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Case Study:
Environmental Sustainability in The City of Folsom, California

Background

“Distinctive by Nature” is the tagline for the City of Folsom, California, a local government situated in the eastern region of Sacramento County. The city of 86,300 people (World Population Review, 2021), which was made popular by the Johnny Cash song “Folsom Prison Blues,” is nestled between the Sacramento Valley and northern Sierra Nevada foothills, about 22 miles northeast of Sacramento. It is worth noting how this local government is integrating environmental sustainability management into its operations because the city is impacted by intensifying wildfires and drought, promotes a close connection to nature, and is in an environmentally conscious state, but appears to be still in the early stages of sustainability planning.

As a part of the public sector, the mission statement of the City of Folsom (the City) is “to be a role model and regional leader that blends rich historical roots and diverse recreational and business resources into a great community” (City of Folsom, 2021). This vision’s emphasis on recreational opportunities is an acknowledgement of the City’s devotion to maintaining areas for natural spaces where residents can bike, walk, and play. Within the City’s local government there are 431 regular employees (Annual Report, 2019 - 2020), one of whom I interviewed as part of my research. Funding for the City’s operations and community services are provided by taxes, grants, and service charges.

Since it is the local government’s responsibility to care for the city and people of Folsom, it is helpful to take a quick look at the city itself for some background. This suburb of California’s state capital is 30.15 square miles (General Plan Update, 2021) and has an average income per capita of \$74,579 and a poverty rate of 5.56%—well below California’s poverty rate of 13.4% (DePietro, 2021). Since the year 2000, the population has grown an impressive 66% (World Population Review, 2021), meaning the City has had to continuously grow its operations to help keep up with maintenance while the population boomed. One of the main focuses of the City has been to ensure the residents maintain a strong culture of outdoor recreational activities. Not only does both the tagline, “Distinctive by Nature,” and the City’s vision, which mentions recreational activities, acknowledge this outdoor recreational culture, but the City has worked to ensure the residents of Folsom have access to multiple outdoor activities including the American River, the man-made Folsom Lake, and more than 50 miles of bike and pedestrian trails (City of Folsom, 2021). During the COVID-19 pandemic, the City released a video called “Looking Ahead” where the featured local politicians assured residents that the city’s “trails are a peaceful respite from daily challenges” (2021). Outdoor activities are woven into the fabric of everyday life in Folsom, California. However, even though this middle-class suburb supports a strong connection to nature, there is still much work that needs to be done to translate that passion for

outdoor activities into meaningful action to mitigate Climate Change and ensure those beloved community spaces can be enjoyed by generations to come.

This case study will explore how the local government of Folsom, California plans to integrate environmental sustainability by reducing greenhouse gas (GHG) emissions through its water consumption, wastewater management, transportation sector, solid waste management, and energy sector. Throughout this paper, I will discuss the City's organizational structure, the strategy and metrics used, how sustainability is perceived within the organization, and it will end with a look towards the future of sustainability in the City of Folsom. The research used includes the City of Folsom's 2035 General Plan and its Appendix A for the GHG Emissions Reduction Strategy, the 2009 GHG Emissions Inventory for Sacramento County, and an interview with one of the City's administrative employees.

Organization Structure & Capacity

One of the immediately evident structural elements for the City of Folsom is that it does not have a specific department devoted to sustainability planning or a city-wide sustainability plan. Instead, there are three main departments responsible for the environmental sustainability efforts detailed in the 2035 General Plan, the Environmental and Water Resources Department, the Public Works Department, and the Community Development Department. The Environmental and Water Resources manages water treatment, water quality, water conservation, and the wastewater pipe system. Public Works manages transportation infrastructure and collects solid waste, recycling, and green waste. The Community Development Department is responsible for managing the land use designations from the 2035 General Plan. Within all three departments there are engineers, scientists, administrative assistants, and technicians, and the Community Development Department also employs city planners. To better understand how the City is integrating environmental sustainability, there are six sectors of particular interest, five within the departments mentioned above and one applicable for the greater region. This section will discuss how the City divides responsibilities for the water, wastewater, transportation, land use, and solid waste sectors, and how the energy sector is accounted for by the City of Folsom.

