	Duration (work days)	Resources Required
SMART Goal One-Build a Strategic Plan to Increase Participation in the FCNC Program					
A. Build a band of contiguous counties	11/1	12/1	0	31	Access to FCNC historical data; collaborative platform; help from ED to plan and present; hotel and mileage costs; feedback from Steering Committee members
A.1. Contact target counties and invite to competition	12/1	12/31	30	31	
A.2. Create "Lunch and Learn" information session; present at Regional Competition	1/1	1/20	61	20	
A.3. Deploy "satisfier" and outreach survey	3/1	3/31	120	31	
A.4. Create presentation and deploy during NC Middle Years Educators Conference	2/12	3/5	103	22	
A.5. Analyze goal: 50% increase of new participating counties	9/1	9/30	304	30	
A.6. Quality Assurance Plan Developed	11/1	11/15	365	15	
A.7 Analyze goal: 30% increase in	1/1	1/31	426	31	

	matriculating counties				
SMART Goal Two-Complete Plan for Creation of FCNC Mission/Vision/Values/Belief (M/V/V/B) set of statements					
	B.1. Collaborate with Steering Committee Members	8/1	8/31	273	31	Location; refreshments and lunch; collaborative platform; office supplies; attendance by all Steering Committee members
	B.2. Create agenda and protocols to complete the work; present and facilitate at retreat	8/1	8/25	273	25	
	B.3. Participate in collaborative discussions based on the outcome of retreat and B.2. goals	8/25	9/30	297	37	
SMART Goal Three-Create a Communications Plan and Social Media Policy					
	C.1. Communications plan focuses on types of social media platforms to utilized to align with M/V/V/B statements	12/15	1/27	409	44	Knowledge of social media platforms; legal council; ED; Director of Marketing, Communications, and Social Media
	C.2. Social Media Policy created, approved, and put into effect for Regional Competition	12/3	1/27	397	56	
SMART Goal Four-Create Documentation of Plan Performance against SMART Goals One-Three					

|					
	D.1. Comprehensive overview submitted as Milestone 10	3/15	4/28	499	45	**Access to all CP work to this point**
	D.2. Sustainment Statement created and submitted	4/28	6/15	543	49	
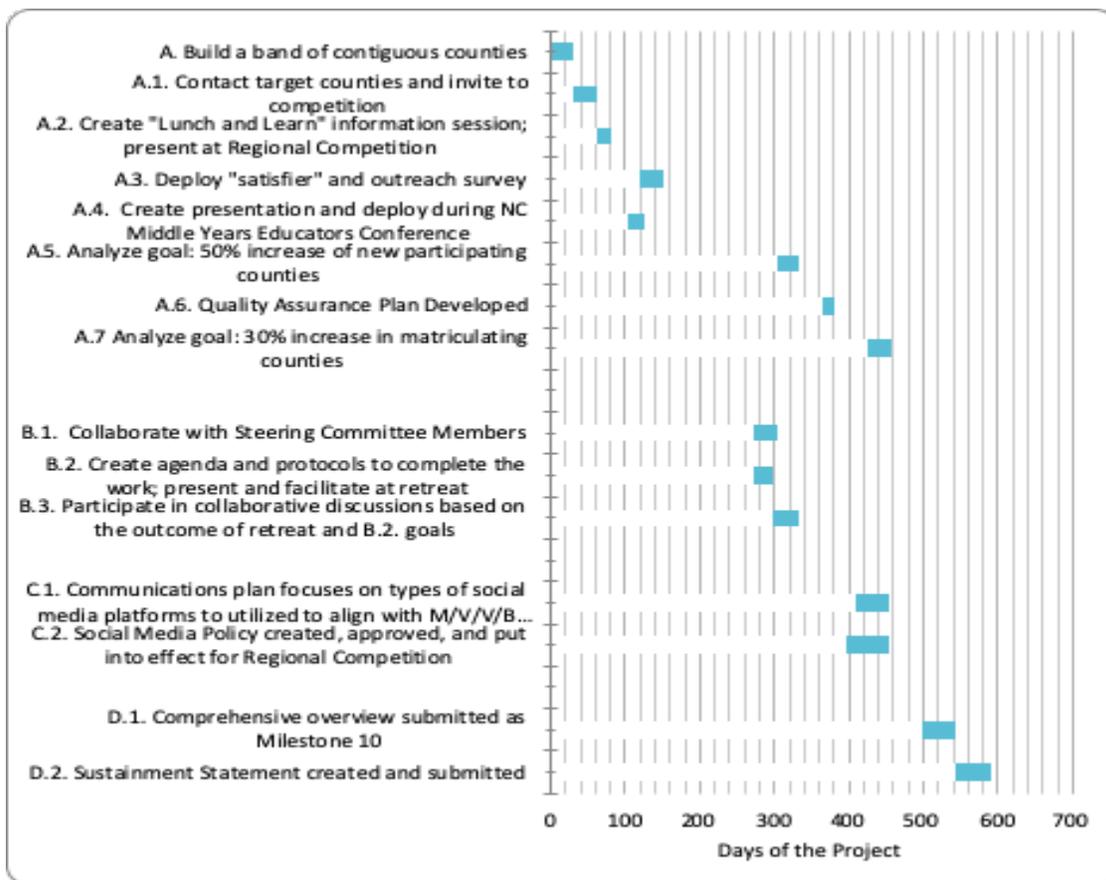
Figure 4. Gantt Chart FCNC Timeline and Resources.

7 Milestones

The Milestones found in Figure 5 are accompanied by titles of *supporting commensurate projects* completed in the Doctorate of Education in Organizational Leadership (DEOL) program. Phasing is located in Figure 4 (Gantt chart) and within the detailed descriptions of SMART Goal progress located in Appendix B.

Milestone Number (Aligned with SMART Goals listed in Appendix B) *Related DEOL Project Titles*	Milestone Title	Forecast date
1 *Culture Change Project*	Strategic Plan to Increase Participation created and deployed	30-Nov-17 22-Oct-17
2 *Qualitative Data Project* *Quantitative Data Project*	Plan for, and creation of, Mission, Vision, Values, and Beliefs statements to drive goals, define roles, and explicitly illustrate purpose both internally and externally	31-May-18 7-Apr-18 7-Apr-18
3 *Social Media Implementation Plan*	Communications Plan and Social Media Policy created and deployed	31-Dec-18 21-July-18
4	Documentation of Performance and Sustainment Statement delivered to FCNC	30-Mar-19 15-June-19

Figure 5. Milestones, DEOL Related Projects, and Forecast Dates.

The Culture Change project (Thompson, 2017) enabled the candidate to successfully navigate the work of the first and second Milestones/SMART Goals through the knowledge of Change Theory as espoused by Bridges and Mitchell (2000), Lewin (Kritsonis, 2004) and Schein (2010). The Qualitative and Quantitative Data projects (Thompson, 2018b, 2018c) created opportunities for addressing "gaps in knowledge," as well as an understanding of the advantages and disadvantages of the "Flatarchy" (Morgan, 2015) structure of the FCNC organization. Within the Qualitative project, the candidate was able to build a more comprehensive understanding about objectives for the FCNC program through in-depth interviews with the ED and two of the program's founding members. Through a survey and analysis within the Quantitative project, the candidate was able to utilize the information to inform the CP. For example, teacher challenges to matriculation (referred to in Section 8) as well as other "satisfier" metrics provided a clearer picture of a range of items such as the flow of the competition day, to the more effective use of the organization's website. The compilation of preliminary trend data during this phase provided foundational information on which the comprehensive data chart, shown in Section 8, was built. The Social Media Implementation Plan (Thompson, 2018d) outlined foci for communications and messaging to be incorporated, in order to target different groups of stakeholders and participants: teachers, students, parents, volunteers, sponsors, and donors. Particular attention was paid to the different platforms of social media and the advantages of those types for different purposes.

8 Metrics and Results

Metrics gathered within the SMART Goals had specific purposes and drove decisions moving forward, in the following broad categories: growth, internal culture and organization, external communications, and recommendations based on those metrics. Metrics gathered within the first SMART Goal informed the candidate and the Steering Committee of specifics regarding who was participating in the program; which counties should be targeted for future participation; and, via a survey within one of the phases of this goal, possible restrainers preventing schools from full matriculation.
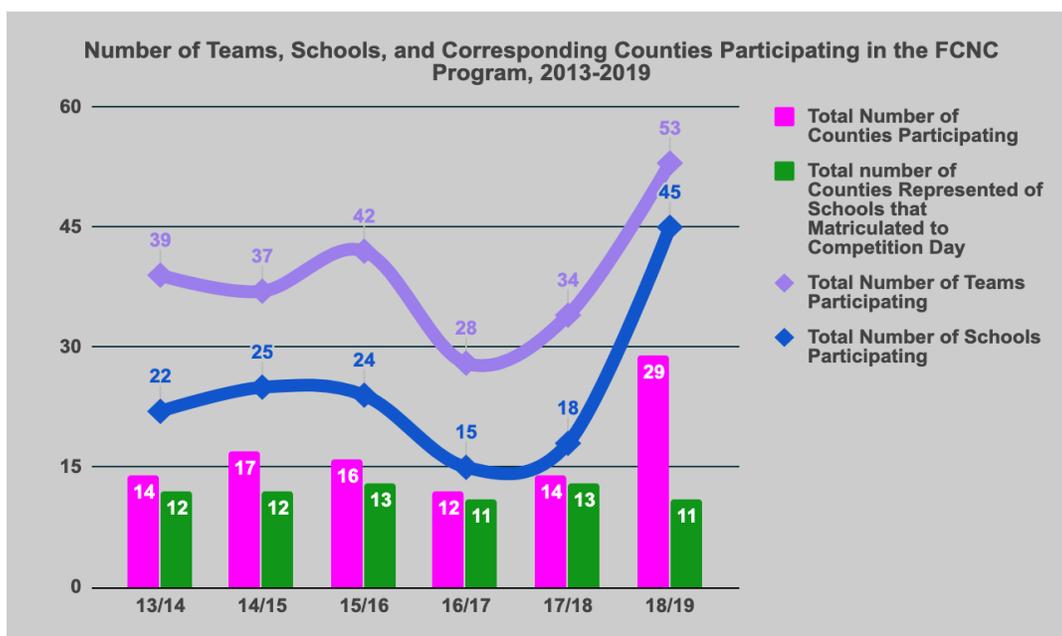
Figure 6. Total number of participating teams, schools, and corresponding representative counties, and matriculating-to-competition counties within FCNC Competition cycles, 2013-2019.

