Fleet Optimization

Goals

Reduce CO_2 emissions

Save costs

Strategies

1. **Vehicle Lifecycle** - Implement a standard fleet replacement period
    a. **Vehicle Modernization** - Update most common models with newer models
    b. **Vehicle Powertrain Choices** - Replace 75% of sedans with hybrid electric vehicles
    c. **Vehicle Utilization Rates** - Remove underused vehicles from the fleet
2. **Vehicle Idling** - Reduce idling during drop offs by 70%

Results

4.6 million lbs CO_2 saved annually (annual energy use of 241 homes)

$247,000 saved annually

Presented by CRC Team 9: Fleet Foxes

Rachel Mohr // rmohr7@gatech.edu
Michelle Babcock // michelleb@gatech.edu
Veronica Thompkins // vthompkins3@gatech.edu
Emmaline Cunningham // ecunningham30@gatech.edu

Summary

Large fleets must plan their replacement cycles to ensure vehicles are being resold before their repair costs exceed their value [7]. With an optimized global fleet, CRS could realize significant cost and CO_2 savings and use more resources in its mission to help others. We have developed these strategies of recommendation for the CRS fleet in coordination with the global fleet manager, Michael Bieger.

Vehicle lifecycle improvement will involve CRS replacing 75% of its sedans with hybrid electrics, replacing other vehicles in the fleet over 4 years old with their most recent model, eliminating 31 underused vehicles, and implementing a standard 4.5 year replacement period. Excess idling caused by drivers keeping vehicles running outside during meetings can also be curtailed by up to 70% [2,7,10]. The most impactful recommendation we can make to CRS is vehicle lifecycle improvement, which would save $150,000 and 3.6 million lbs of CO_2 annually [7,10]. This plan along with reducing idline will allow CRS to save $247,000 and 4.6 million lbs CO_2 annually [10]. Co-benefits of the proposal include more money used to further the CRS mission of helping others, reducing vehicle air pollution, and reselling safe vehicles to local buyers.

Motivation and Background

Global average surface temperatures on the Earth continue to rise in the industrial world as a direct result of carbon dioxide (CO_2) emissions. As the world gradually changes to address this problem, vehicle fleets across the world will need to adapt. The sooner a fleet is modernized to minimize CO_2 emissions, the more global CO_2 levels can decrease and the more money can be saved. Since CRS is a charitable organization and works to better the lives of people around the world, switching to a lower carbon emission fleet is directly in-line with the organization's mission. Reducing atmospheric CO_2 improves public health by reducing frequency and intensity of heatwaves, slowing the spread of infectious disease, and preventing poor air and water quality that can sicken people [1]. Not only is lowering carbon emissions itself a positive change, but it comes with additional benefits including annual cost savings and increased donations.

On April 22, the stakeholder indicated that CRS would be participating in a Non-Government Organization (NGO) Climate Compact in celebration of Earth Day, and focused on addressing climate change by reducing their carbon footprint. Signing the Climate Compact, organized by Interaction.org, further demonstrates the organization's desire to

lower carbon emissions [11]. Overall, fleet modernization will put CRS on a modern footing for improving charitable work in a lower-carbon world.

The Carbon Reduction Challenge (CRC) is a 12-week competition where students work with organizations on projects that significantly reduce their carbon emissions and save money. Under the direction of professors, students develop a plan that is carbon- and cost-saving, engage a corporate stakeholder, and secure significant carbon reductions in their operations. Our project team partnered with CRS to help them achieve sustainable fleet management and a cost-saving vehicle replacement cycle.

Carbon and Cost Savings Breakdown

	Benefit per Year		Lifecycle Benefit per 4.5 Years	
	Savings in $	**lbs of CO_2**	**Savings in $**	**lbs of CO_2**
Vehicle Lifecycle	150,000	-	675,000	-
New Models (except sedans)		3.6 M		16.2 M
Hybrid Sedans (75% / 25%)		159,100		716,000
Vehicle Utilization Rates		282,000		1.27 M
Vehicle Idling	96,800	567,500	435,600	2.55 M
TOTAL	**246,800**	**4,608,600**	**1,110,600**	**20,738,700**

1. Vehicle Lifecycle

Currently, CRS replaces the 871 fleet vehicles on average once every 8.5 years, costing roughly $51.2 M [7] based on invoice prices of current models. This is an average annual cost of $6.02 M [10]. We calculated the potential financial savings possible with a replacement period of 4.5-years instead.

