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goodcity

food desert action

**FOOD DESERT CARAVAN**



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# INTRODUCTION

## BACKGROUND

In July 2006, a study was released that shed light on a major facet of community disinvestment in Chicago's African-American communities: the lack of grocery stores. The study described the phenomenon of "food deserts," defined as, "communities with little or no access to grocery stores and quality, nutritious food choices."

Over 600,000 Chicago residents live in food deserts, primarily on the south and west sides of the city. These areas map almost exactly to the communities with the highest rates of obesity, diabetes, and other diet-related illnesses.

In the absence of grocery stores, residents of these communities either travel extensively to buy food, or settle for the less healthy options and fast food that are more readily available.

In addition to the health risks of reduced food access, there are economic consequences from the absence of jobs that grocery stores would otherwise create and the outflow of money from the community to those that do have food access. It is part of a larger pattern of "retail redlining" that is part of a pattern of disinvestment in African-American communities.

## WHY GROCERS IGNORE FOOD DESERTS

While there are many good reasons existing grocers will give for ignoring food deserts, there are no good excuses. Common factors that grocers tend to cite include the following:

*Chains* - The large supermarket chains are not equipped to serve urban neighborhoods. Their business model involves building large stores, and large, well-located parcels of land are increasingly hard to find in urban areas. They target suburban markets, and show little interest in developing the flexibility and demographic specificity that are the key competitive advantages of successful urban grocery retailers. Many chain grocers have had failed stores in food desert areas and they see no incentive for return to those communities. The major players are also struggling to remain relevant in a changing food market where they are losing both high-end and discount customers to niche grocers.

*Independents* - Barriers to entry for new players or for the expansion of small players are extremely high. Typical start-up costs for a new store can exceed \$5 million. If a bad location is chosen, or the market is misjudged, the entire company could be destroyed, forcing the closure of profitable stores along with unprofitable ones. The potential financial rewards of success are not strong, making capital investment very hard to find.

*Ethnic Stores* - There have been recent successes of small grocers emerging in the Latino and Asian communities. With few exceptions however, these grocers tend to serve the ethnic community where they have found initial success. Because most food deserts are in African-American communities, there are only a couple of good examples of ethnic grocers establishing stores in food deserts.

*Discounters* - Wal-Mart is very interested in entering this market, and would likely do well, although there are very few parcels of land available to build such a large store. Aldi seems to succeed in any economic environment, and several are located in food deserts. Aldi's growth is still slow enough in food deserts that it will not be a comprehensive solution in the near future. The store's produce offerings are also quite limited. Food 4 Less has been successful in Englewood, and is planning a new store in Roseland. Again, the slow pace of growth makes this an imperfect solution. Cub Foods has closed locations in food deserts in recent years.

*New Players* - The most successful new players serve the affluent market: Whole Foods and Trader Joe's. They will not locate in food deserts while there is still an untapped market in more affluent communities. Tesco's Fresh & Easy stores are the most promising new player, but they have been reluctant to locate in food deserts, and early indicators are that their stores have not been as successful as projected.



# INTRODUCTION

## IN SEARCH OF A NEW MODEL

All indicators point to a substantial market for groceries in food deserts. Analyses of stores operating in food deserts show substantially higher sales than the industry average. A combination of population density, consumer access to alternative resources such as food stamps, and the lack of competition drive profitability for stores located in food deserts. The challenge is not demand-based, but rather developing a cost-effective means of supply.

While there are some socially responsible grocery store projects in the planning phases, these will only gradually come online, if they are successful at all. A new model is required in the meantime that can restore food access rapidly to communities, with enough agility to reach the areas of highest need. What's most needed now may not be a grocery store at all, at least in the conventional conception of a bricks-and-mortar store that runs as a for-profit company

## THE MOBILE MARKET

The Urban Mobile Market is a proposal for a one-aisle grocery store on wheels, built in a retrofitted city transit bus and focused on selling fresh food. A mobile store does not require the purchase or development of real estate. It could be constructed in a matter of weeks, not years. And its location is not irreversible; it could potentially serve multiple locations in a single day.

The extent that the model is effective and well-documented, it could easily scale up in Chicago, or be replicated in other cities. It uses available resource that exists in any major city and which suggests public-private partnership: retired transit buses.

Given the extensive size of the food desert in Chicago, a mobile market would quickly restore food access to a greater geographic area more quickly and more cheaply than building bricks-and-mortar stores.

In addition to providing instant access to fresh food such a mobile market would provide additional economic, social, and environmental benefits that would be felt immediately throughout the local communities.

## PARAMETERS AND DESIGN CONSIDERATIONS

- Chicago Transit Authority bus
- Four season operation
- Green, sustainable and energy efficient technologies
- Appropriate shelving, refrigeration and storage for produce
- Accessible/universal design
- Storage area for packaged pre-ordered produce boxes/bags
- Space for income generating signage/advertisements
- Easy loading and unloading produce
- Space for point of purchase area
- Area for educational and promotional materials
- Speedy Construction (easily replicated)









**THE VEGGIE WONDERLAND!**



# VEGGIE WONDERLAND

## Entering the Veggie Wonderland is a surprising and delightful experience

*Our goal in the design for this mobile-mart is to create a world apart : the shopper will step from the busy curbside into a space quite divorced from the bus that contains it. The shopper will be enveloped by food space, rather than bus space, and feel comfortably coddled.*

## The bus is simply the container for the market, and not the market itself

*The enclosing market space should set the shopper at ease. The environment should be calming, focused on the food, and easy to navigate. The space should be filled with natural light.*

*In turn, the bus---as container for market---should advertise its identity and distinguish itself from its brethren in the city fleet by becoming a rolling signboard for the goods within.*



With cost-consciousness as our guide, we propose three concepts key to accomplishing the goal of creating a new and comfortable environment for the shopper :

### MOBILE IDENTITY

Effect a complete transformation of the CTA bus by wrapping the entire exterior in **applied graphics**. These would be changed to **promote** seasonal produce and to advertise related educational programs, such as city farms, the center for green technology, cooking and gardening classes and resources. In this way we can take advantage of the mobility of the market to encourage **connections across neighborhoods** and to the community at large; educational materials can reach both the target shoppers and the general public.

Use the large existing windows of the bus to our advantage : help the food market promote itself by keeping shelving away from the windows so that there is a clear path of sight from the outside of the bus through to all the **food and activity on display within**. The bright lights, the vibrant colors of the food, and the smiling faces of shoppers will be an engaging advertisement to the community.

Cut slots into the metal side panels of the bus, in the bay beneath each window and between structural ribs, and provide **drawers that slide outside** to display food to the public at the exterior of the bus. This will expand the scope of the market and help it figuratively reach out into the community: shoppers can select and pay for some foods without having to enter the bus (increasing the **accessibility** of the market), or the drawers can be covered and serve as a public demonstration worktops for larger groups. When in transit, these drawers will slide back into the bus and occupy the now-unneeded floor space in the aisles. (We note that in many cold European cities, open-air markets operate year-round; however, if the mobile market were to be indoor-only in colder weather, the drawers could easily be removed and the slot cut-outs simply sealed off with a fill panel.)