For example, the data illustrated in Figure 6 clearly shows that there is not a positive correlation between the number of counties participating and the number of counties fully matriculating to the competition. In fact, the number of counties matriculating to the competition is almost flat over the course of the 6 years studied. A clear success within this goal was that FCNC reflected a participation increase of 108% over participation in Regional Competition cycle 2017-2018 in *total* number of counties participating. Other metrics gathered within this goal are found in Appendices C and D.

Metrics for the second SMART Goal were focused on the cultural structure of the organization – what FCNC stands for, where the organization wants to "go," and the values and beliefs that will set the pathway for that work. Although the focus was inward facing, the creation of these statements and their consistent use in all

communications added a much-needed outward facing legitimacy and purpose to the organization. The results of this goal – the M/V/V/B statements documents – can be found within Appendix G.

SMART Goal 3 encompassed outward facing communications and leveraging the power of social media. Results were shown in the actual platforms that were created and used during competition: A new website was created, a new Director of Marketing, Communications, and Social Media joined the team; the FCNC Facebook page was reinvigorated; a Twitter account was opened and actively used during the competition; and an Instagram account was created. A Social Media policy was created (Appendix I) and put into place for use beginning just prior to the 2019 Regional Competition.

The last SMART Goal summed up the entire CP for the partnering organization; a Sustainment Statement containing recommendations and considerations as the organization moves forward was delivered to the Steering Committee. That Statement, with its own accompanying charges and appendices, can be found in Appendix J.

9 Risks, Constraints, Assumptions

9.1 Risks

The risks, located in Figure 7, illustrate perpetual risks for FCNC. Highlighted sections under the Mitigation heading have been put into place over the course of 2019.

Risk Description	Impact	Mitigation Plan	Contingency Plan	Likelihood of occurrence
Decrease in funding due to not enough donors and sponsors to cover costs and provide for following year buffer	Using the current end of year balance, the organization could withstand one year of a decrease in funding by curtailing expenditures; it is uncertain if it could withstand two years	Create a more robust fundraising effort, including creating a position for Director of Fundraising; create a fundraising committee; create "stretch goals" for each year the economy is strong to offset future lean years	Cut back on costs of giveaways and food for the Regional Competition; limit the number of teams that can participate from each school	Medium if the organization functions as it did in years prior to 2019; low if the fundraising committee continues the focus and momentum it exhibited during the 2019 competition cycle
Lack of regard for, and/or knowledge of, the adopted M/V/V/B statements	Organization will lose its way; roles and commensurate goals will have no alignment to purpose; donors and sponsors may perceive a lack of organizational legitimacy, which could impact donations	Discuss at Steering Committee meetings; align all work with the statements; put Mission statement on all outward-facing communication	Create another "retreat" opportunity to re-calibrate expectations, goals, and roles	High if the statements are not discussed and reviewed at least once a year
Membership/ leadership fatigue	Founding members leaving the organization-most networked relationships would leave with them; lack of drive and enthusiasm on the part of remaining volunteers	Put a plan in place to recruit and retain new Steering Committee members; consider creating a "leveled" organization of top level Board of Directors, and a task-oriented Steering Committee; founding members begin making introductions between industry connections and existing committee	Petition the university to connect the organization to some current engineering leaders in the community who could serve solely on the fundraising committee	Currently medium as members seem "re-energized"; high as time goes on if no new members and/or structure

Figure 7. Perpetual Risks for the Organization.

9.2 Constraints

The FCNC organization will continue to work under some constraints as it contemplates the path forward. Currently, it is a benefit for the organization to be affiliated with the university. Access to a dedicated student volunteer group through the College of Engineering is critical to the organization of the competition event as well as assistance with other clerical types of duties throughout the year. Visibility and "panache" for the organization due to its affiliation with the university is also a benefit. Where this is a constraint is for the ED of the FCNC organization. Currently and in the future, FCNC needs to be continually mindful that even though FCNC has become one of the responsibilities of that role (Coordinator of K-12 Outreach), it is not the *only* responsibility that is required in this role. In fact, it would be easy to perceive that the burden of responsibilities would be significantly lifted for the rest of this volunteer organization due to the role of the ED. The constraint is that now that FCNC is part of the university programming, FCNC needs collective awareness that that role quite often ends up being more labor intensive than for the rest of the volunteers due to that dual status. This year, due to the M/V/V/B focus, roles were reallocated and responsibilities were reconfigured to create more of a scaffolded structure to create additional supports and disseminate tasks. FCNC needs to continue to be mindful of this and respond accordingly.

Another constraint that appeared due to the university partnership is the fact that the FCNC organization needs to ensure an "agnostic" platform in which to archive all documents relating to the organization. The university operates in the Google environment; and the fact that Google Drive is built to be cloud-based and collaborative and due to account permissions, there is no limit on storage space. All files were housed there and shared with the rest of the Committee members. The constraint is again due to the benefit: Having a secure environment that is tied to a position outside of our organization is problematic. Not only could there be security issues for the EC and the university, the EC is also sometimes limited as to who has granular permissions to particular documents. This was remedied to a point this year, as a Google account was set up to be an "agnostic" account, not tied to any one person, and accessible by anyone with the credentials. Most files were migrated to this account. Another constraint FCNC will need to consider, and sooner rather than later, is the issue of storage space. If the Committee likes this platform, extra space can be purchased, but that will also add an additional yearly, although small, constraint on the budget and will then be something that cannot be cut back in "lean" times.

9.3 Assumptions

This CP was contracted according to the following assumption statement:

> The FNCN Steering Committee members desire a structure to outline the building and creation of a framework for increased presence in currently

non-participating counties across NC and continued participation of currently participating counties across NC. This plan will include collaboration with other members of the Steering Committee to facilitate the implementation of this strategic growth plan. The Committee and stakeholders are able to identify restrainers to carrying out this goal. The Committee members will collaborate to create a Mission and Vision statement to ensure clarity of purpose and a pathway moving forward to guarantee institutional legacy through best-practice actions. The Mission and Vision will align with the Mission and Vision of the College of Engineering/The Engineering Place at NCSU (College of Engineering, n.d.) and with the goals of DiscoverE (Future City/DiscoverE Engineering, 2014), the national organization under which the national Future City Competition is housed (Future City Competition, n.d.).

10 Financial Plan

Background for understanding: It is important to note that the only source of income for FCNC is through sponsorships and donations. The success of fundraising is largely due to historic networked relationships between the engineers and founders on the Steering Committee. As mentioned previously, the organization is also run solely by volunteers; the only compensation involved are stipends given to the Engineering Ambassadors, which are NCSU engineering students. These stipends come through the College of Engineering at NCSU.

During the work of the CP, the candidate met with the Treasurer of FCNC. He shared that FCNC had been running close to cost-neutral for many years, but over the course of the last few years, began exceeding funds raised. The organization has been dipping into reserves over the course of the last several years, to the cost of ~$3,000 each year. He discovered this during an audit conducted in order to conceptualize needs moving forward. His concern was that if the trend continued, FCNC would not be able to hold the competition after 4 years. In July 2018, there was a reserve of $15,527,23. At that time, actual cost for competition cycle 2017-2018 was $27,576.04; actual revenue from fundraising was $29,500 (these figures fluctuated some due to the Treasurer's investigations to clarify the budget before the season started). Funds raised minus costs only added an additional $1,413.96 to the balance in the reserves, which did not even clear the halfway marker of the estimated dip into the reserve for the upcoming cycle. Additionally, beginning in the 18/19 competition season, the FCNC Steering Committee had pledged to raise and submit $5,000 to NCSU College of Engineering/The Engineering Place to offset the cost of stipends to pay the Engineering Ambassadors who assist with all aspects of competition preparation. The goal then, to stay cost-neutral in order to not dip into reserves, would be to raise $33,000. Even this was not ideal, however, as that number would not grow the reserves moving forward to 2019-2020. Given all these factors, the Treasurer set a needs goal of $38,000.00 in revenue to be raised, in expectation of a neutral cost/ benefit and no dip in reserves, and to also allow for an addition of $3,000 to the reserve funding. He then challenged the organization and set a stretch goal of $42,000.00-$44,000.00 to allow for more buffer of reserves going into the next competition cycle.

The outcome for the 2018-2019 competition cycle is reflected in Figure 8. It is important to note that these numbers are solid enough to understand the big picture but may fluctuate some as final invoices and pledged donations become reconciled through the end of the fiscal year. Additionally, within the work of the August 2018 M/V/V/B retreat and the resulting discussion of codifying roles and goals, one of the Steering Committee members was approached to be the Director of Fundraising and to work directly and in a collaborative relationship with the Treasurer. The recommendation was accepted; the structure was in place for the 2018-2019 competition cycle.

Financial Information for 18/19 Cycle (As of March 30th, 2019)		
Category	**Notes**	**Figures**
Remaining Balance from Competition Cycle 2017-2018		$15,527.23
Number of Sponsors		25
Estimated Donations	(based in previous year's donations of $29,500 and goal to remain neutral)	$33,600.00
Actual Donation Revenue	(based on actual amount pledged by donors/sponsors)	$43,500.00
Estimated Competition Expenses	(based on previous year's expenses)	$38,738.40
Actual Competition Expenses		$37,463.06
Net End of Year (Revenue) Projected	(based on the additional new expenditure of $5,000 to NC State for stipends for students)	$10,388.83
Net End of Year Balance (Revenue) Actual	**End of year balance=Remaining balance of $15,527.23 + 6,036.94 net**	$21,564.17

Figure 8. Financial Information for Competition Cycle 2018-2019.

Positive results are attributed to the skill set of the Director of Fundraising, in conjunction with the Treasurer's vision, and a renewed focus and purpose of funding needs are reflected in the following outcomes illustrated in Figure 9. The estimate of costs was exceeded – total expended is currently estimated at $37,463.06; but due to the robust fundraising efforts, the FCNC Steering Committee members raised $43,500 which resulted in a net gain of $6,036.94. This was a big success for the organization. During the postmortem meeting, however, members discussed that there needs to be a plan moving forward about how to strategically fundraise, so the organization will be able to weather any fluctuations over time to account for flush and lean years.

Sponsor/Donor Information Competition Cycle 2018-2019		
Category	Notes	Figures
Number of Sponsors/Donors		25
Total number of new Sponsors/Donors		6 of 25
Pledge Totals from New Sponsors/Donors		$6,250.00
Number of Sponsors/Donors from 2017-2018 Competition Cycle increasing their donation for 2018-2019		7 of 19 total former donors
Total Amount of increase over 2017-2018 from Sponsors/Donors who increased their donation for 2018-2019	Breakdown of increases: 3-$250 1-$500 1-$1,000 1-$2,500 1-$3,000	$7750.00
New and increased amounts from Sponsors/Donors		$14,000
Total of ALL donations from all Sponsors/ Donors (actual pledged revenue)		$43,500.00

Figure 9. Sponsor/Donor Information Competition Cycle 2018-2019.