4.5 Years vs. 8.5 Years

	Costs	Benefits
Modernize Fleet	51,200,000	
Increased Resale Value		15,900,000
Reduced Fuel Costs		2,880,000
Remove Underused Vehicles		1,831,500
Reduced Maintenance		2,900,000
Warranty Benefits		1,220,000
Total	51,200,000	24,731,500
Cost / Fleet Lifecycle	26,468,500	
Annual Over 4.5 Year Lifecycle	5,870,000	
Current Annual Lifecycle Cost	6,020,000	
Annual Savings	150,000	

Vehicle lifestyle savings amount to a savings of approximately **$150,000** annually over the current cost, which is why we recommended this replacement period given the available data. [10]

a. Vehicle Modernization

Of the 1,131 vehicles that make up the most-used 11 models in the CRS fleet, 77% were greater than 4 years old (871 vehicles). By updating these models to take advantage of the better fuel economy, CRS can generate cost savings and CO_2 reduction. Excluding sedans, which are discussed in the next section "Vehicle Powertrain Choices", this update could save CRS 179,590 gallons of fuel annually, which amounts to **3.6 M lbs of CO_2** and **$612,400** in annual fuel savings. [4,5,7,10]

b. Vehicle Powertrain Choices

In discussion with the fleet manager, we determined about 75% of the sedan fleet could be upgraded to hybrid models while the other 25% would remain internal combustion engine (ICE) powered. CRS could save 7,958 gallons of fuel and **159,100 lbs of CO_2** per year by switching 75% of its sedans to hybrid models. The cost difference to purchase 75% hybrids over the Corolla ICE model is about $23,500 more per year over the 4.5-year replacement period, while fuel savings amount to **$27,100** annually, a net positive of **$3,600** per year. [4,5,7,10]

c. Vehicle Utilization Rates

In discussion with the fleet manager, we learned there are some vehicles that aren't used regularly and could potentially be eliminated from the fleet. We identified 31 vehicles

driven less than 501 km per month (about 300 miles), which was the cutoff agreed upon by the global fleet manager. The miles these vehicles drive would shift to other vehicles, but there would still be CO_2 and cost savings. By not having to purchase replacements for these 31 vehicles each replacement cycle (4.5-years), CRS would save approximately **$407,000** and **282,000 lbs of CO_2** annually. [6,7,10]

2. Vehicle Idling

Given idling data from Vtron idle monitoring devices installed on 65% of vehicles in four sample countries that are representative of the CRS fleet as a whole, we looked at idling periods in excess of 10 minutes. The fleet manager indicated that most idling occurs while drivers wait in vehicles for long periods of time outside meetings, and estimated that realistically 70% of this idling could be eliminated with a directive from the fleet manager and a change in policy. Out of 150 vehicles in the four sample countries, 97 had idle monitors installed, which recorded 5,775 hours of idling in excess of 10 minutes (5 hours per month). Expanding this data to cover the entire fleet of 1,374 vehicles, that amounts to 53,700 idle hours. If 70% of these idle hours are eliminated, assuming 0.51 gallons of fuel burned per hour of idling [2], that amounts to 28,376 gallons, **$96,800**, and **567,500 lbs of CO_2** saved annually. [7,10]

Total Savings

These results are based on the analysis of 871 data-supported vehicles. Our assumption is that greater results would occur if the full fleet of 1,395 vehicles were included in the plan. Since approximately 77% of the fleet vehicles are older than 2016, this would mean modernization of 1,074 vehicles.

The most impactful recommendation we can make to CRS is vehicle lifecycle improvement. The cost to replace the 871 vehicles ($51.2 M), minus the total savings from a 4.5-year replacement period, fuel savings from vehicle modernization and Powertrain choices, and savings from cutting out underutilized vehicles ($24.8 million), brings the final cost per 4.5-year period to $26.4 million. Divided across the 4.5-year replacement period, this is approximately $5.87 million per year. Compared to the current $6.02 million per year with the 8.5-year replacement period, $150,000 and 3.6 million lbs of CO_2 from better fuel efficiency are saved annually. Additionally, by reducing idle time for the entire fleet by 70%, the potential for annual savings is $96,800 and 567,500 lbs less CO_2. This amounts to an **annual savings of $247,000** and **4.6 M lbs less CO_2,** equivalent to the annual energy use

of 241 homes. Over a **4.5 year replacement period**, savings would be **$1,110,600 and 20.7 M lbs less CO_2** equivalent to the annual energy use of 1,084 homes. [10]

Best Practices

In terms of best practices for fleet replacement, it is key to replace strategically. While we are recommending CRS to carry out all the above mechanisms for fleet improvement, the first or "pilot" replacement will be 75% of sedans to be replaced with hybrid electrics. We recommend CRS strategically begin this round of replacement with those cars that drive mainly in city centers where gas is more than $3.60 per gallon on average, in the countries Senegal, Malawi, Gaza, Congo, Central African Republic, and Burundi. On the advice of the global fleet manager, we are recommending replacements for the entire fleet be made with the newest model year available to ensure maximum resale returns at the end of the 4.5-year replacement period. Continual monitoring of fleet mileage must be implemented to ensure vehicles aren't being underused (driving less than 500km per month). In the event vehicles drive less than this, they should be flagged for non-replacement and their vehicle miles should be transferred to a different vehicle.