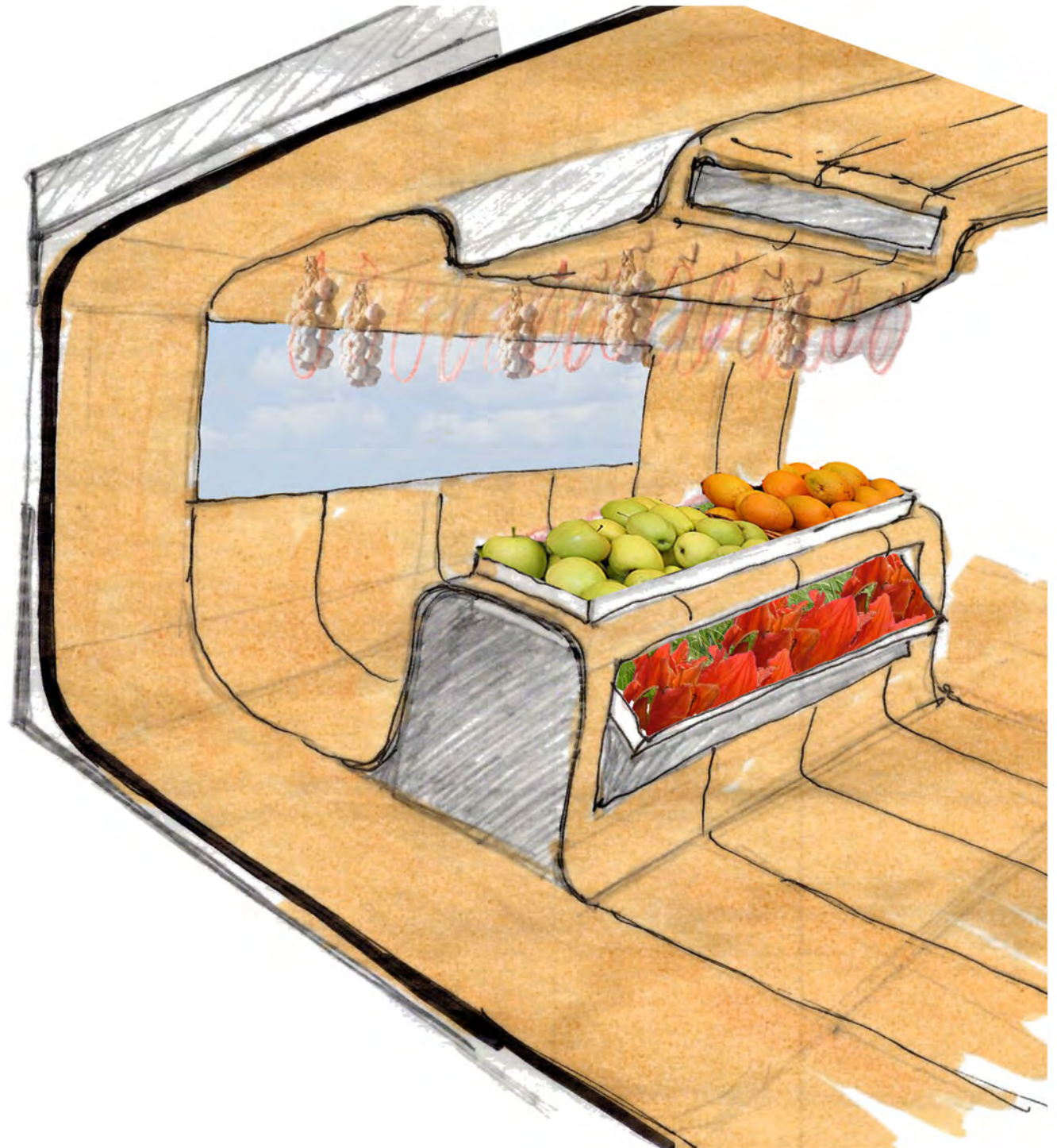
Conserve resources by mounting **solar panels** on the roof of the bus that feed into the existing bus battery and provide basic power needs for the market while the bus is stationary. This will allow the bus to remain a conditioned space (enough to keep the food fresh) without having to depend on an electrical hook-up.

# VEGGIE WONDERLAND

## MARKET IDENTITY

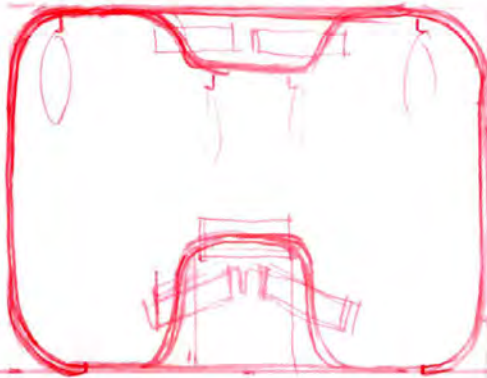
Remove all bolted-in bus components (such as seats and poles) and wrap the interior of the bus with a **continuous lining** of pre-formed bent plywood paneling, bolted directly to the metal bus walls so that none of the previous bus surfaces are visible. These smooth plywood walls, **enveloping** the shopper, will at once help to disconnect the shopper's senses from previous bus experiences and serve as a uniform and quiet background that will focus attention on the colorful food displays within.

These panels also form the armature for the food display and shelving and can be fabricated on forms offsite so that they are **easily replicated and installed in multiple buses**. This, combined with the simple method of face-screwed installation, makes plywood a cost-effective material that can create a strong identity in the space with minimal cost. The bus is removed from view; the shopper is transported to a new, clean and seamless environment dedicated only to fresh food.

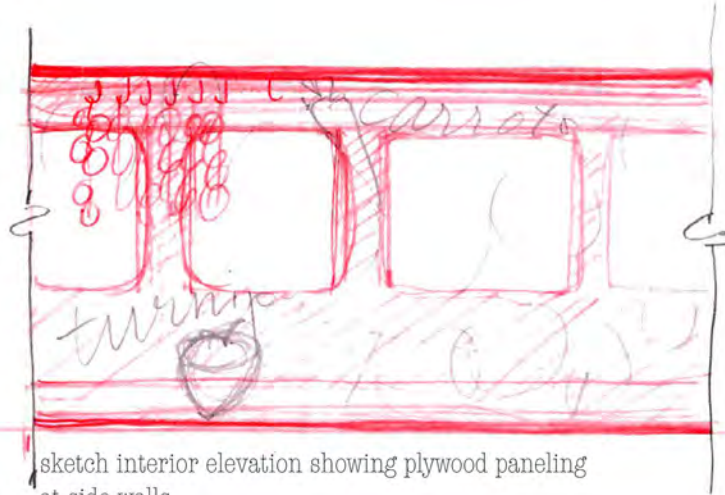




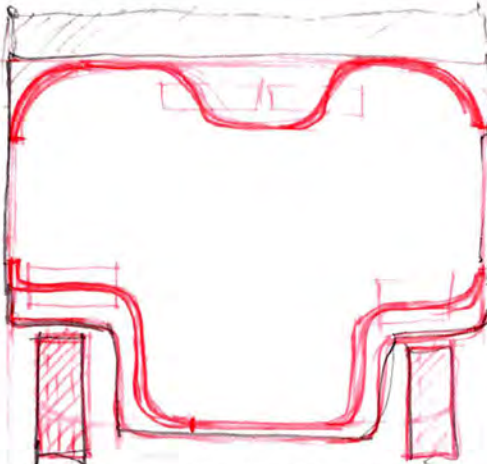
# VEGGIE WONDERLAND



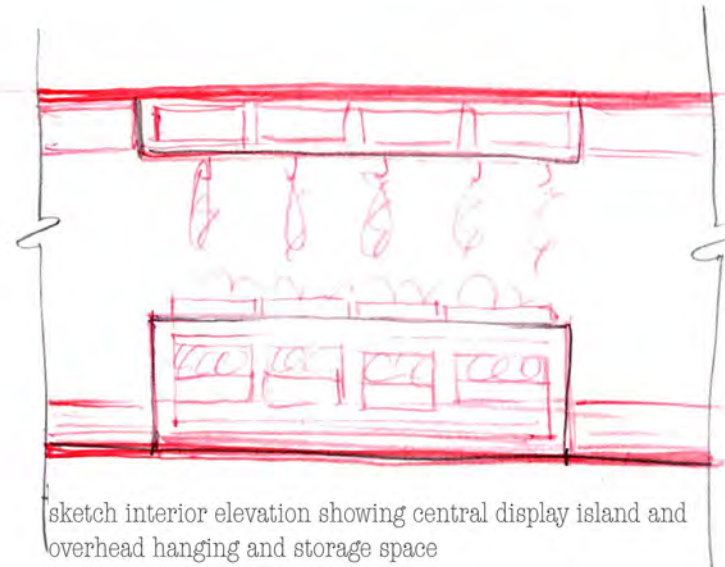
sketch cross-section showing continuous plywood paneling at central display island



sketch interior elevation showing plywood paneling at side walls



sketch cross-section showing continuous plywood paneling at rear display shelving



sketch interior elevation showing central display island and overhead hanging and storage space

## MARKET LAYOUT

Organize the market activity within the bus container in such a way as to allow for a comfortable market experience that is disassociated from previous experiences of movement within a city bus. We believe that allowing movement only along a single middle aisle will make the shopping experience difficult and unpleasant; shoppers risk getting stuck in a one-way line, with no freedom to go back and look at something already passed by. We propose a circular floorplan around a central island display that will give shoppers the **freedom to easily move back and forth** among the displays of fruits and vegetables, testing and learning about each before making a decision. In our opinion, shopping for fresh produce requires space for reflection and decision-making -- especially when learning about a new product.

