Executive Summary:

Final Research Paper
Acting as an informal economic consulting team over the course of the semester, our team has identified a local economic and social problem within the city of Fort Collins. We have prepared a Cost-Benefit Analysis, which gives insight into a specific policy initiative. We realized the existing shortage of the number of beds available to people experiencing homelessness, and aimed our project towards a multifaceted solution. In an effort to increase the number of available beds, it was decided to focus on the Fort Collins Rescue Mission building located on Jefferson street. Our policy proposal is to revamp this building through repainting, solar panel installation, and increasing the number of sleeping arrangements. The notion of gentrification has remained in the contextual background of our policy proposal and connections are made throughout the paper between new construction projects in the city and our own initiative. The costs of our project were all tangible and able to be estimated directly. The benefits we predict to see were much harder to quantify, and so we decided to use various survey methods to monetize them. It was necessary to separate our impacted markets into primary and secondary, think carefully about surplus areas and economic forces, and develop a survey that helped illustrate people’s willingness to pay. It was concluded based on our research and findings that this project is fiscally reasonable and is something the city of Fort Collins could allocate its resources to. We have used various methods and practices from the course textbook to aid our analysis, and have incorporated feedback we received from our instructor and the other teams in the class to develop this final research paper.

Our policy proposal aims at bettering the life of homeless people in Fort Collins. More specifically, we are going to target the “Fort Collins Rescue Mission” building located in Old Town. The homeless population in Fort Collins has been growing over the years, and currently
it’s estimated around 330 people sleep outside every night. Within this homeless population, 16% are considered minors, which we found to be very shocking. Moreover, we’ve recently noticed that areas in Old Town where the homeless would sleep outside due to the lack of beds, have been experiencing a great deal of gentrification pushing them out of their already very restricted number of available places to sleep. This gentrification is further restricting the amount of “acceptable” areas they are able to wander and sleep. Recently, a housing project broke ground on “Jefferson Park” across the street from the shelter to build another restaurant in Old Town. This housing project pushed out many homeless who slept in the park due to a limited number of cots in the shelter. With all of this happening, we hope that our policy can alter the perception of the homeless and revamp the shelter, while also providing benefits to the surrounding community. Thus, the main focus of our policy will be on renovating and expanding the number of beds at the existing building and creating a modern, self-sustaining, solar panel design.

We strongly feel that our policy provides a great deal of benefits to the public which generally relate to aggregate willingness to pay. Following the Neighborhood Livability & Social Health and Environmental Health Strategic Objectives in the Fort Collins city plan, we can “Engage citizens in ways to educate and encourage behaviors toward more sustainable living practices” through being a renewable source of solar energy, as well providing opportunities that teach the homeless population trade skills and overall enhancing the available life changing programs at the shelter. Our main goal with this is to provide more beds as well as additional opportunities to the homeless, alter the current perception of the shelter and homeless, and lastly provide secondary benefits to the surrounding community. Further, solar energy will allow the shelter to be self sustainable, with hopes to provide excess energy to the city. Our hope by
imposing this policy is to alter the perception of the homeless, increase their quality of life, and decrease the homeless population, and loitering throughout Old Town. Lastly, by implementing this policy we envision a great deal of benefits arising that support the local community and its businesses. More specifically, the benefits should include supporting workforce development by increasing employment in the city (current unemployment is 1.8%), decreasing the homeless population, and lastly contribute to the success of surrounding businesses. Our policy will have both primary market and secondary market effects. The details of our primary market will entail things such as increasing the number of available beds, increasing the overall quality of the homeless shelter, and providing further growth opportunities for the homeless such as books, farming, and trade skills. For our secondary market, some of the benefits we feel our project will bring to the city are solar energy providing a sustainable power source for the shelter, as well as hopefully providing excess energy to the city. In addition, we hope to provide more employees who can help patrons of the shelter overcome any mental or physical health issues they have, and prepare them for getting back on their feet. We also will highlight the importance of programs which create job opportunities in which the homeless population can become more engaged with the community, while simultaneously educating themselves with books and building trade skills through farming and other opportunities offered by the shelter. Lastly, we hope this policy will bring an increased appeal and changed perception of the shelter and homeless people as a whole. This would benefit the surrounding businesses in the community and result in an increase in employment and decrease the homeless population for the city. Our costs that will be encountered throughout the project are as follows.

