

# MEMORANDUM

**Date:** 8/30/2018  
**To:** Seattle City Council  
**From:** SDOT & OSE  
**Subject:** Food Access SLI Response

The following memo responds to SLI 31-1-B-2 requesting that:

*The Seattle Department of Transportation (SDOT), in coordination with the Office of Sustainability and the Environment (OSE), report back to Council regarding how it would implement a transportation voucher pilot program to provide residents living in low-income housing located in food deserts (for example, Brettler Family Place in Magnuson Park) with free ride share vouchers to get to and from locations providing healthy food options, like grocery stores accepting Fresh Bucks and farmers markets. A major barrier to accessing healthy food and participation in the Fresh Bucks program is a user's ability to get to and from grocery stores and local farmers markets.*

The report should include:

- How "food desert" is defined;
- An estimate of how much funding is needed to implement a pilot program;
- The number of individuals and families residing in food deserts;
- The cost per individual or family for the program;
- How long the pilot program would last;
- The outcomes used to evaluate the pilot program; and
- An evaluation of whether this is an effective strategy to provide low-income residents with food.

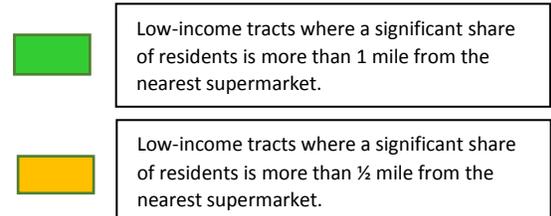
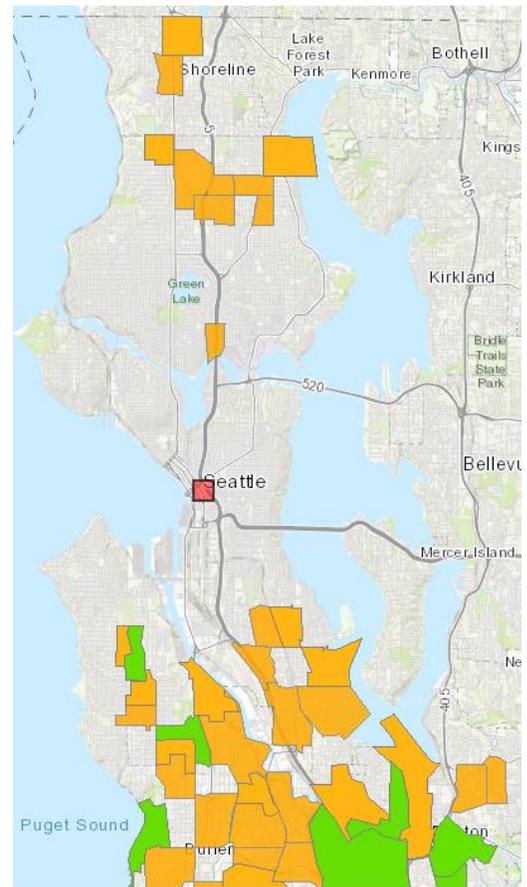
## Background: Food Deserts

In 2008, Congress directed the U.S. Department of Agriculture (USDA) to study areas with limited access to affordable and nutritious food and to develop recommendations to address the problem. Through this research, the USDA defined, identified, and mapped food deserts nationally. Their research provided concrete evidence of disparities in food access and resulted in recommendations to open retail outlets in food deserts to increase access to nutritious food, improve community health, and stimulate economic development in low-income areas.

The USDA defines food deserts as census tracts that are (a) low-income<sup>1</sup> with (b) low access to supermarkets and with (c) limited access to transportation. The USDA Food Access Research Atlas maps two variations of food deserts:

- Low-income Census tracts that are more than 1-mile from a supermarket (Green)

**Map 1. USDA-Defined Food Deserts in Seattle, with 1-Mile and ½-Mile Buffers**



<sup>1</sup> USDA uses the following definition for low-income tracts: Tracts with a poverty rate of 20% or higher, or tracts with a median family income less than 80% of median family income for the state or metropolitan area.

- Low-income Census tracts that are less than ½-mile from a supermarket (Orange)

Map 1 shows the census tracts in Seattle that meet the USDA definition. The only neighborhood that qualifies as a food desert at the 1-mile range is Delridge. At the ½-mile range, several other neighborhoods, predominately in North and South Seattle, are considered food deserts.

Unfortunately, policy interventions across the country that have focused on increasing the geographic availability of healthy food options within food deserts, such as facilitating the opening of new grocery stores or converting corner stores, have been largely unsuccessful<sup>2,3</sup>. In fact, there is growing evidence that, in addition to geography, food access is closely related to affordability, individual and cultural preferences, food quality and variety, and food and nutrition knowledge<sup>4</sup>.