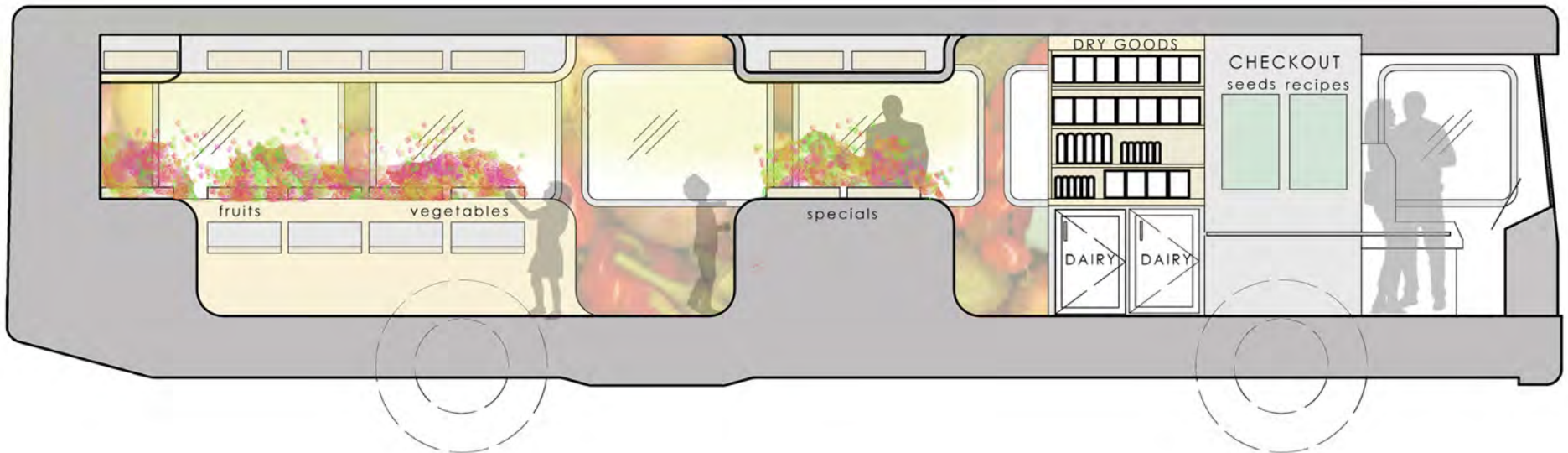
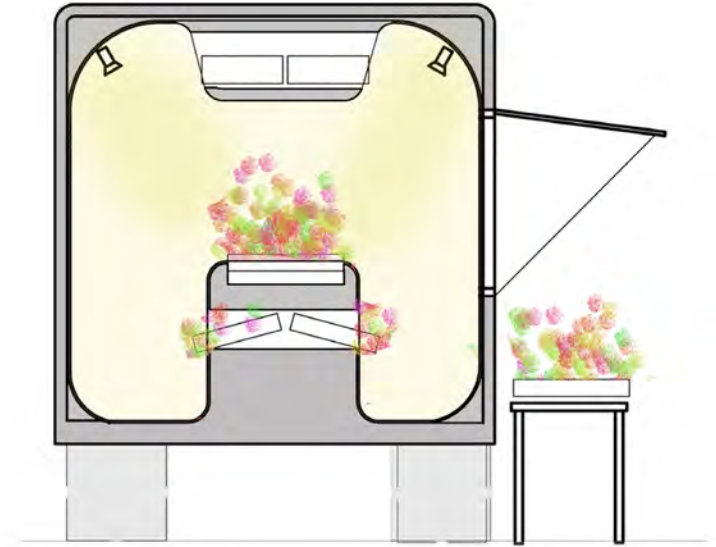
The central island is the main focal point of the space, topped with displays of bright fresh fruits and vegetables and with additional displays lining the sides. With a simple tabletop cover, this island can easily be transformed into a large central **educational and demonstration space** where shoppers have room to gather around. We envision demonstrations ranging from a cooking class to workshops on harnessing renewable resources at home.



# VEGGIE WONDERLAND

With activity focused on the central island, we can keep the circulation space clear near the windows, allowing lots of visibility through the large bus windows and plenty of natural light to fill the space. **Hanging baskets** over the circulation spaces provide extra room for food display and don't need to be secured when the bus is in transit; they add to the **vibrant view** for those outside the bus looking in. Extra shelves of produce line the rear alcove of the bus and storage is tucked overhead above the central island.

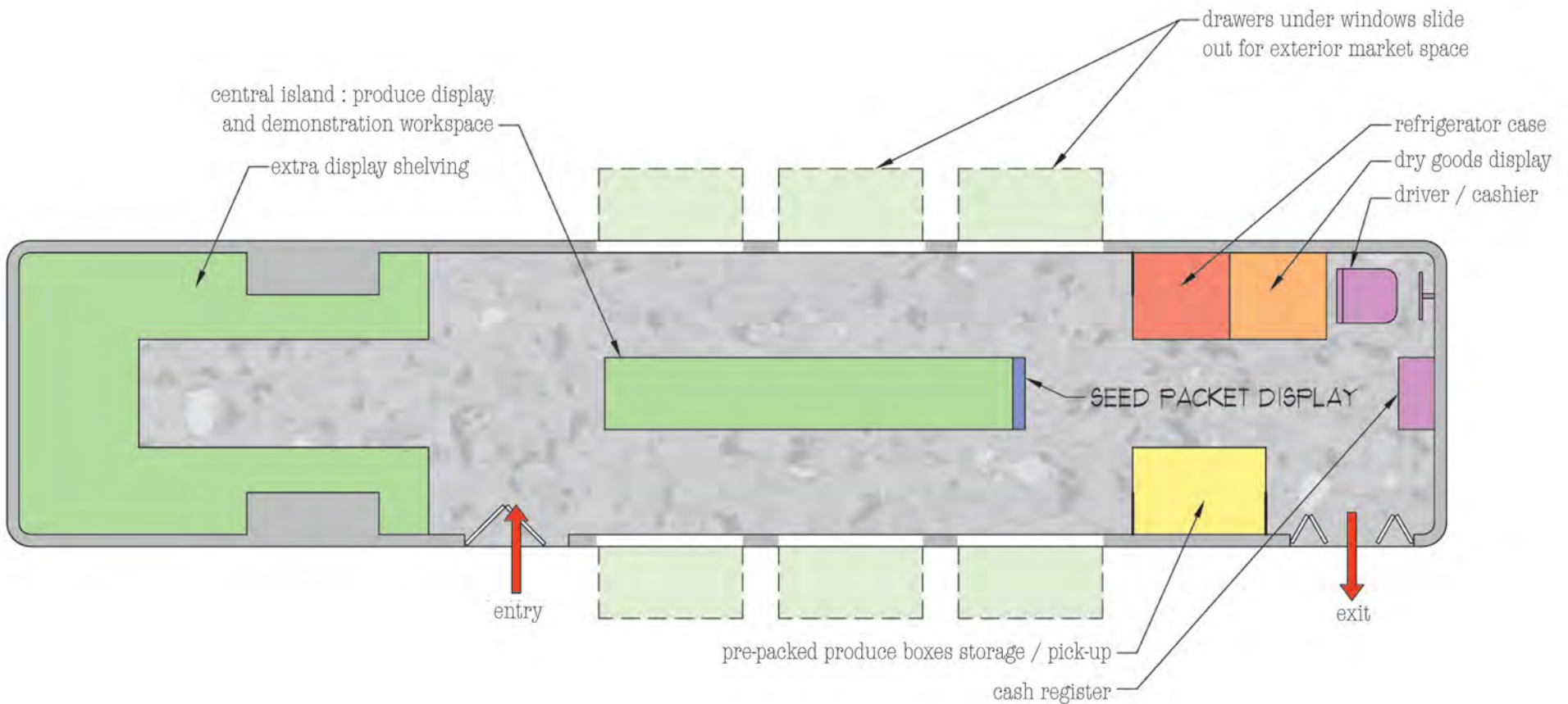
Produce is displayed in boxes that rest in recesses in the plywood paneling, and therefore do not need to be specially-built or designed. Produce can be brought inside **in its own packaging** and simply dropped into place as is, in order to minimize the effort required to set up and take down each day. Simple cardboard boxes or re-purposed wooden crates could be used. All food can be **easily secured for transit** by stretching a net over the tops and securing to hooks on each side.



# VEGGIE WONDERLAND

We envision a minimum of two staff members running the market : one will roam freely to assist customers and the other serves as driver when the market is closed and in motion and cashier when the market is stationary and open for business. Therefore we locate the cash register adjacent to the driver's seat, where power supply is already available. Shoppers may enter the market through the rear doors and check out at the front. We provide space for a small amount of refrigerated and dry goods just before check-out so that shoppers can pick up everything they need to **create a complete meal** without having to make additional trips to stores that may not be as convenient as the mobile market. There is also space near the cashier for easy pick-up of pre-boxed produce.

Finally, we propose to line the walls with a **seasonal seed rack**, where customers can pick out seeds to take home and plant, thus extending the reach of the market out into the community.







