Dubuque E-Bike and Scooter Program Market Analysis

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Project Scope:

This project is to determine if implementing an electric bike or scooter share program is a good idea and/or feasible for the City of Dubuque. Through research conducted along with the City of Dubuque, our goal is to be able to determine if this would be a successful implementation amongst 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, as well as if it would work in the geography of the city.

Project Goals and Deliverables:

The main goal of this project is to determine if implementing an electric bike or scooter share program is a good idea and/or feasible for the City of Dubuque. Through research conducted along with the City of Dubuque, our goal is to be able to determine if this would be a successful implementation amongst the city's demographic and geography.

This project will be responsible for three main deliverables:

- A PowerPoint project presentation via Zoom on December 6th
- Mock-ups of graphical information from conducted survey research 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 17th. We created it with the goal of finding out the demographics, peoples experiences with E-Bike and E-Scooter rental programs, and people's opinions on E-Bike and E-Scooter rental programs. We first started 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 if they have heard of E-bikes/E-scooters rental programs and if they have used them before. The questions about experiences made it easy to move into the opinionated questions, including thoughts of the rental programs, if it would be a good idea for Dubuque to adopt the program(s), and suggestions for transportation within the city of Dubuque. Our survey received 126 responses, with our survey being distributed through Cottingham and Butler employees and residents of the city of Dubuque. The survey was sent directly to Cottingham and Butler employees and our client, Amanda Lewis, uploaded the survey to the City's transportation plan website, Move DBQ.

Key Finding #1:

After analyzing data from a secondary source, we found that e-bikes and e-scooters reduce traffic congestions. E-bikes and e-scooters 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 creates more bike lanes that will ensure safety and usage measures.

Key Finding #2:

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:

We recommend that given the city's budget for the program that the city should look into government environmental funding as it can have beneficial effects on decreasing overall carbon emissions.

Key Finding #3:

After analyzing data from Simply Analytics, we found that electric bikes can increase overall physical activity within the City. The availability of electric bikes can turn transportation into a form of exercise.

Recommendations:

Our recommendation for this finding is to market the electric bikes as a form of physical activity as it can draw in more attention from consumers as there are added benefits.

Also, it can drastically affect the thoughts and interpretations of the program from health aware residents.

Key Finding #4:

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. We found that the average cost for installation of a charging rack is $3,000-$5,000, an up-front cost that will be charged towards the city. There is also a charge for users of the rental programs, about $1 to unlock and 15 cents per min, which is something users may be hesitant about.

Recommendations:

Our recommendation is that the city will need to invest in multiple stations, which quickly adds up to be expensive. We believe the city should look for some sort of outsourced funding that will help lower the initial cost of implementation. Specifically,

look at governmental climate programs that incentivize cities moving towards more climate friendly alternatives.

Key Finding #5:

Our key finding number five dealt with the overall infrastructure of the city. We found that within the city of Dubuque, there are key geographical and infrastructure issues in terms of implementing a rideshare program. These issues include the large hills and lack of bike lanes within the city.

Recommendation:

Our recommendation for this issue is to install a number of bike lanes 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. Since the geography of the city is rather large, range limits would help people stay within the city's limits and intended usage areas.

Key Finding #6:

Our key finding number 6 dealt with the clutter and misuse of the scooters and bikes. As these programs are user-based, it will be hard to guarantee that users will return them to the 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:

Our recommendation corresponding with this finding is to implement a large, time-based fine 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:

Our key finding number 7 involves all of the liability and safety concerns related with the implementation of one of these programs. The laws on electric scooters and bicycles are still constantly evolving, which can make it complicated to pinpoint liability for any potential accidents. Potential parties that could be liable for an accident include: pedestrians, e-riders, e-rental company, the city, drivers, and the manufacturer. One statistic that we found was that 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 implementations.

Recommendation:

If implemented, we recommend having a strong waiver contract to reduce liability. As well as making riders read safety information before using the vehicles. Ideally allocate liability away from the city as possible.

Final Assessment and Recommendations:

Looking at all our findings throughout this semester, some clear benefits to the implementation of either an electric scooter program or an electric bicycle program. Few of these being reduced traffic congestions with being a secondary option of transportation, as well as improved air quality with less use in emission options being used. However, we do believe there are more significant challenges with implementing a program. Those being the cost, the overall infrastructure of the city, potential clutter and misuse, as well as all of the safety and liability concerns.

A few of the initial recommendations we suggest are to partner with current local businesses such as Dubuque E-Bikes, as well as to improve the cycling infrastructure by installing more bike lanes throughout the city. The major factors that are deterring the project is how there is currently no budget being allocated by the city to implement the program. There is the lack of proper infrastructure due to Dubuque's hilly roads, lack of bicycle lanes, and winter months. The several liability and safety concerns, where the city wants to have zero involvement in having the

liability responsibility of any accidents or injuries associated with the program. Because of this, for the time being we advise against the implementation of a rental service for both electric bicycles and electric scooters. However, our data collected from our findings can definitely be used in future projects or implementations. Specifically, Move Dubuque can have this for additional data and information.

The alternative suggestions we highly suggest instead of these programs is to incorporate a Clean Vehicle Rebate Project. With this you can subsidize a set amount of money for Dubuque residents to purchase their own electric bicycle. The other is to give support to the business Dubuque E-Bikes and help expand their business, and potentially collaborate with other local businesses for promotion.

For the Clean Vehicle Rebate Project, we created the idea around the California Clean Vehicle Rebate Program. For California's program their government subsidizes approximately a $4,000 rebate off purchasing a new electric vehicle, and with the average electric vehicle price being $53,500 this makes it an approximately 7% rebate. The example amount we recommend Dubuque to use for their Clean Vehicle Rebate Program is using that same 7% rebate. The average electric bicycle retails between $2,000 to $3,000. Making potential rebate options be between $140 to $210.

For Dubuque E-Bikes, they started in late 2020 mid pandemic. They have a focus on leisure biking and trail biking. They have seen great success from simply word of mouth advertising and their business has increased each year. Our idea is to have the city collaborate with them. This may include donating more e-bicycles to expand his existing rental services. Expanding the quantity of e-bicycles in his rental service may expand his clientele from leisure biking to more commute biking customers.

Our final recommendation is that due to high cost, possible liability, and infrastructure limitations, we do not recommend implementing a city electric bicycle or electric scooter program. Instead, we recommend the city to support residents in purchasing their own personal electric bicycle by using the Clean Vehicle Rebate Program.

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