Research in Seattle has led OSE to reach similar conclusions. For instance, the Seattle Obesity Study found only 1 in 7 respondents shopped at the nearest supermarket. The rest traveled to further stores that had more affordable food or the selection they preferred<sup>5</sup>. Of the clients surveyed in the 2014 Seattle Women and Food Access Study, which focused on Delridge, 55% said cost was their biggest barrier to accessing healthy food, while 11% said it was distance to a nearby grocery store<sup>6</sup>. Finally, in Got Green’s Women in the Green Economy study, 67% of respondents said that cost was the biggest barrier to eating nutritious foods. Location was highlighted with 23% of respondents stating that their main barrier to a healthy diet was the location of the store.”<sup>7</sup>

### **Background: Transportation**

Seattle is the fastest growing major city in the United States. The city has gained more than 100,000 residents in the last 20 years and anticipates gaining another 120,000 residents in the next 20 years. While this growth presents opportunities for Seattle, it also poses challenges for maintaining overall mobility throughout the City and requires new investments to serve new residents.

SDOT and partner agencies have responded to this growth with major investments in local and regional public transportation, including bus service investments through the Seattle Transportation Benefit District, new and improved RapidRide lines, new Link Light Rail Stations, and improvements to bicycle and pedestrian infrastructure and access. These investments have paid dividends; while public transit use has held steady or declined in recent years among peer cities, transit ridership in Seattle has risen steadily. The most recent Modesplit Survey shows that almost half of all commute trips to downtown are taken via transit, and only 25% of downtown commuters choose to drive alone.

Through the Transportation Equity Program, SDOT is working to ensure that Seattle’s most vulnerable and disproportionately cost-burdened residents have access to safe, sustainable, accessible and affordable

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<sup>2</sup> Steven Cummins, et al. 2014. New Neighborhood Grocery Store Increased Awareness of Food Access But Did Not Alter Dietary Habits or Obesity. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4201352/>

<sup>3</sup> Alexander Ortega. 2017. Substantial Improvements Not Seen in Health Behaviors Following Corner Store Conversions in 2 Latino Food Swamps. <https://bmcpublikealth.biomedcentral.com/articles/10.1186/s12889-016-3074-1>

<sup>4</sup> Darcy Freedman, et al. 2013. Developing a Multicomponent Model of Nutritious Food Access and Related Implications for Community and Policy Practice. <https://www.tandfonline.com/doi/abs/10.1080/10705422.2013.842197>

<sup>5</sup> University of Washington Center for Public Health Nutrition. 2010. Seattle Obesity Study Research Brief: The Supermarket Gap. <https://depts.washington.edu/uwcphn/reports/cphnbrf051910.pdf>

<sup>6</sup> Seattle Women’s Commission. 2014. Seattle Women and Food Access: Learning from Women in Delridge. [https://www.seattle.gov/Documents/Departments/SeattleWomensCommission/Women-and-Food-Access-Study-Final-Report\\_2014.pdf](https://www.seattle.gov/Documents/Departments/SeattleWomensCommission/Women-and-Food-Access-Study-Final-Report_2014.pdf)

<sup>7</sup> Got Green. 2012. Women and the Green Economy: Voices from Southeast Seattle. <http://gotgreenseattle.org/wp-content/uploads/2011/09/gotgreen-women-report-lowres-9-11.pdf>

transportation options. Investment in transit service is a key strategy to address transportation equity and create a more affordable transportation system. SDOT's Transportation Equity Program is supported in part by the 2014 voter approved Seattle Transportation Benefits District (STBD), and annual free-floating car share permit fees. Approximately \$500 per free-floating car share permit is earmarked for Transportation Demand Management, including transportation equity and emergent or new mobility initiatives.

Existing Transportation Equity Program initiatives include:

- Low-income Access to Transit: SDOT purchases and distributes pre-loaded ORCA Lift cards to income-eligible people living, working, playing and learning in Seattle through inclusive engagement & enrollment programming;
- Youth ORCA: SDOT purchases and distributes Youth ORCA fare cards to income-eligible high school and middle school students living within two miles of school. Seattle Public Schools provides ORCA cards to students living greater than two miles of their school. The program distributed 2,860 ORCA cards, to date, this school year;
- Car Tab Rebate: SDOT provides income-eligible residents that have paid their vehicle license registration fee with a \$20 car tab rebate.

Additionally, there are several non-City programs available:

- Regional Reduce Fare: A King County administered program that entitles senior riders (age 65 or older), riders with a disability, and Medicare card holders to reduced fares on a wide range of public transportation systems in the Puget Sound region.
- Nonprofit providers: A variety of nonprofits provide free, pre-scheduled transportation services to and from medical appointments and other essential locations to Medicaid card holders and seniors. Some of those providers include: Hopelink, Solid Ground and Sound Generations.

