CIVIL AND ENVIRONMENTAL ENGINEERING

Design of Collection System for the Recyclable Solid Waste in Adams Neighborhood, Logan City

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Abstract: Due to the high cost of recyclable solid waste collection practices, this project aimed at designing a new collection system for the Adams Neighborhood, Logan City, Utah using Arc GIS tools. The project focused on finding optimum locations for placing 4-cubic yard dumpsters to collect household recyclable waste such that travel time and distance from households to dumpsters is minimized. Additionally, the project focused on generating the optimum collection routes, minimizing the travel distance for the collection trucks. The first goal of this project was achieved using a Location-Allocation analysis whereas the second goal was achieved using a Vehicle Routing Problem analysis. The outcomes showed that 242 4-cubic yard dumpsters are needed to the serve all the households in Adam's neighborhood. The dumpsters were spread out all over the neighborhood in a way that resulted in an average vehicle travel time of 0.056minutes (3.3 seconds) (following speed limit of road network) from the households to the corresponding dumpster. In our analysis we only calculated in vehicle travel time whereas the average travel time of 0.056 minutes showed that most of these are easily accessible by walking also. The longest and shortest travel time were 1.04 and 0.01 minutes, respectively. The results also showed that the proposed scenario would reduce the collection distance of trucks from 104 to 59.2 km causing approximately 45% reduction in the travel distance. This could be easily reflected on fuel consumption and the consequent air pollutants emissions. This project showed that switching to bigger waste containers would reduce the number of collection points and minimize the travel distance needed to cover all these points. However, people's response, the economic aspects and many other parameters have to be addressed first in order to come up with a comprehensive study.

Keywords: *Routing problem, stationary collection system, collection routes, 4-cubic yard dumpster*

1. INTRODUCTION

Solid waste generation has been considered as a critical issue all over the world mainly because of its effects on the environment, human life and its high management costs (Shekdar, 2009). Waste recycling practices have been adopted by many countries in order to help in a proper management of the huge amount of waste produced every day (Haug, 2018). Waste recycling is a process consisting of different practices that mainly aim to recycle wastes that can be used for making new products ready to be used again. In addition, waste recycling also helps in natural resource optimization. According to the U.S. Environmental Protection Agency (EPA), the recycling rate in the USA was 34.7% of total Municipal Solid Waste (MSW) in 2015. In the USA, the amount of generated recyclable waste in 2015 was about 67.8 million tons, which was collected by local municipalities (United States Environment Protection Agency, 2018). Waste recycling processes start with collecting the recyclable waste from the source (Pattnaik et al, 2010). Among different elements of a waste management system, waste collection system is a crucial one. The reason is that collecting separated or unseparated recyclable waste from each home, apartment, commercial and industrial facility in urban and suburban area is difficult and complex. An efficient waste collection system requires the sufficient ability to predict capacity of the system and to meet the demand of the users (Tchobanoglous, et al, 1993).

Waste collection practices require more than 50% of the total budget allocated for the management of solid waste. For instance, Ghose et al. (2006) mentioned that almost 85% of total waste management expenses were spent on collecting and transporting waste in many developed countries. In addition to the

high running cost, waste collection practices are also responsible for the emission of Greenhouse gases, which can add to the global warming problem. Hence, there is a need to optimize cost, travel distance, fuel and gas emissions attributed to the practices of recyclable waste collection. Therefore, this study aimed to design a new collection system for the recyclable solid waste for the Adams neighborhood to reduce the travel distance and time of the collection trucks. Using tools available in ESRI ArcGIS software, the project produced a plan to distribute 4-cubic yard dumpsters in the Adams neighborhood in a way that minimizes travel distance and time from the households to the dumpsters to encourage the highest participation from the population.

2. BACKGROUND

This part of the report provides the overview of the study area, information on the current collection system and information of some similar types of work done previously.

2.1. Study Area

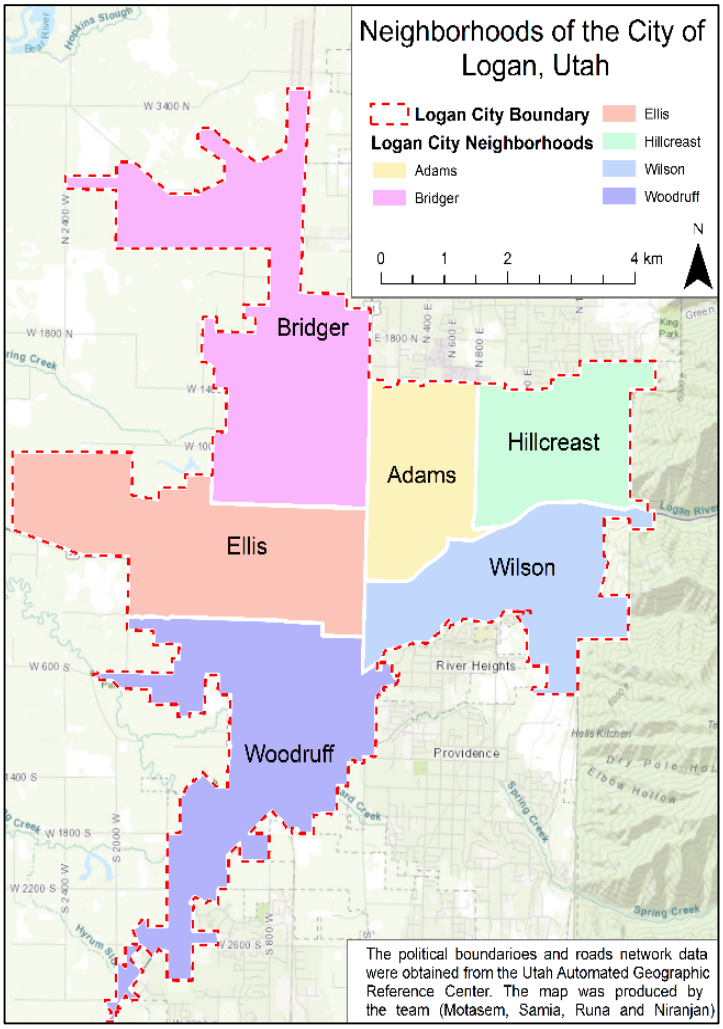

Figure 1. Neighborhoods of the City of Logan, Utah

Adams Neighborhood is located in Logan City, Utah (Figure 1). This study area includes residential areas, schools and grocery stores. This neighborhood was chosen for this project because it is one of the most populated neighborhoods of the City of Logan. According to the Logan City Environmental Department, almost 44,000 pounds of recyclable solid waste are usually generated every two weeks in the neighborhood. The current collection system is a house-to-house system, which requires the collection trucks to reach and stop at every house in the neighborhood. The collection is done using 4 collection routes which takes total of around 8 hours of collection time. These four routes are shown in Appendix A.

Each household in the Adam's Neighborhood is provided with a blue recyclable waste bin with a capacity of 96 gallons. Based on the information provided by the Logan City Environmental Department, these bins are usually 75% to 90% full as recyclable waste are mostly bulk items. Furthermore, each household generates 18 pounds of recyclable waste in every two weeks, each collection trucks covers about one fourth of the neighborhood and collects around 11,00 pounds of the waste. Collection routes starts and ends at the Logan City Transfer Station located at 153 N 1400 W, Logan City, Utah.

2.2. Literature Review

The problem of waste collection systems has been studied by several authors using different methodologies. For instance, Kallel et al. (2016) used the ArcGIS software to find the shortest route for waste collection trucks under different scenarios. Similarly, Malakahmad et al. (2014) used ArcGIS for examining the effect of travel distance, number and capacity of waste collection trucks, the changes of traffic and the variations in waste production on the collection practices of solid waste. All of these studies have shown that well-designed collection systems can reduce associated costs and emission of air pollutants. Velumani & Technology (2013) reported that the use of an optimized collection route reduced the expenditure on the collection practices by 50% and showed that the use of optimized route decreased the travel time by 24.7% and travel distance by 44.3%.

3. METHODOLOGY

There are currently around 2418 collection points (considering one at each building) and we wanted to reduce these collection points to collection dumpsters bigger in size dispersed throughout the neighborhood where people will bring their waste. Larger collection containers optimizing the number of dumpsters required and the travel time and distance people have to travel for disposing their waste will be placed all along the neighborhood.

3.1. Data Collection and Network Dataset Creation

The political boundary and the roads network data of Logan City were obtained from the Utah Automated Geographic Reference Center (Utah AGRC) while the buildings footprints data were obtained from ArcGIS online, the owner of the data is ESRI Training Services. Following that, the political boundary of Adam's neighborhood was digitized using the ESRI World Imagery Base-map. The Logan City Transfer Station was also digitized using the ESRI World Imagery Base-map. In addition, the Select by Location tool was used for extracting the roads network of Adam's Neighborhood along with all the buildings located within its boundary. The study area is located in the State of Utah, so all the shape files were projected to the NAD 1983 UTM Zone 12N coordinate system and organized in a geodatabase file. Prior to the creation of a network dataset, the length of all the roads were measured in meters using the Calculate Geometry tool. In our analysis average speed for travelling will be considered as the speed limit of the road. Two cost attributes were created in order to control the navigation process of the network.

The attributes were vehicles travel time in minutes and vehicles travel distance in meters. The network dataset was created using the existing roads network shapefile of Logan City. The attributes of the network dataset are shown in Table 1. These attributes will govern the travel behavior and patterns along the road network.

Table 1. Properties of Logan City network dataset

Attributes	**Parameters**	**Description**
Turns	Global turns	Improves travel time by penalizing turn movements.
Connectivity	Endpoints	Creation of junctions and edges for network dataset from roads network shapefile.
Elevation	Ignored	Not used because of little difference in elevation in the Adams Neighborhood
Historical traffic data	Ignored	Use of historical traffic data to get time–dependent speeds, ignored due to lack of data.
Restrictions	One-way roads	Use the attribute in network dataset if one-way road is present.

3.2. Selection of Trash Dumpster

Logan City Environment Department currently uses Front-End Trucks to collect waste,4-cubic yard dumpsters are already in use at other places of Cache Valley and with these trucks they have, it is feasible to collect wastes from 4-cubic yard dumpsters. So, 4-cubic yard dumpster was chosen in our analysis which has an approximate dimension of 4 * 4 * 6 feet. These dumpsters are spacious enough for holding recyclable waste of different sizes and from different houses and small enough to be placed in the spaces where people can easily reach to them. Pictures of the dumpsters and the Frond-End trucks are shown in Appendix C.

3.3. Number of Trash Dumpsters

The number of trash containers to be placed in the Adam's Neighborhood was determined based on information obtained from the Logan City Environmental Department. Equations (1) and (2) were used for calculating the minimum number of 4-Cubic yard dumpsters needed to serve the households in the Neighborhood.

$$Number\ of\ households\ per\ one\ dumpster = \frac{Capacity\ of\ \ 4\ cubic\ yard\ dumpster}{amount\ \ of\ waste\ genetrated\ at\ a\ household} \quad (1)$$

$$Minimum\ number\ of\ Dumpsters = \frac{Number\ of\ househods\ in\ Adam\ Neighborhood}{Number\ of\ households\ per\ one\ dumpster} \quad (2)$$

With the limited information about the number of people in each household and per capita waste generation, the waste generation from each household was assumed to be same. According to the Logan City Environmental Department, each household approximately generates 18 pounds (0.38 cubic yards) of recyclable waste per two weeks. The footprints of the buildings mentioned above in the data collection section gave us the information that there are 2418 houses in the Adams Neighborhood. The calculations are shown in Equations (3) and (4).

$$Number\ of\ households\ per\ one\ dumpster = \frac{4\ cubic\ yard}{0.38\ cubic\ yard} = 10.56 = ten\ households \quad (3)$$

$$Minimum\ Number\ of\ Dumpsters = \frac{2418}{10} = 241.8 = 242\ dumpsters \quad (4)$$

As clearly shown in the calculation process, all the buildings in the neighborhood were treated as residential households and were assumed that all of them produce the same amount of recyclable solid waste because the number of residential households in the neighborhood are far more in number than other commercial or different types of buildings. Separate collection system with different charge rate can be applied for commercial and other types of buildings.

3.4. Optimum Location for the Collection Bins (Location-Allocation Tool)

Initially, potential bin locations were created along the roads of Adam's neighborhood using the Generate Points along Lines tool (toolbox\data management tools\ sampling\ Generate Points along Lines). These points represent potential final locations (these are candidate locations for final location of bins) where the 4-cubic yard dumpsters could be placed and were generated at a distance of 2-m on the roads. If this distance is decreased, it will increase the accuracy of locations (will choose best location from a set of locations) of the final bins but will also increase the analysis time. With this tradeoff between analysis time and accuracy, 2 m distance was selected.

Location-allocation analysis is generally used to determine the optimal location for facilities that will service the demand accounting for different factors as the number of facilities, their cost and so on. It can be done using the location-allocation tool available in the network analyst tool in ArcMap. In our analysis

initial points representing the potential locations of the collection bins were considered as facilities and the households to be served were considered as demands in the network analyst window. The households were represented as points which were created from the footprints of the buildings (as geometric centroid) using Feature to Point tool (toolbox\data management tools\ Features\Feature to Point). Travel distance for each household was considered to be from this point to the allocated dumpster. In the network analyst window, location-allocation properties were selected to change the settings as per our analysis. In the Advanced setting window, we changed the problem type to Maximize Capacitated Coverage. This setting will allow us to do the analysis checking the fact that each container cannot serve more than 10 households. From section 3.3, the number of required dumpsters to cover all the households of Adams Neighborhood is found 242.The location-allocation tool will select the facilities such that the total sum of weighted impedance (time or distance) is minimized. The actual physical attributes of the roads such as one-way roads, speed limits were considered in the analysis and U-turns in the intersections were allowed. When solving, location-allocation tool will place these 242 dumpsters minimizing the impedance (distance and time) on those potential candidate points which were placed 2 meters apart in the roads initially. Other points which were located 2 meter on the road initially are discarded and the points selected when solving our location-allocation analysis are our location of the dumpsters.