11 Quality Assurance Plan

The Quality Assurance Plan, in Plan, Do, Study, Act (PDSA) format, relates to the Sustainment Statement and goals for the organization, rather than a plan for the CP. As mentioned earlier, the entire Sustainment Statement for FCNC and the associated Steering Committee can be found in Appendix J.

PLAN	1. Revisit goal categories and role responsibilities each year for alignment with Mission and Vision of organization- what are our targets?
	2. Monitor and compare registered schools and county locations against similar data from previous year-is additional recruiting needed based on #1?
	3. Yearly timeline of duties, responsibilities, and events followed-are changes needed?
	4. Review end-of-year expenditures to analyze for effectiveness-is reprioritization needed? Targets met? Additional donors needed?
	5. Analyze registered schools to project current year budget and volunteer needs-how much/how many do we need?
	6. Analyze efficiency/location/needs of previous year's competition cycle-are changes needed?
	7. Create "satisfaction markers" for targeted measures of improvement-do teachers and volunteers feel prepared and supported?
DO	1. Implement goals for current year as assigned to roles of Steering Committee members and M/V aligned responsibilities
	2. Support participating schools though the competition season; monitor Steering Committee roles and sub-committee responsiblities, particularly those supporting deliverables and providing mentors to schools
	3. Follow timeline; action items aligned with Steering Committee and sub-committee roles and responsibilities
	4.& 5. Fundraise and recruit volunteers; responsibilities aligned with Steering Committee and sub-committee roles and responsibilities
	6. Execute competition cycle changes created through analysis and agreed upon by Steering Committee Members, including event location, purchases, and day of event support needs
	7. Executive Director creates and deploys teacher and volunteer survey based on "satisfaction markers" created in plan stage
STUDY*	1. Executive Director and Steering Committee Chair evaluate goals and position responsibility alignment and effectiveness based on agreed yearly acton steps for targets
	2. Committee and sub-committee members analyze and compare current year data to previous year to analyze trends of participation by numbers, teams, and counties; Executive Director and Steering Committee chair monitor goal accomplishments
	3. Executive Director and Steering Committee Chair monitor timeline accomplishments; enlist committee members' assistance to monitor goals to stay on-track
	4. Treasurer tracks donations and expenditures; reports back to committee for short and long-term targets and decisions; works with Director of Fundraising to procure donations
	5. Members responsible for volunteer recruitment monitor for need (Directors of Judges, Deliverables, Mentors, and Student volunteers)
	6. Disaggregate components of efficiency, location, and fiscally driven needs to drive following year's competition; analyze NC State students volunteer time logs to help analyze efficiency compared to previous year's logs
	7. Study teacher and volunteer survey results to determine if "satisfaction markers" are increasing, decreasing, or staying the same; create action plan based on results
ACT	At competition's end, hold a "post-mortem" meeting; meeting will formalize the "STUDY" (qualitative and quantitative) data in order to drive the markers at which to begin the following year's PLAN cycle. THOROUGHLY record and archive all discussions during meeting in case of Steering Committee membership changes.

*#2: Data to be compared: previous year's participation of counties, schools, and # of teams matriculating to the competion vs. registering and not competing; key performance indicators would be to increase (by no less than 2) counties new to the current year vs. previous year, as well as an increase in schools and/or teams matriculation to the competition; for number of schools, the key performance indicator would be determined by number of teams the current venue can accomodate; this last consideration will determine which will need to change-number of schools or location of event

Figure 10. Plan, Do, Study, Act (PDSA) Model for Quality Assurance of the FCNC Program.

References

Bridges, W., & Mitchell, S. (2000, January). Leading transition: A new model for change. Retrieved October 05, 2017, from http://www.crowe-associates.co.uk/delivering-change-2/transitions-a-new-model-for-change/

College of Engineering. (n.d.). Retrieved April 16, 2019, from https://www.engr.ncsu.edu/theengineeringplace/programs/

Future City Competition. (n.d.). Retrieved April 16, 2019, from https://futurecity.org

Future City/DiscoverE Engineering. (2014, January 06). Retrieved from http://www.discovere.org/our-programs/future-city

Future City Program Handbook 2018-2019. (n.d.). The official program handbook for the Future City Competition, 2018-2019. Retrieved from https://futurecity.org/form/resources?download=/sites/default/files/2018-07/2018-2019_Program_Handbook_hi.pdf

Kritsonis, A. (2004). Comparison of Change Theories. *International Journal of Scholarly Academic Intellectual Diversity,8*, 1st ed., 1-7. For Kurt Lewin three-step change model

Mission and History. (2014, January 06). Retrieved from http://www.discovere.org/about-us/mission-and-history

Morgan, J. (2015, July 20). The 5 types of organizational structures: Part 4, Flatarchies. Retrieved from https://www.forbes.com/sites/jacobmorgan/2015/07/15/the-5-types-of-organizational-structures-part-4-flatarchies/

Schein, E. H. (2010). *Organizational culture and leadership* (4th ed.). Hoboken, NJ: Jossey-Bass.

Thompson, L. M. (2017, October 22). *Culture change project* [Scholarly project].

    Retrieved April 16, 2019.

Thompson, L. M. (2018a, July 21). *North Carolina future city program: Increasing a*

    statewide program mission, presence, and participation to ensure institutional

    legacy statement of work (SoW) [Scholarly project]. Retrieved April 19, 2019.

Thompson, L. M. (2018b, April 7). *Qualitative data project* [Scholarly project].

    Retrieved April 16, 2019.

Thompson, L. M. (2018c, April 7). *Quantitative data project* [Scholarly project].

    Retrieved April 16, 2019.

Thompson, L. M. (2018d, July 20). *Social media implementation plan* [Scholarly

    project]. Retrieved April 16, 2019.

Appendix A

Statement of Work (SoW)

North Carolina Future City Program:

Increasing a Statewide Program Mission,

Presence and Participation

to Ensure Institutional Legacy

STATEMENT/SCOPE OF WORK

Lisa Thompson, Candidate

Doctorate of Education in Organizational Leadership

NOVEMBER 7, 2017

INTRODUCTION/BACKGROUND

-Future City North Carolina Region (FCNC) is an organization that is affiliated with the national Future City Competition. National Future City is one of seven sponsored programs supported by DiscoverE. DiscoverE's Mission is, "..to sustain and grow a dynamic engineering profession through outreach, education, celebration, and volunteerism."

-FCNC is in its 17th year as an active, participating regional affiliate. FCNC consists of and serves the entire state (100 counties) of NC. Additionally, some schools just across the state line into Virginia also periodically compete in the NC region due to the lack of a regional presence in VA.

-The original founders of the Regional Steering Committee are still active participants on the current Steering Committee.

-Future City NC Region started out as an all-volunteer group of engineers and supporters. FCNC has a history of strong support and partnership with NCSU, specifically the College of Engineering. As of 2013, Future City NC became an official outreach program of the College of Engineering within The Engineering Place, NCSU's K-20 education and resource headquarters for exploring engineering.

-I have been volunteering with FCNC since 2008, and have been part of the Steering Committee since 2010, serving as a member and previously as a co-chair of the committee.

-Challenge: To increase participation in the Future City Program, and specifically, for increased numbers of represented counties whose schools matriculate to the competition phase of the program. The challenge for this organization is to follow a clear and strategic plan to grow and sustain the FCNC program. Efforts to increase participation will be focused on increasing the numbers of counties represented at the regional competition in January. In order to grow the program's notoriety within the state, and therefore, to ensure institutional legacy, focusing on increasing the numbers of participating counties across the state seems, as this time, more important than building numbers of unique participating schools within currently participating counties. Additionally, a challenge as well as a necessity will be to meld Mission statements of both the National Future City Competition program with the program Mission of The Engineering Place, and blend them with goals of this Steering Committee to create a Mission for the NC Future City Program. Vision statements outlining a pathway for growth of participation will ensure that the legacy of the program continues as members leave and enter roles on the Steering Committee.

-Purpose and end result of project/proposal: To assist in the building and creation of a framework for increased presence and participation of currently non-participating counties across NC. This plan will include collaboration with other members of the Steering Committee to facilitate the implementation of this strategic growth plan , including best practices for consistency in communication and timely information dissemination. A Mission and Vision statement will ensure clarity of purpose and a pathway moving forward to guarantee institutional legacy through best-practice actions.

-Consultancy will also include collaboration with other members of the FCNC team, to leverage their unique skill sets and connections. Leverage of external STEM

stakeholders and community connections so as to build the program will also be an embedded function of this Scope of Work.

SCOPE OF WORK

The Scope of Work (SoW) for Future City NC will include:

1. Collaboration over the course of the project with Xxxxx Xxxx, Academic Advisor, Lecturer, and Coordinator of Outreach, NCSU, Xxxxx Xxxxxxx, President & CEO, Simpson Engineers & Associates; Founder, FCNC, and other Founders and members of the FCNC Steering Committee. *Collaboration will be conducted in person and virtually, and will occur at an interval mutually agreed upon by all parties.*

2. Creation of a framework to strategically:
   A. Increase the number of unique counties participating in the program, as measured through registration in the contest management system
   B. Increase the number of unique schools participating in Future City NC competition, as measured by registration in the contest management system, project deliverable completion, and participation in the Regional Competition

3. Create a Mission statement that aligns with the outreach and current Mission of the NCSU College of Engineering and the Engineering Place, and the Mission of the National Engineers Week Future City Competition; create vision statements to align with those Missions, and outline a framework for enduring growth and sustainability of the program to ensure institutional legacy for the NC Future City Program.

Not included in the scope of work for this project is any work on the FCNC website, or other work not named in this SoW document.

PERIOD OF PERFORMANCE

The period of performance for the Future City NC project will be November 7th, 2017, through April 30th, 2019.

PLACE OF PERFORMANCE

The work will take place virtually and/or in person, within select locations in the Raleigh/Cary area, and other locations agreed upon mutually by parties named in this SoW. Workspace will be flexible, depending upon the venue in which work will be accomplished or meetings are attended.

GOALS/MILESTONES/WORK OUTLINE

The below list consists of the initial milestones and work outline identified for the Project, "*North Carolina Future City Program: Increasing a Statewide Program Mission, Presence and Participation to Ensure Institutional Legacy.*" These items are organized by type of category under which they will be accomplished.