First, water consumption is a critical element of environmental sustainability for Folsom, not only because the electricity required to transport clean water throughout the city can result in increased GHG emissions if non-clean energy sources are used, but because Folsom is in a water stressed area. According to the World Resources Institute's Aqueduct Tool, which assesses regional water stress levels based on twelve different indicators, Folsom, California currently has an overall water risk level of medium to high. The area's level of water risk is projected to continue in this concerning category into the year 2040—no matter the action or inaction the City takes. While the overall risk level considers indicators that are low risk for the area, such as the percentage of the population drinking untreated water, when looking at the ratio of water withdrawal compared to water supplies, the level risk is extremely high in the region (WRI, 2021). Suffice it to say, water is a precious commodity for the residents of Folsom. The City has a responsibility to help residents reduce their water consumption, especially since water risk is a compounding issue. The ongoing drought on the West Coast of the United States in tandem with the area's increasing heat levels are also associated with increasingly frequent and intense wildfires that pose great risk to the residents. The Environmental and Water Resources

Department's main objective is to oversee water consumption for the city and the department's priority in this area is to increase water efficiency. The department facilitates water efficiency through practices such as water efficiency services, commercial water audits, water-wise house calls, rebate programs, and water waste enforcement. The department also has programs devoted to community outreach and education to help residents learn the importance of water conservation. In terms of water consumption, the main goal of the Environmental and Water Resources Department is to provide reliable, low-cost water to residents and businesses (City of Folsom, 2021). Additionally, this department is also responsible for providing wastewater services, which will be explored next.

Second, wastewater management is important to environmental sustainability because treating wastewater is vital in ensuring harmful elements in wastewater are not released back into the ecosystem. The Environmental and Water Resources Department is responsible for mitigating any issues with wastewater pollution. They house a Wastewater Collection Division that inspects and maintains the City's 271 miles of sewer system pipeline with a five-year program to keep the pipes flowing freely (City of Folsom, 2021). Similar to the water consumption division in the Environmental and Water Resources Department, the main goal of the wastewater division is providing dependable and affordable services to the community.

Third, the Public Works Department is responsible for transportation infrastructure for the City of Folsom, including public transportation and street maintenance. Notably, although the City is proud of the more than 50 miles of bike and pedestrian trails, these trails are maintained by the Parks and Recreation Department (City of Folsom, 2021) and seem to be viewed separately from the commute priorities of street transportation and public transportation. Instead, the trails are viewed more for recreation than as viable commuting possibilities, which makes sense given that their paths meander throughout the natural areas on the outskirts of the city and not toward the main city areas. Both public transportation and active transportation options, such as biking and walking, are important to transitioning the City to more sustainable practices because the common personal car relies on gasoline and contributes to GHG emissions. Further, a city's productivity increases as more people can commute to more job opportunities with a reasonable daily commute, about one hour (Bertaud, 2014), making increased access to reliable alternative transportation not only good for environmental sustainability, but also for the city's economy. Currently, personal cars reign supreme in Folsom. A 2021 survey comparing cities in the Sacramento region found that 78.9% of Folsom residents commute using a personal vehicle (Best Places, 2021) and the real estate company Redfin rated Folsom's walkability 30 out of 100, deeming it "car-dependent" (2021). For Public Transportation, there are two options, the Folsom Stage Line buses that go within the city and the Light Rail that connects it to other cities in the region. There are three bus lines in the Folsom Stage Line and three Light Rail stations within Folsom. Both are priced at an affordable USD\$2.50 per ride, but only run about once an hour and do not run on the weekends or holidays (City of Folsom, 2021). Although the bus lines go to multiple, but not all, of the city's most popular destinations, the Light Rail stops are only located far on one side of the city. Given these parameters, it makes sense that a survey comparing cities in the Sacramento region states that only 2% of Folsom residents commute via public transportation (Best Places, 2021). Within the Public Works Department, the main goal is to provide affordable and timely services to residents, and within the public transportation division the goal is to offer services to everyone regardless of their various abilities.

Fourth, managing land use is critical for environmental sustainability because the decisions to use land for various purposes and spatial structure can greatly help or hinder the process of transitioning to a more sustainable city. The Community Development Department is responsible for the land use planning for the City of Folsom and looking at the City's website for land use, the map demonstrates that single family homes dominate the area. Of the residents in Folsom, 72% are homeowners, instead of renters (City of Folsom, 2021) and the land use map demonstrates the area's preference for single family homes. The land use map also shows how separate the residential areas are from the commercial areas, but that the city is planning to expand into the nearby open area, previously ranch land, to build a more mixed use and higher density area that has transit-oriented development (City of Folsom, 2021). The main goal of the Community Development Department is to actively participate in development-related projects and issues, and the planning division's mission is to provide a clear and responsive development process that creates a "balanced, sustainable community" (City of Folsom, 2021). This desire to be more sustainable is most reflected in the new land use plans for the new build area of the city.