3.5. Collection Routes (Vehicle Routing Problem Tool)

After solving for the location of the dumpsters a Vehicle Routing Problem analysis was carried out to allocate the optimum collection routes. The current collection frequency for Logan City Environment Department is 2 weeks, so we also used this time period in our analysis. This analysis was done using New Vehicle Route tool under the network analyst toolbox. The total waste generated from Adams Neighborhood is around (2418 * 18) 43,524 pounds for 2 weeks' period and each truck has a capacity of around 22,000 pounds. So, two trucks (calculated using truck capacity and total recyclable waste of Adams Neighborhood) are required to collect the waste from the neighborhood. In the network analyst window new vehicle routing problem was chosen and the locations obtained from the location-allocation analysis were loaded as orders and the location of Logan City Transfer Station was loaded as Depot. New attribute field Service Time was added to the results from location-allocation analysis and the time was assigned as 1.75 minutes which is the time required per dumpster to unload the waste to the truck (Tchobanoglous et al.,1993). In the layer properties of Vehicle Routing Problem, the average capacity of each dumpster (in pounds) was added as Pickup Quantities in the analysis settings. The average weight capacity of each dumpster was calculated by multiplying the number of households per dumpster and average waste (in pounds) produced from each household. The work hours of Logan City Transfer station are from 8:00 am to 5 pm which were set as start and end time in analysis settings. Two routes were created for each truck. Table 2 shows the properties for both routes. Providing these properties for the routes the Vehicle routing problem was solved to get the optimum routes for these two collection trucks.

Table 2. Properties of collection routes

Attribute	Value	Comments
Name	Truck1 / Truck2	Unique name for each collection route
Start and End Depot Name	Logan City Transfer Station	The collection routes start and end from the transfer station
Earliest Start Time	8:00:00 AM	The earliest time the trucks leaves the transfer station and start collection.
Latest Start Time	8:00:00 AM	The latest possible time when the trucks can leave the transfer station.
Capacities	22,000	Maximum amount of waste that can be collected by a single truck.
Max order count	122	Maximum number of dumpsters that could be visited by a single truck in a collection cycle (almost half).

3.6. Comparison with Current Scenario

The results from the above analysis (total travel time and distance) were compared with the current travel time and distance to evaluate how much travel time and distance were saved. According to Logan City Environmental Department, there are currently four collection routes for the collection of waste from Adams Neighborhood. The hand drawn maps of the current collection routes around Adams Neighborhood are shown in the Appendix A. The collection process takes around 8 hours for whole of the neighborhood. The collection frequency for each route is once in every two weeks. The hand drawn routes were digitized in the ESRI Street Base map for comparing distance. For this purpose, New Route tool (different from the tools used above) under Network Analyst tool was used. Create Network Location option was used to add stops on the map graphically. These stops will control the path and direction of the travel of the trucks. This analysis was used for calculating travels distance for current distance.

4. RESULTS & DISCUSSION

New waste collection system was designed for the Adams Neighborhood with the use of ArcGIS software. The main results of our analysis are the location of the dumpsters, new collection routes and comparison with the current scenario which are described in the following sections.

4.1. Dumpster Locations

The locations of the 242 dumpsters from location-allocation analysis are shown in Figure 2.

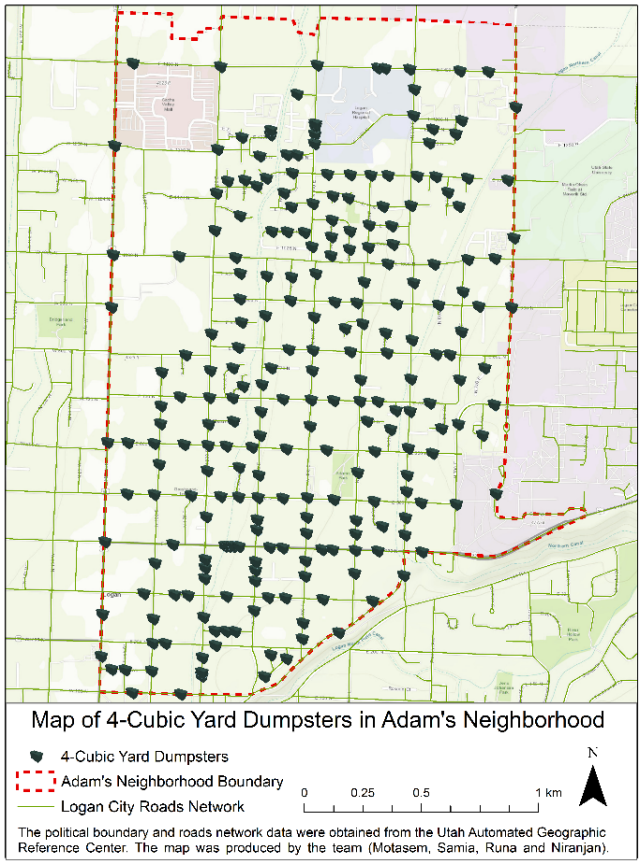

Figure 2. Map showing the location of 4-Cubic yard dumpster in Adam's Neighborhood

The map in Figure 2 shows an initial placement of the dumpsters. Shifting the dumpsters to more suitable places without considerably affecting the travel time from the allocated houses can be considered. Two columns were added to the attribute table of the final location and both X and Y coordinates were calculated using the Calculate by Geometry option. The coordinates were exported as excel file and is included in the Appendix D of this report.

The households were allocated to the corresponding dumpsters in a way that total travel distance and time were minimized. A map showing the allocation of the each of the households to the corresponding dumpsters is shown in Appendix B. In average the travel time from household to the dumpster was 0.056 minutes (in car time only). Maximum and minimum travel times were 1.04 minutes and 0.01 minutes respectively. This result shows that most of the dumpsters could be reached easily by walking also, people won't have to travel long distance/time to dispose their recyclable waste. Figure 3 shows the map of Adams Neighborhood zoomed to the level of a single dumpster showing the allocation of the households to the dumpster. The average amount of waste collected in the dumpster is around 180 pounds over two-week period.

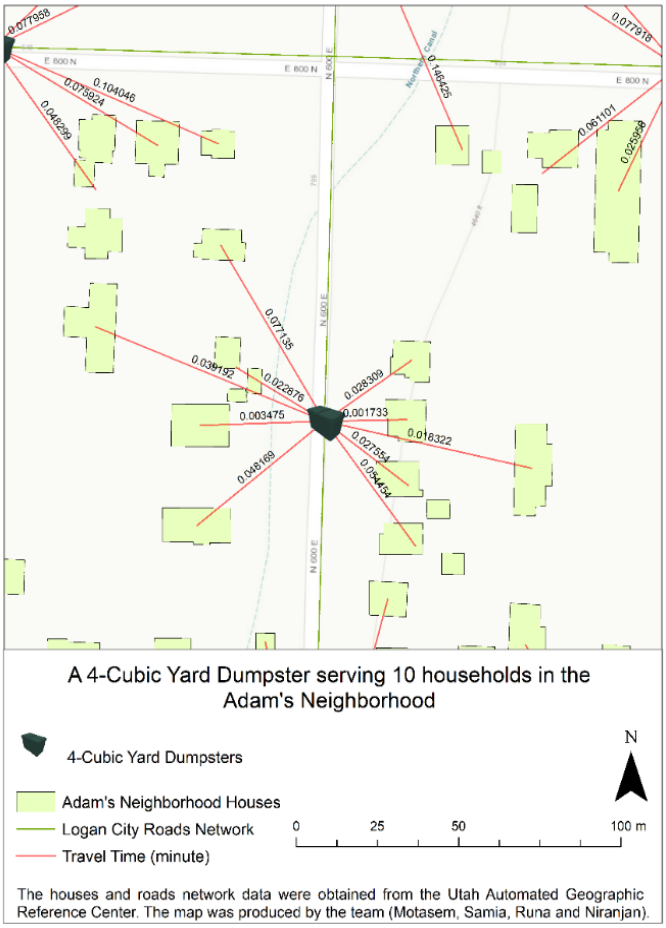

Figure 3. A 4-Cubic Yard Dumpster Serving 10 Households in the Adams Neighborhood

The red lines show the allocation of the households to the respective dumpster. In the map above we can see some of the lines coming from outside the buildings, these lines are coming out from the centroid of two or more buildings which represent a single household. The numbers along the red line represent the travel time from the respective household to the corresponding dumpster.

4.2. Collection Routes

The results from the Vehicle Routing problem (VPR) are shown in Figures 4 and 5. The VPR analysis solved the routing problem to minimize the overall travel time and distance. The first truck has been assigned to 120 households and the second truck has been assigned to 122 households. The outcomes also showed that collection trucks would spend over 80% of their time loading the waste from the dumpsters. Properties of these two collection routes are shown in Table 3.

Table 3. Properties of the collection routes designed for the Adams Neighborhood

Parameter	Route for Truck 1	Route for Truck 2
Unloading dumpsters time	208.25 minutes	213.5 minutes
Travel time	30.7 minutes	47.5 minutes
Total collection time	238.9 minutes	261 minutes
Total collection time	3 hours 59 minutes	4 hours 21 minutes
Start time	8:00:00 am	8:00:00 am
End time	11:58:56 am	12:21:00 pm
Traveled distance	23.5 km	35.7 km
Number of Households	120	122

The directions of the vehicle movement in designated routes are in Appendix E. There will be remarkable reduction in travel distance for the collection trucks in the new collection system compared to the current collection system. Table 4 shows the comparison between two collection systems.

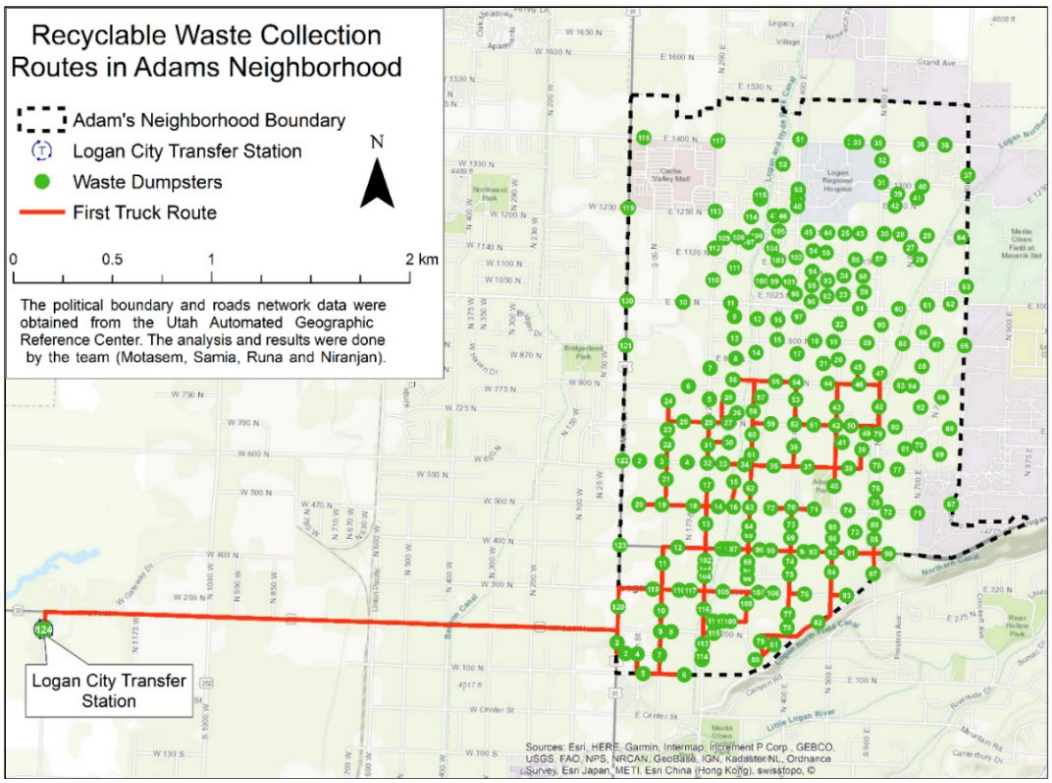

Figure 4. The collection route for the first truck

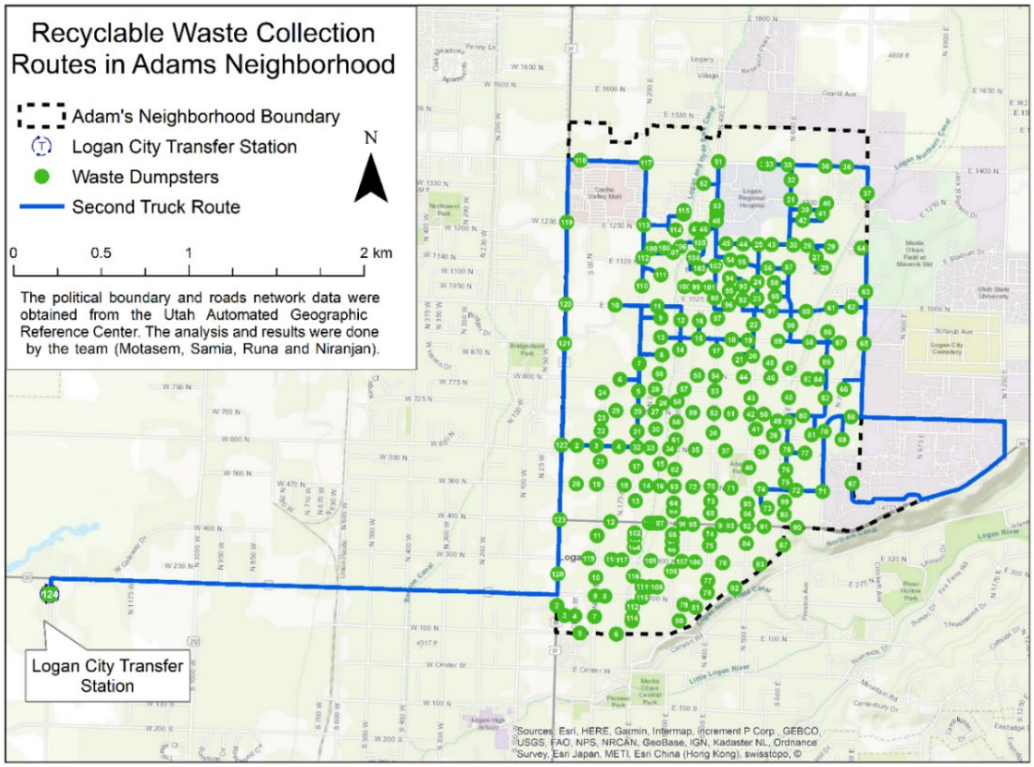

Figure 5. The collection route for the second truck

We can see the travel distance reduced from 104 km to 59.2 km. The reduction in number of stops and lengths can be reflected in the fuel saving and reduction in emissions (Miller, 2011). There is not much change in the collection time because the majority of collection time is required in loading of the waste to the vehicle.