Kick-Off:
1. Candidate will present SoW for approval by Xxxxx Xxxx, Chair, FCNC Region, and Xxxxx Xxxxxxx, President & CEO, Simpson Engineers & Associates; Founder, FCNC, by November 7th, 2018.
2. By the end of November, 2018, the candidate will have created a strategic plan to:

A. Target 12 counties currently not participating, so as to form a "band of participation" of contiguous counties from the mountains to the coast (Avery, Alexander, Davie, Davidson, Alamance, Orange, Chatham, Harnett, Cumberland, Johnston, Wilson and Pitt). These targeted counties share a border with a currently participating county, and have been chosen to create "the band"; additionally, a consideration as to the choice of these particular counties is that they border an experienced participant county for whom they can call for questions, tips, etc.

B. Target 3 additional counties in which there are middle schools currently not participating, but that have received STEM Schools of Distinction status as designated under the North Carolina Department of Public Instruction's (NCDPI) STEM Recognition Program (Surry, Cabarrus, Martin).

C. Facilitate assignment of representatives from 3 additional counties to volunteer positions at the 2018 Competition; volunteers came forward after an invitation went out through a NCDPI list serve blast (Lincoln, Person, Hoke).

Build Phase:

3. By mid-late December, 2017, the candidate will have created, deployed, and compiled results of an invitation/survey for ~30 representatives, 2 from each *target county,* to attend the Future City NC Regional Competition, taking place on Saturday, January 20th, 2018.

4. By early January, 2018, in preparation for the 2018 FCNC Regional Competition, the candidate will have created a "Lunch and Learn" for the invited *target county* representatives. 30 will be invited; expect 25 to attend.

5. By end of March, 2018, the candidate will have created, deployed, and compiled data from Plus/Delta surveys of the Future City NC Competition process, as well as ideas for outreach in *existing* counties, from participants at the 2018 competition.

6. By end of March, 2018, the candidate will have co-presented at the North Carolina Association for Middle Level Education annual conference on the FCNC program.

7. By end of May, 2018, the candidate will have put a structure in place to begin the build of the Mission and Vision for FCNC. Completion target: January, 2019.

Growth Analysis Phase:

8. By early August, 2018, FCNC will see a 50% increase (based on 16 counties participating in the 2017 Competition) over 2017 in registered, unique (did not participate in 2017) counties, as evidenced by the FCNC CMS database.(Target increase =8 counties)

9. By early August, 2018, the candidate will have developed an outline of preparation for Phase 2 implementation, to include: strategies, activities, timelines, responsibilities, outcomes and to-date results, for all phases of the project, including in internal and external communications plan, based on the previous strategy (targeting counties in original list that did not matriculate to Competition; targeting additional counties to expand the "band of participation," reaching out to counties that expressed an interest in the previous year but missed the registration cut-off).

10. By end of September, 2018, the candidate will have collaborated with other Steering Committee members to estimate the needed budget to implement Phase 2 implementation.
11. By early November, 2018, the candidate will have developed a quality assurance plan to include measures to the effectiveness of project plan phases.
12. By January, 2019 Competition date, FCNC will see a 30% increase in fully matriculated to Competition counties, as evidenced by participation in the FCNC Regional Competition, January, 2019. (Target increase~5 new counties)

Project Hand-Off Phase:
13. By mid-March, 2019, the candidate will develop documentation of plan performance against these SMART goals.
14. By mid-June, 2019, the candidate will have prepared a sustainment statement and plan for FCNC, based on learnings and results of the enumerated goals.

ACCEPTANCE CRITERIA

For the project, "*North Carolina Future City Program: Increasing a Statewide Program Mission, Presence and Participation to Ensure Institutional Legacy,*" the acceptance of all deliverables and task completion will be mutually agreed upon by Xxxxx Xxxx Academic Advisor, Lecturer, and Coordinator of Outreach, NCSU, Xxxxx Xxxxxxx, President & CEO, Simpson Engineers & Associates; Founder, FCNC, and Lisa Thompson, DEOL candidate. In order to insure success, project phases may need to be extended beyond the initial dates designated in the Goals/Milestones/Work Outline section.

Once all project tasks have been completed, the project will enter the handoff/closure stage. During this stage of the project, the candidate, Nancy Shaw, David Simpson, and any other interested Steering Committee members, will create a project task checklist for continuation.

Any discrepancies involving completion of project tasks or disagreement between the candidate, Xxxxx Xxxx and Xxxxx Xxxxxxx, will be reviewed and discussed to come to mutual agreement.

ACCEPTANCE
Signatures included in original document.

Appendix B

SMART Goals and Progress Documented

I SMART Goal I-By the end of November, 2017, the candidate will have created a *strategic plan to increase participation* in the Future City Program, NC Region:

A. Build a "*band of participation*" of contiguous NC counties from the mountains to the coast by targeting 12 counties that, according to reviews of records kept since 13/14, never participated in the program, or had not participated within the last two to three years: Avery, Alexander, Davie, Davidson, Alamance, Orange, Chatham, Harnett, Cumberland, Johnston, Wilson, and Pitt; three additional counties that also fall within the participation parameter and that also have the NC STEM school of distinction designation will also be targeted: Surry, Cabarrus, Martin; total targeted counties: 15.

  1. By end of December, 2017, the candidate will have contacted each target county to identify appropriate representatives for communications; the candidate will have created and deployed a survey and compiled responses of the 30 representatives (two from each target county) invited to attend the Future City NC Regional Competition taking place the end of January, 2018.

     PROGRESS: Representatives from the target counties were contacted. Eight representatives responded to the survey. The invitation survey was also sent to two representatives from Perquimans County and one from the NC Museum of Science. They contacted the candidate requesting interest about FCNC via

**a Department of Public Instruction listserve blast. The other
respondents were: two from Orange, one from Wake, one from
Davidson, and one from Harnett.**

2. Candidate will create a "Lunch and Learn" informational session for
up to 30 representatives; session will take place during the Regional
Competition in January, 2018; target attendance goal: 25 county
representatives.

    **PROGRESS: Out of those responding in #1 above, one from
    Wake, one from Davidson, and two from Perquimans County
    attended. Another long time participant from Robeson County
    saw our invitation listed in the Regional Competition program and
    decided to attend; she ended up adding much to the conversation
    about the importance of the program. Orange County responded
    and said they would not be attending due to weather factors.
    Actual attendees: five. Even though we did not reach the target
    number of attendees to the Lunch and Learn, Perquimans County
    participated in the program for the first time during the
    competition cycle for 2018/2019, and matriculated to the Regional
    Competition. This was a small yet important success marker.**

B. By the end of March, 2018, the candidate will have created and deployed a
survey, and compiled data from participants in the Future City Competition
process for the 2018 competition cycle, including ideas for outreach into
currently participating counties.

PROGRESS: The survey response was 29%, or 15 out of 52 surveyed teachers, mentors, and non-NC State volunteers responding. Even though the response rate was low, it provided important information for the Committee to consider, especially in the area of the "satisfier" types of questions. Responses that provided focus for consideration by the FCNC Steering Committee were those around the mentor procurement process, and about the restrainers that middle school teachers experience when trying to implement or utilize the Future City program at their school. Other areas of the survey asked questions about how to improve the regional website. This data wasoutlined in the Quantitative Project submitted with Milestone 6.

C. By the end of March, 2018, the candidate will have created an agenda and presentation about the FCNC program, to be co-presented with the Executive Director of FCNC, at the North Carolina Association for Middle Level Education annual conference; additionally, the winning team from the 2018 NC Regional Competition will be part of the presentation.

PROGRESS: Small number of attendees overall; the candidate and the ED for FCNC presented at two sessions; the FCNC Regional Competition winning team for the 2018 also presented. Attendees at these sessions represented two counties that have participated in the FCNC Program previously-Mecklenburg County (Charlotte Mecklenburg Schools), and Buncombe County (Asheville City Schools) and two counties that had not participated in FCNC during the span of time identified in the SMART

goal (Alexander and Caldwell counties; Alexander County is one of the 15 identified "band of participation" counties).

D. By the end of September, 2018, FCNC will see an increase of 50% over Regional Competition cycle 17/18 (13), of NC counties that, according to records kept since 13/14, never participated in the program, or had not participated within the last 2-3 years; counties targeted will include the 15 listed in A; target total for increase: 20 counties.

PROGRESS: FCNC reflected a participation increase of 108% over participation in Regional Competition cycle 17/18 in *total* number of counties participating: Competition cycle 17/18-*13* total counties; Competition cycle 18/19-*27* total counties. This is an increase of 14 counties within one year. See chart entitled, "Total number of Counties Participating Each Year, 2013-2019." Out of those participating in 18/19, *11* (nine were NC counties, two were VA counties) of them were new to the program, and four of the 11 NC participants were part of the original 15 targeted "band of participation" counties. While there was no target goal for increase of total number of counties participating, this is a very positive outcome. This total will become a baseline for the 2019-2020 competition cycle. The picture is a bit more complicated if one focuses on those particular "band of participation" counties. Out of the 15 targeted counties, four out of the 15, or 27% of the target, actually participated this year; see chart, "Band of Participation Counties and Activities."

E. By mid-November, 2018, the candidate will have developed a quality assurance plan to include measures to the effectiveness of project plan phases.

PROGRESS: The candidate facilitated the creation of a

working/deliverables timeline at the end of Regional Competition cycle

2017-2018. That timeline became a collaborative document, with all

members adding to it as they saw fit. Once it was finalized, it was used it

to align and model the Quality Assurance Plan created for Milestone 9.

F. By the FCNC Competition date in January, 2019, the organization will see a

30% increase in fully matriculated-to-competition counties over those that

participated in the 2017 Competition. Counties matriculating in 2017: *11*; in

2018: *13*.

PROGRESS: Results for 2019 in number of fully matriculated

representative counties: *11*. See, "Data table for Total Number of Teams,

Schools, and Counties Participating; Counties Representing

Matriculating Schools Years 2013-2019," located in the Appendix section

of the ES. See also Figure 6 located in the body of the Executive

Summary. In reading Figure 6, it is clear that over the course of the time

studied, the number of counties participating does not have a positive

correlation to the number of counties representing schools matriculating

to the competition. This brings up questions for the Steering Committee

that will be outlined in SMART Goal IV.

II SMART Goal II-By the end of May, 2018, the candidate will complete a *plan for*

creation of a Mission, Vision, and set of Values/Belief statements for FCNC, including

how the MVV statements drive goals for the organization, and how they align with the

roles and responsibilities within the organization to these goals:

A. Collaborate with other members of the Steering Committee to codify concerns, gather information, and agree on a common retreat/meeting date and location.