In order to reduce idling, the fleet manager should implement an awareness campaign among drivers, using incentives and/or disincentives to achieve a 70% idling reduction. The fleet manager himself proposed this percentage, indicating he has effective strategies in mind. Lastly, to potentially realize even greater savings, future accurate fleet driving data can be used to analyze carpooling potential and Land Cruiser miles driven to see if any driving can be transferred to higher fuel-efficiency sedans. We have estimated that these additions could save as much as $4.28 million and 27.45 million lbs of CO_2 every 4.5-year period.

Co-benefits

As CRS is a non-profit charitable organization, every dollar saved on the fleet can go directly toward the CRS mission of supporting people in need in the developing world. Other co-benefits of this proposal include reducing tailpipe emissions that worsen air quality and cause numerous health problems, including respiratory symptoms, asthma, and heart attacks [8]. This plan will also allow fleet vehicles to be resold in safe, working condition to benefit local car buyers and demonstrate CRS's commitment to the environment and efficiency, which will attract future donors.

Anticipated Obstacles

This proposal involves a very large upfront investment, but our calculations demonstrate significant savings within 4.5 years [10]. CRS remains fully operational in its charity work during the COVID-19 pandemic, which has allowed us to continue with this initiative as planned [11]. However, operations strategies for aid delivery have been temporarily altered, which will likely result in altered fleet usage that we cannot calculate at this time. This is a large fleet with previously little coordinated oversight or data collection. The fleet management team will have to expand to realistically implement a coordinated fleet strategy, and mileage and idling monitoring will have to be expanded across the fleet. This proposal is simply the first step in a long-term fleet management strategy to be executed by the CRS team.

Next Steps

The final proposal and presentation were submitted to CRS on April 22 [11] and approved for our presentation to CRS executives. After a COVID-related delay, we presented to the CRS executive team during an online meeting on April 30 [11]. The stakeholder indicated that our plan was approved, and a financial plan to address the fleet optimization was approved by the CFO [11]. Our stakeholder said he expects an implementation period between 2-3 years for full modernization, and an immediate adoption of idling reduction.

Appendix I: Partial fleet data

Make	Model	Count
Toyota	Land Cruiser	585
	Hilux	269
	Corolla	77
	Rav4	38
	Fortuner	28
	Hiace	11
	Yaris	11
	4Runner	10
Nissan	Patrol	23
Ford	Ranger	14

Appendix II: Full calculations

ALL ANNUAL NUMBERS

From 1,374 fleet vehicles, we narrowed our focus to just the vehicles we had fleet data for (mileage, model, year). From there, in discussion with the fleet manager we decided to look at the 11 models most used by CRS, leaving 1,131 vehicles. Finally, we cut out any vehicle newer than a 2016 model, bringing our total to 871 vehicles to assess for fleet modernization. We found the fuel efficiency for every model in the fleet from official sources (fuelefficiency.gov or other official source), and entered it into our spreadsheet of raw fleet data. Using the odometer reading for each vehicle we divided by years in service, to find the avg miles driven per year for each vehicle in the fleet. From there, we found the gallons used per year for each vehicle using the vehicle's fuel efficiency. To find gallons saved, we found the fuel economy for newest-year models for each vehicle, and re-calculated the miles per year using the new fuel efficiency, then found the difference. We then converted gallons of fuel saved to gallons of CO_2 saved using the 20 lbs per gallon ratio given to us by Dr. Cobb. To calculate CRS's current fuel prices, we looked at the seven operational regions and countries' average fuel prices as of February 2020. After finding the average fuel price for each country, we used the percentages of cars in each country to average the amount CRS is paying for fuel for the entire fleet. We used this amount to calculate a blended $3.41 per gallon average fuel price.