In addition to public transportation, private emergent technology-enabled mobility options—Transportation Network Companies, Ridehail/Rideshare, Car Share, Bike Share, Micro-Transit and eventually Autonomous Vehicles—are growing in popularity and creating new ways for people to live in Seattle car-lite or car-free, saving money and creating environmental benefits. In 2017, SDOT published the nation's first-ever New Mobility Playbook, which offers a set of strategies for shaping the future of these emergent transportation options that positions people first.

### **Rethinking Food Deserts**

Local research suggests that the definition offered by the USDA is too centered on geography and car use, does not account for personal and cultural preferences among grocery shoppers, and obscures smaller low-income communities living amid higher income areas. Therefore, we opted to pursue a more narrow and tailored definition of food deserts to inform our work on this SLI response. Specifically, we developed a composite food/transportation index, which combines access via Seattle's frequent transit network, all ages and abilities bicycle network, and sidewalk network shed. See the Appendix for a full description of the composite index and the accompanying walk, bike, and transit travelshed maps (Maps 3-5). We then identified all rent- and income-restricted affordable housing locations with a concentration of at least 15 units, along with healthy food locations, defined as major chain and independent supermarkets in Seattle and Fresh Bucks retailers, and used the composite transportation index to assess how easily residents of each low-income housing site could travel to a healthy food location.<sup>8</sup>

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<sup>8</sup> Note: Fresh Bucks retailers include 6 ethnic grocers, all farmers markets in Seattle, and 4 farm stands.

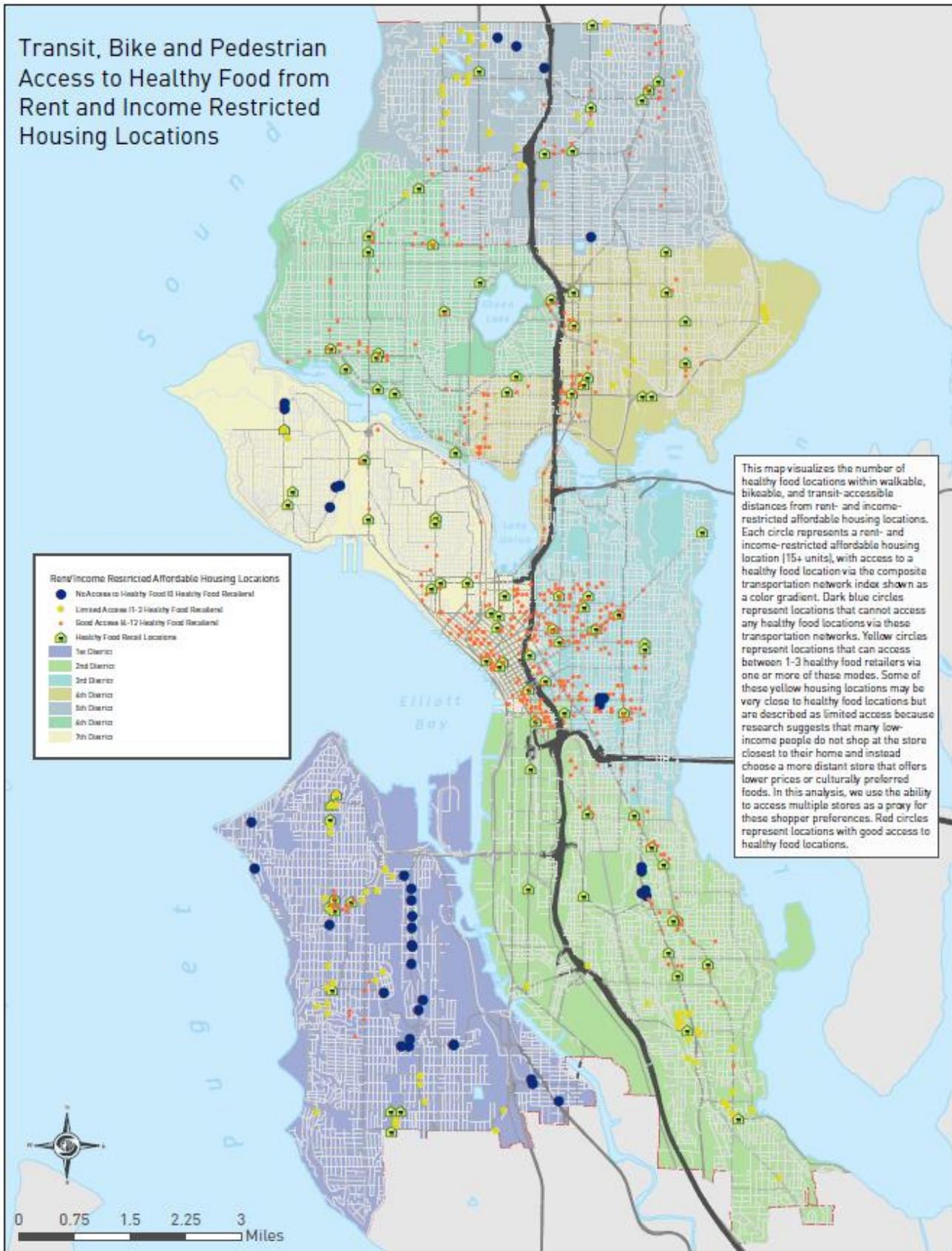
Map 2 visualizes the number of healthy food locations within walkable, bikeable, and transit-accessible distances from rent-and income-restricted affordable housing locations. The analysis provides a more granular view of food access disparities in comparison to the USDA-Defined Food Deserts illustrated in Map 1, displaying both relative levels of access and healthy food.