1. Target date: mid-August, 2018.

2. Location determined by availability of meeting space through workplace locations of Committee members.

3. Gather information and concerns for roles and goals of Committee members.

PROGRESS: Conversations involving the ED, the Steering Committee Chair, and the Treasurer all took place in order to secure the date, the venue, and any long-term concerns about roles and goals that needed to be addressed during this retreat.

B. Create an agenda and protocol, and facilitate the retreat; agenda will include:

1. A process to agree on norms for the day.

2. A frame for the "WHY" of the work.

3. Protocols for the work to be accomplished during the session; structured as "naming" and "narrowing" activities.

4. A process to help members combine sensibilities of the Mission and Vision statements from DiscoverE (national affiliate engineering organization), and North Carolina State University/College of Engineering; final Mission and Vision must be compatible with NC State, as the College of Engineering is a collaborative partner (FCNC is part of the outreach programs offered through The Engineering Place within the College of Engineering).

5. A process to clarify Goals and Roles; predicated on current and historical roles tied to goal responsibilities, with new roles to be created as needed.

6. A process to virtually and collaboratively come to consensus on the Mission, Vision, Values/Belief statements (M/V/V/B), should the task not be completed at meeting.

PROGRESS: The candidate created a day-long retreat involving all members designed to facilitate idea generation, synthesize M/V/V/B statements from the NC College of Engineering/The Engineering Place, DiscoverE, and other exemplary language, and to narrow decisions and to come to consensus on the statements. See, "Agenda for Future City Retreat." Outcome was successful. By the end of the retreat, M/V/V/B statement was very close to being completed; consensus was received from the group for the candidate to "tweak" language and then post to a collaborative platform (Google). Process for this interaction was explained, including how to comment on the iterations of the document. Once the document was completed per members' inputs, a final document was posted for approval and passed. It is currently the working M/V/V/B statement for FCNC. See the document labeled, "Mission, Vision, Values, and Belief Statements for Future City North Carolina Region."

C. By the end of September, 2018, the candidate will have participated in collaborative discussions aligned with the M/V/V/B created, in order to

determine resource needs for the 18/19 FCNC Competition cycle; discussion topics to include staffing considerations, financial needs and goals, and contingency plans, among others, as outlined in the M/V/V/B statement.

PROGRESS: This resulted in the chart of roles/explanations, found in the Sustainment Statement as discussed in SMART Goal IV, and a Quality Assurance document formatted as Plan-Do-Study-Act, which is located in section 11 of the Executive Summary.

III SMART Goal III-By December, 2018, create a *Communications Plan and Social Media Policy* to be put in place to be used moving into the January 2019 Regional Competition:

A. Communications Plan will focus on types of Social Media Platforms to put in place to meet the Mission, Vision, and Goals of the FCNC Organization

B. Social Media Policy will govern reasons for, and expectations of, those on the Steering Committee who are responsible for using the assigned social media platforms decided within A., above.

PROGRESS: The outward-facing communications plan for the organization was antiquated, and not leveraging the social media tools available. A new website was created, and all files and folders related to the organization were all connected to a platform tied only to the organization and not a particular individual. Part of the M/V/V/B retreat about the discussion of roles and goals was centered around bringing on a Director of Communications and Marketing (which happened two three months after the retreat). The organization now also has a Twitter account, an Instagram account, and has a reinvigorated Facebook page. The Social Media Policy

was in place for the recent competition cycle. The Director interfaces with the Executive Director, the Education Liaison, and the Historian, at multiple times through the cycle to understand communication needs.

IV SMART Goal IV-By March, 2019, the candidate will develop documentation of plan performance against SMART Goals I-III:

A. Milestone 10 (this document) will serve as a comprehensive overview of performance of the work thus far.

B. Plan will include suggestions and high-level questions in the format of a Sustainment Statement, so as to prompt the path moving forward and to facilitate hand-off to the Steering Committee, based on learnings and results of the enumerated goals; plan will be presented to the FCNC Steering Committee in June, 2019.

PROGRESS: Sustainment Statement is located in Appendix J.

Appendix C

Total number of Counties Participating Each Year, 2013-2019

County	13/14 Participation	14/15 Participation	15/16 Participation	16/17 Participation	17/18 Participation	18/19 Participation
Total Counties	14	17	16	12	13 *(1)	27 *(2)
Alamance		14/15				
Alleghany			15/16			
Avery						18/19
Buncombe		14/15				
Burke	13/14	14/15	15/16	16/17	17/18	18/19
Cabarrus			15/16			
Carteret			15/16			
Craven	13/14	14/15	15/16	16/17	17/18	18/19
Cumberland		14/15				18/19
Davidson						18/19
Durham	13/14	14/15	15/16	16/17	17/18	18/19
Edgecombe		14/15	15/16	16/17	17/18	18/19
Forsyth	13/14	14/15	15/16	16/17	17/18	18/19
Guilford	13/14	14/15	15/16		17/18	18/19
Harnett	13/14					
Haywood						18/19
Iredell	13/14	14/15	15/16	16/17	17/18	18/19
McDowell				16/17		18/19
Mecklenburg	13/14	14/15	15/16	16/17	17/18	18/19
Moore	13/14	14/15	15/16	16/17		
Nash	13/14	14/15	15/16	16/17	17/18	18/19
New Hanover						18/19
Onslow	13/14					
Pamlico					17/18	18/19
Perquimans						18/19
Pitt						18/19
Polk						18/19
Randolph					17/18	18/19

Robeson	13/14	14/15	15/16	16/17	17/18	18/19
Scotland						18/19
Union	13/14					18/19
Vance		14/15	15/16			18/19
Wake	13/14	14/15	15/16	16/17	17/18	18/19
Watauga		14/15				18/19
Wayne						18/19
VA Schools					*17/18 (Campbell Co.)	*18/19 (Henry and Spotsylvania Cos.)
Participated all 6 years						
New to Future City NC Region for Competition Cycle 2018/2019						

Appendix D

Total Number of Teams, Schools, and Counties Participating; Counties Representing

Matriculating Schools Years 2013-2019

Year	Total Number of Teams Participating	Total Number of Schools Participating	Total Number of Counties Participating	Total number of Counties Represented of Schools that Matriculated to Competition Day
13/14	39	22	14	12
14/15	37	25	17	12
15/16	42	24	16	13
16/17	28	15	12	11
17/18	34	18	14	13
18/19	53	45	29	11

Appendix E

Band of Participation Counties and Activities

Name of Targeted County to Create "Band of Participation"	Last year participated in FCNC Program	Other Participation Ex:Attended NC Middle Level Educators Conference (NCMLEC)	Participated in FCNC Program for 18/19; Schools in participating counties did Not Matriculate to Competition	Findings
Alamance	14/15			Percentage of targeted counties participating in the FCNC
Alexander		*Attended NCMLEC		Program for 18/19: 4 counties, or 27% of targeted counties
Avery			√	Fell short of goal of "band of participation" counties by 23%
Cabarrus	15/16			
Chatham				Targeted Projection for Counties MATRICULATING to the Competition: Increase of
Cumberland	14/15		√	30% over 17/18 (13), or 17 total Counties
Davidson			√	Fell Short of Goal of "Mariculated Counties" by 6 ; 11 total counties
Davie				Fell short of goal of counties matriculating by -65%
Harnett	13/14			
Johnston				Competition Cycle 18/19: INCREASED total number of All Counties
Martin				PARTICIPATING in the Competition by 108%
Orange				
Pitt			√	
Surry				
Wilson				Comments: While the VA counties aren't encouraged or targeted, they may be proof a growing reach of recognition
* Caldwell Co. also attended our session at this conference				

Appendix F

Agenda for Future City Retreat

DATE: Saturday, August 25th

TIME: 9:00 AM to 2:30 PM

LOCATION: Xxxxxxx Xxxxxxxx's work location

XXXXXX
XXXXXXXX
Raleigh, NC 2760X

TIME	WHAT	NOTES
9:00-9:20	Welcome & Purpose; Norms and Expectations; Tools;	
9:20-9:35	Level setting & Understandings	
9:20-10:00	Naming Protocol-Our Values Our Beliefs	
10-10:15	Break	Affinitize ? Bin
10:15-10:45	Narrowing Protocol #1-Distilling the Vision	
10:45-11:30	Narrowing Protocol #2-Defining the Mission	
11:30-12:15	Catered Lunch	? Bin
12:15-12:30	Refocus and Review	
12:30-1:15	Naming protocol #2-Goals-What are they?	
1:15-2:00	Naming Protocol #3-Roles and Alignments	? Bin
2:00-2:30	Tie it up and Next Steps	

Appendix G

Mission, Vision, Values, and Belief Statements for Future City North Carolina Region

The Mission of the Future City North Carolina Region is to support and prepare students to apply STEM-related solutions to solve the challenges facing communities both locally and globally.
We do this through:
- *utilizing public/private partnerships to connect K-12 education communities, the engineering industry, and the College of Engineering at NC State University;*
- *deploying a program with the potential to reach and engage all students statewide;*
- *providing a structure to broaden the conversation, skills, and opportunities that the Engineering Habits create through "what if" possibilities; and*
- *conveying the importance of solutions to answer global engineering challenges.*

The Vision of the Future City North Carolina Region is to facilitate an increase in the numbers of students choosing STEM-related college and career options, particularly in engineering fields.
We will carry out this Vision by:
- *building a reliable network to support current and future participating middle school teams across North Carolina;*
- *maintaining an organization of involved and committed individuals who serve the Regional organization;*
- *increasing stakeholder involvement, including volunteers, donors and sponsors, and Regional organization members; and*
- *developing and leveraging connections between public and private entities, and between the organization and North Carolina communities.*

Beliefs and Values

We BELIEVE that EVERY student should have the opportunity to:
- participate in the Future City Program;
- experience hands-on learning that the Program provides; and
- develop "soft-skills" of communication, collaboration, and critical and creative thinking by building solutions to real-world challenges.

We VALUE:

- the enthusiasm of the teachers, mentors, and students in grades 6-8 across the state of NC;
- the expertise and commitment of Program volunteers and Steering Committee members;
- the structure of the Future City Program, that allows for enhanced opportunities to teach effective problem solving through teamwork; and
- the opportunity for students to create a strong work ethic by building responsiveness to, and perseverance in, solving challenges, particularly in STEM-related disciplines.