Vehicle modernization except sedans

179,590 gallons saved * 20 lbs per gallon = 3,591,800 = **3.6 million lbs**

179,590 gallons saved * $3.41 per gallon = 612401.9 = 612,402 = $612,400 in fuel savings

Powertrain choices = sedan modernization using 75% hybrid and 25% gas
7,958 gallons less than currently using * 20 lbs per gallon = 159,160 = **159,100 lbs**
7,958 * $3.41 per gal = 27136.78 = $27,100 in fuel savings

Utilization
31 vehicles using the avg cost per replacement vehicle based on the 871 and their current model invoice prices * $59,080.65 = $1,831,500 over 4.5 years
Divided by 4.5 years = $407,000 per year saved
CO2 saved based on source noted in doc. Low end for small vehicles is about 12,000 lbs CO2 to produce, high end for large vehicles is about 70,000 lbs. Fleet is about half and half, so avg is 41,000 lbs CO2 per vehicle.
41000 * 31 vehicles = 1,271,000 lbs each cycle,
1,271,000 lbs divided by 4.5 years = 282444.44 = 282,400 lbs per year
Since it's such an estimate, rounded down to just **282,000 lbs per year**

Idling
Reduce by 70%
28,376 gallons * 20 lbs = 567,520 = **567,500 lbs**
28,376 * $3.41 per gal = 96762.16 = $96,800 fuel savings

Total CO2 saved = 4.6 million lbs

Vehicle Lifecycle savings from each piece
From better fuel efficiency (including ALL vehicles, both sedans and other vehicles)
$612,400 (non-sedans) + $27,100 (sedan) = **$639,500 per year** = $2,877,750 = **$2.88 per 4.5**
3.6 million lbs (non-sedans) + 159,100 lbs (sedans) = 3,759,100 lbs = **3.76 million lbs per year** = **16.92 million lbs per 4.5 years**
From resale value
Using **31%** resale value of original purchase price of $51.2 million (using invoice price to purchase new models)
$51.2 * 0.31 = $15.872 million = **$15.9 million recovered after 4.5 years**
From not purchasing underused/utilization
$407,000 per year saved = $1,831,500 per 4.5 years = **$1.83 million per 4.5 years**
1,271,000 lbs per 4.5 year cycle = **1.271 million lbs per 4.5 year cycle**
= **282,400 lbs saved per year**

Est Maintenance Cost for last 4 years of 8.5 years (from linked source)
Using real avg maintenance for each year for each model, multiplied by number of each model in fleet
About **$2.9 million total saved per cycle**
Est savings if they have a negotiated warranty to cover maintenance for first 3 years (using same source linked above and same method for estimating across real fleet model percentages)
$1.22 million saved per cycle

→ Lifecycle Savings

Resale value plus maintenance savings and warranty savings
15.9 + 2.9 + 1.22 = **$20.02 million per 4.5 year cycle** = 4.4489 = **$4.45 million per year**

→ Savings from: Lifecycle Savings + Fuel Efficiency + Utilization/underused

$4.45 million per year (vehicle lifecycle) + $639,500 per year (all vehicles fuel savings) + $407,000 per year saved (utilization/underused) = $5,496,500 per year saved
= $24,734,250 = **$24.8 every 4.5 year cycle**
CO2 savings is
= 3.76 million lbs per year (ALL vehicles fuel savings from modernization) + 282,400 lbs saved per year (from not buying underutilized vehicles) = 4.04244444 = **4.04 million lbs per year**
= 18.191 = **18.19 million lbs per 4.5 years**

→ To find net cost

Fleet replacement cost of $51.2 million minus savings over 4.5 year period
$51.2 - $24.8 = **$26.4 million every 4.5 years**
Divided over 4.5 years = $5.86666667 = **$5.87 million per year**

→ Compared to current cost

Current replacement is avg of 8.5 years
$51.2 divided by 8.5 years (without savings) = $6.02352941 = **$6.02 million per year**

→ Amounts to Savings of

$6.02 - $5.87 = **$150,000 per year**

Appendix III: Key Communications

1. First communications:

This first email communication was our team member Michelle Babcock's introduction to the potential stakeholder on Jan. 27, followed by a phone call between them and the stakeholder Michael Bieger, Global Fleet Manager for CRS, on Jan. 28 from 5-7 p.m. During the call, the stakeholder explained 4 main areas for potential savings he wanted to explore. After the call, Michelle discussed the potential project idea with group members in class on Jan. 29, and sent follow-up questions on Jan. 30 to gather rough data for the preliminary draft plan.

Introduction from Greg
5 messages

Michelle Babcock <mediabym@gmail.com> Mon, Jan 27, 2020 at 5:44 PM
To: michael.bieger@crs.org

Hi Michael,

Thanks for being willing to chat with me about this project I'm working on through Georgia Tech!