In Map 2, each circle represents a rent- and income-restricted affordable housing location (15+ units), with access to a healthy food location via the composite transportation index shown as a color gradient. Larger, dark blue circles represent locations that cannot access any healthy food locations via these transportation networks. Yellow circles represent locations that can access between 1-3 healthy food retailers via one or more of these modes. Some of these yellow housing locations may be very close to healthy food locations, but are described as limited access because research suggests that many low-income people do not shop at the store closest to their home and instead choose a more distant store that offers lower prices or culturally preferred foods. In this analysis, we use the ability to access multiple stores as a proxy for these shopper preferences. Smaller red circles represent locations with good access to healthy food locations

The results show there are areas in Delridge, Alki, Olympic Hills/Victory Heights, Haller Lake, South Park, and Interbay that have no access to healthy food locations. This equates to 3% of rent-and income-restricted affordable housing units (851 units total). Of these units, 56% are at high risk of displacement according to Seattle 2035's Growth and Equity Analysis. An additional 18% of units (4641 units total) experience low access to healthy food, 67% of which are at high risk of displacement. It is important to note that this map does not take into account whether the nearest healthy food location is affordable or culturally-appropriate.

This analysis informs research into potential programs to address this issue by either improving the inputs to the composite transportation index or providing more culturally and financially appropriate options near low-income housing locations.

**Map 2. Transportation Options to Grocery Stores and Fresh Retailers Composite Score**



## Rideshare Voucher Service Delivery Option

As identified in the SLI, one option for addressing low accessibility to healthy food for low-income housing residents is a rideshare voucher or subsidy (i.e. ridehail apps like Uber, Lyft, ReachNow Ride, and Moovin). This would allow a recipient to use a ridesharing service to travel to and from locations providing healthy food options.

There are two primary benefits to the rideshare voucher option. First, they are responsive to preference; the voucher enables a recipient to travel to a more affordable or culturally appropriate healthy food location that is more distant, requires more transfers, or is otherwise geographically inaccessible. Second, rideshare is a relatively convenient, reliable, and accessible mode of transportation and is suitable for transporting a high volume of groceries in ways other modes of transportation are not.

Although there are benefits to the rideshare voucher options, there are also RSJI concerns around disparate barriers to using rideshare technology. Research has shown that communities of color experience longer wait times and more frequent cancellations, while women are often taken on longer, more expensive rides than men.<sup>9</sup> The City's ability to monitor and mitigate against these barriers is minimal due to the lack of data around when and why they occur. Low income individuals and communities of color are also less likely to have access to a smart phone, bank account, and credit card, all of which are needed to use a ridesharing service. There are also cultural barriers to rideshare use including distrust of authority, discomfort with shared mobility systems, and preference for the comfort of culturally-congruent systems.<sup>10</sup> However, the City can overcome these barriers in the context of a pilot or program through partnership with financial literacy organizations or community-based financial institutions and by providing smart phones at a reduced cost (as recommended in Seattle IT's Digital Equity Initiative Action Plan).

Accessibility and reliability are diminished prior to vehicle arrival as well. Vehicle wait times and cancellations tend to be higher outside of dense neighborhoods, which could make it harder for recipients in those areas to effectively use their vouchers. While the availability of drivers citywide and at most hours of the day ensures service reliability, cost fluctuation throughout the day diminishes the service's reliability, especially with a fixed rate voucher system. Ridehail app prices fluctuate based on driver supply at any given time and the amount of company subsidy provided for each trip, particularly in the case of Uber and Lyft. This means that trip costs can vary significantly, especially during surge pricing events, which would significantly increase the potential out-of-pocket costs of people that cannot afford high cost trips.