Appendix H-Future City Timeline

	Date/Month Range	Activity	Lead
1	Early January	Finalize program/Flow; Review of Program with Emcee	Executive Director
1.1	January-Competition	Hold "Lunch and Learn" specifically for counties we are targeting who are NOT participating in any way for that current year's competition; target AFTER registration closes at the end of October	Education Liaison
1.1	January	Confirm venue for next year	Executive Director
2	February-Post National Competition	Meet for debrief, Meet with EAs at their montly meeting to introduce Future City Program, Select the next year's EA team	Executive Director, Steering Committee Chair, All
2	February/ President's Day weekend/ Engineers Week	Send out reminder to teachers who attended Lunch and Learn, and target counties from target list that did not attend to remind about registration in July	Education Liaison
3	March	Present at North Carolina Association of Middle Level Education Conference, if invited	Executive Director, Education Liaison
3	Mid March	Fundraising Meeting	Director of Finance, Director of Fundraising, All
4	April	Send out reminder to teachers who attended Lunch and Learn, and target counties from target list that did not attend to remind about registration in July	Educational Liaison
6	Summer & Winter	Present at NC DOT and NC LUG Conferences/Events	Director of Mentor Communication
7	July-October	Teachers begin registering for competition	N/A
7	July-October	Preliminary Mentor interest letter sent	Director of Mentor Communication
7	July	Present at NC CTE Summer Conference each year	Executive Director, Education Liaison
8	August-as soon as teacher workdays begin	Target counties that have not yet participated to entice to participate for the CURRENT YEAR using list from previous November's decision after registration was complete. Send reminder of registration, link for current year's handbook, theme title, etc.	Executive Director, Education Liaison
8.75	Late August	Email teachers to remind them to register	Executive Director, Education Liaison
9	September	First Steering Committee Team meeting	Executive Director, Steering Committee Chair, Historian, All
9	Early September – before EAs get busy with schoolwork		NCSU COE Lead/ EAs & Steering Committee Leads
9	Ongoing, from Early September as Schools and mentors accept, and specialty awards sponsors accept	Printed Program Development	Director of Communications (Heavily supported by NCSU COE Lead/ EAs & Steering Committee Leads)
10	October	Present at Bridging the Gap Conference each year	Executive Director, Education Liaison
10	October-November	Analysis of participating counties/schools; invite NON participating targeted counties to Competition Day "Lunch and Learn"	Executive Director, Steering Committee Chair, Historian, All
10	October – early November	Call out for Preliminary Judges	Director of Competition Judges; Director of Communications (Heavily supported by NCSU COE Lead/ EAs & Steering Committee Leads)
10.5	Mid October	Order Giveaways and Ribbons	NCSU COE Lead
10.5	Mid October	Order lunches	NCSU COE Lead
10.75	Late October/Early November	Finalist Judges	Director of Competition Judges
10.95	31-Oct	As soon as registration window closes, see which schools still do not have mentors	Director of Mentor Communication
11	November	Find contacts/create invitation letter/Google survey invitation for "Lunch and Learn"/Browse during the current year competition in order to build interest for following year	Education Liaison & Director of Mentor Communication
12	December – January	Preliminary Judge training	Director of Competition Judges
12	December	Find printer for Program	Director of Communicatons

Appendix I -Social Media Policy Future City North Carolina Region
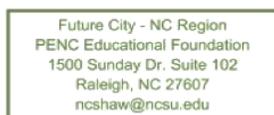
Future City - NC Region
PENC Educational Foundation
1500 Sunday Dr. Suite 102
Raleigh, NC 27607
ncshaw@ncsu.edu

fuTuRe CiTy
COMPETITION

The Mission of the Future City North Carolina Region is to support and prepare students to apply STEM-related solutions to solve the challenges facing communities both locally and globally.

Policy Name:	Media Relations and Social Media Use for the Future City North Carolina Region organization					
Approval Authority:	Executive Director, Future City North Carolina Region	Adopted:	December 1, 2018	Reviewed:	November 27, 2018	
Responsible Executive:	Director of Marketing, Social Media, and Communications, Future City North Carolina Region	Revised:	November 28, 2018			
Responsible Office:	Steering Committee, Future City North Carolina Region	Contact:	Lisa Thompson, Steering Committee Member, Education Liaison			

1. The purpose of this policy is to ensure consistency of messaging via social media platforms and through media relations, for and about the Future City North Carolina Region organization, for the purposes of information dissemination, outreach, growth of the program, fundraising, and networking. Social media provides fast, efficient, dynamic communication, but can also cause misunderstanding and/or damaging situations in part due to the same attributes that make the platforms effective tools.

2. This policy will outline expected behaviors and use to provide safety and integrity of reputation of the umbrella entity (NC State University), participants, donors, sponsors, and volunteers. Due to the age of the student participants, and the importance of reputation protection within and surrounding this organization and its activities for the teachers, school systems, current and potential participants, volunteers, sponsors, and the FCNC organization, all current and future members of the Future City North Carolina Region organization will be expected to adhere to this policy.

3. Policy follows:
   - All social media created for the organization will include the organization acronym or title; branding guidelines will be mutually agreed upon between the DMSMC, the ED, and the Steering Committee;
   - Anyone affiliated with the FCNC organization that is not directly responsible for handling the accounts and use, but that comments on social media platforms about FCNC, NC State, or any sponsors, donors, volunteers, or affiliates, will use the platforms to positively promote the organization(s) and individuals, and use "common sense" when doing so;
   - No student photos will be included in any social media generated by FCNC without written permission;
   - Anyone posting from accounts directly associated with the login and password used by FCNC will be moderated by the DMSMC and the Executive Director; ideas for posts to various platforms will be sent directly to the DMSMC for consideration and will be posted by the DMSMC;
   - Social media platforms used by the FCNC organization will be used for professional purposes only as related to the organization and its activities;
   - Any suspicion of illegal activity on any social media platform operated by the FCNC organization will be reported to law enforcement immediately and the platform suspended; and
   - This policy will be reviewed yearly to consider needed additions, deletions, or changes.

Appendix J

Sustainment Statement for Future City North Carolina Region

Findings

The comprehensive findings, based on the Consultancy Project, "North Carolina Future City Program: Increasing a Statewide Program Mission, Presence and Participation to Ensure Institutional Legacy" can be found in the Executive Summary and associated documents. The term of the work, outlined in the original Statement of Work (SoW), took place from November, 2017, and will end June, 2019, upon delivery of this Statement to the Steering Committee. Deliverables in the SoW were outlined as SMART goals.

Recommendations

These recommendations are based on the work and findings that have taken place with Future City North Carolina Region (FCNC) since November, 2017. The work was accomplished through SMART goals. The first SMART goal is based on the creation of a strategic plan to increase participation in the regional program. The questions the FCNC organization must answer are: What does increased participation "look" like, and what are the goals for growth? Growth speaks directly to the second bullet in the Mission statement of the organization, "deploying a program with the potential to reach and engage all students statewide." The program's purpose is implicit in the Vision statement: "The Vision of the Future City North Carolina Region is to facilitate an increase in the numbers of students choosing STEM-related college and career options, particularly in engineering fields." Participation is also spoken to in the first bullet of the Belief statement, which reads, "We BELIEVE that EVERY student should have the opportunity to..participate in the Future City Program." The parameters

around and expectations of the answers to those questions will also need to involve stakeholders within the NC State College of Engineering, so long as FCNC is a part of the outreach programing within The Engineering Place. At the very minimum, the consultant recommends that the plan to spread the awareness of the program should continue to be focused on *targeting counties* and specifically increasing the counties that have not participated, while increasing the consistency of subsequent yearly participation in currently participating counties.

Another question FCNC must answer is, "What IS participation?" If the organization continues to agree with the philosophy of the National organization-that if teachers and other mentors want to use parts of the program as they see fit-the importance is to provide exposure, even if they don't move to the competition phase. If that is the case, and that philosophy does indeed square with the Mission of the organization, FCNC will need to become "ok" with a fairly flatline expectation between years in the number of counties that end up matriculating to the competition. The FC program in Arizona, while very large and well-run, also finds this to be the case-that the number of competition participants stays fairly flat from year to year. If the concern becomes the intent of the program within schools, and that the only way to measure the full impact of the program is for schools to participate in all phases, and, therefore, matriculate, the participation question becomes a curriculum question. If that is the case, that becomes a much bigger scope of what the current Steering Committee should or could handle, as this question impacts and is affected by curricular decisions made by the NC Department of Instruction (NCDPI).

Additional recommendations:

● Out of the original list of target counties that were created for this project, continue targeting all of them; particularly target Alexander, Davie, and Surry in the western part of the state, and add Caldwell and Rowan; in the eastern part of the state, add Bertie and Chowan;

● Target Moore County, which was on the way to being a "legacy" county-one that participated every year since 2013; Moore was active 2013-2017, but has not participated the last two years;

● Target the counties contiguous with Wake; out of the seven counties that border Wake, only 3 have been active in the Program, with one county only participating once in a 6 year period;

● Consider a more focused target on the 35 counties that have participated between 2013-2019: 9 have participated every year, 19 have participated 2 or more times, and 16 of the 35 have participated one time only. Figure 1 illustrates the frequency in percentage of those participating.
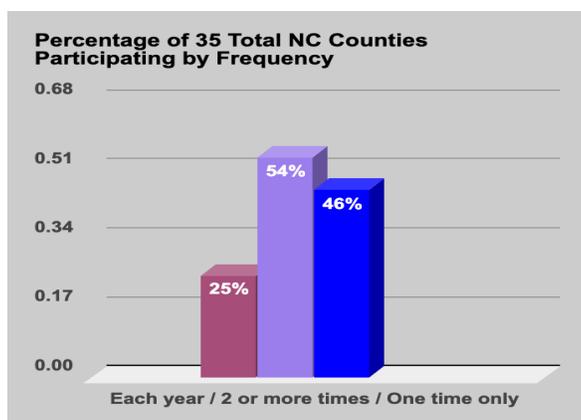

Figure 1: Percentage of frequency of participation of 35 NC Counties

● Make clear and careful decisions about the above and how many and which to target depending on ability to serve the schools within the current venue;

- Survey participants yearly; put a process in place to build a focus group of teachers to target the "boots on the ground" challenges that face the implementation of this program; create options to join the Steering Committee meetings for designated discussions and input on this subject;

- Keep accurate and consistent records, so that from year to year, locations for documents are easily found, and data can be easily tracked;

- Keep an accurate yearly map based on the counties from which the schools are registering, as well as the school names and number of teams; this shows that the county "knows" about us, and is, therefore, participating, whether or not that county's school/schools end up matriculating to the competition;