A quick introduction, and why I'm doing this: I met Greg at Kennesaw State University, when we both worked at the newspaper there. I got my first degree in communication, and worked in print journalism for several years, before transitioning into online marketing for a southern U.S. company, and finally 3 years ago I started my own media and marketing company, which is what I do today. A couple years ago I went back to school because I realized my real passion was science communication and planetary sciences. I'm now at Georgia Tech, studying astrophysics and earth and atmospheric science. And I've been lucky enough to hook up with a few NASA teams, where I manage their social and online media through my business.

That brings me to today!

I'm in a class whose primary focus is to participate in the Carbon Reduction Challenge. On my end, the goal of this group project is reduce the output of CO2 (or other greenhouse gasses) that would otherwise be released into the atmosphere, WHILE ALSO working to save energy/money for the stakeholder(s) who we work with.

In the past, projects have:

- Reduced Delta in-flight magazines, saving $3.03 million/year, and reducing CO2 output by 27.8 million lbs/year
- Several project have changed lights to LED, reducing maintenance and energy costs, saving money and reducing CO2
- Another project worked with a company to change their policy to default to compact rental vehicles for traveling employees, unless they needed mid- or large-size, saving significant money and CO2

This challenge has been going on for years through Georgia Tech, and the projects vary substantially from one another. Some ideas repeat, because the only goal is to reduce CO2 emissions, and produce cost savings for partners.

Greg explained that you were global fleet manager for CRS, and I saw on your LinkedIn that you've already accomplished some impressive feats with CO2 reduction, switching the global fleet to hybrids.

I wanted to see if there might be other potential ways to save money and further reduce CO2 emissions through either CRS or other connections you might have. The first idea that sparked my curiosity with regards to CRS, was whether or not traveling employees by default rented compact size, or larger vehicles, and whether or not that might be a feasible step toward saving money and CO2?

If there is a potential for CO2 and cost savings, by working with my team at Georgia Tech, we can do things to make it easier to project the cost savings and plan for the future. We would provide the calculations to estimate CO2 reduction and cost/energy savings, and would be able to provide some positive publicity for CRS. And of course, the goal would be continuing cost savings, year after year. So I would hope this partnership, if feasible, would significantly benefit CRS.

I was thinking I'd give you a call tomorrow (Tuesday EST) around 5-5:30 p.m., if that works for you?

I look forward to chatting!

Michelle

--
Michelle Babcock
Media By Michelle LLC
MediaByMichelle.com

Bieger, Michael <michael.bieger@crs.org> Tue, Jan 28, 2020 at 10:23 AM
To: Michelle Babcock <mediabym@gmail.com>

Michelle,

5 pm is fine; please call my cell at 862-371-9704

Michael

2. Scope of Work:

This was the first draft of the scope of work, as written by the Fleet Manager. We went back and forth several times amending this to work for our class project, removing some items. The original timeline is included in the below SOW document, but the final timeline was

pushed back and the meeting changed to an online video format a couple weeks later, because of Covid-19.

SOW for Georgia Tech engagement
3 messages

Bieger, Michael <michael.bieger@crs.org> Thu, Feb 13, 2020 at 12:02 PM
To: Michelle Babcock <mediabym@gmail.com>
Cc: "Safari, Benjamin" <benjamin.safari@crs.org>

Hello Michelle,

I hope that your team and the professors are still engaged and looking forward to the project work for CRS; I am certainly excited and anticipate working with your class. Please see the attached SOW for the project and let me know if it encompasses the needs of your class and the professors requirements.

A Mutual Non-Discloser Agreement (MNDA) will be forthcoming shortly for all participants to sign. The MNDA basically states CRS cannot use the project results and work except for its own use and that we will not make public any of the details without express written permission. As it is a mutual agreement the same requirements will be on the TEAM as well.

Please let me know your thoughts on the SOW and if the timelines fit the TEAM's needs.

Thank you.

Michael Bieger

Global Fleet Manager | Catholic Relief Services

Mobile: +1 443-362-2578 | Email: michael.bieger@crs.org

228 West Lexington Street, Baltimore, MD 21201-3443

crs.org | crsespanol.org

Scope of Work (SOW)
Global Fuel Cost and Emissions Reduction

1. **Purpose:** The purpose of the engagement between CRS Global Fleet and students from the Georgia Tech class xxx (TEAM) is, for CRS 1) to provide detailed analysis of the current CRS global Fleet and several operational test scenarios designed to reduce fuel costs, GHG and particulate emissions; several operational practices will be evaluated and the benefits of each established, and for the TEAM 2) provide real world experience in exploring ways an established entity can impact the environment, receive practical experience in the corporate world and develop, and present an acceptable action plan to be reviewed and implemented by CRS.