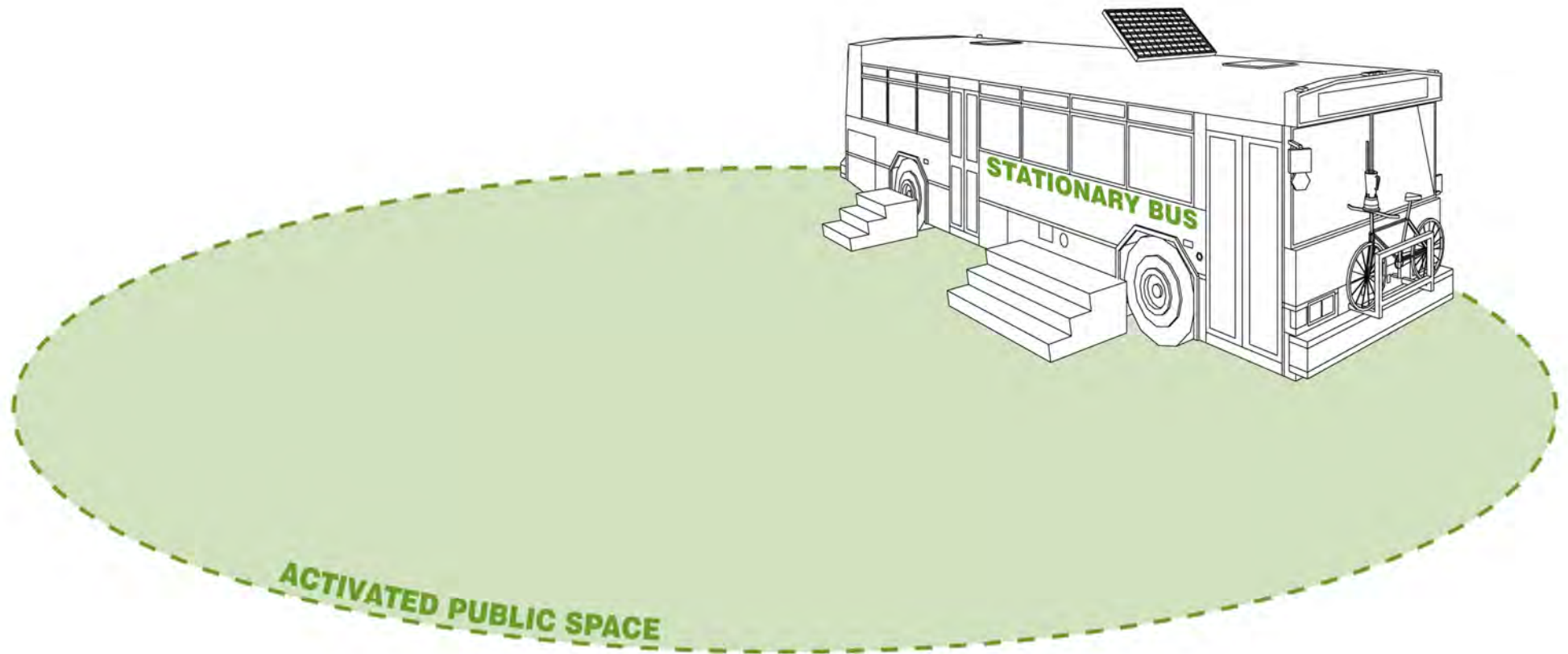


**Fitbus**  
Farm In Transit

## FIT bus [FARM IN TRANSIT]

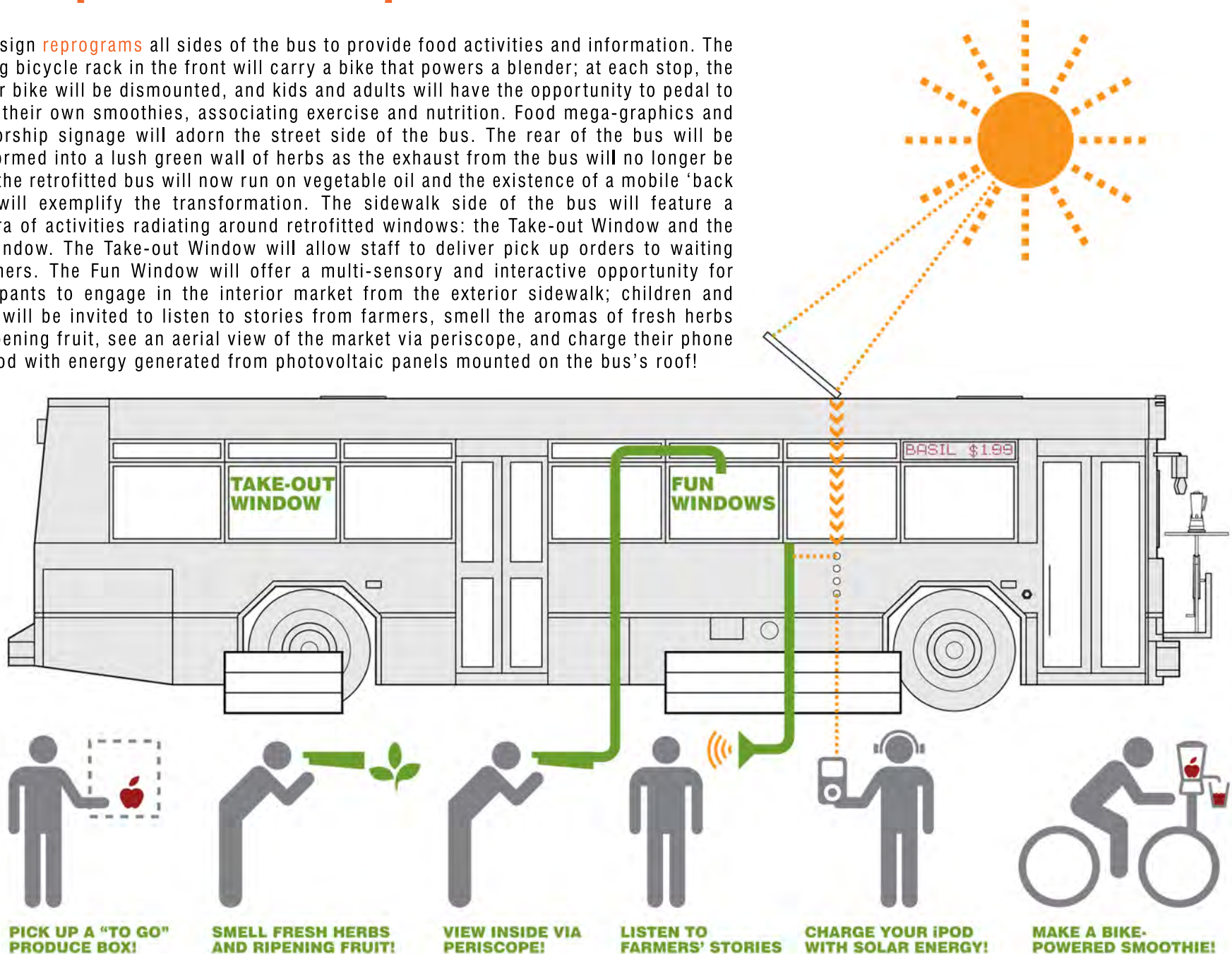
FIT bus [Farm In Transit] is a mobile farmer's market that **activates public space** by bringing fresh produce and educational programming to Chicago's neighborhoods! By transforming the urban streetscape into an inclusive, interactive, and multi-sensory environment, the project nurtures participation of the **whole family** in the routine food shopping experience.

The design **repurposes** the existing systems and fixtures of a CTA bus; seats and back rests are separated and mounted to the rear wall to create storage shelves for produce 'to go' boxes. Safety poles and handrails are reused to create a lattice for hanging baskets of produce that will serve as a colorful indicator of seasonal produce availability. Produce storage cabinets fit standard grocery packaging crates and secure the contents while the bus is in motion. LED bus route display monitors will broadcast the latest produce stock and prices.



## FIT bus [FARM IN TRANSIT]

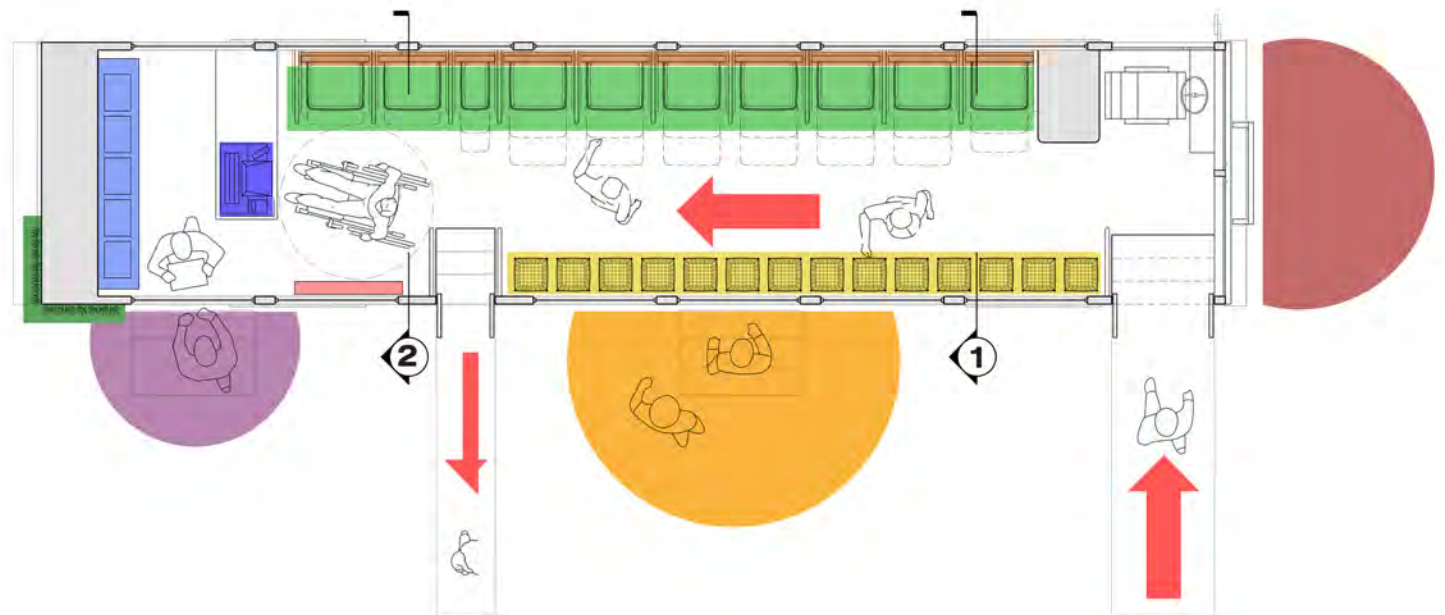
The design **reprograms** all sides of the bus to provide food activities and information. The existing bicycle rack in the front will carry a bike that powers a blender; at each stop, the blender bike will be dismantled, and kids and adults will have the opportunity to pedal to create their own smoothies, associating exercise and nutrition. Food mega-graphics and sponsorship signage will adorn the street side of the bus. The rear of the bus will be transformed into a lush green wall of herbs as the exhaust from the bus will no longer be toxic; the retrofitted bus will now run on vegetable oil and the existence of a mobile 'back yard' will exemplify the transformation. The sidewalk side of the bus will feature a plethora of activities radiating around retrofitted windows: the Take-out Window and the Fun Window. The Take-out Window will allow staff to deliver pick up orders to waiting customers. The Fun Window will offer a multi-sensory and interactive opportunity for participants to engage in the interior market from the exterior sidewalk; children and adults will be invited to listen to stories from farmers, smell the aromas of fresh herbs and ripening fruit, see an aerial view of the market via periscope, and charge their phone and iPod with energy generated from photovoltaic panels mounted on the bus's roof!