- look at the documentation for the counties that have participated out of 100, and the list of schools that have never participated; see Figure 2, below, to understand the frequency of how many counties out of all 100 NC counties have participated between 2013-2019. In Appendix A, find a list of the NC counties who have not participated in the Future City Program between 2013-2019.
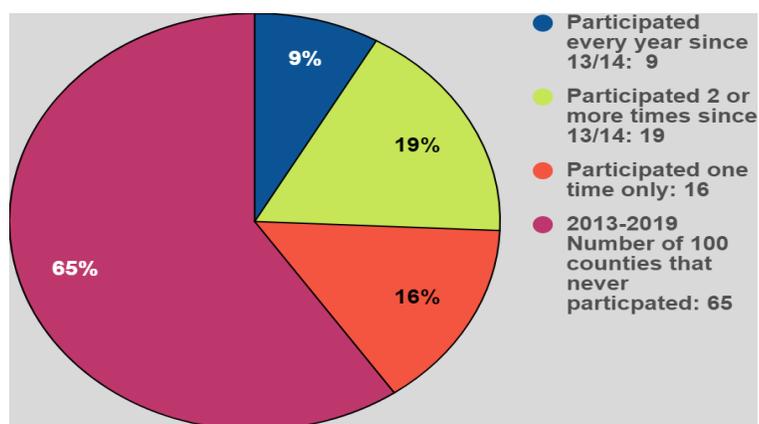

Figure 2: Percentage out of 100 NC that have participated in the FCNC Program, 2013-2019

- Analyze trend data from year to year to note the percent of change in county participation between years as outlined in Figure 3; see chart for Comparison of Percentage (%) of Change in Number of Counties Participating from Year to Year, 2013-2019, located in Appendix B.
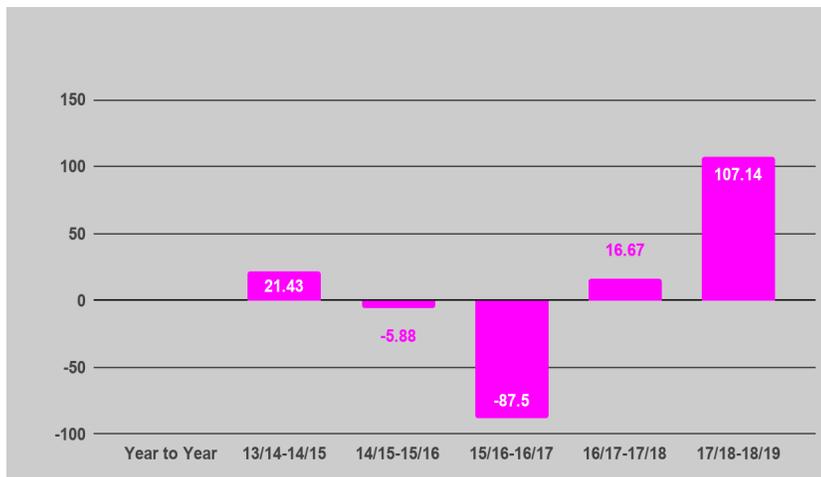

Figure 3: Comparison of Percentage (%) of Change in Number of Counties Participating from Year to Year, 2013-2019

- Keep an accurate "compilation" map, so as to track targeted counties, and to see which counties are not participating; make yearly target decisions based on those data; see Appendix C for the compilation map.

The second SMART goal was to create a, "*Mission, Vision, and set of Values/Belief (M/V/V/B) statements for FCNC, including how the M/V/V/B statements drive goals for the organization, and how they align with the roles and responsibilities within the organization to these goals.* Out of all of the work that was done during this project, the candidate feels this was probably the most important work. It cannot be stressed enough, that the organization cannot move forward if there is not a clearly articulated M/V/V/B body of statements. The M/V/V/B should be a "living, breathing"

document that sets the tone for the culture of the organization, and sets a path for expectations, goals, and actions of the members within FCNC. It creates an external-facing authenticity with our current and future volunteers, donors, and stakeholders. This statement must be reviewed yearly at the beginning of each competition cycle to set goals, and at least every two years to determine if anything within the M/V/V/B needs to change or be updated. The work to create this statement was based on leveraging the institutional strength of FCNC, but also uncovering "gaps in knowledge," which manifest due to the fact that many processes and procedures have not been formalized. This lack of formalization and institutionalization can translate to gaps in resources, capacity, skills, etc. that may be preventing FCNC and its potential for legacy from taking hold. Additional recommendations:

- "Official" roles and their definitions were created from the M/V/V/B retreat; formal organizational chart needs to be updated with role explanations, distributed to all members, and posted within the records site; roles and associated goals need to be revisited annually to make sure all current and new members to the Steering Committee understand their jobs for the year; see Appendix D.

- According to Forbes Nonprofit Council, one challenge of a nonprofit is to balance innovation and productivity. ".. when budgets are tight and employees have full plates of responsibilities, it's easy to focus on what needs to get done today instead of looking toward the long-term possibilities." In the case of this organization, the word "budgets" can be replaced with the word "time." Also, roles and traditional task responsibilities of those roles are included in each year's set of documents, but knowledge of who does what is historical, and therefore not explicitly reviewed each year, which can cause some confusion for

new members and a gap in knowledge as mentioned before; in order to alleviate this, the FCNC Yearly Timeline, and the Quality Assurance Plan, located in the Executive Summary will, if followed, ensure that all Steering Committee Members understand the timing and requirements of their particular deliverables.

- As the program grows, there needs to be consideration of how to level the organization; a consideration of the formation of a Board, its members, and its purpose should be decided within the next year, in order to begin those conversations;

- It has been identified by teachers over the years, and by members of FCNC, that the mentor procurement/ matching process is an area that must be addressed and improved; innovative thinking and resources will need to be utilized to make that happen; we have feedback from one of the surveys created for this project that would allow us to pull a focus group together to analyze solutions to this issue, among others. See the SWOT analysis, Appendix E, for further information to inform decisions on the above considerations.

SMART Goal Three addressed a communications plan and social media policy. The consistency with which these are followed and leveraged to their full potential will be the game-changer for the organization, in terms of statewide awareness of the program and success of growth in fundraising efforts. The regional program is behind the curve on self-promotion through these necessary and easily-accessed platforms. The role that this Director of Social Media fills is a crucial one, and one that needs dedication and diligence in order to thrive. Additional recommendations:

- Assure there is a process in place as to who is sending which types of communications out and when;

- Assure that the appropriate members of the Committee are on appropriate communications; strive for concise communications and clear next steps;

- Consider some redundancy in roles and oversight of external communications, such as the website (Google site and link to National site), Twitter, Instagram, and Facebook;

- Create a separate survey to collect data from sponsors about social media presence: did you see you or your company represented within our social media? Was it enough? Too little? Too much? Did you decide to volunteer and/or donate due to awareness through social media? Did you decide to volunteer and/or donate because you wanted to make sure you were on-mark with competitors and/or colleagues who had and were receiving positive social media feedback?

- Continue to monitor the efficacy of the social platforms in place to make decisions on future use;

- Make sure that all members who will be dealing with and using social media in anyway connected to FCNC are aware of the Social Media Policy, which should be reviewed annually for any needed changes; see the Executive Summary.

- Ensure that all written copies of communications, such as donor/sponsor letters, have the Mission of the organization at the top; ensure that social media platform "bios" do as well

Conclusions

As stated in the analysis portion of SWOT, "FCNC seems to be an organization of contrasts. For example, FCNC seems to be both an organization that will stand the test of time, and one that is also on the verge of possible collapse if certain parameters are not met. Its long-time anchor volunteers are both passionate, and at the same time, ready to hand the reins over to new members that can propel the organization forward. Five major items will need to be

a continual focus for the organization in order to mitigate the threats: following the M/V/V/B and the associated roles and goals; upping the threshold each year of fundraising targets while

simultaneously touting new sponsors; continuing to build a network of public/private support for the program; and putting more robust and reliable systems and processes in place to facilitate the Future City program in classrooms across the state." The Future City Program is probably one of the best kept secrets in wholistic learning programming for middle school students. The contrasting take-away for the organization: eradicate the secret.

References

Council, F. N. (2016, May 18). Five challenges all nonprofit leaders must come to terms

with. Retrieved April 6, 2018, from

https://www.forbes.com/sites/forbesnonprofitcouncil/2016/05/17/5-challenges-all-

nonprofit-leaders-need-to-come-to-terms-with/#2a3898133a48

Future City Program Handbook 2018-2019 (n.d.). The official program handbook for the

Future City Competition, 2018-2019. Retrieved from

https://futurecity.org/form/resources?download=/sites/default/files/2018-07/2018-

2019_Program_Handbook_hi.pdf

Map of North Carolina [Map]. (n.d.). In www.waterproofpaper.com

Thompson, L. M. (2019, April 19). *Milestone 10 project* [Scholarly project].

Thompson, L. M. (2018, April 7). *Quantitative data project* [Scholarly project].

Retrieved April 16, 2019.

Appendix A

Counties that have Never Participated in FCNC, years 2013-2019

Alexander	Franklin	Northampton
Anson	Gaston	Orange
Ashe	Gates	Pasquotank
Beaufort	Graham	Pender
Bertie	Granville	Person
Bladen	Greene	Richmond
Brunswick	Halifax	Rockingham
Caldwell	Henderson	Rowan
Camden	Hertford	Rutherford
Caswell	Hoke	Sampson
Catawba	Hyde	Stanly
Chatham	Jackson	Stokes
Cherokee	Johnston	Surry
Chowan	Jones	Swain
Clay	Lee	Transylvania
Cleveland	Lenoir	Tyrrell
Columbus	Lincoln	Warren
Currituck	Macon	Washington
Dare	Madison	Wilkes
Davie	Martin	Wilson
Duplin	Mitchell	Yadkin
	Montgomery	Yancey
65 counties total that have never participated 13-19		

Appendix B

Comparison of Percentage (%) of Change in Number of Counties Participating from Year
to Year, 2013-2019

Year to Year	Number Participating First year of span	Number Participating Second year of span	Numeric change between year spans	Percentage (%) change between year spans
13/14-14/15	14	17	3	21.43
14/15-15/16	17	16	-1	-5.88
15/16-16/17	16	12	-4	-87.5
16/17-17/18	12	14	2	16.67
17/18-18/19	14	29	15	107.14