Table 4. Comparison with the current collection system

Parameter	Proposed collection system	Current collection system
Total collection time (minute)	500	480
Total traveled distance (km)	59.2	104

5. CONCLUSION

We have presented a design of a new collection system for the recyclable solid waste in Adams Neighborhood, Logan city. ArcGIS software was used for the analysis purpose. With this new collection system, the collection trucks from Logan City Environment Department will have to travel almost 57% less distance than the current collection system. The number of collection stops would be reduced from each and every household to the 242 different locations in the Adams Neighborhood. This decrease in the number of stops will reduce the fuel consumption and gas emission.

The major limitation of this project is how much people are willing to travel to the allocated dumpsters. Some questionnaire surveys can be conducted to see the willingness of people to participate in the proposed collection system. In order to encourage people for this system, some incentives like reducing the fees charged for the waste collection can be initiated. The travel time from the household to the dumpster location is done in terms of car travel time which can be easily converted to the walking time.

This collection system can be further improved by gathering the information of where the dumpster can be placed without any hindrances to the social and environmental aspects.

Overall this collection system can be adopted by the Logan City Environmental Department to collect the waste from Adams Neighborhood with reduction in fuel consumption and emission of the gases. Similar analysis can be done in a large scale for collection system of the whole city.

6. ACKNOWLEDEGMENT

We would like to thank Bruce Douglas, Recycling Crew Chief of Logan City Environment Department as well as other members of the Logan City Environment Department who provided us with the data of average waste per household, time taken for collection and maps of the current collection routes.

7. REFERENCES

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Grading Rubric for Final Report Names: Motasem S Abualqumboz, Samia Rubaiat, Ferdousy Runa, Niranjan Poudel

Category (Possible Score)	No Evidence	Does not Meet Standard	Nearly Meets Standard	Meets Standard	Exceeds Standard	Instructor Score
Title (2)	Absent 0	Evidence of two or less 0	Evidence of three 1	Evidence of four 1	Title – Includes cover page. Can assess main point from title alone; Names, Affiliations, Email addresses all correct. Neatly finished. 2	
Abstract (8)	Absent 0	Unclear what the report achieves. Three or more of the required elements are missing. 3 - 4	Either too long or too short. Two or more of the required elements are either missing or unclear. 5 - 6	Summarizes report but one of the required elements is either missing or unclear 7	Provides an effective summary of the report in 1 paragraph (less than 250 words). Problem statement, procedures /methods, and key conclusions are evident and clear. 8	
Introduction (10)	Absent, no evidence 0	There is no clear introduction, main topic, or thesis. 1 - 5	The introduction states the main topic but is: 1) Too sketchy. Gives an inadequate overview, or 2) too detailed, info later repeated 6 – 7	The introduction states the main topic, the problem the report addresses, and previews the report's structure 8	The introduction states the main topic, identifies the problem the report addresses, provides reference to existing literature or related work, and previews approach/methods taken to address the problem. Gives enough detail to interest the reader. 9 - 10	
Statement of Contribution (5)	Statement not present. 0	Unclear purpose a no statement of contributions. 1 - 2	Either purpose or contributions unclear, but evidence of 1. 3	Clear purpose with some evidence of contributions. 4	A strong, clear statement of the purpose of the work that establishes why the work is important is present in the Introduction. It describes the report's key contributions. 5	
Technical Content (35)	No analysis evident. 0 - 9	The writer has little clue what they are talking about. 10 – 20	Sketchy: may have left out important points, improper methods used, little reference to prior work, or no original tables or figures presented. 20 – 28	Report lacks adequate detail, but appropriate methods used that draw on prior work. One or more original tables or figures. 28 – 32	Appropriate methods used with correct results. Methods explained clearly but not in overwhelming detail. Draws on and references prior related work (e.g., cites other reputable papers or reports). Contains one or more original tables or figures. 32 - 35	

Category (Possible Score)	No Evidence	Does not Meet Standard	Nearly Meets Standard	Meets Standard	Exceeds Standard	Instructor Score
Organization and Development (10)	Not applicable	Report fails to follow the required template. Paragraphs fail to develop the main idea. No evidence of structure or organization. 2 – 5	Report follows required template. Organization of ideas not fully developed. Paragraphs lack supporting detail sentences. No transitions. 6 – 7	Report follows required template. Section and paragraph development present but not perfected. Paragraphs have sufficient supporting details. Few transitions. 8	Report follows required template. Logical sequencing of ideas. Uses well thought out sections and well-developed paragraphs that provide supporting details. Transitions between paragraphs and sections are evident and smooth. 9 - 10	
Word Usage and Format (10)	Not applicable	Numerous and distracting errors in punctuation, capitalization, spelling, word usage, grammar, significant figures, tables, and figures. Unacceptable at the college level. 2 - 5	Some grammatical errors. Figures are too small and/or under-labeled, although usually of acceptable quality and focus. Tables incoherent and/or missing column labels and units. Bad font sizes. Could be improved by being more meticulous. 6 - 7	Almost no errors in punctuation, capitalization, spelling, sentence structure, word usage, significant figures, and presentation of figures and tables. Report stapled and turned in on time. 8	Punctuation, capitalization, spelling, sentence structure, word usage, and significant figures all correct. Clear, consistent fonts. Good word processing skills. Figures and tables presented in correct format. Appendices, if needed, are also presented in correct format. Report stapled and turned in on time. 9 - 10	
Conclusions (5)	Absent 0	Incomplete and/or not focused. 1 - 2	The conclusion does not adequately restate the main findings. 3	The conclusion restates the main findings. 4	Effectively restates the problem, main findings, contribution, and benefit to the reader. 5	
References (5)	Absent 0	Many errors, odd sources, no reputable sources cited. 1 – 2	With some errors, mostly appropriate sources used. 3	Few errors, adequate sources, at least 2 reputable sources cited (e.g., peer reviewed journals). 4	All citations and references are correctly formatted. 2+ citations are journal articles and are effectively used to place the work in the context of existing literature. 5	
Group Participation (10)	Not applicable.	Report is the work of only one member. 1 - 4	One or more members disproportionately author content. 5 - 7	All group members author content. 8	All group members significantly and equitably author content. 9 - 10	
TOTAL (100)						

APPENDICES

APPENDIX A

CURRENT COLLECTION ROUTES OF THE RECYCLABLE SOLID WASTE IN THE ADAM'S NEIGHBORHOOD

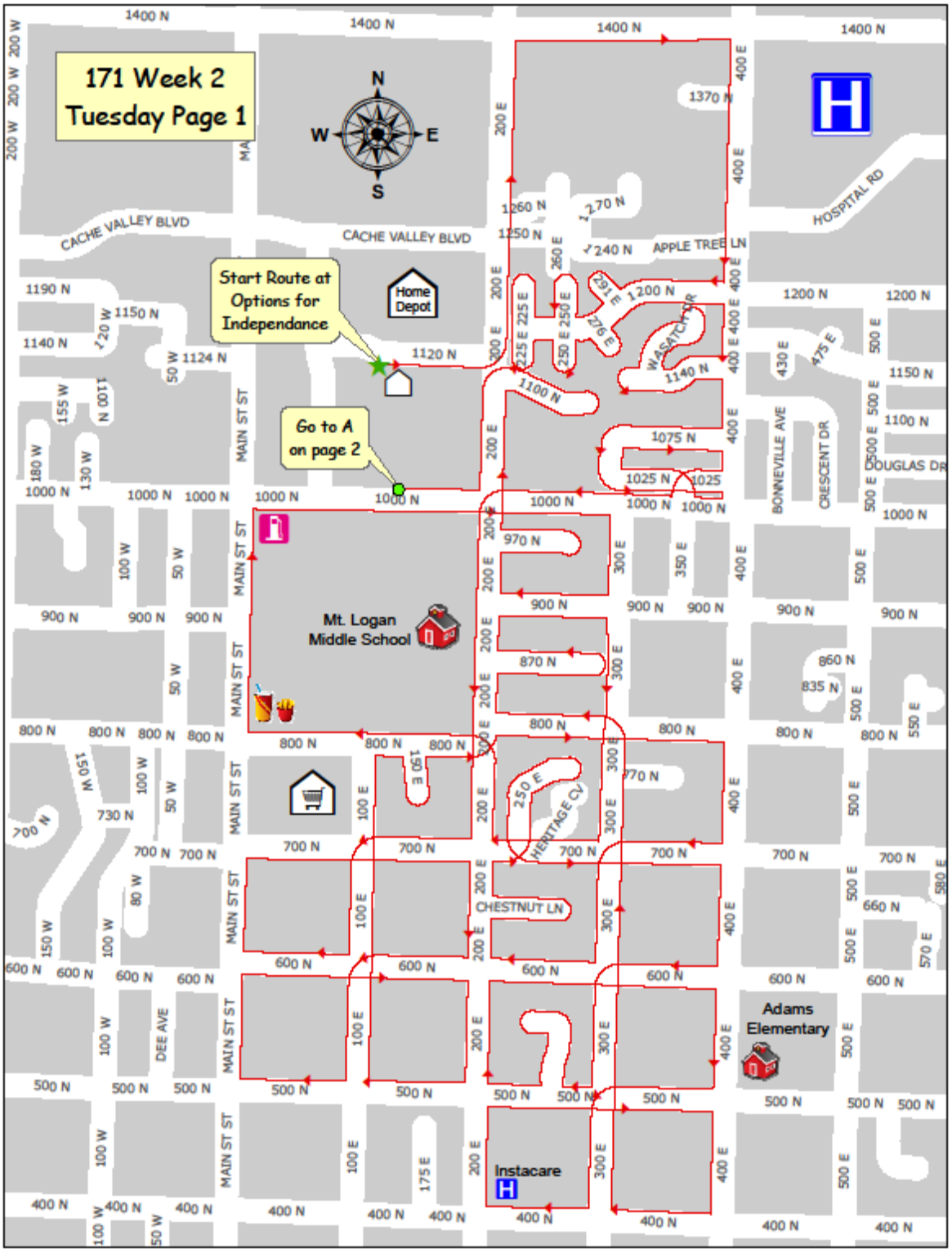

Figure 1. The First Recyclable Waste Collection Route in the Adam's Neighborhood

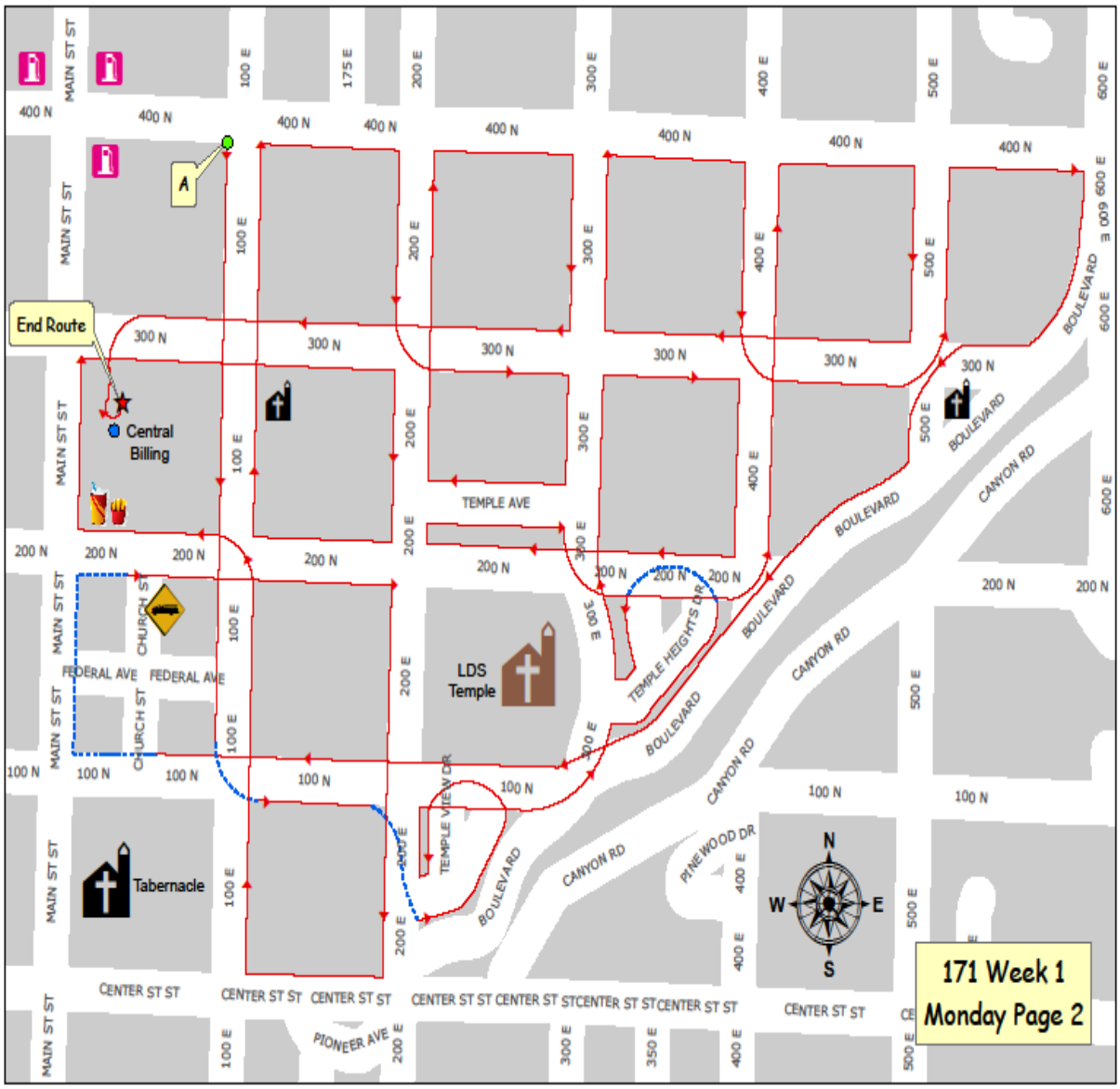

Figure 2. The Second Recyclable Waste Collection Route in the Adam's Neighborhood