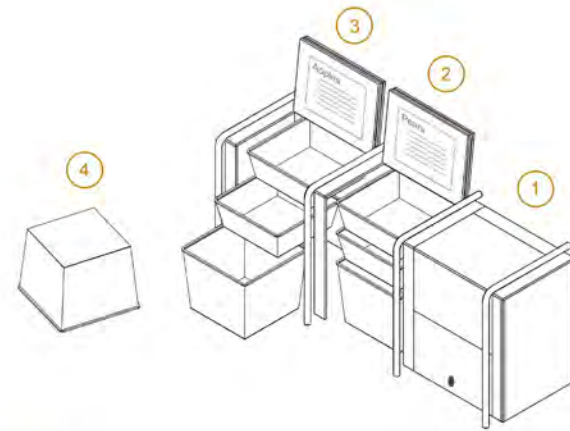


# FIT bus [FARM IN TRANSIT]

- Circulation
- Drawer Storage | Display
- Hanging Food Storage
- Food Facts
- Check-Out
- Pre-Order Boxes | Storage
- Pre-Order Box Pick-Up
- Recipes | Food Facts
- Fun Zone!
- Fender Blender Zone
- Herb Growing Wall

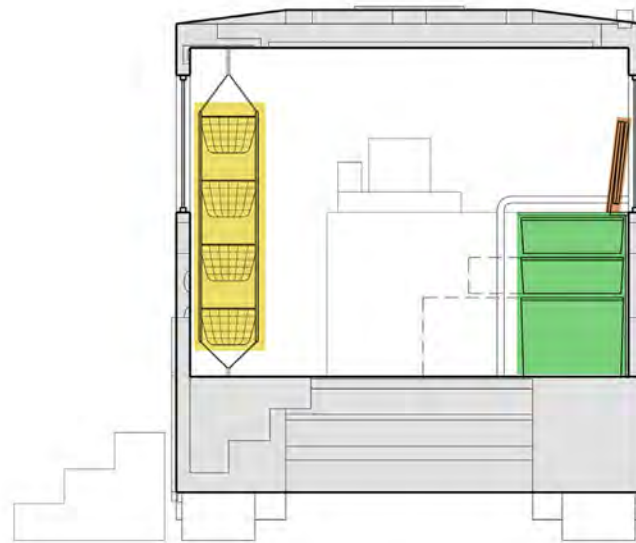


# FIT bus [FARM IN TRANSIT]

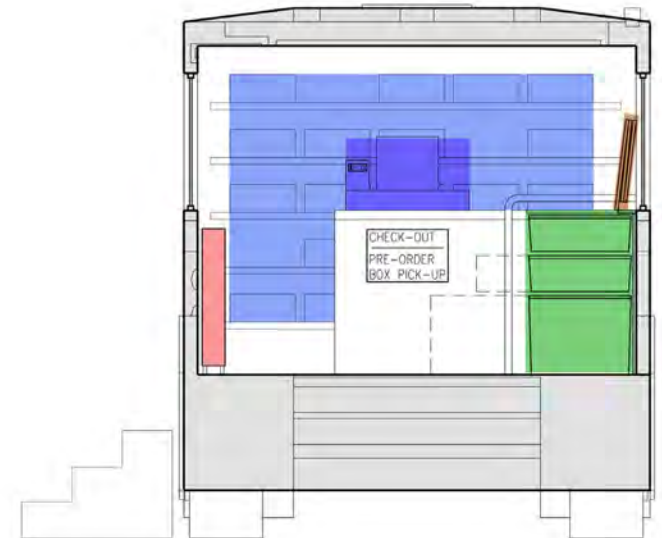


- ① Cover plate locks to secure food during transit
- ② Underside of cover displays food facts
- ③ Bins slide out for easy access
- ④ Bottom bin flips over for use as a seat during food prep demonstrations, presentations, etc.

- Circulation
- Drawer Storage | Display
- Hanging Food Storage
- Food Facts
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- Pre-Order Boxes | Storage
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- Herb Growing Wall



SECTION 1



SECTION 2



FIT bus [FARM IN TRANSIT]





FIT bus [FARM IN TRANSIT]





# FIT bus [FARM IN TRANSIT]









g o n' g reens

# GO 'N GREENS

## DESIGN APPROACH

To convert a Chicago Transit Authority bus into a mobile grocery store and provide fresh produce to underserved neighborhoods in Chicago.

Ease of installation and low cost were determining guidelines in developing a replicable model with a quick start-up time. Variations from existing models include adaptations for four-season use in the Chicago climate, increased storage capacity, and accessible on-vehicle shopping. A minimum of functional elements are provided to create an efficient, flexible, stripped-down "base model" for initial use, to which various "options" may be added as resources and needs evolve over time.

## KEY DESIGN ELEMENTS

Base Model:

### \*Rear entry and front exit -

- Entrances are not modified.
- Access throughout the vehicle is primarily one-way.
- Handicapped access/egress and loading take place through front door with existing mobile ramp, operated by driver on request.

### \* Tripartite spatial division of uses -

Rear:

- Staff supervised entry with shopping baskets nearby.
- Counters are provided over wheel wells for distribution of Community Supported Agriculture (CSA) goods and other storage. (Window may be used for CSA goods distribution as well.)
- Shelf storage for CSA boxes is provided.

Center:

- Produce on 18" shelving to either side leaves a 4'-6" clear aisle.
- Shelving is standard rolling racks with integrated bins that may be loaded with produce in the warehouse, and then wheeled onto the bus.
- Shelves are locked into place to secure produce during transit.
- Nutritional information and recipe cards provided on bin information panels.
- Overhead advertising panels are re-used with new messages, i.e., health tips and vitamin information.

Front:

- Supervised by the driver, who performs checkout near front door at a counter installed over the wheel well.
- Checkout counter-kit, wired for electricity, includes processing for Supplemental Nutrition Assistance Program (SNAP), a.k.a. food stamps, LINK® cards and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) vouchers, as well as credit, debit, and cash.
- Any vertical poles that obstruct flow of movement in this area are removed.
- Front door is exit only, except when driver operates handicapped access ramp.
- A small cooler for a few cold items is located behind the driver's seat, cooled by ice chips or cold packs. May be upgraded to an electrical unit.

### \* External loudspeaker -

- Rooftop mounted loudspeaker to run off the driver's existing internal P.A. system.
- Music and announcements outside of the bus while driving and parked, announces the presence of the vehicle.
- A specific song or bell should be used to create an identity for the bus.

### \* Visual messaging on exterior and interior of bus -

- Bus exterior is decorated to express its purpose and create an identity (see images).
- Complexity of design depends on available resources: A vinyl wrap may be used to cover entire bus or design may be painted on by a community group or local artists.
- Interior of bus (see "Center" above) - nutrition messaging on advertising panels, may also be painted onto the floor and ceiling.

### \* Covered external multipurpose area -

- Outdoor area surrounding doors is temporarily annexed, for use in both summer and winter as an educational zone, comfort area, and an expanded sales area.
- A projected awning with possible roll-down sides shields waiting customers from sun and precipitation, and shades extra produce sold there in summer.
- Cooking, eating, or other educational displays/programs may also occur in this area.