Appendix C

Compilation Map of Participating Counties, 2013-2019
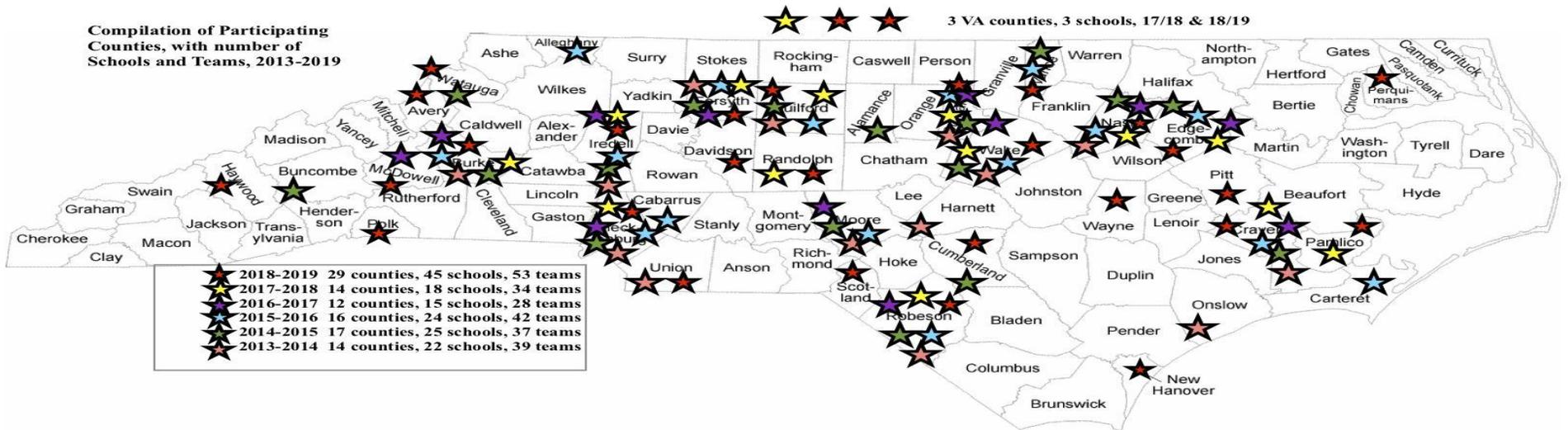
Appendix D

Future City North Carolina Region Steering Committee Roles and Descriptors

Role	Responsibilities/Description
Steering Committee Body	Currently, the Steering Committee serves as the "Board" and the "work", and will continue to do so until responsibilities are leveled so as to have both
Executive Director- **Xxx Xxxx**	Professional role is Coordinator of K-12 Outreach, The Engineering Place, College of Engineering, NC State University; works in tandem with the Steering Committee Chairs (Volunteer) Oversight of Steering Committee; procurement and oversight of Engineering Ambassadors in conjunction with the Competition yearly cycle; calls meetings and sets the agenda; answers teachers questions and concerns;
Steering Committee Chair- **Xxx Xxxx**	Work in conjunction with and in support of the Executive Director. Roles vary. May also hold a Director position. -Responsible for keynote speaker
Steering Committee Vice Chair- **Xxx Xxxx**	Work with the Steering Committee Chair and shares responsibilities as directed by the Chair
Director of Finance (Treasurer)- **Xxx Xxxx**	All fiscal tracking; works in tandem with the Director of Fundraising
Director of Fundraising (DoF)- **Xxx Xxxx**	Responsible for creating of fundraising plan in conjunction with projections provided by the Director of Finance; actively deploys the plan by: -Looking at theme for relevant contact links to donors -Looking at legacy and new donors and supporters -Identifying point of contacts to meet the goal -Working with the treasurer to strategize targets -Actively fundraises according to created goals -Reporting back to the Steering Committee -May recruit to create a sub-committee
Director of Competition Judges- **Xxx Xxxx**	-Helping the DoD come up with essay judges, virtual city judges, finalist judges -Scoring -Specialty judges dependent on -Fundraising-DoF needs to coordinate with this position
Director of Deliverables (DoD)- **Xxx Xxxx**	Responsible for strategizing processes to collect and/or judge the following: -virtual city -essays -project plan -honors statement -medial release -expense form
Director of Mentor Coordination- **Xxx Xxxxx**	-Tracking/pairing of schools registered to schools needing mentors, by utilizing the CMS and other environments -Find every school a mentor; can be in person or virtual -Expectation is to set a deadline; communicate with the Steering Committee

	members to keep them abreast of the needs; -actively leverage connections within the following organizations to reach all areas of the state: Duke Energy, DOT, professional engineering associations; -Discuss process of mentoring with Executive Director to utilize EA students to create protocol for virtual mentorship; create other opportunities/structure for virtual mentorship of professionals from across the state
Director of Communications and Marketing- <u>**Xxx Xxxx**</u>	Oversight of communications, including press releases, and social media marketing -Outreach to media and other outlets to announce competition date; -Works with Executive Director to oversee social media/platform use;
Education Liaison and Advocate- <u>**Xxx Xxxx**</u>	-Communications to DPI to include Future City information in 6-8 Science Teacher listserves; -Informs the Committee of restrainers, best-practices for deployment and outreach, timelines, and possible additional connections -Works with the Executive Director to determine target areas for possible expansion or outreach; presents at conferences when applicable -Works with Director of Communications for oversight of best-practices when communicating with a 6-8 educational audience
Historian/Secretary- <u>**Xxx Xxxxx**</u>	-Records and maintains a record of Steering Committee minutes; archives minutes - Notify Steering Committee members of pending meetings and ask for updates, distribute agenda, previous meeting minutes, and other pre-meeting materials - Maintain a roster of Committee members, teams/school, mentors, volunteers, judges and respond to member changes - Maintain an archive Steering Committee Roster - Maintain a FC NC charter (mission & goals), protocols, keep records from past programs, events, and other Committee activities -Maintains historical records and anecdotal information

Definitions:

Chair-should be the most outward facing to the community (getting them involved, and then passing that off to someone else)

"Pusher" for the business community

V. Chair-Works with the Chair as directed

Executive Director (ED) has external support network; ED is on the Steering Committee and connects the external support network to the Steering Committee

Appendix E

SWOT Analysis

STRENGTHS	WEAKNESSES
-The program is based on authentic experiences with STEM habits of mind and skills, as well as interactions with engineering professionals that act as project mentors for students; Future City North Carolina Region (FCNC) is affiliated with DiscoverE, a national engineering association; FCNC is in its 18th year of operation -Multiple founders of the FCNC organization are active participants on the Steering Committee; extensive expertise and engineering connections are nurtured and created through these members -Members from two state-wide entities (NC Department of Transportation and Duke Progress Energy) are part of the Steering Committee, allowing for potential extensive reach of messaging and volunteer procurement -FCNC is partnered with the College of Engineering-The Engineering Place within NC State University; FCNC is one of the outreach programs offered through the Engineering Place, and is one of the program for which the FCNC Executive Director is responsible; access to facilities and student volunteers to assist with the Competition are also major benefits of this partnership -Several of the FCNC volunteers return to assist with the Competition cycle each year -Pool of consistent yearly contributors; opportunities for direct connection of yearly theme to engineering companies in the area, particularly sponsorships of specialty awards by companies matching theme of the award; four different levels of sponsorship available -K-12 public school educator on the Steering Committee serves in the role of Education Liaison	-All volunteer organization; people vary in their levels of and types of commitment -Intensity builds for the competition, and then drops off sharply after the competition day occurs -One "level" of the organization handles everything that happens in the organization -Continual turnover of student volunteers from year to year; much of the detailed or repetitive work becomes their volunteer responsibility -No consistent pool of mentors (matching an engineer mentor with a team is a best practice within the FC program and guidelines) across the state; need to be recruited each year; many schools receive no mentor, including "legacy" teams -Finances previous to Competition cycle 18/19 ran close to break-even, or dipped into savings each year; clear need to have a plan for fundraising goals for plentiful and lean times -Up until Competition cycle 18/19, no Mission, Vision, Values, Belief (M/V/V/B) statements for the Regional organization; the challenge will be in members "following" what has been created -Permanent new members of the Steering Committee slow to be recruited, and slow to commit to join the Committee -Learning curve/gap is wide and varied among members of the Steering Committee when it comes to utilization of electronic and social media platforms -Funding amounts from regular and potential contributors not known/guaranteed from year to year; local companies are only able to sponsor if they are fiscally "sound" for the year -Recognition of sponsors outside of a mention in the program is new this year (now on new website, and have been minimally mentioned in social media); presence and "peer pressure" has not yet been built -Social media presence is still being viewed as a time-bound (Competition cycle) activity, rather than something periodic but ongoing throughout the year.

OPPORTUNITIES	THREATS
-Adherence to and use of the M/V/V/B statement will add authenticity and gravity to the work of FCNC; these statements should drive consistency and planning for roles and attached goals within the organization -Social media platforms can, with little effort, do the "marketing" work of the Steering Committee members long after active participation has "dropped off" for the season; can help build interest in recruiting new members who would like to join the Steering Committee, and recruiting volunteers; can assist in increasing company sponsorships and donations; can cast a wider net that transcends geography when recruiting for volunteers across the state, particularly mentors; can spread the mission of the organization in a consistent, branded, and far-reaching manner; can act as the perfect vehicle for cross-pollination of the businesses represented on our Committee, as well as the businesses that contribute time, talent, and treasure to the organization -Opportunity to grow the organization by leveling the members into a Board and a Steering Committee structure	-Initiative fatigue; if new members are not recruited and sustained within FCNC, the program could collapse -Other programs and initiatives creating asks of our donors and sponsors; budget cuts within our sustaining sponsors can create the same threat for FCNC -Networking within the engineering community will be lost when founding Steering Committee members leave the organization -Having consistent commitments of individuals to bring fidelity to their roles and associated goals is a threat for the organization continuing; this happens particularly when adding new members or changing the roles of existing members -Having too few individuals on the Steering Committee as liaisons for the different social media platforms; lack of understanding of the "right tool for the right job at the right time" -Change in personnel can mean a change in the fidelity of social media use -Weather; the competition is always in January during the month when the weather in NC is most unpredictable

ANALYSIS SUMMARY
FCNC seems to be an organization of contrasts. For example, FCNC seems to be both an organization that will stand the test of time, and one that is also on the verge of possible collapse if certain parameters are not met. Its long-time anchor volunteers are both passionate, and at the same time, ready to hand the reins over to new members that can propel the organization forward. Five major items will need to be a continual focus for the organization in order to mitigate the threats: following the M/V/V/B and the associated roles and goals; upping the threshold each year of fundraising targets while simultaneously touting new sponsors; continuing to build a network of public/private support for the program; and putting more robust and reliable systems and processes in place to facilitate the Future City program in classrooms across the state.