Fifth, solid waste in cities is of critical importance to environmental sustainability because the conventional, linear take-make-waste economic model contributes to GHG emissions through production and end of life disposal, as well as the environmental issues associated with disposal such as landfill leaching and incineration pollution. This section will focus on the GHG emissions created in the later part of a products life. Folsom creates about 200 tons of waste every day (City of Folsom, 2021), and the Public Works Department mainly manages this solid waste by contracting with a company named Waste Management, Inc. (Waste Management, 2021). The primary method for disposing of trash in Folsom is through modern landfills that work to capture emissions. The company Waste Management has a large section of their website devoted to the sustainability practices the company uses, demonstrating a big devotion to environmental sustainability. The company also has received recognition as a Fortune 2021 World's Most Admired Companies, Barron's 100 Most Sustainable Companies, is on CDP's A List for climate friendly companies, and is a member of the Dow Jones Sustainability Indices (Waste Management, 2021). The company demonstrates their devotion to sustainability through projects such as their solar fields projects atop previous landfills which can power 460,000 neighboring homes and their goals to report and reduce their own emissions while helping their partners—such as the City of Folsom—to reduce their emissions. Another effort generating results is their project that has reduced their fleet emissions 46% from their 2010 baseline levels. Although this reduction is substantial, it is worth noting that fleet emissions were reduced by switching to "renewable natural gas," partly made from methane capture from their landfills. The technology to capture methane from landfills and transform it into usable car fuel is impressive, but one could argue that it should not be labeled "renewable" since this process relies on landfills from the unsustainable take-make-waste economic model. A truly sustainable waste management system would work to transform our economy from a linear model to a more circular one that largely reduces solid waste and reuses items many more times, instead of using the landfills to make natural gas fuel. Still, a 46% reduction of fleet emissions is impressive and worthy of recognition. Overall, the Folsom Public Works Department's primary partner in managing solid waste is contributing to the main goal of providing good service to consumers and is also actively taking steps to reduce GHG emissions.

Sixth is the energy sector, which does not have its own managing department within the City of Folsom, and instead is managed by the region's electricity companies and the state of California. However, a conversation about a sustainable city is not complete without a discussion on energy, because it is often thought of as the lynchpin of the Climate Crisis. If we can figure out how to deliver safe, reliable, and renewable energy to people around the world, we will greatly reduce GHG emissions and can transition to a clean economy, without sacrificing quality of living standards. To help transition away from dirty energy sources, the state of California has passed legislation—Senate Bill No. 100 or SB100—to reach 33% of renewable energy sources by 2020, 50% by 2030, and 100% by 2045 (California Legislative Information, 2018). Within the City of Folsom, there are two main electricity and gas providers, Sacramento Municipal Utility District (SMUD) and Pacific Gas and Electric (PG&E). Both are on track for the 2045 goal by achieving the 2020 renewable energy portfolio standards goal of 33% with SMUD and PG&E achieving 34% and 33%, respectively (SMUD, 2021; PG&E Corp, 2021). With this information we can see that even though the City is not in direct control of the renewable energy portfolio expansion, the City of Folsom is on its way to 100% renewable energy, along with the rest of California.

In analyzing the City of Folsom's organizational structure and capacity, one of the key takeaways is that of the six sectors related to environmental sustainability studied here, five are under direct control of the City, but they are spread out within three different departments. The main goal of the Environmental and Water Resources, Public Works, and the Community Development Departments is to deliver cost-effective and reliable services to the residents and businesses of Folsom. As demonstrated from the sustainability responsibilities spread between many different departments, sustainability measures are often interwoven into the departments' everyday responsibilities. From land use decisions that impact transportation choices, to water consumption trends that impact how much energy is spent transporting fresh water—sustainability opportunities are intertwined throughout the City's responsibilities. However, even though there are opportunities for sustainability management throughout these departments, the City of Folsom currently does not have a clearly designated team to track the progress on sustainability goals from the 2035 General Plan. One could argue that a sustainability focused team is not necessary, and this is true, integrating sustainability throughout every department of an organization can be highly effective, but this integrated approach does not seem to be working for the City of Folsom. Since none of the departments' goals are devoted to tracking sustainability progress, progress in this area seems to be getting lost, making it difficult to manage success.