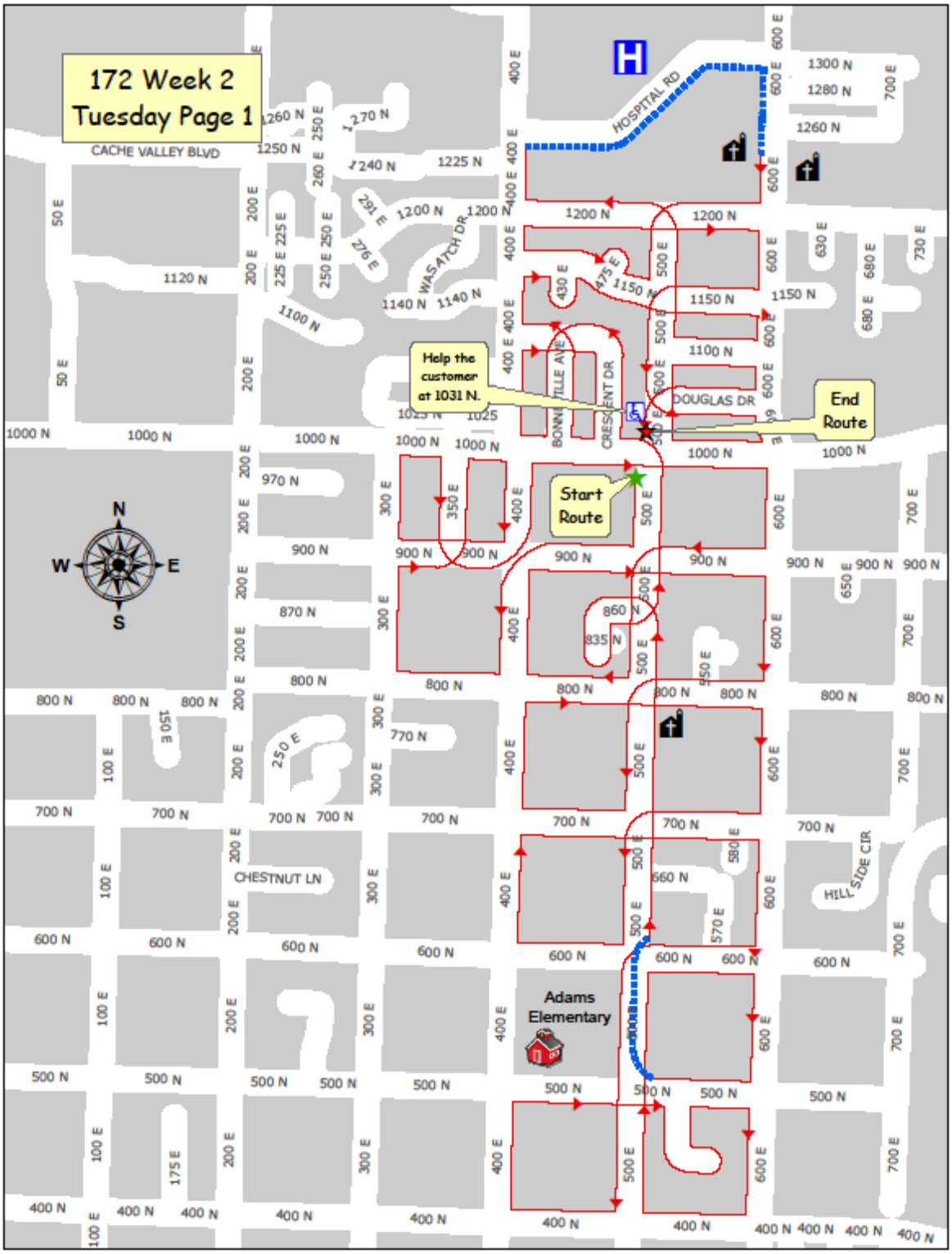

Figure 3. The Third Recyclable Waste Collection Route in the Adam's Neighborhood

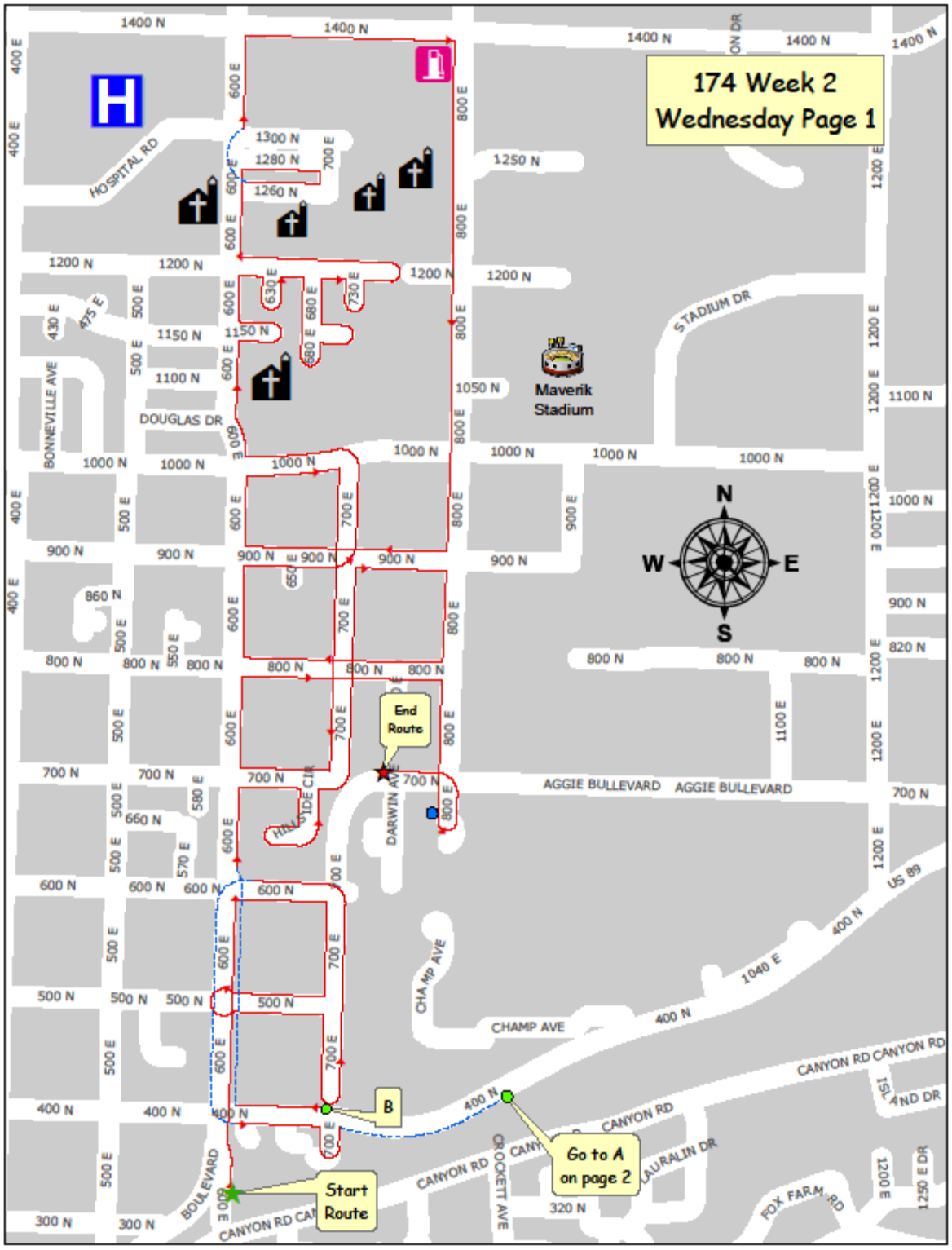

Figure 4. The Fourth Recyclable Waste Collection Route in the Adam's Neighborhood

APPENDIX B

MAP SHOWING THE ALLOCATION OF THE DUMPSTERS TO THE HOUSEHOLDS IN THE NEIGHBORHOOD.

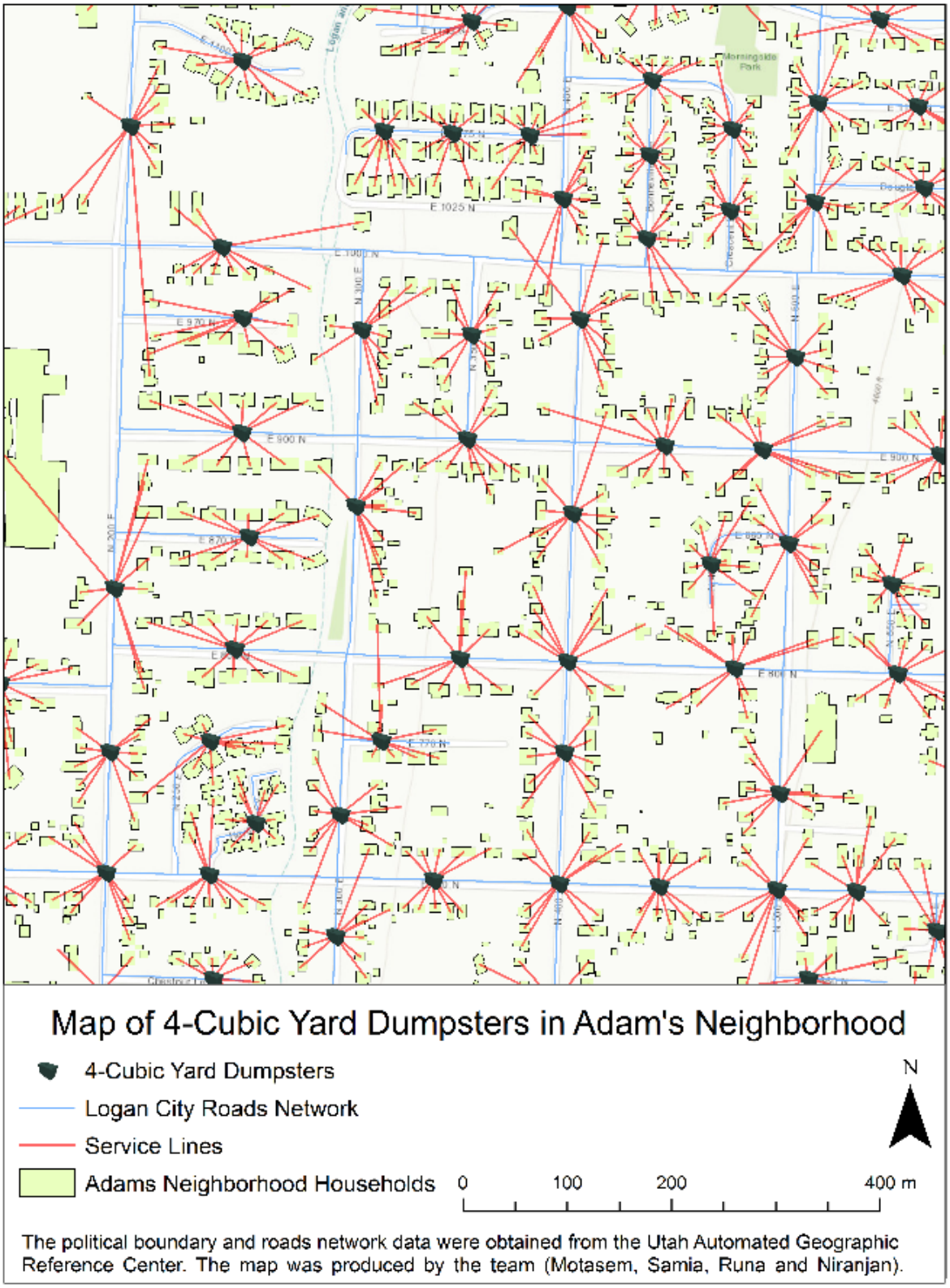

Figure 5. Zoomed Map of the selected 4-Cubic Yard Dumpsters in Adam's Neighborhood

APPENDIX C

THE 4-CUBIC YARD DUMPSTER AND THE FROND-END COLLECTION TRUCK

Figure 1. The 4-Cubic Yard Dumpster

Figure 2. The Frond-End Collection used for the collection of 4-Cubic Yard Dumpsters

APPENDIX D

LOCAATION OF THE DUMPSTERS

Table 1. Information of the 242 Selested 4-Cubic Yard Dumspter to be Distributed the Adam's Neighborhood