From a technical standpoint, administering such a program would be challenging. Voucher or rebate programs require significant staff resources to enroll, promote, educate, evaluate, and manage reimbursements. Administrative costs would be the most resource-intensive portion of a program or pilot such as this. Although there are a few examples of large institutions like local governments and hospitals partnering with rideshare companies to provide transportation options for individuals, no other city has implemented rideshare voucher program specifically aimed at food access, meaning there are no best practices from which to draw from. The

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<sup>9</sup> Ge, Yanbo et al. National Bureau of Economic Research. 2016. Racial and Gender Discrimination in Transportation Network Companies. <http://www.nber.org/papers/w22776.pdf>

<sup>10</sup> Kodransky, Michael and Gabriel Lewenstein. Living Cities and Institute for Transportation & Development Policy. 2014. Connecting Low-Income People to Opportunity with Shared Mobility. <https://www.livingcities.org/resources/284-can-shared-mobility-help-low-income-people-access-opportunity>

City also has no mechanism to ensure that the credit is used for the purpose of traveling to a healthy food location; without a validation process, voucher use for other personal trips is likely.

**Pilot Program Implementation Details**

If Council were to pursue a rideshare voucher pilot, we recommend an 8-month pilot period at one housing location to effectively evaluate the voucher concept’s ability to provide affordable access to healthy food locations. This discrete pilot period would also provide the time to identify a test population, market the program, educate participants on food access issues and how to use rideshare services and other transportation options, and measure the behavior change and other key performance indicators of the pilot (see evaluation metrics section for a list of proposed metrics).

The departments strongly recommend that a community engagement process be initiated prior to launching a potential pilot program. This is consistent with City policy established in Council Resolution 31773, affirming the City of Seattle’s commitment to racial equity and social justice and recognizing the Seattle Department of Transportation’s Transportation Equity Program, OSE’s Equity and Environment Agenda, SDOT’s New Mobility Playbook, and OPCD’s Equitable Development Initiative.

These initiatives, along with non-City resources like the Greenlining Institute’s [Mobility Equity Framework](#), offer best practices on how best to conduct inclusive public outreach. Effective community engagement that centers marginalized communities should include focus groups, interviews with frontline community members, and needs assessments informed by qualitative and quantitative data, among other best practices. Engaging the community prior to developing and implementing a potential pilot program is key to ensuring that the pilot centers the needs, wants, and solutions that communities wish to see.

We focused on Brettler Family Place as the initial pilot location since it was specifically mentioned in the SLI. However, as our analysis shows, there are other housing locations within the city with greater access needs. Using the 105 subsidized units at Brettler Family Place and Brettler Family Housing at 6816 62<sup>nd</sup> Avenue NE as the initial pilot location, we assume the following costs and resource needs for an 8-month project with a 5-month pilot period. Our target is to provide subsidy for two two-way trips to healthy food locations per week for each unit at Brettler Family Place and Brettler Family Housing. This is to enable more grocery trips so participants can purchase perishable healthy food items (instead of less trips per month, relying on highly preserved processed foods that are generally less healthy). We assume the average cost per one-way trip is \$10 for most trips to grocery stores from Brettler Family Place. Our target is to require participants to pay roughly the same amount as a two-way transit fare (\$5). Therefore, the voucher subsidy is assumed to be \$7.50 per trip leg. We assume 7,560 trips will be made during a 4-month data collection period. The total cost of the passenger subsidy is \$56,700, and the all-in costs for the pilot is estimated to be \$283,700.

Pilot element	Timeline	Activities	Cost
Pilot planning and community engagement	3 months	<ul style="list-style-type: none"> <li>Detailed programming and cost estimation</li> <li>Engagement with Brettler Place rideshare partners and follow up program changes based on ideas and feedback</li> <li>Develop marketing materials</li> </ul>	<ul style="list-style-type: none"> <li>\$112,000 for 0.5 FTE SDOT SA1 staff for life of the pilot</li> <li>\$20,000 for engagement activities and analysis</li> </ul>

Pilot element	Timeline	Activities	Cost
Pilot initiation	1 month	<ul style="list-style-type: none"> <li>• Ambassador training and outreach</li> <li>• Outreach and promotions</li> <li>• Enrollment</li> </ul>	<ul style="list-style-type: none"> <li>• \$5,000 for 3 ambassadors</li> <li>• \$20,000 to run outreach events, including food and child care services</li> <li>• \$10,000 for marketing and promotional materials</li> <li>• \$10,000 for translation services</li> </ul>
Pilot administration and data collection	4 months	<ul style="list-style-type: none"> <li>• Two two-way trips to healthy food locations per week for each unit at Brettler Family Place and Brettler Family Housing</li> </ul>	<ul style="list-style-type: none"> <li>• \$56,700</li> </ul>
Evaluation analysis and reporting	1 month	<ul style="list-style-type: none"> <li>• Analysis report to be completed by University of Washington</li> <li>• Long-term feasibility determination</li> </ul>	<ul style="list-style-type: none"> <li>• \$50,000</li> </ul>
<b>TOTAL COST</b>			<b>\$283,700</b>

The all-in cost per trip for the proposed 4-month rideshare pilot equates to \$37.53 per trip. However, roughly 50-75% of vouchers are typically redeemed by the target population in pilot programs like this. Assuming that three-quarters of the vouchers are redeemed, the all-in cost per trip would be \$47.54 per trip. To put this into perspective, in 2016 King County Metro’s fixed route transit cost per trip was \$2.54 and Access paratransit’s cost per trip was \$55.75. This would be a high-subsidy program considering that it is a partnership with a private mobility provider. SDOT and OSE recommend targeted engagement with the community first. This would be followed by additional analysis of the ideas generated by the community and the alternative service delivery options below.

