

Executive Summary

Dubuque E-Bicycle / E-Scooter Program

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Project Scope:

This purpose of this project is to determine if implementing an electric bike or scooter share program is a feasible choice for the City of Dubuque. Through research conducted in conjunction with the City of Dubuque, our goal is to determine if this could be successfully implemented given the city's demographic and geography.

Problem Statement:

The City of Dubuque would like to expand their public transportation options. They are interested in incorporating electric bikes and/or electric scooters into the city but are unsure if it would be a popular solution for the demographic of Dubuque. The city's geography also poses potential challenges.

Project Goals and Deliverables:

The main goal of this project is to determine if implementing an electric bike or scooter share program is a feasible choice for the City of Dubuque. Through research conducted in conjunction with the City of Dubuque, our goal is to be to determine if such a program could be successfully implemented.

This project will be responsible for three main deliverables:

- A PowerPoint project presentation via Zoom on December 6, 2023

- Mock-ups of graphical information from survey research conducted with the City of Dubuque
- An Executive Summary Report that summarizes the project and key findings, implications, and recommendations.

Survey Methodology:

We created our survey the week of September 17, 2023, with the goal of learning about: demographics, citizens' experiences with E-Bike and E-Scooter rental programs, and people's opinions on these kinds of rental programs. We began our survey with questions about demographics, including age, gender, and location. We also asked about the frequency of travel within Dubuque and parking within the city. We then transitioned into questions about people's experiences with E-bikes/E-scooters. We asked questions about their familiarity with E-bikes/E-scooters rental programs and if they have used them before. We then moved into subjective questions, including opinions of the rental programs, if it would be a good idea for Dubuque to adopt such a program(s), and suggestions for transportation within the city of Dubuque.

The survey was sent directly to Cottingham and Butler employees. Our client/partner, Amanda Lewis, uploaded the survey to the City's transportation plan website, Move DBQ. We received 126 responses.

Key Finding #1: Alternative transportation

After analyzing data from a secondary source, we found that e-bikes and e-scooters reduce traffic congestions and provide a secondary option for transportation.

Recommendations: While the street traffic will become less congested, the lack of bike lanes creates cause for concern. We recommend that the Move Dubuque program create more bike lanes that will ensure safety and usage measures.

Key Finding #2: Air quality

After analyzing data from the University of California, we found that e-bikes and e-scooters can improve the air quality by reducing the number of motorized vehicles on the road. According to the University of California, “Davis, California generated 70% fewer emissions.”

Recommendations: Due to these programs’ positive reduction of carbon emissions, we recommend investigating government-sponsored environmental grants.

Key Finding #3: Physical activity

After analyzing data from Simply Analytics, we found that electric bikes can increase overall physical activity within a city by turning transportation into a form of exercise.

Recommendations: We recommend marketing E-bikes as a form of physical activity and emphasizing this added benefit. We believe this will have strong appeal from health-aware residents.

Key Finding #4: Costs

After analyzing data from secondary sources, including financial websites and Citi Bikes website, we found that there is a large cost associated with the implementation of an E-bike/E-

Scooter rental program. The average cost for installation of a charging rack is \$3,000-\$5,000, an up-front the city would need to take on. This is in addition to the user charges of about \$1 to unlock and 15-cents per minute, which may be a drawback for some potential users.

Recommendations: The city will need to invest in multiple stations, which quickly becomes expensive. We believe the city should look for some sort of outsourced funding that will help lower the initial cost of implementation—specifically, governmental climate programs that incentivize cities moving towards more climate friendly alternatives.

Key Finding #5: Geographical challenges

We found that within the city of Dubuque, there are major geographical and infrastructure issues affecting implementation of an E-Bike/E-Scooter program. These issues include steep hills and an overall lack of bike lanes within the city.

Recommendation: More bike lanes need to be installed around the city. Also, due to the overall infrastructure, it would be beneficial to include range monitoring on the electric bikes and or scooters in hopes of decreasing lost and stolen bikes. Range limits would help people stay within the city's limits and intended usage areas.

Key Finding #6: Return of equipment

As these programs are user-based, it can be hard to guarantee that users return the bikes and scooters to a designated location. Also, since there is a plethora of bars within the area, people

under the influence may be at higher risk of misusing the bikes and or scooters resulting in injuries or damages.

Recommendation: A sizable, time-based fine should be implemented for users who do not return the vehicle to the designated charging stations. Also, these fine will correspond with damages done to the vehicle itself and property around the city.

Key Finding #7: Liability and Safety

The laws pertaining to electric scooters and bicycles are still evolving, which can make it complicated to pinpoint liability for any potential accidents. Parties that *could* be liable for an accident include pedestrians, e-riders, e-rental company, the city, drivers, and the manufacturer. According to one source, more than 20 individuals may be injured for every 100,000 e-scooter trips. From our understanding, the city wants to avoid liability at all costs, making this a big concern for implementation.

Recommendation: A strong waiver contract should be implemented to reduce liability, coupled with safety information that users must read prior to using the vehicles.

Recommendations and Final Assessment:

In reviewing our findings, there are clear benefits to the implementation of either an electric scooter program or an electric bicycle program. These programs can reduce traffic congestion, provide a secondary option of transportation, and improve air quality. However, we believe there the significant challenges outweigh the benefits to implementing a program. These

include cost, the city's lack of bike lanes and hilly terrain, potential misuse and other issues of liability and safety.

In lieu of a city-wide rental program, we suggest partnering with current local businesses, such as Dubuque E-Bikes, and improving the cycling infrastructure by installing more bike lane. By providing support to small businesses that sell e-bikes and scooters, they might expand and reach more users. Dubuque E-Bikes opened in 2020 with a focus on leisure and trail biking. Their business has increased each year mainly from word-of-mouth advertising. We suggest the city collaborate with them by providing financial assistance with building their existing pool of rental bikes. If more people have access to e-bicycles via their rental service, Dubuque might see growth in its commuter biking population.

We also suggest creating a Clean Vehicle Rebate that subsidizes a set amount of money for Dubuque residents to purchase their own electric bicycle. This is inspired by the California Clean Vehicle Rebate Program through which the state government subsidizes approximately a \$4,000 rebate off purchasing a new electric vehicle. This is approximately a 7% rebate off the price of a new car. We recommend Dubuque use this same percentage for their Clean Vehicle Rebate Program: the average electric bicycle retails between \$2,000 to \$3,000, so a rebate would be between \$140 to \$210.

Due to the city's stated desire to avoid all liability, the lack of bike lanes, and the city's geography, we advise against the implementation of a rental service for both electric bicycles and electric scooters. We hope Move Dubuque can use the data and information we collected for future consideration of this issue as the city finds other alternatives to its transportation system.

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