OBJECTID	Street Name	Capacity (Pound)	Demand Count	Service Time (minute)	Start Time	End Time	X coordinate	Y coordinate
1	1100	180	10	3	8:00	17:00	431811.2	4622496
2	430	180	10	3	8:00	17:00	431560.4	4622625
3	900	180	10	3	8:00	17:00	431568.3	4622171
4	900	180	10	3	8:00	17:00	431662.3	4622167
5	460	180	10	3	8:00	17:00	431612.6	4622057
6	500	180	10	3	8:00	17:00	431712.2	4622404
7	400	180	10	3	8:00	17:00	431470.8	4622407
8	200	180	10	3	8:00	17:00	430790.5	4620709
9	500	180	10	3	8:00	17:00	431081	4621337
10	300	180	10	3	8:00	17:00	430752.5	4620922
11	200	180	10	3	8:00	17:00	431041.3	4622034
12	1000	180	10	3	8:00	17:00	430903.5	4622367
13	800	180	10	3	8:00	17:00	431635.4	4621957
14	800	180	10	3	8:00	17:00	431372.2	4621967
15	400	180	10	3	8:00	17:00	431513.3	4621110
16	400	180	10	3	8:00	17:00	431559.3	4621109
17	400	180	10	3	8:00	17:00	431656.1	4621107
18	200	180	10	3	8:00	17:00	431033.2	4621761
19	200	180	10	3	8:00	17:00	431037	4621877
20	700	180	10	3	8:00	17:00	431563.3	4621748
21	700	180	10	3	8:00	17:00	431675.8	4621746
22	300	180	10	3	8:00	17:00	431223.4	4620849
23	100	180	10	3	8:00	17:00	430786	4620590
24	700	180	10	3	8:00	17:00	431132	4621759
25	800	180	10	3	8:00	17:00	431156.3	4621976
26	1200	180	10	3	8:00	17:00	431275.8	4622700
27	1200	180	10	3	8:00	17:00	431387	4622723
28	680	180	10	3	8:00	17:00	432051.4	4622640
29	600	180	10	3	8:00	17:00	431874.7	4621358
30	600	180	10	3	8:00	17:00	431877.6	4621428
31	100	180	10	3	8:00	17:00	430910.2	4620490
32	1200	180	10	3	8:00	17:00	431536.6	4622718
33	1200	180	10	3	8:00	17:00	431634.6	4622716
34	1200	180	10	3	8:00	17:00	431722.2	4622714
35	250	180	10	3	8:00	17:00	431133	4621887
36	700	180	10	3	8:00	17:00	432249.5	4621730
37	400	180	10	3	8:00	17:00	431472.1	4621877
38	400	180	10	3	8:00	17:00	431475.5	4621964
39	300	180	10	3	8:00	17:00	431278.2	4622282
40	300	180	10	3	8:00	17:00	431249.4	4621598
41	300	180	10	3	8:00	17:00	431252.9	4621700
42	400	180	10	3	8:00	17:00	431483	4622888
43	400	180	10	3	8:00	17:00	431484.5	4622924
44	400	180	10	3	8:00	17:00	431484.9	4622934
45	MAIN	144	8	3	8:00	17:00	430628.1	4622840

46	200	180	10	3	8:00	17:00	430844.5	4620707
47	200	180	10	3	8:00	17:00	431007.8	4620821
48	300	180	10	3	8:00	17:00	431272.3	4622113
49	1270	180	10	3	8:00	17:00	431294.5	4622886
50	1270	180	10	3	8:00	17:00	431295	4622906
51	500	180	10	3	8:00	17:00	431665.9	4621440
52	1200	180	10	3	8:00	17:00	431920.1	4622710
53	200	180	10	3	8:00	17:00	430999.7	4620567
54	200	180	10	3	8:00	17:00	431000.4	4620583
55	200	180	10	3	8:00	17:00	431002.9	4620647
56	970	180	10	3	8:00	17:00	431164	4622293
57	900	180	10	3	8:00	17:00	431163.1	4622183
58	700	180	10	3	8:00	17:00	430907.7	4621765
59	1200	180	10	3	8:00	17:00	431796.2	4622713
60	1400	180	10	3	8:00	17:00	432102.7	4623161
61	1400	180	10	3	8:00	17:00	432224.6	4623157
62	300	180	10	3	8:00	17:00	430884.1	4620917
63	300	180	10	3	8:00	17:00	430942.1	4620914
64	700	180	10	3	8:00	17:00	432109.3	4622043
65	1370	180	10	3	8:00	17:00	431407.5	4623061
66	600	180	10	3	8:00	17:00	431882.4	4621544
67	600	180	10	3	8:00	17:00	431888.9	4621702
68	800	180	10	3	8:00	17:00	432333.3	4622444
69	400	180	10	3	8:00	17:00	431290.2	4621119
70	400	180	10	3	8:00	17:00	431346.2	4621117
71	1240	180	10	3	8:00	17:00	431248	4622795
72	600	180	10	3	8:00	17:00	431904.7	4622252
73	200	180	10	3	8:00	17:00	431059	4620700
74	100	180	10	3	8:00	17:00	430800.6	4621052
75	400	180	10	3	8:00	17:00	431487.1	4622292
76	260	180	10	3	8:00	17:00	431171.4	4622875
77	800	180	10	3	8:00	17:00	432002.3	4621946
78	800	180	10	3	8:00	17:00	432060.2	4621945
79	600	180	10	3	8:00	17:00	431985.6	4621523
80	400	180	10	3	8:00	17:00	431480.2	4622106
81	MAIN	180	10	3	8:00	17:00	430570.6	4620653
82	HERITAGE	180	10	3	8:00	17:00	431176.5	4621809
83	600	180	10	3	8:00	17:00	431905	4622969
84	600	180	10	3	8:00	17:00	431908.3	4623081
85	1075	180	10	3	8:00	17:00	431299.2	4622473
86	1075	180	10	3	8:00	17:00	431365.2	4622471
87	1075	180	10	3	8:00	17:00	431439.2	4622468
88	300	180	10	3	8:00	17:00	431257.4	4621817
89	600	180	10	3	8:00	17:00	431104.9	4621553
90	600	180	10	3	8:00	17:00	431214.8	4621548
91	400	180	10	3	8:00	17:00	431447	4621180
92	400	180	10	3	8:00	17:00	431448.7	4621248
93	100	180	10	3	8:00	17:00	430829.6	4621870

94	500	180	10	3	8:00	17:00	431346.5	4621330
95	200	180	10	3	8:00	17:00	431062.8	4622637
96	500	180	10	3	8:00	17:00	431736.1	4621317
97	100	180	10	3	8:00	17:00	430702.9	4620497
98	BONNEVILLE	180	10	3	8:00	17:00	431551.3	4622369
99	BONNEVILLE	180	10	3	8:00	17:00	431554	4622449
100	1140	180	10	3	8:00	17:00	431383.3	4622578
101	300	180	10	3	8:00	17:00	431227.9	4620975
102	300	180	10	3	8:00	17:00	431229.3	4621021
103	300	180	10	3	8:00	17:00	431230.4	4621059
104	900	180	10	3	8:00	17:00	431379.2	4622177
105	BROOKSIDE	162	9	3	8:00	17:00	431159.9	4621462
106	CHESTNUT	180	10	3	8:00	17:00	431135.8	4621659
107	1300	180	10	3	8:00	17:00	432110.5	4622948
108	200	180	10	3	8:00	17:00	431024	4621447
109	200	180	10	3	8:00	17:00	431027	4621557
110	1000	180	10	3	8:00	17:00	431144.2	4622361
111	100	180	10	3	8:00	17:00	430823.8	4621649
112	100	180	10	3	8:00	17:00	430826.3	4621725
113	500	180	10	3	8:00	17:00	431715.3	4622500
114	1100	180	10	3	8:00	17:00	431163.6	4622540
115	400	180	10	3	8:00	17:00	431462.8	4621638
116	600	180	10	3	8:00	17:00	431893.3	4621840
117	300	180	10	3	8:00	17:00	431283.8	4620905
118	300	180	10	3	8:00	17:00	431357.7	4620902
119	200	180	10	3	8:00	17:00	431019.3	4621250
120	DARWIN	180	10	3	8:00	17:00	432198.8	4621600
121	600	180	10	3	8:00	17:00	431739.6	4621530
122	HOSPITAL	180	10	3	8:00	17:00	431481.3	4622848
123	1150	180	10	3	8:00	17:00	431774.4	4622580
124	800	180	10	3	8:00	17:00	430931.4	4621944
125	APPLE TREE	180	10	3	8:00	17:00	431363.5	4622801
126	APPLE TREE	180	10	3	8:00	17:00	431407.5	4622800
127	TEMPLE	180	10	3	8:00	17:00	431056.3	4620761
128	TEMPLE	180	10	3	8:00	17:00	431104.3	4620760
129	TEMPLE	180	10	3	8:00	17:00	431142.3	4620759
130	870	180	10	3	8:00	17:00	431170	4622083
131	CHAMP	180	10	3	8:00	17:00	432256.8	4621349
132	400	180	10	3	8:00	17:00	431099	4621125
133	400	180	10	3	8:00	17:00	431115	4621124
134	400	180	10	3	8:00	17:00	431131	4621124
135	400	180	10	3	8:00	17:00	431137	4621124
136	400	180	10	3	8:00	17:00	431159	4621123
137	400	180	10	3	8:00	17:00	431450.9	4621333
138	700	180	10	3	8:00	17:00	432096	4621647
139	1280	180	10	3	8:00	17:00	431986.9	4622911
140	300	180	10	3	8:00	17:00	431729.7	4620890
141	900	180	10	3	8:00	17:00	432183.4	4622152

142	800	180	10	3	8:00	17:00	432323.5	4622148
143	600	180	10	3	8:00	17:00	430684.5	4621567
144	600	180	10	3	8:00	17:00	430796.4	4621564
145	DOUGLAS	180	10	3	8:00	17:00	431816.7	4622418
146	500	180	10	3	8:00	17:00	431687	4622077
147	500	180	10	3	8:00	17:00	431657.8	4621177
148	500	180	10	3	8:00	17:00	431659.2	4621235
149	300	180	10	3	8:00	17:00	431240.5	4621333
150	300	180	10	3	8:00	17:00	431243.7	4621429
151	400	180	10	3	8:00	17:00	430877.3	4621132
152	276	180	10	3	8:00	17:00	431234.3	4622667
153	800	180	10	3	8:00	17:00	432341.5	4623005
154	TEMPLE HEIGHTS	180	10	3	8:00	17:00	431362.2	4620642
155	TEMPLE HEIGHTS	180	10	3	8:00	17:00	431268.4	4620566
156	475	180	10	3	8:00	17:00	431626.3	4622615
157	1250	180	10	3	8:00	17:00	431067.3	4622824
158	500	180	10	3	8:00	17:00	431678.6	4621837
159	900	180	10	3	8:00	17:00	432011.9	4622157
160	700	180	10	3	8:00	17:00	431751.8	4621744
161	500	180	10	3	8:00	17:00	431564.6	4621323
162	1000	180	10	3	8:00	17:00	432136.7	4622352
163	1000	180	10	3	8:00	17:00	432252.2	4622356
164	CRESCENT	180	10	3	8:00	17:00	431630.9	4622396
165	CRESCENT	180	10	3	8:00	17:00	431633.2	4622474
166	CRESCENT	180	10	3	8:00	17:00	431556.4	4622521
167	100	180	10	3	8:00	17:00	430818.3	4621475
168	RAYMOND	180	10	3	8:00	17:00	431771.5	4621209
169	300	180	10	3	8:00	17:00	431235.1	4621194
170	300	180	10	3	8:00	17:00	431236.8	4621238
171	700	180	10	3	8:00	17:00	432087	4621305
172	1150	180	10	3	8:00	17:00	432098.9	4622580
173	570	180	10	3	8:00	17:00	431806.4	4621625
174	400	180	10	3	8:00	17:00	431752.1	4621104
175	600	180	10	3	8:00	17:00	431361.5	4621542
176	250	180	10	3	8:00	17:00	431183.7	4622693
177	500	180	10	3	8:00	17:00	430954.7	4621341
178	400	180	10	3	8:00	17:00	431475.1	4622592
179	1000	180	10	3	8:00	17:00	431795.6	4622334
180	WASATCH	180	10	3	8:00	17:00	431351.5	4622637
181	1000	180	10	3	8:00	17:00	431993	4622332
182	400	180	10	3	8:00	17:00	431941	4621099
183	MAIN	180	10	3	8:00	17:00	430598.5	4621569
184	200	180	10	3	8:00	17:00	431080.5	4623179
185	300	180	10	3	8:00	17:00	431106.2	4620909
186	660	180	10	3	8:00	17:00	431706.3	4621660
187	800	180	10	3	8:00	17:00	431791.6	4621952
188	MAIN	180	10	3	8:00	17:00	430586.8	4621143
189	1200	180	10	3	8:00	17:00	432306.9	4622692

190	200	180	10	3	8:00	17:00	431029.4	4621647
191	1200	180	10	3	8:00	17:00	432135.7	4622701
192	500	180	10	3	8:00	17:00	431652.2	4621008
193	700	180	10	3	8:00	17:00	431346.9	4621754
194	700	180	10	3	8:00	17:00	431467.3	4621751
195	600	180	10	3	8:00	17:00	431897.9	4622007
196	700	180	10	3	8:00	17:00	432084.8	4622891
197	1400	180	10	3	8:00	17:00	430706.3	4623194
198	1260	180	10	3	8:00	17:00	431972.5	4622852
199	500	180	10	3	8:00	17:00	431936.8	4621310
200	200	180	10	3	8:00	17:00	431012.5	4620985
201	200	180	10	3	8:00	17:00	431014	4621031
202	200	180	10	3	8:00	17:00	431015.1	4621067
203	600	180	10	3	8:00	17:00	431867.8	4621172
204	600	180	10	3	8:00	17:00	431870.5	4621246
205	FEDERAL	180	10	3	8:00	17:00	430614.5	4620597
206	FEDERAL	180	10	3	8:00	17:00	430673.5	4620594
207	500	180	10	3	8:00	17:00	431157.9	4621335
208	600	180	10	3	8:00	17:00	431893.7	4622583
209	BOULEVARD	180	10	3	8:00	17:00	431585.7	4620754
210	1400	180	10	3	8:00	17:00	431752.8	4623173
211	1400	180	10	3	8:00	17:00	431782.8	4623172
212	1400	180	10	3	8:00	17:00	431888.8	4623168
213	550	180	10	3	8:00	17:00	431785.9	4622038
214	TEMPLE HEIGHTS	180	10	3	8:00	17:00	431294.8	4620659
215	400	162	9	3	8:00	17:00	431429.6	4620727
216	400	180	10	3	8:00	17:00	431432.7	4620795
217	200	180	10	3	8:00	17:00	431056.4	4622477
218	1000	180	10	3	8:00	17:00	430621.9	4622373
219	700	180	10	3	8:00	17:00	431974.4	4621737
220	500	180	10	3	8:00	17:00	430681.6	4621348
221	500	180	10	3	8:00	17:00	430797.5	4621346
222	600	180	10	3	8:00	17:00	431532.9	4621536
223	400	162	9	3	8:00	17:00	431493.4	4623185
224	1200	180	10	3	8:00	17:00	432000.2	4622707
225	580	180	10	3	8:00	17:00	431828.9	4621706
226	400	180	10	3	8:00	17:00	431441	4620995
227	400	180	10	3	8:00	17:00	431443.4	4621061
228	225	180	10	3	8:00	17:00	431110.7	4622689
229	750	180	10	3	8:00	17:00	432208.4	4621887
230	350	180	10	3	8:00	17:00	431383.2	4622277
231	500	180	10	3	8:00	17:00	431693.5	4622256
232	MAIN	180	10	3	8:00	17:00	430615	4622148
233	770	180	10	3	8:00	17:00	431296.5	4621888
234	700	180	10	3	8:00	17:00	432102	4621837
235	600	180	10	3	8:00	17:00	430924.8	4621560
236	300	180	10	3	8:00	17:00	431517.6	4620897
237	900	180	10	3	8:00	17:00	431832.4	4622162