# GO 'N GREENS

## Upgrade Options:

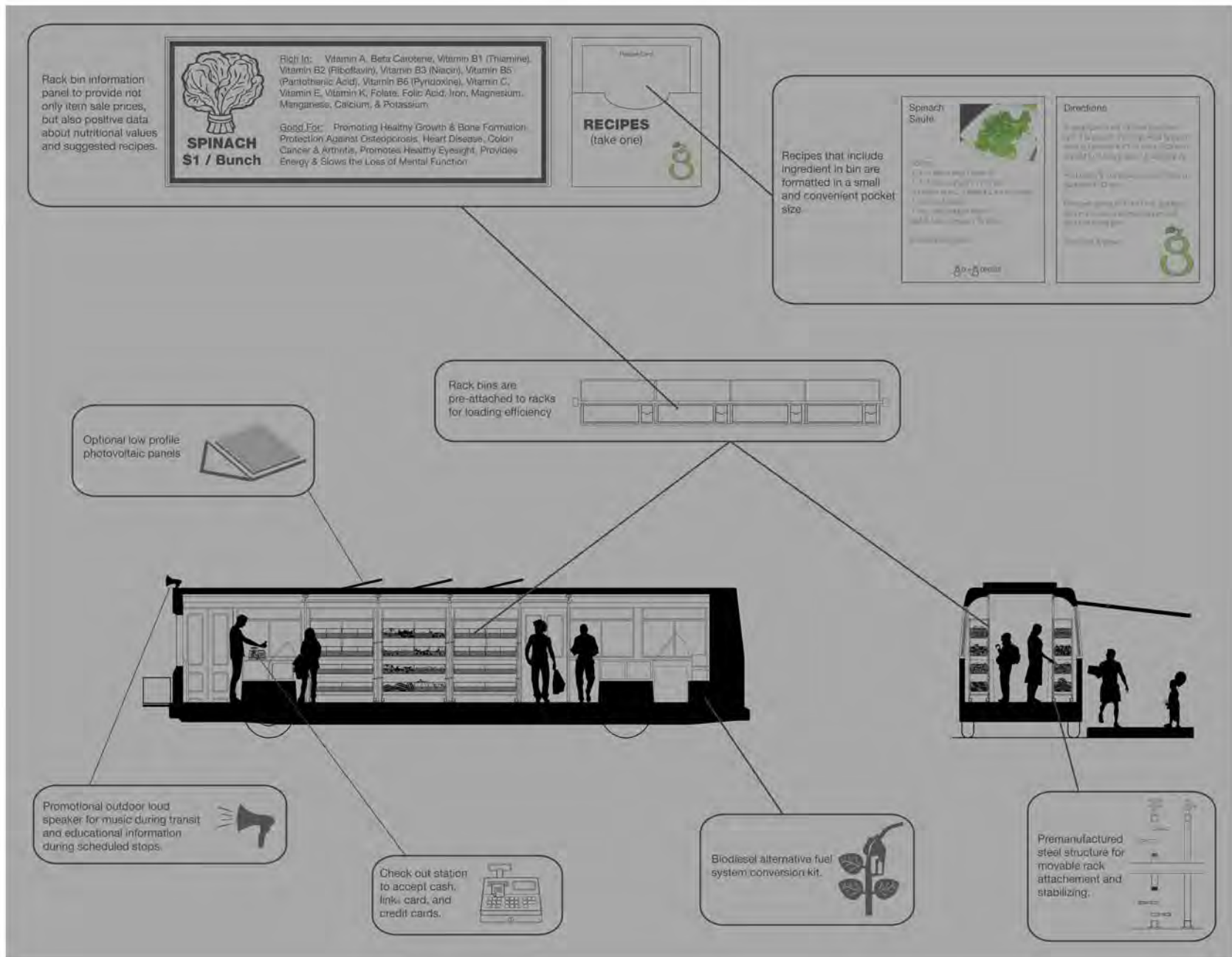
- \* Rear mechanical space -
  - Ample flexible space allows for alternative fuel system conversion kit to substantially reduce harmful pollutants.
  - Space is also an adequate storage location for solar power batteries.

- \* Roof solar panels -
  - Flat panels low enough to allow passage below bridges.
  - Provide additional energy for lighting , heating and optional refrigeration systems while engine is turned off.
- \* Refrigeration equipment -
  - A variety of sizes available including undercounter refrigerators for storage, and small countertop coolers or full size commercial coolers for display.