Strategy & Metrics

The main sustainability goals of the City of Folsom are reducing GHG emissions 51% by 2050 from 2020 levels and immediately reducing water usage 20% from 2020 levels (GHG Inventory for Sacramento County, 2009; City of Folsom, 2021). Specifically, the GHG emissions goals are to reduce community and municipal emissions by 15% below 2005 levels by 2020, and eventually 51% below the 2020 target by 2050 (GHG Inventory for Sacramento County, 2009). Although the water reduction goals are directly stated on the City's website—along with tips for water reduction—the GHG goals are harder to find. Even when looking through the 2035 General Plan, the specific GHG reduction goals are not stated directly. The specific GHG numbers listed here had to be found using a Sacramento County GHG emissions report that broke down the

targets and main contributing sectors by city. The county GHG emissions report was created by a third-party consulting firm named Inner City Fund or ICF, which was named by Forbes America's Best Management Consulting Firm in 2021 for the sixth year in a row and was recognized in 2021 with a Climate Leadership Award for GHG management (ICF, 2021). Inner City Fund has the experience and ability to help Folsom manage its GHG emissions reduction targets, but it is notable that the City of Folsom has never been the initiating party for the GHG inventory. The City has consistently left this responsibility to be dealt with on the county level. In addition, the City of Folsom has never created a citywide sustainability plan, instead it has always opted for the county to deal with the GHG emissions inventory and create a countywide sustainability plan. Water consumption targets however are highlighted directly on the City's website and measuring the usage of water falls directly under the purview of the Environmental and Water Resources Department—although these are always within the context of the historic drought in the area (City of Folsom, 2021).

The lack of leadership on GHG emissions reductions and the water consumption reduction efforts being framed to mainly be drought-driven, leaves the impression that unless there are immediate threats to the City's residents and businesses, sustainability measures are not viewed as important to the organization's strategy. Further, my conversation with one of the City's employees also illuminated that there are no sustainability components in staff performance reviews or management compensation that relies on progress of sustainability targets. In fact, finding progress on the City's sustainability goals has been quite challenging. The City's website does not have a tracking service and other City documents and secondary sources do not have progress updates either. The main progress the City has made towards sustainability efforts appears to be in its plans for expanding into the nearby ranch area and creating a new sustainability focused neighborhood with mixed use and transit-oriented development. This effort to create a new sustainable neighborhood displays the City's awareness about transitioning to more sustainable practices, but the lack of an update to the 2009 GHG County Inventory is undoubtedly questionable in assessing the seriousness of the City of Folsom in environmental sustainability. The 2035 General Plan and its Appendix A for the GHG Emissions Reduction Strategy essentially states that the City will implement monitoring strategies but does not provide any further details on how this will be accomplished, what are the relevant KPIs, how often progress monitoring will occur, or how progress will be communicated to the public (2018). In general, a successful sustainability program appears to be defined as reducing GHG emissions and water consumption, however there is not a stand-alone City sustainability plan on how to achieve those goals, a monitoring process, or a progress report for transparency.

Internal Perceptions of Sustainability

Even though the City of Folsom is in California, one of the world leaders in environmental sustainability, the local government employees of Folsom appear to perceive sustainability anywhere from neutral to not important for the success of the City's overall mission. In my conversation with one of the City's employees, we discussed how the City underwent a process to make the office's operations more sustainable by using recycled paper, adding recycling bins, and switching from a paper to an electronic permitting process. These changes, while helpful, are very low stakes and do not have large reaching effects for creating a more sustainable city. In general, City employees seem to view sustainability efforts either as in

progress within some of the City's activities or as not well known and not a part of the organization's operations. As demonstrated from my conversation with one of the employees, there was some recognition with some office changes, but there was no major awareness about how sustainability has been integrated throughout the 2035 General Plan. For example, the employee was unsure about how the City was integrating environmental sustainability into city-wide operations, except for the water consumption reduction efforts. Sustainability efforts are interwoven throughout the 2035 General Plan, and therefore have been established in the organization, however there is a lack of connection or awareness within employees of sustainability efforts on the larger scale of the City. Even though three departments oversee sustainability into their operations, it still is perceived as a separate issue, impairing the ability for effective integration and employee understanding. This disconnect seems to have resulted in sustainability being viewed as fringe and not as important within the local government as other initiatives. However, even though the City has not made great strides at increasing employees' awareness or knowledge about the ongoing sustainability efforts by not conducting outreach events or including it in the employee onboarding process, there does seem to be an appetite for it. The employee I spoke with was interested in seeing more environmental sustainability within the City—which gives me hope that if the City of Folsom decided to make environmental sustainability more of an outwardly core part of their mission, that there would be acceptance of it within the employees.

Applicability for Other Organizations

During my research for this case study, I have identified three key takeaways that can be applied to other organizations. These takeaways include the importance of having clearly defined roles, how leadership can help make progress, and the need for sustainability to be viewed as a holistic approach.