### Alternative Service Delivery Options

Given these issues, SDOT and OSE identified several alternative service delivery options that could be considered for a potential pilot program:

- *Multipurpose transportation voucher* – This option is a variation on the rideshare voucher or credit. Instead of limiting the recipient to a ridesharing service, this option would provide a voucher that could be credited to any transportation option, including an ORCA card, carshare, or bikeshare.
- *Microtransit* – Establishing or contracting with a private partner to develop a short shuttle, loop, or local on-demand transit system between identified low-income households in food deserts and healthy food locations.
- *Peer to peer mobility and delivery* – Facilitating the development of a hybrid community shared ride and delivery service, where individuals within a specific area or housing development drive one another to the grocery store or utilize their own vehicles or bikes to deliver food in exchange for modest compensation through City-subsidized service or through an incentivized application-based model.
- *Direct delivery service* – Partially or wholly subsidizing the delivery of healthy foods to low-income households in food deserts. This could take the form of a community nonprofit program like COMPRA Foods in Los Angeles, or a private contracting model through Amazon Fresh or similar service.
- *Hub delivery service*– Similar to the direct delivery service option, except that food would be delivered to an accessible location near the neighborhood, such a library, community center, or mobility hub. This

could be done using Amazon Fresh or similar service, with secure storage akin to Amazon's existing locker service, or through a public/nonprofit model like Baltimore's Virtual Market – an option that community members have expressed support for during previous OSE community engagement efforts. OSE and HSD already engage in this work on a smaller scale through the Fresh Bucks To Go program, which makes healthy food available through delivery-lite services like providing fresh fruits and vegetables for parents to take home from their children's school.

- *Service and Route Expansion* – Assess community needs and feasibility to use Seattle Transportation Benefits District funds for the purchase of service on existing routes or to create new routes that serve areas with identified deficiencies; assess opportunity to leverage King County Metro's Community Connections program, established to develop innovative and cost-efficient transportation solutions in areas of King County that don't have the infrastructure, density, or land use to support regular, fixed-route bus service. The program aims to develop, test, and evaluate new transportation services that take advantage of innovative ideas, unique partnerships, or emerging technology.

### **Evaluation Metrics**

Regardless of the service delivery option selected, SDOT and OSE recommend evaluating the pilot program using the following criteria:

- *Effectiveness* – How much the option increases access and/or decreases travel time to healthy food.
- *Equity* – The extent to which the option is accessible and to marginalized communities.
- *Cost* – How much the option costs to implement and manage.
- *Longevity* – The long-term viability of the option, as measured by how time- and resource-intensive it is to operate.
- *Flexibility* – The degree to which the option can be used at off-hours or to travel using different modes, routes, and destination reflecting the personal and cultural preferences of the user.
- *Reliability* – The consistency of the option in terms of availability, accessibility, and price.
- *User Satisfaction* – How the users/recipients of the pilot program feel about the service.

**Appendix A: GIS Analysis Methodology and Mapping Output**

Analysis 1: Citywide 2-mile Frequent Transit Network (FTN) Corridor Shed Analysis

- *Scope:* Citywide 2-mile FTN corridor shed analysis from all City- and non-City supported affordable housing sites with 15 or more units to healthy food locations (Fresh Bucks retailers and major chain/independent supermarkets with healthy food [e.g., no convenience stores]).
- *Outputs:*
  - Network analysis map with corridor line work and stops within a 3/8 mile walk of each affordable housing location.
  - Spreadsheet showing the number of healthy food locations available to all affordable housing site with 15 or more units and the primary routes serving each location.

Analysis 2: Citywide 1-mile All Ages and Abilities Bike Network Shed Analysis

- *Scope:* Citywide 1-mile (10-minute) Basic Bike Network shed analysis from all City- and non-City supported affordable housing sites with 15 or more units to healthy food locations (Fresh Bucks retailers and major chain/independent supermarkets with healthy food [e.g., no convenience stores]).
- *Outputs:*
  - Network analysis map with bike network within a 1-mile bike ride along the basic bike/all ages and abilities network between all affordable housing sites with 15 or more units and the healthy food locations within reach. This should show clear food access and bike network gaps.
  - Spreadsheet showing the number of healthy food locations available to all affordable housing sites with 15 or more units.