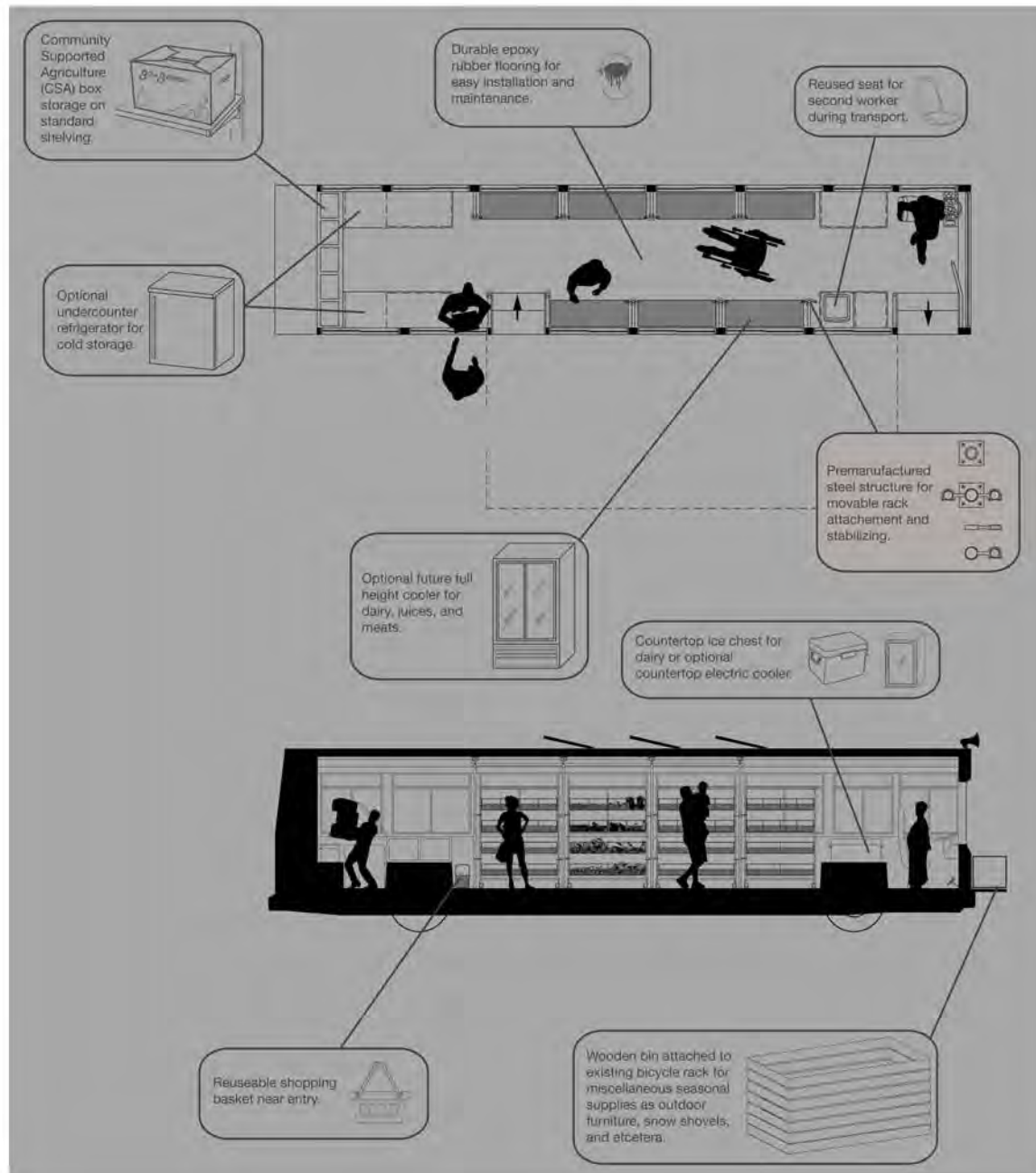




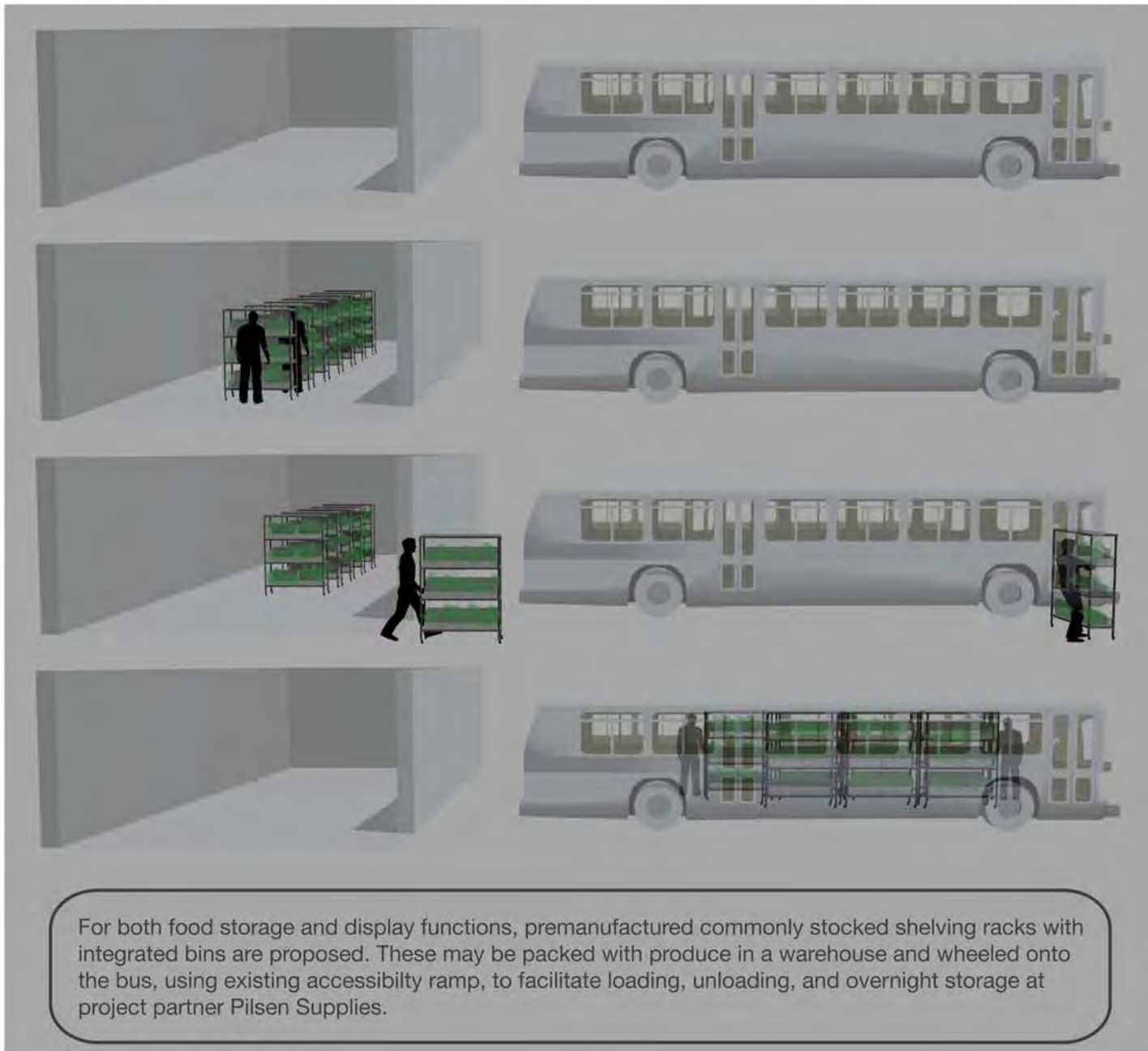
# GO 'N GREENS



# GO 'N GREENS



## GO 'N GREENS









**FRESH FOOD FLEET**

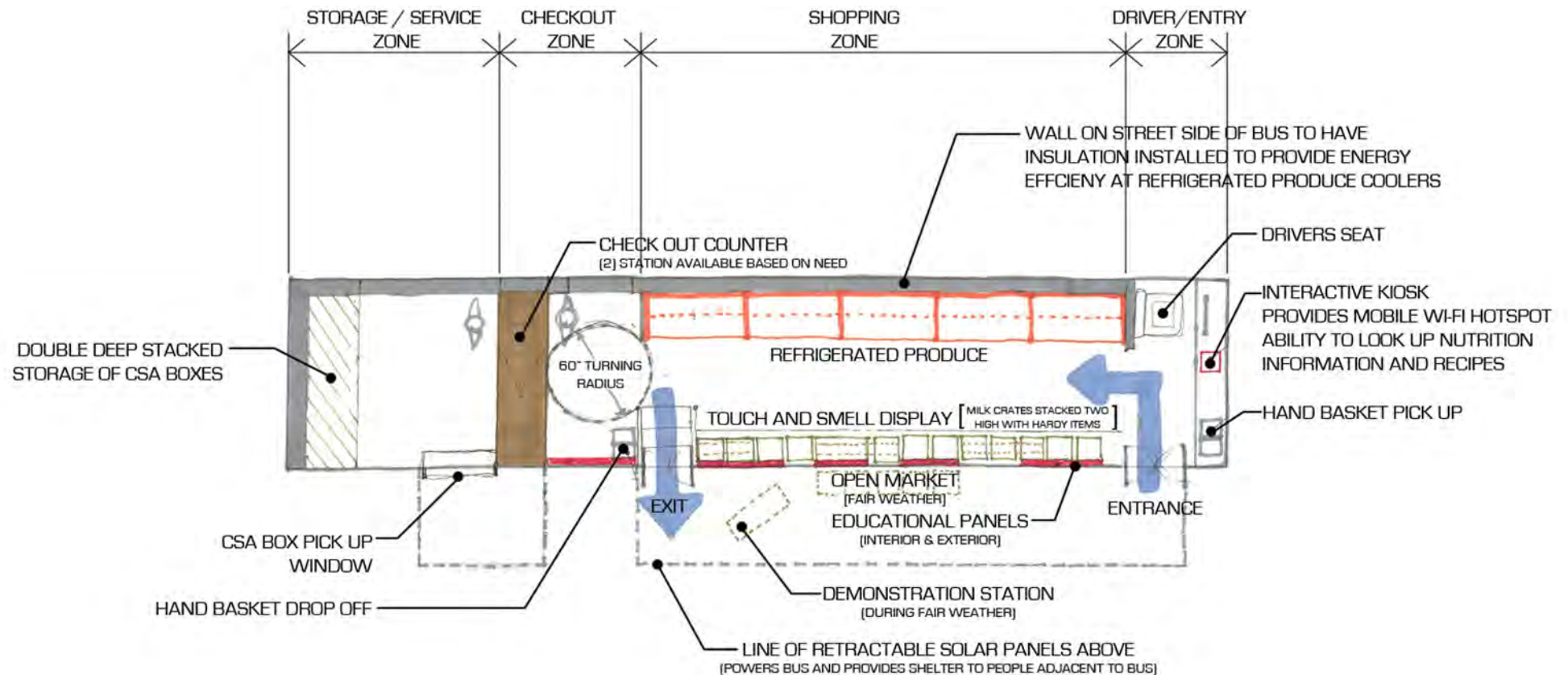
# FRESH FOOD FLEET

## THE DESIGN

The Fresh Food Fleet is designed with two primary functions in mind: the provision of fresh, healthy produce to Chicago neighborhoods identified as city food deserts, and the education of neighborhood residents on ways in which to prepare and use the food they purchase from the Fleet.

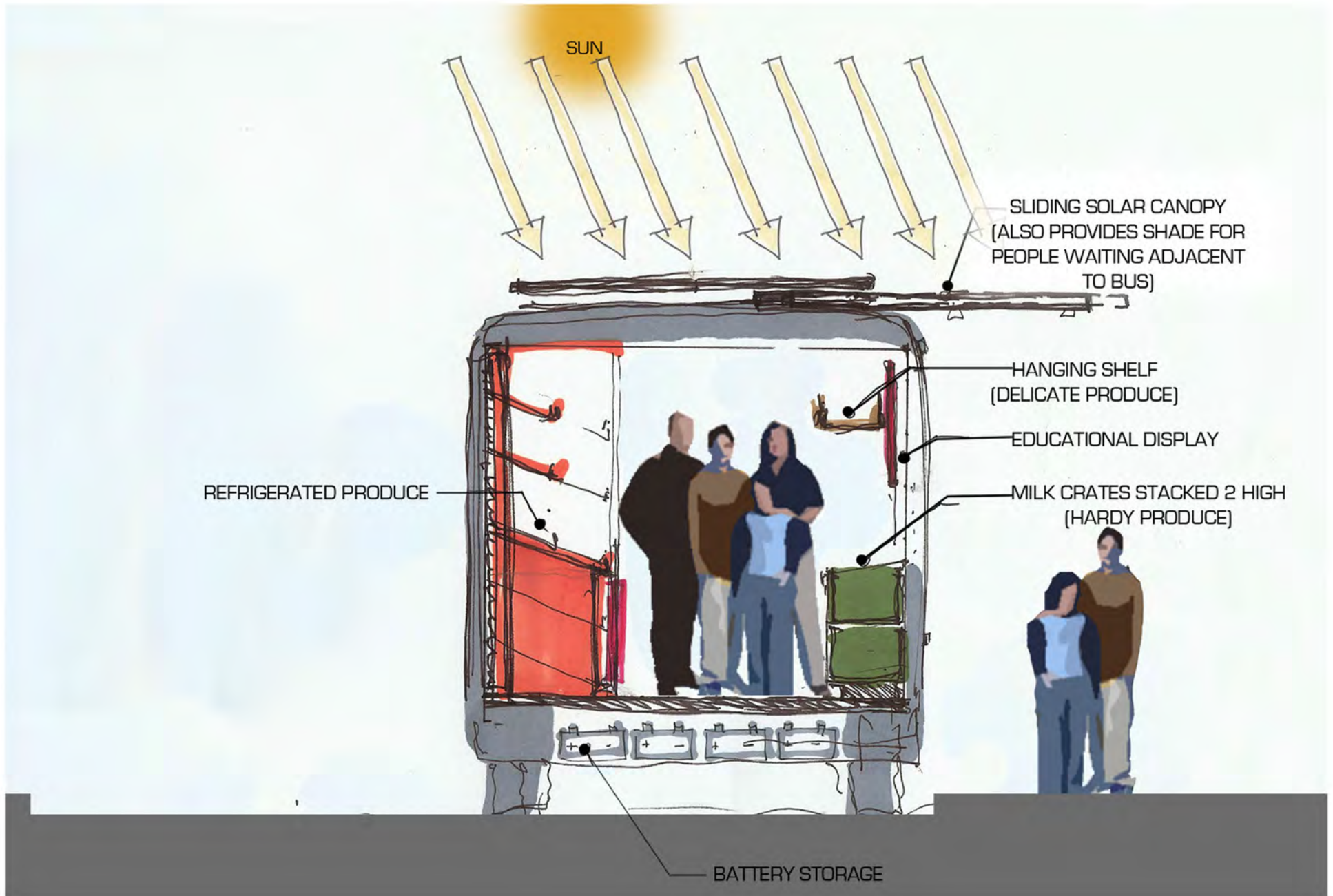
The repurposed bus is divided into two major zones: shopping and service. Customers enter the bus at the front doors to make their way through the shopping zone. Near the entry sits an interactive kiosk with basic descriptions of the produce items for sale, access to recipe ideas, and information on food deserts and the importance of eating fresh. Shoppers move through the bus's midsection to select their items. One side of the bus contains refrigerated display cases powered by solar energy with backup power. The opposite side contains touch-and-smell items arranged in stackable produce boxes, encouraging customers to interact with the food in a similar way to an outdoor farmers market. Above the crates hangs a window display system with interchangeable posters that describe the week's featured items and offer helpful tips on selecting, storing, and using each item.