Having clearly defined jobs, such as who is responsible for measuring and reporting progress, can have immense importance in helping organizations clarify their operations and manage their sustainability goals. In this case study, the City of Folsom did not have clearly defined roles because none of the three departments responsible for the six various sustainability sectors had the explicit job to also measure, track, or manage the progress being made. Peter Drucker is often attributed to the quote, “you can't manage what you can't measure,” and this sentiment rings true in this case study, but even more elementary than that, if the job of measuring is not assigned to a specific team or person, it will not get done. This was demonstrated by the fact that Folsom's GHG emissions have not been updated since 2009. When transitioning to more sustainability practices, it is essential to ensure each task is assigned to someone so that nothing is accidentally forgotten.

In addition, this case study demonstrated that leadership is critical in helping transition organizations to more sustainable practices. Leadership from the state of California was cited repeatedly as the reasoning behind why the City of Folsom adopted new practices. For example, the reasoning for the City's GHG emissions reduction goal was cited as Senate Bill 32, which declares the state's emissions will be reduced 40% by 2030 from the baseline year of 1990 (Sacramento County Climate Action Plan, 2021). Leadership and legislation were very clear motivators for why the City has made progress. Alternatively, within the City, there is not a clear figure or team that is driving sustainability within the organization. This lack of leadership is actively hurting the culture of sustainability, within the local city government and in the

community, as demonstrated by the employees' lack of awareness about current progress or goals. Sustainability leadership, such as a distinct Sustainability Department, can be helpful for organizations that are struggling with their sustainability goals. In contrast, organizations that already have a strong culture of sustainability might not need a separate department. Either way, no matter the form, organizations working to improve on sustainability could benefit from leadership with thoughtful direction and motivation for achieving sustainability goals.

This case study also demonstrated the need for sustainability to be viewed as a holistic approach to adapting an organization's operations, not a distinct, single action that can be taken. Even though the main sustainability goals articulated by the City of Folsom are GHG emissions reductions and water conservation, the City has environmental sustainability measures integrated across three different departments. This integration shows that, as important as it is to have strong leadership, it is also important to show how sustainability is intertwined throughout an organization's operations. If there is an understanding of sustainability as an operational concept that touches many of the processes, then not only will the organization's analysis of how to increase their sustainability will improve, but also the culture and appreciation for sustainability will increase.

Using these key takeaways, I hope that other organizations can integrate the lessons of clearly defining roles, actively using leadership to motivate progress, and demonstrating how sustainability is a holistic approach and is part of many steps in an organization's operations.

The Future of Sustainability in the Organization

In general, the City of Folsom has made some progress, but there is still much work to be done to integrate sustainability more seriously into the City's foundational operations. To improve the sustainability progress of the City, I recommend that it create a separate Sustainability Department, establish its own stand-alone sustainability plan with thorough goals and strategies, implement a routine measurement process with transparent reporting, and improve the sustainability culture within its offices and community. Currently, none of these recommendations are underway, but implementation would greatly improve the City of Folsom's ability to reach its sustainability goals.

The first action that will help the City take more ownership over its sustainability goals is to create a separate Sustainability Department. As demonstrated in the Organization Structure and Capacity section of this paper, currently sustainability measures—such as water, wastewater, transportation, land use, and solid waste management—are dispersed over three different departments. Integrating sustainability practices throughout an organization can work, however, since the main job of these departments is to provide affordable and effective services, there is a void of accountability for who oversees tracking progress on sustainability. After a Sustainability Department is created, the next step is to work on making a thorough citywide sustainability plan. This plan should be easy to read for non-experts, include goals and KPIs for the six relevant sectors (water, wastewater, transportation, land use, solid waste, and energy) and contain a schedule for measuring and reporting the KPIs on the City's website. With this more detailed roadmap, the Sustainability Department will be able to better manage and improve the City's sustainability performance. Lastly, throughout this process, there should be a concerted effort to build a culture of environmental sustainability in the City's offices and community.

Strategies and management practices will help a meaningful transition, but if the people are not engaged and excited for these changes the transition will be much less successful. I suggest adding sustainability elements to existing community events and hosting new events throughout the year devoted specifically to sustainability outreach. These events will help the City employees and community members know what steps are being taken, how they can be involved, and what to expect in the future.

If these recommendations are implemented, I believe Folsom, California will greatly increase progress on its sustainability goals. If action is not taken to improve the City's environmental sustainability efforts, progress will still be made, but it will be minimal and much of the progress will be from outside influences—such as SB100's influence on achieving 100% renewable energy. The residents of Folsom already have a strong connection to nature, as is evident from the culture of outdoor recreation, but it is essential to transition that passion into action on sustainability. All in all, it is up to the City of Folsom whether it wants to be dragged into the era of sustainability management or decide to take more meaningful action and become a leader for environmental sustainability.

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