Analysis 3: Citywide ¼-mile Sidewalk Network Shed Analysis

- *Scope:* Citywide ¼-mile (5-minute) sidewalk shed analysis from all City- and non-City supported affordable housing sites with 15 or more units to healthy food locations (Fresh Bucks retailers and major chain/independent supermarkets with healthy food [e.g., no convenience stores]). Network access accounts for sidewalk availability.
- *Outputs:*
  - Network analysis map with sidewalk network within a 1/4-mile walk between each affordable housing site with 15 or more units and the healthy food locations within reach. This shows clear food access and sidewalk network gaps.

Spreadsheet showing the number of healthy food locations available to all affordable housing sites with 15 or more units.

Analysis 4: Composite Index of Transit, Walk, Bike Access to Healthy Food

- *Scope:* Develop a raster composite index illustrating relative access score (using 300x300ft raster cells). The following scoring approach was employed:

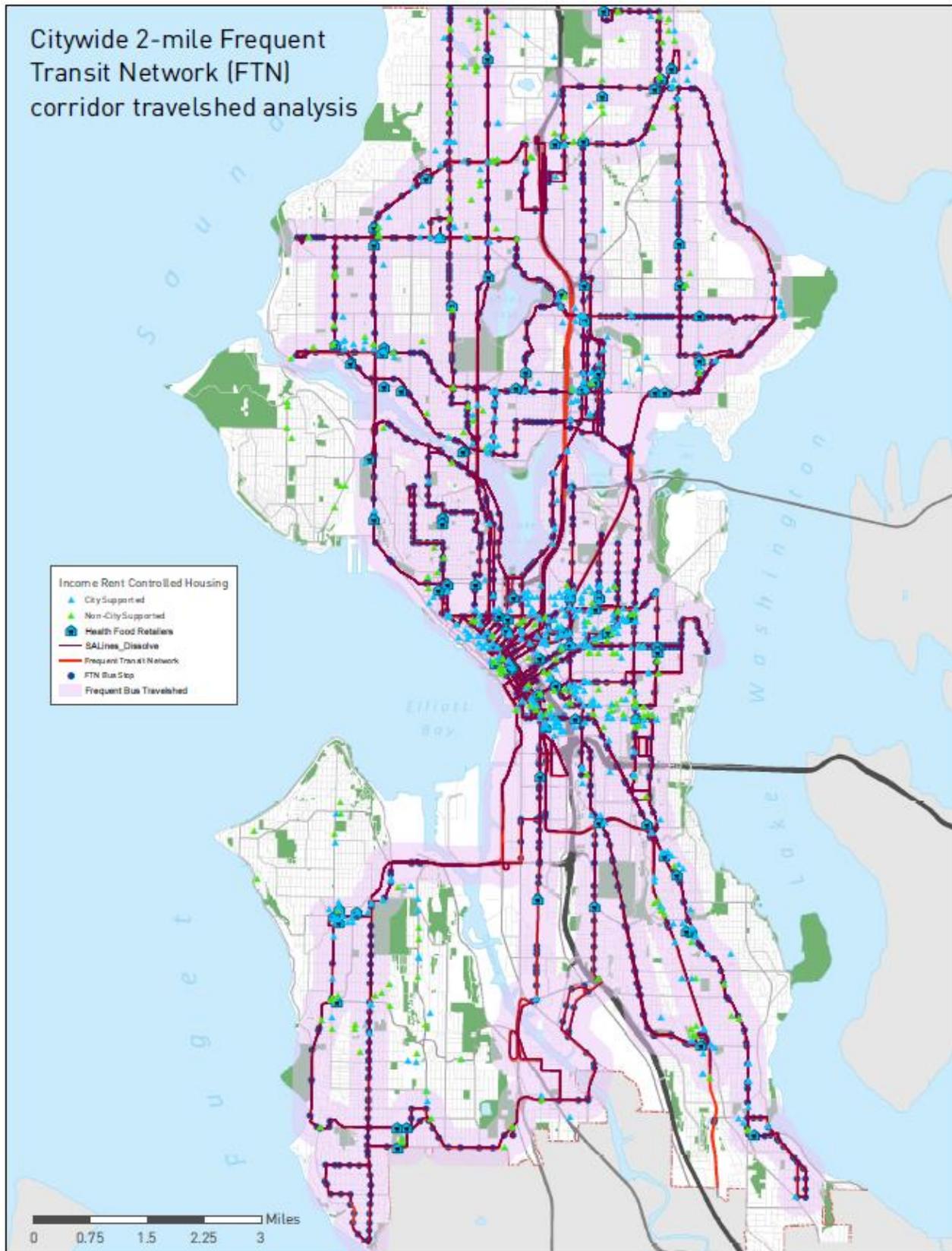
Qualitative score	No access & options	Low access & options	Good access & options
Composite score of healthy food sites accessible from each housing site along the 1/4-mile sidewalk network, along the 1-mile All Ages and Abilities bike network, and along the 2-mile FTN corridors	0	1-3	4-12