Our primary market will be increasing the quality of life for the homeless of Fort Collins. We plan to do so by expanding the number of available beds and the highlighting of life
changing programs that get them back on their feet and set them up to improve their opportunities finding a job. While further enriching the surrounding community. Our idea was that increasing the number of beds available to the homeless, could enable further growth opportunities for the homeless. Such as providing therapy aimed at their betterment, highlighting the value of available programs that contribute to career building skills, with the goal of getting them back in the workforce. Also providing donated books which we would get from people within the community who want to further enable their betterment. Overall goal being to alter the current perception of the homeless which in turn results in increased donations, and further support in getting the homeless on their feet. This policy not only benefits the homeless community but also brings a great deal of benefits to the surrounding community.

Our secondary market By providing solar sustainability to the shelter we will be able to cut costs for the shelter and potentially funnel excess energy to the city. Decreasing the homeless population, by actively providing the homeless opportunities which in turn help them get jobs within the community, overall decreasing lingering around business and further decreasing the current 1.8% unemployment rate. Expanding the number of available beds should also decrease the number of illegal sleeping fines issued to the homeless, as well lingering around businesses and in turn make oldtown feel more welcoming. To monetize our benefits and costs that we will encounter throughout this project we will need to identify people's willingness to pay through surveying. We plan to conduct these surveys within old town, surveying businesses and people. Gathering info regarding how they value bettering the life of homeless people in Fort Collins, and other data such as how much they value the secondary benefits that come with bettering their lives. Such as a decrease in the number of illegal sleeping fines issued to the homeless as well as the amount people lingering around businesses. We hope that this will result in increased appeal
of Old town and result in increased traffic flow to businesses. Further we expect that our solar panels providing a renewable source of solar energy for the shelter can enable it to become self sustainable and provide excess energy to the city.

**Benefits and Costs Outlined**

Benefits = Increased standard of living (Direct, Internal, Intangible, Real), Solar energy (Direct, Internal/External, Tangible, Real), increased appeal of homeless / building (Indirect, External, Intangible, Real), job opportunities (Indirect, Internal, Tangible, Real), education / getting people engaged with the community (Direct, Internal, Intangible, Pecuniary).

Costs = New beds (Direct, Internal, Tangible, Real), Solar panels (Direct, Internal, Tangible, Real), books (Direct, Tangible), Food (Direct, Real, Tangible), Employees (Real, Direct, Tangible), Monthly utilities (Tangible, Internal).

**Monetized Costs**

- **New Employees x 4**
  - House Manager x 1 x $32,000 = $32,000
  - Case Manager x 1 x $35,000 - $35,000
  - Counselors x 2
    - Mental health counselors x 1 x $37,410 = $37,410
    - Shelter psychologists x 1 x $53,380 = $53,380

- **Repainting of building** - 7,841-square-feet at $4 a square foot = $31,364

- **Solar Panel Installation** - 1,500 square feet - 5 kilowatt System Cost = $15,000 ($10 per square foot)
  - Could produce 22,488 KWh/year, Fort Collins charges $0.067/KWh
  - Potential savings of $1,506 per year
  - Solar installation paid off in 10 years
  - Subsidies are dried up.

- **Beds** - Triple Bunk Bed Cots - $550 per bed x 42 (new additional sleeping spaces) = $23,100
  - Mainstays pillows - $5 per pillow x 42 = $210
  - Blankets - $5 per x 42 = $210
- **Food, Water & Electric (Utilities)** - At a cost of $2,100 per person (monthly), the program is a cost-effective means of helping the homeless at a time when shelters are struggling just to make ends meet. It costs a shelter on average $2,100 a month per person or $25,200 a year per person just to feed and house the homeless. $2,100 x 42 (new beds) = $1,050,000 per year
  - After 10 years adjusted cost per person per month= $1,974.50
  - Total yearly after 10 years cost per person = $23,694

- **Total Project Costs** = $1,248,874
  - Potential savings of $1,506 per year for solar panels after 10 years.