238	100	180	10	3	8:00	17:00	430793.3	4620813
239	HILLSIDE	180	10	3	8:00	17:00	432024.6	4621627
240	MAIN	180	10	3	8:00	17:00	430576.1	4620834
241	700	180	10	3	8:00	17:00	432115.8	4622215
242	BOULEVARD	180	10	3	8:00	17:00	431862.9	4620999

APPENDIX E

ROUTE DIRECTIONS

Route: Truck1		23482.8 m	3 hr 59 min
1:	Start at Logan City Trasnfer Station Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM		
2:	Go north on 1400 W toward 200 N	88.9 m	< 1 min
3:	Turn right on 200 N	2888.0 m	3 min
4:	Turn right on MAIN ST	62.9 m	< 1 min
5:	Arrive at 81, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
6:	Depart 81		
7:	Continue south on MAIN ST	54.0 m	< 1 min
8:	Turn left on FEDERAL AVE	46.0 m	< 1 min
9:	Arrive at 205, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
10:	Depart 205		
11:	Continue east on FEDERAL AVE	59.1 m	< 1 min
12:	Arrive at 206 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
13:	Depart 206		
14:	Go south on CHURCH ST	96.8 m	< 1 min
15:	Turn left on 100 N	34.0 m	< 1 min
16:	Arrive at 97, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
17:	Depart 97		
18:	Continue east on 100 N	207.4 m	< 1 min
19:	Arrive at 31, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
20:	Depart 31		
21:	Go back west on 100 N	126.0 m	< 1 min
22:	Turn right at 100 E to stay on 100 N	95.5 m	< 1 min
23:	Arrive at 23, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
24:	Depart 23		
25:	Continue north on 100 N	119.2 m	< 1 min

26:	Turn right on 200 N	54.0 m	< 1 min
27:	Arrive at 46, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
28:	Depart 46		
29:	Go back west on 200 N	54.0 m	< 1 min
30:	Arrive at 8 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
31:	Depart 8		
32:	Go north on 100 E	104.0 m	< 1 min
33:	Arrive at 238, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
34:	Depart 238		
35:	Continue north on 100 E	239.0 m	< 1 min
36:	Arrive at 74, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
37:	Depart 74		
38:	Continue north on 100 E	82.8 m	< 1 min
39:	Turn right on 400 N	74.0 m	< 1 min
40:	Arrive at 151, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
41:	Depart 151		
42:	Continue east on 400 N	139.8 m	< 1 min
43:	Turn left on 200 E	124.0 m	< 1 min
44:	Arrive at 119, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
45:	Depart 119		
46:	Continue north on 200 E	88.6 m	< 1 min
47:	Turn right on 500 N	60.0 m	< 1 min
48:	Arrive at 9, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
49:	Depart 9		
50:	Continue east on 500 N	71.0 m	< 1 min
51:	Turn left on BROOKSIDE PL	131.8 m	< 1 min

52:	Arrive at 105, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
53:	Depart 105		
54:	Go back south on BROOKSIDE PL	131.8 m	< 1 min
55:	Turn left on 500 N	6.0 m	< 1 min
56:	Arrive at 207, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
57:	Depart 207		
58:	Go back west on 500 N	137.0 m	< 1 min
59:	Turn right on 200 E	108.0 m	< 1 min
60:	Arrive at 108, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
61:	Depart 108		
62:	Go back south on 200 E	108.0 m	< 1 min
63:	Turn right on 500 N	66.3 m	< 1 min
64:	Arrive at 177 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
65:	Depart 177		
66:	Continue west on 500 N	157.2 m	< 1 min
67:	Arrive at 221, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
68:	Depart 221		
69:	Continue west on 500 N	116.0 m	< 1 min
70:	Arrive at 220, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
71:	Depart 220		
72:	Go back east on 500 N	131.3 m	< 1 min
73:	Turn left on 100 E	130.0 m	< 1 min
74:	Arrive at 167, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
75:	Depart 167		
76:	Continue north on 100 E	174.2 m	< 1 min

77:	Arrive at 111, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
78:	Depart 111		
79:	Continue north on 100 E	76.0 m	< 1 min
80:	Arrive at 112, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
81:	Depart 112		
82:	Continue north on 100 E	144.3 m	< 1 min
83:	Arrive at 93, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
84:	Depart 93		
85:	Go back south on 100 E	102.0 m	< 1 min
86:	Turn left on 700 N	80.0 m	< 1 min
87:	Arrive at 58, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
88:	Depart 58		
89:	Continue east on 700 N	224.4 m	< 1 min
90:	Turn left on HERITAGE CV	78.0 m	< 1 min
91:	Arrive at 82, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
92:	Depart 82		
93:	Go back southwest on HERITAGE CV	78.0 m	< 1 min
94:	Arrive at 24 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
95:	Depart 24		
96:	Go on 700 N		
97:	Turn right on 700 N and immediately turn right on 250 E	175.9 m	< 1 min
98:	Arrive at 35, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
99:	Depart 35		
100:	Go back south on 250 E	146.0 m	< 1 min
101:	Turn right on 700 N	68.9 m	< 1 min

102:	Arrive at 18 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
103:	Depart 18		
104:	Go south on 200 E	98.2 m	< 1 min
105:	Turn left on CHESTNUT LN	106.0 m	< 1 min
106:	Arrive at 106, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
107:	Depart 106		
108:	Go back west on CHESTNUT LN	106.0 m	< 1 min
109:	Turn left on 200 E	16.5 m	< 1 min
110:	Arrive at 190, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
111:	Depart 190		
112:	Continue south on 200 E	90.0 m	< 1 min
113:	Arrive at 109 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
114:	Depart 109		
115:	Go east on 600 N	78.0 m	< 1 min
116:	Arrive at 89, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
117:	Depart 89		
118:	Continue east on 600 N	110.0 m	< 1 min
119:	Arrive at 90, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
120:	Depart 90		
121:	Continue east on 600 N	146.8 m	< 1 min
122:	Arrive at 175, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
123:	Depart 175		
124:	Continue east on 600 N	97.5 m	< 1 min
125:	Turn left on 400 E	100.0 m	< 1 min
126:	Arrive at 115, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019		2 min

	5:00 PM Service Time: 2 min		
127:	Depart 115		
128:	Go back south on 400 E	100.0 m	< 1 min
129:	Turn left on 600 N	74.0 m	< 1 min
130:	Arrive at 222, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
131:	Depart 222		
132:	Continue east on 600 N	265.7 m	< 1 min
133:	Turn left on 570 E	98.0 m	< 1 min
134:	Arrive at 173, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
135:	Depart 173		
136:	Go back south on 570 E	98.0 m	< 1 min
137:	Turn right on 600 N	59.0 m	< 1 min
138:	Arrive at 121, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
139:	Depart 121		
140:	Continue west on 600 N	70.0 m	< 1 min
141:	Turn left on 500 E	92.6 m	< 1 min
142:	Arrive at 51, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
143:	Depart 51		
144:	Go back north on 500 E	221.6 m	< 1 min
145:	Turn right on 660 N	32.0 m	< 1 min
146:	Arrive at 186, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
147:	Depart 186		
148:	Go back west on 660 N	32.0 m	< 1 min
149:	Turn right on 500 E	84.2 m	< 1 min
150:	Arrive at 21 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
151:	Depart 21		
152:	Continue north on 500 E	92.0 m	< 1 min

153:	Arrive at 158, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
154:	Depart 158		
155:	Continue north on 500 E	117.9 m	< 1 min
156:	Turn left on 800 N	47.0 m	< 1 min
157:	Arrive at 13, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
158:	Depart 13		
159:	Go back east on 800 N	148.3 m	< 1 min
160:	Turn left on 550 E	85.7 m	< 1 min
161:	Arrive at 213, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
162:	Depart 213		
163:	Go back south on 550 E	85.7 m	< 1 min
164:	Turn left on 800 N	8.0 m	< 1 min
165:	Arrive at 187, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
166:	Depart 187		
167:	Continue east on 800 N	104.7 m	< 1 min
168:	Turn left on 600 E	58.0 m	< 1 min
169:	Arrive at 195, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
170:	Depart 195		
171:	Go back south on 600 E	167.3 m	< 1 min
172:	Arrive at 116, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
173:	Depart 116		
174:	Continue south on 600 E	100.0 m	< 1 min
175:	Turn right on 700 N and immediately turn left on 580 E	96.6 m	< 1 min
176:	Arrive at 225, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
177:	Depart 225		

178:	Go back north on 580 E	36.0 m	< 1 min
179:	Turn left on 700 N	78.1 m	< 1 min
180:	Arrive at 160, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
181:	Depart 160		
182:	Continue west on 700 N	188.6 m	< 1 min
183:	Arrive at 20, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
184:	Depart 20		
185:	Continue west on 700 N	96.0 m	< 1 min
186:	Arrive at 194, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
187:	Depart 194		
188:	Go north on 400 E	126.0 m	< 1 min
189:	Arrive at 37, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
190:	Depart 37		
191:	Continue north on 400 E	87.1 m	< 1 min
192:	Arrive at 38 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
193:	Depart 38		
194:	Go west on 800 N	103.4 m	< 1 min
195:	Arrive at 14, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
196:	Depart 14		
197:	Continue west on 800 N	216.1 m	< 1 min
198:	Arrive at 25, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
199:	Depart 25		
200:	Go back east on 800 N	108.1 m	< 1 min
201:	Turn right on 300 E	82.7 m	< 1 min
202:	Turn left on 770 N	36.0 m	< 1 min

203:	Arrive at 233, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
204:	Depart 233		
205:	Go back west on 770 N	36.0 m	< 1 min
206:	Turn left on 300 E	71.9 m	< 1 min
207:	Arrive at 88, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
208:	Depart 88		
209:	Continue south on 300 E	60.0 m	< 1 min
210:	Turn left on 700 N	92.0 m	< 1 min
211:	Arrive at 193, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
212:	Depart 193		
213:	Go back west on 700 N	92.0 m	< 1 min
214:	Turn left on 300 E	56.5 m	< 1 min
215:	Arrive at 41, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
216:	Depart 41		
217:	Continue south on 300 E	102.0 m	< 1 min
218:	Arrive at 40, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
219:	Depart 40		
220:	Continue south on 300 E	169.5 m	< 1 min
221:	Arrive at 150, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
222:	Depart 150		
223:	Continue south on 300 E	96.0 m	< 1 min
224:	Arrive at 149 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
225:	Depart 149		
226:	Continue south on 300 E	95.5 m	< 1 min
227:	Arrive at 170, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019		2 min

5:00 PM
Service Time: 2 min

228:	Depart 170		
229:	Continue south on 300 E	44.0 m	< 1 min
230:	Arrive at 169, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
231:	Depart 169		
232:	Continue south on 300 E	219.0 m	< 1 min
233:	Arrive at 101, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
234:	Depart 101		
235:	Go back north on 300 E	46.0 m	< 1 min
236:	Arrive at 102, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
237:	Depart 102		
238:	Continue north on 300 E	38.0 m	< 1 min
239:	Arrive at 103, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
240:	Depart 103		
241:	Continue north on 300 E	63.0 m	< 1 min
242:	Turn right on 400 N	213.2 m	< 1 min
243:	Turn left at 400 E to stay on 400 N	68.0 m	< 1 min
244:	Arrive at 91, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
245:	Depart 91		
246:	Continue north on 400 N	153.4 m	< 1 min
247:	Arrive at 137, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
248:	Depart 137		
249:	Go back south on 400 N	6.0 m	< 1 min
250:	Turn left on 500 N	114.0 m	< 1 min
251:	Arrive at 161, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min

252:	Depart 161		
253:	Go back west on 500 N	218.3 m	< 1 min
254:	Arrive at 94, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
255:	Depart 94		
256:	Go back east on 500 N	104.3 m	< 1 min
257:	Turn right on 400 E	79.4 m	< 1 min
258:	Arrive at 92, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
259:	Depart 92		
260:	Continue south on 400 E	186.6 m	< 1 min
261:	Arrive at 227, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
262:	Depart 227		
263:	Continue south on 400 E	66.0 m	< 1 min
264:	Arrive at 226, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
265:	Depart 226		
266:	Continue south on 400 E	96.0 m	< 1 min
267:	Turn left on 300 N	80.0 m	< 1 min
268:	Arrive at 236, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
269:	Depart 236		
270:	Go back west on 300 N	80.0 m	< 1 min
271:	Turn left on 400 E	104.1 m	< 1 min
272:	Arrive at 216, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
273:	Depart 216		
274:	Continue south on 400 E	68.0 m	< 1 min
275:	Arrive at 215, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
276:	Depart 215		
277:	Continue south on 400 E	42.0 m	< 1 min