The rear third of the bus constitutes the service zone, with two checkout stations and space for storage. A pass-through window allows customers who ordered pre-packaged boxes of produce to collect their food from outside the bus.





# FRESH FOOD FLEET



# FRESH FOOD FLEET

FRESH FOOD SUPER GRAPHIC  
CALLS ATTENTION TO THE CAUSE

RETRACTABLE SOLAR CANOPY  
(SHOW RETRACTED).  
EVEN WHILE TRAVELING THE  
BUS CAN CAPTURE SUNLIGHT



OPPORTUNITY FOR SPONSORSHIP  
WILL HELP TO OFFSET COST OF  
OPERATIONS AND ALLOW  
MORE BUSES TO BE IN  
SERVICE TO HELP

## SOLAR PANELS AND SUPER GRAPHICS

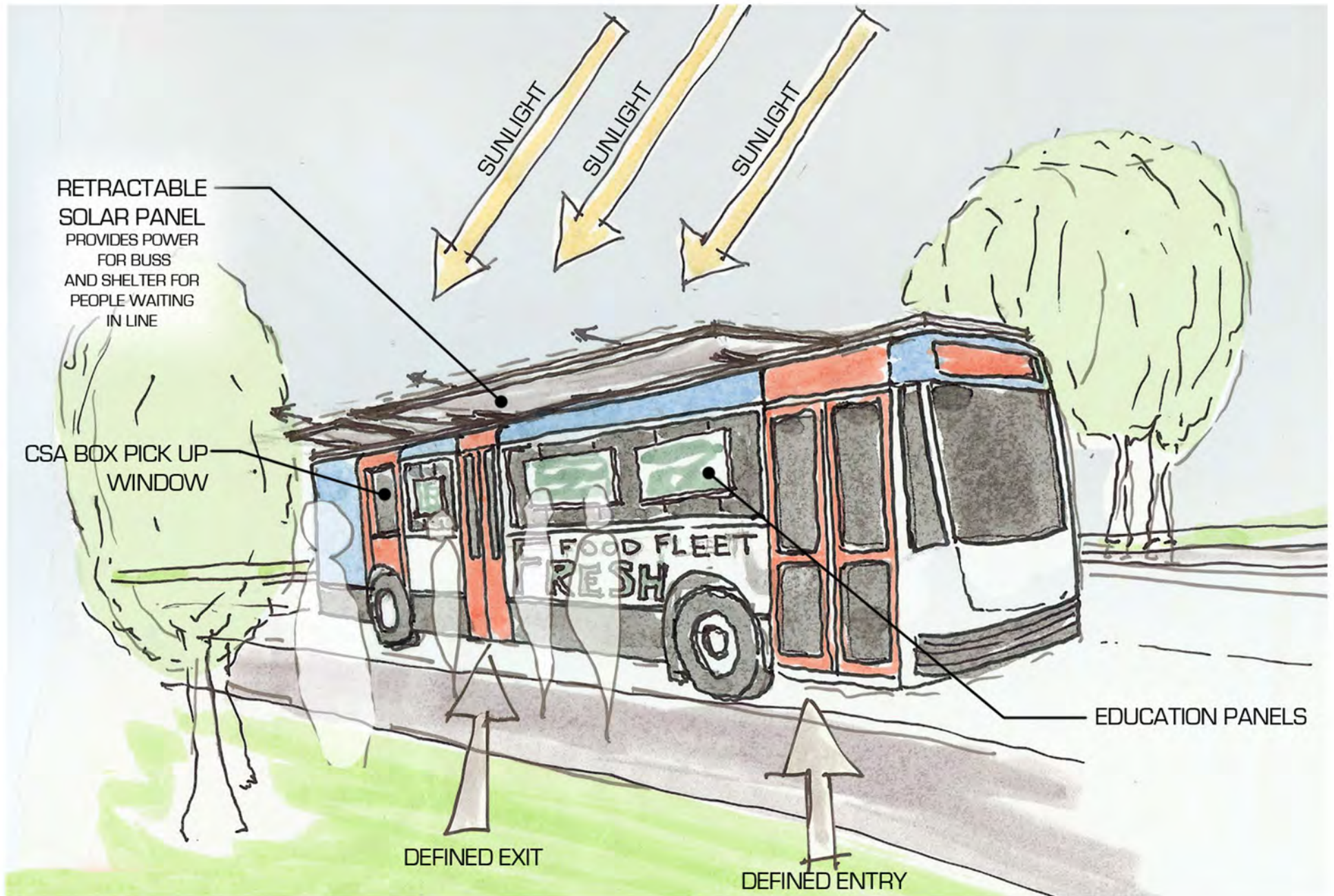
The roof of the Fleet vehicle contains a grid of solar panels that provide most of the bus's power needs. Underneath this grid slips a canopy that can be rolled out to provide shade from sun or shelter from inclement weather. Super-graphics of produce items cover the sides of the vehicle and identify its purpose to each community it visits.



ALTERNATE SUPER GRAPHIC OPTION



# FRESH FOOD FLEET







## WHO WE ARE

### ARCHITECTURE FOR HUMANITY

Architecture for Humanity - Chicago is a local chapter of Architecture for Humanity, a 501(c)(3) charitable organization that seeks architectural solutions to humanitarian issues and brings design services to communities in need. We are a collaborative group of volunteer design professionals and students dedicated to the pursuit of advocacy and social change through the built environment.

We believe in socially responsible design for our communities, nonprofit organizations, families, and individuals in Chicago. We believe in activism in our neighborhoods working collaboratively with community partners developing relationships with those that we serve by fostering a shared passion for clean, healthy, and sustainable spaces. We believe that design matters, people matter, and we should design like we give a damn.

### FOOD DESERT ACTION

Food Desert Action was founded in 2007 as a collective of concerned individuals who participate in research, advocacy, and social enterprise in order to restore community food access. The organization is a member of the Goodcity non-profit incubator, and Goodcity serves as fiscal agent for Food Desert Action.

Food Desert Action's mobile market project will begin to restore access to healthy food to the more than 600,000 Chicago residents without easy access to grocery stores. Through establishing the mobile market, Food Desert Action seeks to reduce diet-related health risks such as diabetes and obesity in urban communities, and to reverse a trend of retail disinvestment in the inner city.



## Project Team

Steven Casey  
Toylee Green Harris  
Seth Harris  
Christopher Hicks  
John Joyce  
Geoff Malia  
Sheelah Muhammad  
Jeff Pinzino  
Curtis Smith  
Tyrone Span

## Contact

Steven Casey, Food Desert Action  
sjcasey@ameritech.net

John Joyce, AfH - Chicago  
jjoyce@afh-chicago.org

Geoff Malia, AfH - Chicago  
gmalia@afh-chicago.org

Sheelah Muhammad, Food Desert Action  
shemuhammad@yahoo.com

Jeff Pinzino, Food Desert Action  
jeffpinzino@gmail.com

## Veggie Wonderland

Tina Kress  
Myriam Migrditchian  
Kristin Richardson  
Don Semple  
Katie Svec

## FITbus [Farm In Transit]

Joseph Altshulert  
Katherine Darnstadt  
Meghann Maves  
Stephanie Pifko  
Will Wingfield

## Go 'n Greens

Lee Bouchard  
Tom Hagerty  
John Joyce  
Laurel Lipkin  
Lety Murray  
Mig Rod

## Fresh Food Fleet

Laura Bowe  
Marissa Brown  
Thomas Kubik  
Geoff Malia  
Peter Ogbac  
Daniel Rollet  
Dena Wangberg



architecture for humanity



goodcity

food desert action

FOOD DESERT CARAVAN