- **Adjusted total Project costs after 10 years** - $1,247,368

**Graphs**

**PRIMARY MARKET GRAPH = BED SHORTAGE & HOMELESS POPULATION**

The graph below illustrates our predicted primary market effect of bettering the homeless by increasing the number of available sleeping beds at the shelter. We expect that this increase in the number of beds will cause the current shortage of beds to shrink. In turn causing the inelastic bed supply line to increase and shrink the shortage. However we may not have much success in shrinking the shortage as this betterment of the shelter and increase in beds may attract more homeless from around the city and other states nearby and cause the shelter to have a similar bed shortage.

**SECONDARY MARKET GRAPH = SOLAR ENERGY / ELECTRIC COSTS**

The graph below illustrates our predicted energy savings per year for the shelter after the installation of our solar panels. The solar panel system we will install is a 1,500 square foot - 5 kilowatt System which we estimated from data found online will be able to produce around 22,488 KWh/year. Fort Collins charges $0.067/KWh so we expect
potential savings of around $1,506 per year. This savings is which is shown below by a downshift in our energy costs, showing our newly predicted yearly costs.

Secondary market graph - Fort Collins Unemployment

The graph below illustrates our predicted secondary market effects of increasing the quality of life for the homeless. We expect that after proper sheltering, progressive programs and therapy with psychologists we will be able to get people from the shelter back on their feet and employed. We hope to be able to move multiple people out of the shelter within a six months to a year at our shelter. We plan to target our younger 16% of the homeless population as they are more likely to get back on their feet and employed after help from our shelter. We expect that their enrollment back into the workplace will cause the Fort Collins unemployment rate down to shift down, and in turn decrease the number of homeless people overall.
Secondary market graph - Business Traffic Flow

The graph below illustrates our predicted secondary market effects on local businesses in old town. We expect that as we increase the number of available beds and get the homeless back on their feet and employed. This will in turn cause the number of homeless in Fort Collins to decrease, which in hopes will result in decreased lingering and sleeping around businesses and the city itself. Resulting in possible increased traffic flow to local businesses and hopefully causing a slight uptick in their monthly sales.

Surveys

In order to make this betterment possible, we need to find a way to monetize the benefits of this policy. So we decided to use a survey method to measure people and businesses willingness to pay. To do so we had to use shadow pricing. Further, when surveying people and business in Old Town we used the Direct Elicitation Method. Lastly, our payment vehicle to further help identify values was a housing tax. Below you will see our finalized surveys and a few graphs illustrating some of our findings.

Old Town Survey Questions: Individuals (Consumers)

1. Are you interested in the betterment of the homeless population of Fort Collins?

2. On a scale of 1-10, 1 being minimal to no interest and 10 being the max and of high interest, how would you value the betterment of the homeless?

3. How much of a housing tax increase would you be willing to accept to enable this betterment of the homeless?
4. Would you be willing to donate books, and or other educational/beneficial things to the homeless shelter to further contribute to their betterment?

5. Lastly, what is the minimum amount of money you would accept to sleep outside for a night?

**Survey Question #2**

**On a scale of 1-10, 1 being minimal to no interest and 10 being the max and of high interest, how would you value the betterment of the homeless?**

23 responses

For this Survey Question, we wanted a way to test how interested people actually were interested in the betterment of the homeless in general. One thing to note about these results, is that these responses are only from people who said “yes” to question number one, which was whether or not they were interested in the betterment of the homeless. The answers for this were pretty split, where some people were very interested (Rating of 8+), and others were not too interested (Rating of less than 5). But what the most people responded was seven, which is promising for what the whole population might think as a whole.

**Survey Question #3**
We wanted to use this question as our shadow price for people's willingness to pay for the potential improvements to the homeless shelter. We found that most people would be willing to accept a moderate increase in housing tax in order to better the homeless. On average, we found that that number was about 0.2%, which would be a slight increase in the current housing tax rate.