278:	Turn right on 200 N	131.0 m	< 1 min
279:	Turn left on TEMPLE HEIGHTS DR	31.0 m	< 1 min
280:	Arrive at 214, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
281:	Depart 214		
282:	Continue south on TEMPLE HEIGHTS DR	68.0 m	< 1 min
283:	Turn right to stay on TEMPLE HEIGHTS DR	51.9 m	< 1 min
284:	Arrive at 155, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
285:	Depart 155		
286:	Go back northeast on TEMPLE HEIGHTS DR	123.9 m	< 1 min
287:	Arrive at 154, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
288:	Depart 154		
289:	Go north on TEMPLE HEIGHTS DR	45.1 m	< 1 min
290:	Turn right on 200 N	113.8 m	< 1 min
291:	Bear left on BOULEVARD	129.3 m	< 1 min
292:	Arrive at 209, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
293:	Depart 209		
294:	Continue northeast on BOULEVARD	69.7 m	< 1 min
295:	Bear left on 500 E	103.3 m	< 1 min
296:	Turn right on 300 N	82.0 m	< 1 min
297:	Arrive at 140, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
298:	Depart 140		
299:	Go back west on 300 N	82.0 m	< 1 min
300:	Turn right on 500 E	116.0 m	< 1 min
301:	Arrive at 192, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
302:	Depart 192		
303:	Continue north on 500 E	226.7 m	< 1 min
304:	Arrive at 148, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019		2 min

5:00 PM
Service Time: 2 min

305:	Depart 148		
306:	Go back south on 500 E	58.0 m	< 1 min
307:	Arrive at 147, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
308:	Depart 147		
309:	Continue south on 500 E	70.0 m	< 1 min
310:	Turn left on 400 N	209.3 m	< 1 min
311:	Turn right on 600 E	85.7 m	< 1 min
312:	Bear right on BOULEVARD ST	16.8 m	< 1 min
313:	Arrive at 242, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
314:	Depart 242		
315:	Go back north on BOULEVARD ST	16.8 m	< 1 min
316:	Bear left on 600 E	157.7 m	< 1 min
317:	Arrive at 203, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
318:	Depart 203		
319:	Continue north on 600 E	74.0 m	< 1 min
320:	Arrive at 204, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
321:	Depart 204		
322:	Go back south on 600 E	146.0 m	< 1 min
323:	Turn left on 400 N	75.7 m	< 1 min
324:	Arrive at 182, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
325:	Depart 182		
326:	Go back west on 400 N	189.0 m	< 1 min
327:	Arrive at 174, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
328:	Depart 174		
329:	Continue west on 400 N	96.0 m	< 1 min
330:	Arrive at 17		2 min

Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM
Service Time: 2 min

331:	Depart 17		
332:	Continue west on 400 N	96.9 m	< 1 min
333:	Arrive at 16, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
334:	Depart 16		
335:	Continue west on 400 N	46.0 m	< 1 min
336:	Arrive at 15, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
337:	Depart 15		
338:	Continue west on 400 N	167.2 m	< 1 min
339:	Arrive at 70, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
340:	Depart 70		
341:	Continue west on 400 N	56.0 m	< 1 min
342:	Arrive at 69, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
343:	Depart 69		
344:	Continue west on 400 N	131.4 m	< 1 min
345:	Arrive at 136, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
346:	Depart 136		
347:	Continue west on 400 N	22.0 m	< 1 min
348:	Arrive at 135, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
349:	Depart 135		
350:	Continue west on 400 N	6.0 m	< 1 min
351:	Arrive at 134, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
352:	Depart 134		
353:	Continue west on 400 N	16.0 m	< 1 min

354:	Arrive at 133, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
355:	Depart 133		
356:	Continue west on 400 N	16.0 m	< 1 min
357:	Arrive at 132, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
358:	Depart 132		
359:	Continue west on 400 N	82.0 m	< 1 min
360:	Turn left on 200 E	59.1 m	< 1 min
361:	Arrive at 202, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
362:	Depart 202		
363:	Continue south on 200 E	36.0 m	< 1 min
364:	Arrive at 201, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
365:	Depart 201		
366:	Continue south on 200 E	46.0 m	< 1 min
367:	Arrive at 200, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
368:	Depart 200		
369:	Continue south on 200 E	74.0 m	< 1 min
370:	Turn left on 300 N	96.0 m	< 1 min
371:	Arrive at 185, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
372:	Depart 185		
373:	Continue east on 300 N	251.7 m	< 1 min
374:	Arrive at 118, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
375:	Depart 118		
376:	Go back west on 300 N	74.0 m	< 1 min
377:	Arrive at 117, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min

378:	Depart 117		
379:	Continue west on 300 N	58.0 m	< 1 min
380:	Turn left at 300 E to stay on 300 N	58.0 m	< 1 min
381:	Arrive at 22, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
382:	Depart 22		
383:	Continue south on 300 N	92.0 m	< 1 min
384:	Turn right on TEMPLE AVE	77.5 m	< 1 min
385:	Arrive at 129, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
386:	Depart 129		
387:	Continue west on TEMPLE AVE	38.0 m	< 1 min
388:	Arrive at 128, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
389:	Depart 128		
390:	Continue west on TEMPLE AVE	48.0 m	< 1 min
391:	Arrive at 127, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
392:	Depart 127		
393:	Continue west on TEMPLE AVE	50.0 m	< 1 min
394:	Turn left on 200 E	115.7 m	< 1 min
395:	Arrive at 55, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
396:	Depart 55		
397:	Continue south on 200 E	80.0 m	< 1 min
398:	Arrive at 53, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
399:	Depart 53		
400:	Go back north on 200 E	16.0 m	< 1 min
401:	Arrive at 54, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
402:	Depart 54		

403:	Continue north on 200 E	118.9 m	< 1 min
404:	Turn right at 200 N to stay on 200 E	54.0 m	< 1 min
405:	Arrive at 73, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
406:	Depart 73		
407:	Go back west on 200 E	54.0 m	< 1 min
408:	Turn right at 200 N to stay on 200 E	118.8 m	< 1 min
409:	Arrive at 47, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
410:	Depart 47		
411:	Continue north on 200 E	91.0 m	< 1 min
412:	Turn left on 300 N	68.2 m	< 1 min
413:	Arrive at 63, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
414:	Depart 63		
415:	Continue west on 300 N	58.0 m	< 1 min
416:	Arrive at 62, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
417:	Depart 62		
418:	Continue west on 300 N	131.8 m	< 1 min
419:	Arrive at 10, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
420:	Depart 10		
421:	Continue west on 300 N	174.0 m	< 1 min
422:	Turn left on MAIN ST	94.9 m	< 1 min
423:	Arrive at 240, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
424:	Depart 240		
425:	Continue south on MAIN ST	118.0 m	< 1 min
426:	Turn right on 200 N	2888.0 m	3 min
427:	Turn left on 1400 W	88.9 m	< 1 min
428:	Finish at Logan City Trasnfer Station, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019		

5:00 PM

Total time: 3 hr 59 min
Total distance: 23482.8 m
Start time: 4/15/2019 8:00 AM
Finish time: 4/15/2019 11:59 AM

Route: Truck2		35683.6 m	4 hr 21 min
1:	Start at Logan City Trasnfer Station Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM		
2:	Go north on 1400 W toward 200 N	88.9 m	< 1 min
3:	Turn right on 200 N	2888.0 m	3 min
4:	Turn left on MAIN ST	854.2 m	< 1 min
5:	Turn right on 600 N	86.0 m	< 1 min
6:	Arrive at 143, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
7:	Depart 143		
8:	Continue east on 600 N	112.0 m	< 1 min
9:	Arrive at 144, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
10:	Depart 144		
11:	Continue east on 600 N	128.5 m	< 1 min
12:	Arrive at 235, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
13:	Depart 235		
14:	Continue east on 600 N	102.2 m	< 1 min
15:	Turn left on 200 E	320.7 m	< 1 min
16:	Arrive at 19, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
17:	Depart 19		
18:	Continue north on 200 E	62.9 m	< 1 min
19:	Turn left on 800 N	107.7 m	< 1 min
20:	Arrive at 124, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
21:	Depart 124		
22:	Go back east on 800 N	107.7 m	< 1 min
23:	Turn left on 200 E	93.8 m	< 1 min

24:	Arrive at 11, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
25:	Depart 11		
26:	Continue north on 200 E	54.0 m	< 1 min
27:	Turn right on 870 N	128.0 m	< 1 min
28:	Arrive at 130, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
29:	Depart 130		
30:	Go back west on 870 N	128.0 m	< 1 min
31:	Turn right on 200 E	208.9 m	< 1 min
32:	Turn right on 970 N	114.0 m	< 1 min
33:	Arrive at 56, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
34:	Depart 56		
35:	Go back west on 970 N	114.0 m	< 1 min
36:	Turn right on 200 E	66.6 m	< 1 min
37:	Turn left on 1000 N	148.8 m	< 1 min
38:	Arrive at 12, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
39:	Depart 12		
40:	Go back east on 1000 N	240.8 m	< 1 min
41:	Arrive at 110, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
42:	Depart 110		
43:	Continue east on 1000 N	136.7 m	< 1 min
44:	Turn right on 300 E	76.0 m	< 1 min
45:	Arrive at 39, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
46:	Depart 39		
47:	Continue south on 300 E	102.0 m	< 1 min
48:	Turn right on 900 N	111.6 m	< 1 min
49:	Arrive at 57, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM		2 min

	Service Time: 2 min		
50:	Depart 57		
51:	Go back east on 900 N	111.6 m	< 1 min
52:	Turn right on 300 E	67.4 m	< 1 min
53:	Arrive at 48, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
54:	Depart 48		
55:	Go back north on 300 E	67.4 m	< 1 min
56:	Turn right on 900 N	104.5 m	< 1 min
57:	Arrive at 104, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
58:	Depart 104		
59:	Go north on 350 E	100.0 m	< 1 min
60:	Arrive at 230, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
61:	Depart 230		
62:	Go back south on 350 E	100.0 m	< 1 min
63:	Turn left on 900 N	103.2 m	< 1 min
64:	Turn right on 400 E	68.6 m	< 1 min
65:	Arrive at 80, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
66:	Depart 80		
67:	Go back north on 400 E	68.6 m	< 1 min
68:	Turn right on 900 N	86.0 m	< 1 min
69:	Arrive at 3, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
70:	Depart 3		
71:	Continue east on 900 N	94.0 m	< 1 min
72:	Arrive at 4, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
73:	Depart 4		
74:	Continue east on 900 N	28.2 m	< 1 min
75:	Turn right on 500 E	88.8 m	< 1 min
76:	Arrive at 146, on the right		2 min

	Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		
77:	Depart 146		
78:	Go back north on 500 E	8.0 m	< 1 min
79:	Turn left on 860 N	68.3 m	< 1 min
80:	Bear left on 460 E	26.0 m	< 1 min
81:	Arrive at 5, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
82:	Depart 5		
83:	Go back north on 460 E	26.0 m	< 1 min
84:	Bear right on 860 N	68.3 m	< 1 min
85:	Turn left on 500 E	170.8 m	< 1 min
86:	Arrive at 231, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
87:	Depart 231		
88:	Continue north on 500 E	80.9 m	< 1 min
89:	Turn right on 1000 N and immediately turn left on 500 E	81.4 m	< 1 min
90:	Arrive at 6, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
91:	Depart 6		
92:	Continue north on 500 E	95.2 m	< 1 min
93:	Arrive at 113 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
94:	Depart 113		
95:	Continue north on 500 E	214.1 m	< 1 min
96:	Arrive at 34 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
97:	Depart 34		
98:	Go east on 1200 N	278.1 m	< 1 min
99:	Arrive at 224, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
100:	Depart 224		
101:	Continue east on 1200 N	54.0 m	< 1 min

102:	Turn right on 680 E	64.6 m	< 1 min
103:	Arrive at 28, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
104:	Depart 28		
105:	Continue south on 680 E	58.0 m	< 1 min
106:	Turn left on 1150 N	50.0 m	< 1 min
107:	Arrive at 172, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
108:	Depart 172		
109:	Go back west on 1150 N	50.0 m	< 1 min
110:	Turn right on 680 E	122.6 m	< 1 min
111:	Turn right on 1200 N	81.7 m	< 1 min
112:	Arrive at 191, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
113:	Depart 191		
114:	Go back west on 1200 N	215.8 m	< 1 min
115:	Arrive at 52, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
116:	Depart 52		
117:	Continue west on 1200 N	24.0 m	< 1 min
118:	Turn right on 600 E	258.1 m	< 1 min
119:	Arrive at 83, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
120:	Depart 83		
121:	Continue north on 600 E	112.0 m	< 1 min
122:	Arrive at 84, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
123:	Depart 84		
124:	Continue north on 600 E	86.1 m	< 1 min
125:	Turn left on 1400 N	128.1 m	< 1 min
126:	Arrive at 211, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min

127:	Depart 211		
128:	Continue west on 1400 N	30.0 m	< 1 min
129:	Arrive at 210, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
130:	Depart 210		
131:	Go back east on 1400 N	136.0 m	< 1 min
132:	Arrive at 212, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
133:	Depart 212		
134:	Continue east on 1400 N	214.1 m	< 1 min
135:	Arrive at 60, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
136:	Depart 60		
137:	Continue east on 1400 N	240.8 m	< 1 min
138:	Turn right on 800 E	148.0 m	< 1 min
139:	Arrive at 153, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
140:	Depart 153		
141:	Go back north on 800 E	148.0 m	< 1 min
142:	Turn left on 1400 N	118.8 m	< 1 min
143:	Arrive at 61, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
144:	Depart 61		
145:	Continue west on 1400 N	314.0 m	< 1 min
146:	Turn left on 600 E	253.8 m	< 1 min
147:	Turn left on 1280 N	84.0 m	< 1 min
148:	Arrive at 139, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
149:	Depart 139		
150:	Continue east on 1280 N	98.6 m	< 1 min
151:	Turn left on 700 E and immediately turn right on 1300 N	64.9 m	< 1 min
152:	Arrive at 107, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019		2 min

5:00 PM
Service Time: 2 min

153:	Depart 107		
154:	Go back west on 1300 N	23.8 m	< 1 min
155:	Turn left on 700 E	58.1 m	< 1 min
156:	Arrive at 196, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
157:	Depart 196		
158:	Continue south on 700 E	42.0 m	< 1 min
159:	Turn right on 1260 N	111.0 m	< 1 min
160:	Arrive at 198, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
161:	Depart 198		
162:	Continue west on 1260 N	72.0 m	< 1 min
163:	Turn left on 600 E	143.3 m	< 1 min
164:	Turn right on 1200 N	99.9 m	< 1 min
165:	Arrive at 59, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
166:	Depart 59		
167:	Continue west on 1200 N	161.7 m	< 1 min
168:	Arrive at 33, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
169:	Depart 33		
170:	Continue west on 1200 N	98.0 m	< 1 min
171:	Arrive at 32, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
172:	Depart 32		
173:	Continue west on 1200 N	60.0 m	< 1 min
174:	Turn right on 400 E	89.3 m	< 1 min
175:	Turn left on APPLE TREE LN	73.3 m	< 1 min
176:	Arrive at 126, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
177:	Depart 126		
178:	Continue west on APPLE TREE LN	44.0 m	< 1 min