2. Background: Catholic Relief Services - United States Conference of Catholic Bishops (CRS-USCCB) was established in 1943 to serve the poor and vulnerable overseas. With nearly 5,000 employees, CRS works in 112 countries, and in FY16 reached 121 million people in the areas of agricultural livelihoods, health and nutrition, and emergency response, working with 1,819 partners around the world.

CRS Fleet operates approximately 1,400 vehicles of varying sizes across more than 50 countries. These vehicles are used to complete the missions in each country; ranging from food and medical distribution, to medical education and support for various other NGO's.

3. Objectives
The objectives of this engagement are:

For CRS
identify meaningful changes current to process and practices for;
- reducing fuel consumption
- reducing costs
- reducing CRS carbon footprint
- reducing particulate matter

For Tech TEAM
- obtain real world experience on issues impacting the global climate
- develop an understanding of the impact of ICE vehicles on the environment
- gain presentation experience and skills

4. Responsibilities

TEAM:
The TEAM will provide knowledgeable students to evaluate the CRS data and will adhere to the project timelines and deadlines:
- Actively participate in data analysis activities
- Use established and accepted scientific principles to develop solutions to meet the need of CRS
- Develop a results and recommendations proposal for senior leadership
- Present recommendations to CRS leadership

CRS:
CRS will provide:

- Internal data necessary to support a meaningful analysis
- Expert guidance on the fleet industry as it relates to proposed solutions
- Coaching on preparation and presentation of results

5. Support

CRS will designate a single point person to provide expertise from an industry standpoint and who will be the liaison between CRS country, regional and senior level management and the TEAM. The TEAM will provide a single point person who will be the liaison for CRS to the members of the TEAM and the professor(s) leading the class and evaluating the project. Both CRS and the TEAM recognize that additional contact may be required outside of the timeline below and will endeavor to meet those needs and will cooperatively work together to meet the goals of the project.

6. Deliverables

By the end of the project, the TEAM will:

- Develop a baseline for current CRS Global Fleet GHG emissions and particulate matter
- Develop at least 3 possible scenarios to reduce fuel usage focused on;
  - Modernizing the fleet using replacement parameters of 3, 4, and 5 years
  - Reducing excess vehicle idling
  - Matching the vehicle capabilities to the mission need
  - Rightsizing the fleet
  - Establishing coordination strategies between missions in country
  - Evaluating manual vs. automatic transmissions for non-4x4 needs
- Develop a presentation for CRS Executive Leadership (the TEAM may be present for the CRS EL presentation however this is dependent on scheduling)

7. Estimated Duration

The TEAM will be engaged from approximately February 24 - April 17, 2020.

Week 1 - 2020 February 24-28	• Kick off meeting with Team in Atlanta • Orientation to CRS • Project overview and data presentation
Week 2 - 2020 March 2-6	• Weekly call with Tech team • Discuss initial challenges
Week 3 - 2020 March 9 -13	• Weekly call with Tech team • Timeline check
Week 4 - 2020 March 16 - 20	• Weekly call with Tech team • Review results to date
Week 5 - 2020 March 23-27	• Weekly call with Tech team • Timeline check
Week 6 - 2020 March 30 – April 3	• Weekly call with Tech team • Review draft of presentation
Week 7 - 2020 April 6-10	• Weekly call with Tech team • Review draft results • Prep for presentation
Week 8 - 2020 April 13-17	• Weekly call with Tech team • Deliver executive presentation for project • Executive agreement for action

3. Covid-19 Changes and Evidence of Expected Approval

Michelle addressed the changing situation with Covid-19 in an email, then further in phone calls with the stakeholder, who expressed no concern about the project moving forward. He said the organization was eager to save money especially in the current climate, and reduce CO2, since the organization recently joined a Non-Government Organization (NGO) Climate Compact to celebrate Earth Day, focused on addressing climate change by reducing their carbon footprint. Signatories of the Climate Compact, organized by Interaction.org, were made public on April 22, 2020. The stakeholder expressed over multiple calls, and in writing below, that he already had preliminary approval for the project. The stakeholder said he expected executives to approve the full plan, but at a minimum, parts of it.