**Survey Question #4**

Would you be willing to donate books, and or other educational/beneficial things to the homeless shelter to further contribute to their betterment?

For our fourth survey question, we wanted to ask this to see what the difference was between people wanting to donate money, or wanting to donate more material items such as book instead. The majority of those surveyed stated that they would be willing to donate books and other items, which could potentially be used in another study or program.

**Old Town Survey Questions: (Businesses)**

1. As a business owner/manager, do you value increasing the quality of life of the homeless?
2. On a scale of 1-10, 1 being minimal to no interest and 10 being the max and of high interest, how would you value the betterment of the homeless?

3. What percentage of income from your Old Town business would you be willing to give up to help enable this betterment?

4. As a business owner/manager, would you have any interest in potentially hiring someone who is or was recently homeless?

Survey Question #2

On a scale of 1-10, 1 being minimal to no interest and 10 being the max and of high interest, how would you value the betterment of the homeless?

21 responses

Similar to question #2 on the individuals survey, we wanted to see how interested businesses would in it as well. Most businesses were actually more interested in their betterment than the individuals, which we thought was interesting, and could be an indicator of how much having the homeless around affects their business.

Survey Question #4
As a business owner/manager, would you have any interest in potentially hiring someone who is or was recently homeless?

21 responses

Because one of our other goals of this CBA was to potentially decrease the homeless population, and in turn decrease the unemployment rate, we wanted to see how many businesses would hire someone who is or was recently homeless. The results were split down the middle on whether or not businesses in old town would hire someone who was recently homeless, which we also saw as a line in the sand on how much the businesses were actually interested in the betterment of the homeless population.

**Summary of Results**

With our survey results, we found that majority of people and businesses were interested in the betterment of the homeless. Understandably, people have varying levels of interest, but the interest shown in the small sample is promising. We tried to frame the questions ways that were fair and objective, instead of trying to convince them to say what we wanted to hear. With that said, this does not reflect upon the entire population of Fort Collins and if this project was to move forward, we would suggest a bigger number of people surveyed.

**Findings**

- We need to account for selection bias, possible fire code issues for our new increased number of beds
- We also found that we should possibly prepare / account for an influx of homeless people to this Fort Collins shelter, which in turn could put us right back to where our issues first began.
- We used shadow pricing to identify our benefits
- Majority of the people were interested in the betterment of the homeless, our average accepted willingness to pay for this betterment was a 0.2% increase in property tax. Further, the majority of the people were interested in donating books and other goods.

- Majority of the business’ were interested in this betterment and were split on hiring homeless or ex-homeless individuals.
  - Willing to accept a tax increase however we couldn’t monetize due to the inability of findings an accurate average of sales for Old Town businesses.
- However, not many people willing to give up much of income, more willing to donate items

- The average value of sleeping outside for a night by the individuals interviewed was $362.50.
● The average cost of a home in Fort Collins is $325,044

● As of 2010, according to the United States Census Bureau, there are 60,500 houses in Fort Collins

● While we do not have a solid number for the entire population, we can take an average of those surveyed willingness to pay, and multiply it by the cost of the average home in Fort Collins, as well as the the number of houses in Fort Collins

● **Benefits from the Tax** - Average cost of a home ($325,044) x 0.002 Tax Increase ($650.88) x Number of houses (60,500) = $39,330,324

● When comparing the costs to the benefits, it reveals that our project is feasible!

● **Total Project Costs** = $1,248,874

● **Total Estimated Project Benefits** = $39,330,324

  Net Social Benefits - $39,330,324 - $1,248,874 = $38,081,405

● If we were to implement this, having the housing tax for only one year would bring in enough tax revenue to sustain the shelter for many years to come

References

- Used for information for solar panels


- Used for information for solar panels


- Link regarding gentrification of homeless population and the building on Jefferson Park


- Used for information regarding electricity costs


- Used for finding salaries of Homeless shelter employees


- Used for information regarding the homeless shelter, and their shortage of beds


- Statistics of homeless population in Fort Collins


- Used for information regarding potential energy savings of our solar panels

- Used for information about home values and housing tax in Fort Collins