- *Outputs:*
  - Raster analysis/heat map showing composite index scores with all affordable housing sites with 15 or more units overlaid on top

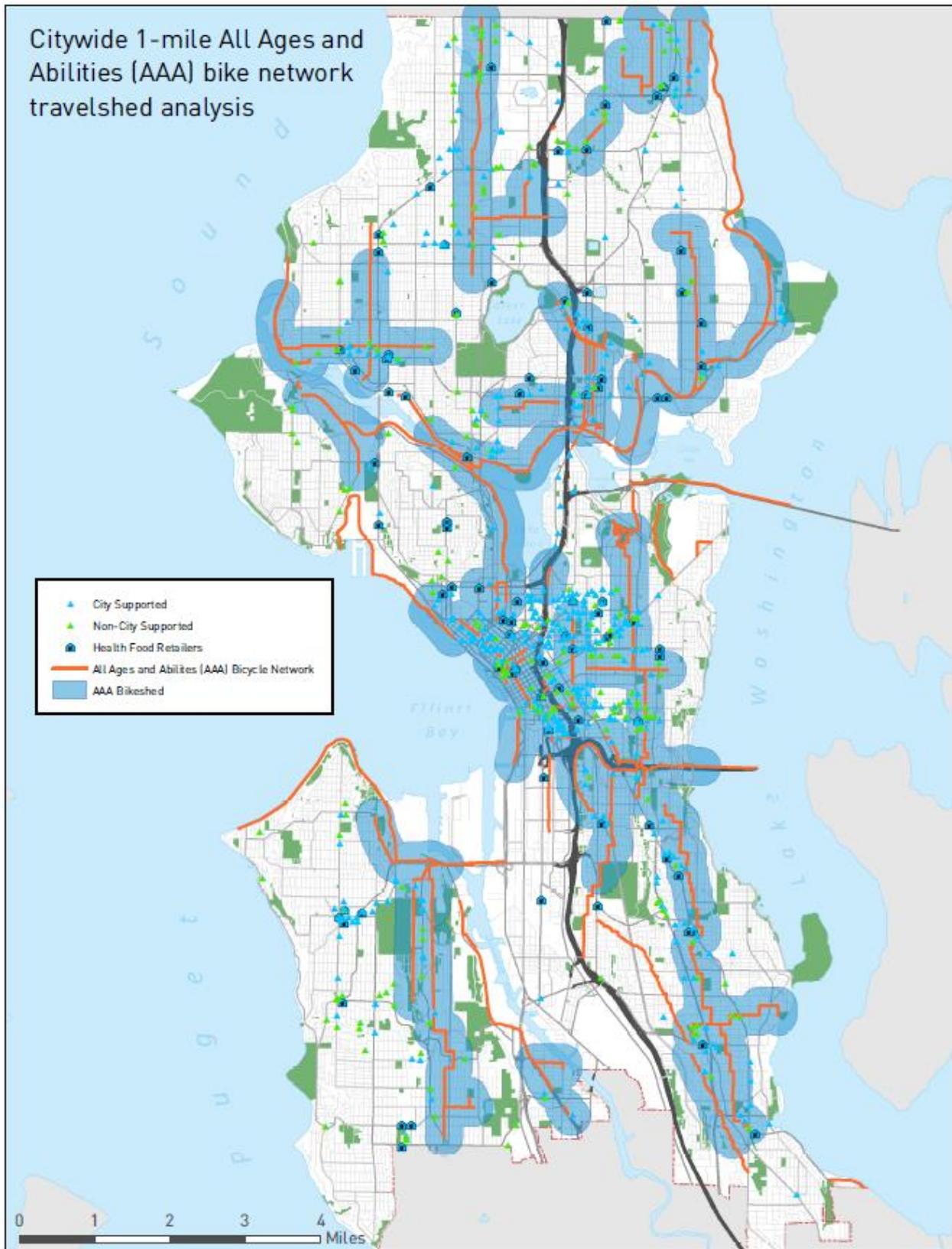
#### Analysis 5: Cumulative Low Access to Healthy Food Assessment

- *Scope:* Analyze the total number of people and households that live in raster cells that score high on limited access to healthy food (using the composite index listed in Analysis 4)
- *Output:*
  - Number of households living in areas with low and no access to healthy food
  - Percentage of households living in areas with low and no access to healthy food that are at high displacement risk (per equitable development analysis in Seattle 2035)

**Map 3. Citywide 2-Mile Frequent Transit Network Corridor Travelshed Access to Healthy Food Locations**



**Map 4. Citywide 1-Mile All Ages and Abilities Bike Network Travelshed Access to Healthy Food Locations**



Map 5. Citywide ¼-Mile Access to Healthy Food Locations