Bieger, Michael <michael.bieger@crs.org> Tue, Mar 17, 2020 at 2:33 PM
To: Michelle Babcock <mediabym@gmail.com>

Hi Michelle,

CRS is working remote for the next few weeks so like your team, we will not be meeting in person but are still moving the organizations work forward as we can. The first imperative is to keep everyone safe so I understand there may be delays. I'd say let's keep shooting for the original dates and just deal with any changes that occur. I completely understand if there are delays but I will still try to get the global leadership team for the 7 regions together when you are ready though it will probably be an online call/presentation if that is ok with your team.

Please send me more info on the Weather channel ask and also the details on the 'contest' that the team is involved in so that I can give written permission for reporting out to the board that judges the class (if it goes beyond GA Tech).

Thanks and stay safe

Earth day
3 messages

Bieger, Michael <michael.bieger@crs.org> Wed, Apr 22, 2020 at 9:25 AM
To: Michelle Babcock <mediabym@gmail.com>

Michelle,

No worries about the acceptance (I believe) as this was just heralded in an internal email from our President:

https://www.interaction.org/events/interaction-celebrates-the-50th-anniversary-of-earth-day-launching-the-ngo-climate-compact/

They cannot say no now – not being a signatory of this.

Michael Bieger | Global Fleet Manager | Catholic Relief Services | Mobile: +1 443-362-2578

Email: michael.bieger@crs.org | 228 West Lexington Street, Baltimore, MD 21201-3443 | crs.org | crsespanol.org

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4. Presenting to Executives and Evidence of Preliminary Approval

Our meeting to present to CRS executives was originally scheduled for the week of April 18th, but was moved online to April 23 after Covid-19 changes. On April 22, the meeting was delayed by one week, to now take place on April 30. After going back and forth with edits for two weeks, on April 22 we sent the stakeholder our final proposal and our final presentation, edited to fit the needs of CRS, along with a calculations reference sheet showing how we got to all of our final numbers. Again, the stakeholder indicated expected approval of the plan and reiterated that he would provide the needed documentation showing the organization's approval by our deadline for the CRC Challenge.

Final Docs
3 messages

Michelle Babcock <mediabym@gmail.com> Wed, Apr 22, 2020 at 2:30 AM
To: "Bieger, Michael" <michael.bieger@crs.org>

Hi Michael,

Attached you'll find 3 items:

1. **Final CRS Proposal:** This is the final copy of the proposal document with up-to-date numbers and information
2. **Final CRS Presentation:** This is our edited copy of the presentation, with all correct numbers and updated charts
3. **CRS Calculations Index:** This is just a "back-of-the-envelope" explanation of where every number came from for your reference. It's not pretty, as it's just for you to look at in case you need to understand where any calculations came from

Would you mind setting up the Microsoft Teams meeting for Wednesday at 6 p.m. for you, Rachel, and I to go over the presentation?

Talk to you soon!
--
Michelle Babcock
Media By Michelle LLC
MediaByMichelle.com

3 attachments

Final CRS Proposal.docx
249K

Final CRS Presentation.pptx
360K

CRS Calculations Index.docx
22K

Bieger, Michael <michael.bieger@crs.org> Wed, Apr 22, 2020 at 9:05 AM
To: Michelle Babcock <mediabym@gmail.com>