179:	Arrive at 125, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
180:	Depart 125		
181:	Go back east on APPLE TREE LN	117.3 m	< 1 min
182:	Turn left on 400 E	39.3 m	< 1 min
183:	Arrive at 122 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
184:	Depart 122		
185:	Continue north on 400 E	40.0 m	< 1 min
186:	Arrive at 42, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
187:	Depart 42		
188:	Continue north on 400 E	36.0 m	< 1 min
189:	Arrive at 43, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
190:	Depart 43		
191:	Continue north on 400 E	261.6 m	< 1 min
192:	Arrive at 223, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
193:	Depart 223		
194:	Go back south on 400 E	130.0 m	< 1 min
195:	Turn right on 1370 N	83.1 m	< 1 min
196:	Arrive at 65, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
197:	Depart 65		
198:	Go back east on 1370 N	83.1 m	< 1 min
199:	Turn right on 400 E	121.6 m	< 1 min
200:	Arrive at 44, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
201:	Depart 44		
202:	Continue south on 400 E	293.5 m	< 1 min
203:	Turn left on 1150 N	85.3 m	< 1 min

204:	Turn right on 430 E	14.1 m	< 1 min
205:	Arrive at 2, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
206:	Depart 2		
207:	Go back north on 430 E	14.1 m	< 1 min
208:	Turn right on 1150 N	71.4 m	< 1 min
209:	Arrive at 156, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
210:	Depart 156		
211:	Continue east on 1150 N	154.1 m	< 1 min
212:	Arrive at 123, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
213:	Depart 123		
214:	Continue east on 1150 N	121.2 m	< 1 min
215:	Arrive at 208, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
216:	Depart 208		
217:	Go south on 600 E	89.6 m	< 1 min
218:	Turn right on 1100 N	77.6 m	< 1 min
219:	Arrive at 1, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
220:	Depart 1		
221:	Go back east on 1100 N	77.6 m	< 1 min
222:	Turn right on 600 E	78.1 m	< 1 min
223:	Turn right on DOUGLAS DR	69.7 m	< 1 min
224:	Arrive at 145, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
225:	Depart 145		
226:	Go back east on DOUGLAS DR	69.7 m	< 1 min
227:	Turn right on 600 E	88.1 m	< 1 min
228:	Turn left on 1000 N	86.0 m	< 1 min
229:	Arrive at 181, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min

230:	Depart 181		
231:	Continue east on 1000 N	145.6 m	< 1 min
232:	Arrive at 162, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
233:	Depart 162		
234:	Continue east on 1000 N	116.0 m	< 1 min
235:	Arrive at 163, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
236:	Depart 163		
237:	Continue east on 1000 N	79.6 m	< 1 min
238:	Turn left on 800 E	90.0 m	< 1 min
239:	Arrive at 68, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
240:	Depart 68		
241:	Continue north on 800 E	247.1 m	< 1 min
242:	Turn left on 1200 N	30.7 m	< 1 min
243:	Arrive at 189, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
244:	Depart 189		
245:	Go back east on 1200 N	30.7 m	< 1 min
246:	Turn right on 800 E	543.9 m	< 1 min
247:	Arrive at 142, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
248:	Depart 142		
249:	Continue south on 800 E	207.6 m	< 1 min
250:	Turn right at 800 N to stay on 800 E	102.1 m	< 1 min
251:	Turn left on 750 E	52.2 m	< 1 min
252:	Arrive at 229, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
253:	Depart 229		
254:	Go back north on 750 E	52.2 m	< 1 min
255:	Turn right on 800 N	102.1 m	< 1 min
256:	Turn right at 800 E to stay on 800 N	212.3 m	< 1 min

257:	Turn left on AGGIE BOULEVARD	819.1 m	1 min
258:	Turn right on 1200 E	194.8 m	< 1 min
259:	Turn right on HWY 89	548.9 m	< 1 min
260:	Turn right on CHAMP AVE	532.7 m	< 1 min
261:	Arrive at 131, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
262:	Depart 131		
263:	Go back east on CHAMP AVE	532.7 m	< 1 min
264:	Turn left on HWY 89	548.9 m	< 1 min
265:	Turn left on 1200 E	194.8 m	< 1 min
266:	Turn left on AGGIE BOULEVARD	819.1 m	1 min
267:	Continue on 700 N	57.3 m	< 1 min
268:	Arrive at 36, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
269:	Depart 36		
270:	Continue west on 700 N	46.0 m	< 1 min
271:	Turn left on DARWIN AVE	132.2 m	< 1 min
272:	Arrive at 120, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
273:	Depart 120		
274:	Go back north on DARWIN AVE	132.2 m	< 1 min
275:	Turn left on 700 N	154.3 m	< 1 min
276:	Arrive at 138, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
277:	Depart 138		
278:	Go south on 700 N	342.8 m	< 1 min
279:	Arrive at 171, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
280:	Depart 171		
281:	Go west on 500 N	150.3 m	< 1 min
282:	Arrive at 199, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
283:	Depart 199		

284:	Continue west on 500 N	200.8 m	< 1 min
285:	Turn left on RAYMOND CT	134.0 m	< 1 min
286:	Arrive at 168, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
287:	Depart 168		
288:	Go back north on RAYMOND CT	134.0 m	< 1 min
289:	Arrive at 96 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
290:	Depart 96		
291:	Go east on 500 N	136.8 m	< 1 min
292:	Turn left on 600 E	46.0 m	< 1 min
293:	Arrive at 29, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
294:	Depart 29		
295:	Continue north on 600 E	70.0 m	< 1 min
296:	Arrive at 30, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
297:	Depart 30		
298:	Continue north on 600 E	97.8 m	< 1 min
299:	Turn right at 600 N to stay on 600 E	104.0 m	< 1 min
300:	Arrive at 79, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
301:	Depart 79		
302:	Go back west on 600 E	104.0 m	< 1 min
303:	Turn right at 600 N to stay on 600 E	18.0 m	< 1 min
304:	Arrive at 66, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
305:	Depart 66		
306:	Continue north on 600 E	158.0 m	< 1 min
307:	Arrive at 67, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
308:	Depart 67		
309:	Continue north on 600 E	38.5 m	< 1 min

310:	Turn right on 700 N	84.0 m	< 1 min
311:	Arrive at 219, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
312:	Depart 219		
313:	Continue east on 700 N	67.2 m	< 1 min
314:	Turn right on HILLSIDE CIR	114.8 m	< 1 min
315:	Arrive at 239, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
316:	Depart 239		
317:	Go back north on HILLSIDE CIR	114.8 m	< 1 min
318:	Turn right on 700 N	154.5 m	< 1 min
319:	Arrive at 234, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
320:	Depart 234		
321:	Continue north on 700 N	106.1 m	< 1 min
322:	Turn left on 800 N	103.5 m	< 1 min
323:	Arrive at 77, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
324:	Depart 77		
325:	Go back east on 800 N	58.0 m	< 1 min
326:	Arrive at 78, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
327:	Depart 78		
328:	Continue east on 800 N	45.5 m	< 1 min
329:	Turn left on 700 E	100.0 m	< 1 min
330:	Arrive at 64, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
331:	Depart 64		
332:	Continue north on 700 E	171.6 m	< 1 min
333:	Arrive at 241, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
334:	Depart 241		

335:	Go back south on 700 E	60.0 m	< 1 min
336:	Turn left on 900 N	70.0 m	< 1 min
337:	Arrive at 141, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
338:	Depart 141		
339:	Go back west on 900 N	171.5 m	< 1 min
340:	Arrive at 159 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
341:	Depart 159		
342:	Continue west on 900 N	179.6 m	< 1 min
343:	Arrive at 237, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
344:	Depart 237		
345:	Go back east on 900 N	69.8 m	< 1 min
346:	Turn left on 600 E	92.0 m	< 1 min
347:	Arrive at 72, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
348:	Depart 72		
349:	Continue north on 600 E	79.0 m	< 1 min
350:	Turn left on 1000 N	111.5 m	< 1 min
351:	Arrive at 179, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
352:	Depart 179		
353:	Continue west on 1000 N	166.4 m	< 1 min
354:	Turn right on CRESCENT DR	58.0 m	< 1 min
355:	Arrive at 164, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
356:	Depart 164		
357:	Continue north on CRESCENT DR	78.0 m	< 1 min
358:	Arrive at 165, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
359:	Depart 165		
360:	Continue northwest on CRESCENT DR	109.7 m	< 1 min

361:	Arrive at 166 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
362:	Depart 166		
363:	Go south on BONNEVILLE AVE	71.8 m	< 1 min
364:	Arrive at 99, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
365:	Depart 99		
366:	Continue south on BONNEVILLE AVE	80.0 m	< 1 min
367:	Arrive at 98, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
368:	Depart 98		
369:	Continue south on BONNEVILLE AVE	28.0 m	< 1 min
370:	Turn right on 1000 N and immediately turn left on 400 E	113.0 m	< 1 min
371:	Arrive at 75, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
372:	Depart 75		
373:	Go back north on 400 E	51.7 m	< 1 min
374:	Turn left on 1000 N and immediately turn right on 400 E	82.1 m	< 1 min
375:	Arrive at 7, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
376:	Depart 7		
377:	Continue north on 400 E	59.9 m	< 1 min
378:	Turn left on 1075 N	107.1 m	< 1 min
379:	Arrive at 86, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
380:	Depart 86		
381:	Continue west on 1075 N	66.0 m	< 1 min
382:	Arrive at 85, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
383:	Depart 85		
384:	Go back east on 1075 N	140.0 m	< 1 min

385:	Arrive at 87, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
386:	Depart 87		
387:	Continue east on 1075 N	33.1 m	< 1 min
388:	Turn left on 400 E	124.3 m	< 1 min
389:	Arrive at 178 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
390:	Depart 178		
391:	Go west on 1140 N	96.9 m	< 1 min
392:	Arrive at 100, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
393:	Depart 100		
394:	Go west on 1140 N	54.0 m	< 1 min
395:	Turn right on WASATCH DR	72.0 m	< 1 min
396:	Arrive at 180, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
397:	Depart 180		
398:	Continue northeast on WASATCH DR	122.4 m	< 1 min
399:	Turn left on 1200 N	18.7 m	< 1 min
400:	Arrive at 27, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
401:	Depart 27		
402:	Continue west on 1200 N	118.0 m	< 1 min
403:	Arrive at 26, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
404:	Depart 26		
405:	Continue southwest on 1200 N	53.1 m	< 1 min
406:	Arrive at 152 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
407:	Depart 152		
408:	Go west on 1200 N	52.8 m	< 1 min
409:	Turn right on 250 E	32.0 m	< 1 min

410:	Arrive at 176, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
411:	Depart 176		
412:	Go back south on 250 E	32.0 m	< 1 min
413:	Turn right on 1200 N	72.5 m	< 1 min
414:	Turn right on 225 E	26.0 m	< 1 min
415:	Arrive at 228, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
416:	Depart 228		
417:	Go back south on 225 E	26.0 m	< 1 min
418:	Turn right on 1200 N and immediately turn left on 200 E	233.7 m	< 1 min
419:	Arrive at 217, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
420:	Depart 217		
421:	Go back north on 200 E	99.3 m	< 1 min
422:	Turn right on 1100 N	112.0 m	< 1 min
423:	Arrive at 114, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
424:	Depart 114		
425:	Go back west on 1100 N	112.0 m	< 1 min
426:	Turn right on 200 E	60.5 m	< 1 min
427:	Arrive at 95, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
428:	Depart 95		
429:	Continue north on 200 E	187.1 m	< 1 min
430:	Arrive at 157 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
431:	Depart 157		
432:	Go east on 1250 N	139.9 m	< 1 min
433:	Turn right on 1240 N	62.0 m	< 1 min
434:	Arrive at 71, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min

435:	Depart 71		
436:	Go back northwest on 1240 N	62.0 m	< 1 min
437:	Continue on 1270 N	168.0 m	< 1 min
438:	Arrive at 50, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
439:	Depart 50		
440:	Go back south on 1270 N	20.0 m	< 1 min
441:	Arrive at 49, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
442:	Depart 49		
443:	Continue southwest on 1270 N	148.0 m	< 1 min
444:	Turn right on 1250 N	139.9 m	< 1 min
445:	Turn right on 200 E	355.4 m	< 1 min
446:	Arrive at 184 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
447:	Depart 184		
448:	Go west on 1400 N	374.5 m	< 1 min
449:	Arrive at 197, on the left Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
450:	Depart 197		
451:	Continue west on 1400 N	70.0 m	< 1 min
452:	Turn left on MAIN ST	356.5 m	< 1 min
453:	Arrive at 45, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
454:	Depart 45		
455:	Continue south on MAIN ST	467.2 m	< 1 min
456:	Arrive at 218 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
457:	Depart 218		
458:	Continue south on MAIN ST	225.0 m	< 1 min
459:	Arrive at 232, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
460:	Depart 232		

461:	Continue south on MAIN ST	579.0 m	< 1 min
462:	Arrive at 183 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
463:	Depart 183		
464:	Continue south on MAIN ST	426.4 m	< 1 min
465:	Arrive at 188 Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM Service Time: 2 min		2 min
466:	Depart 188		
467:	Continue south on MAIN ST	427.8 m	< 1 min
468:	Turn right on 200 N	2888.0 m	3 min
469:	Turn left on 1400 W	88.9 m	< 1 min
470:	Finish at Logan City Trasnfer Station, on the right Time Window: 4/15/2019 8:00 AM - 4/15/2019 5:00 PM		

Total time: 4 hr 21 min
Total distance: 35683.6 m
Start time: 4/15/2019 8:00 AM
Finish time: 4/15/2019 12:21 PM