Michelle,

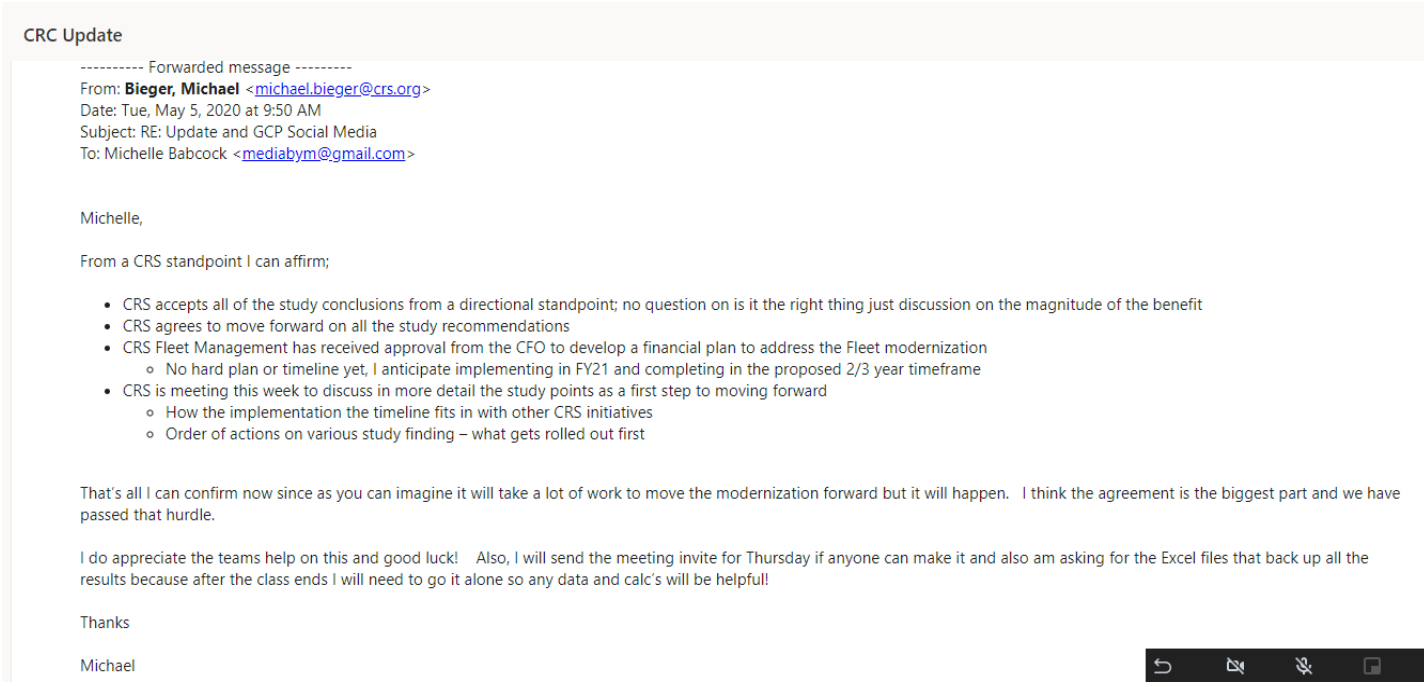
My apologies but the meeting has been moved a week to next Thursday at 8:00. So goes life in the business world!

What do you need as far as written verification that CRS accepts the findings and will implement the recommended actions and when is it needed? I will work to get that by your deadline.

Michael

5. Approval and Plan to Implement

We presented our proposal to CRS executives on April 30th via webchat. The team had about 30 minutes for presentation and questions and answers, and there were several questions remaining at the end of the session. Our stakeholder contact later followed up to let us know he had scheduled a second meeting to personally answer further questions about the proposal. We also received confirmation that CRS accepts the findings of our study and agrees to move forward with implementation. CRS fleet management has also received approval from the CFO to develop a financial plan to implement the proposal, and the expected rollout would begin in FY2021 and last around 2-3 years.



CRC Update

---------- Forwarded message ---------
From: **Bieger, Michael** <michael.bieger@crs.org>
Date: Tue, May 5, 2020 at 9:50 AM
Subject: RE: Update and GCP Social Media
To: Michelle Babcock <mediabym@gmail.com>

Michelle,

From a CRS standpoint I can affirm;

- CRS accepts all of the study conclusions from a directional standpoint; no question on is it the right thing just discussion on the magnitude of the benefit
- CRS agrees to move forward on all the study recommendations
- CRS Fleet Management has received approval from the CFO to develop a financial plan to address the Fleet modernization
  - No hard plan or timeline yet, I anticipate implementing in FY21 and completing in the proposed 2/3 year timeframe
- CRS is meeting this week to discuss in more detail the study points as a first step to moving forward
  - How the implementation the timeline fits in with other CRS initiatives
  - Order of actions on various study finding – what gets rolled out first

That's all I can confirm now since as you can imagine it will take a lot of work to move the modernization forward but it will happen. I think the agreement is the biggest part and we have passed that hurdle.

I do appreciate the teams help on this and good luck! Also, I will send the meeting invite for Thursday if anyone can make it and also am asking for the Excel files that back up all the results because after the class ends I will need to go it alone so any data and calc's will be helpful!

Thanks

Michael

References

[1] Human Health and Climate Change https://www.epa.gov/climate-research/human-health-and-climate-change-research

[2] For idling fuel use: https://ecomobile.gouv.qc.ca/en/ecomobilite/tips/idling_engine.php

[3] For maintenance: https://www.yourmechanic.com/estimates/toyota/land-cruiser

[4] For fuel economy: https://fueleconomy.gov/

[5] For global gas prices:https://www.globalpetrolprices.com/countries/

[6] For the CO2 cost of manufacturing a new car: https://www.theguardian.com/environment/green-living-blog/2010/sep/23/carbon-footprint-new-car

[7] All CRS fleet data from Michael Bieger, Global Fleet Manager

[8] Health Effects of Particulate Matter (PM) https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm

[9] Appendix I: Partial Fleet Data

[10] Appendix II: Full Calculations

[11] Appendix III: Key Communications