

Mapping 'Food Deserts': Access to Healthy Foods in Cities

Measuring Community Access

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Food Desert

Those areas of cities where cheap, nutritious food is virtually unobtainable.

Car-less residents, unable to reach out-of-town supermarkets, depend on the corner shop where prices are high, products are processed and fresh fruit and vegetables are poor or non-existent.

The Independent 11 June 1997

Factors Affecting Food Choices

- Taste
- Income
- Time constraints
- Knowledge about healthy food
- Beliefs
- **Access**

a few studies show an association between type of food stores in neighborhood and quality of residents' diets

Documenting the Effect of the Food Desert on Eating

Assessing the impact of improved retail access on diet in a 'food desert': a preliminary report. *Neil Wrigley; Daniel Warm; Barrie Margetts; Amanda Whelan.*

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Measuring Community Access

- Disability results from interaction between individual capacity and environmental demand
- Can reduce disability by **environmental modification**: curb cuts, better signage, accessible buses, etc
- Project aim: measure aspects of neighborhoods' accessibility, to compare and to set priorities for improvement

Geographical Data

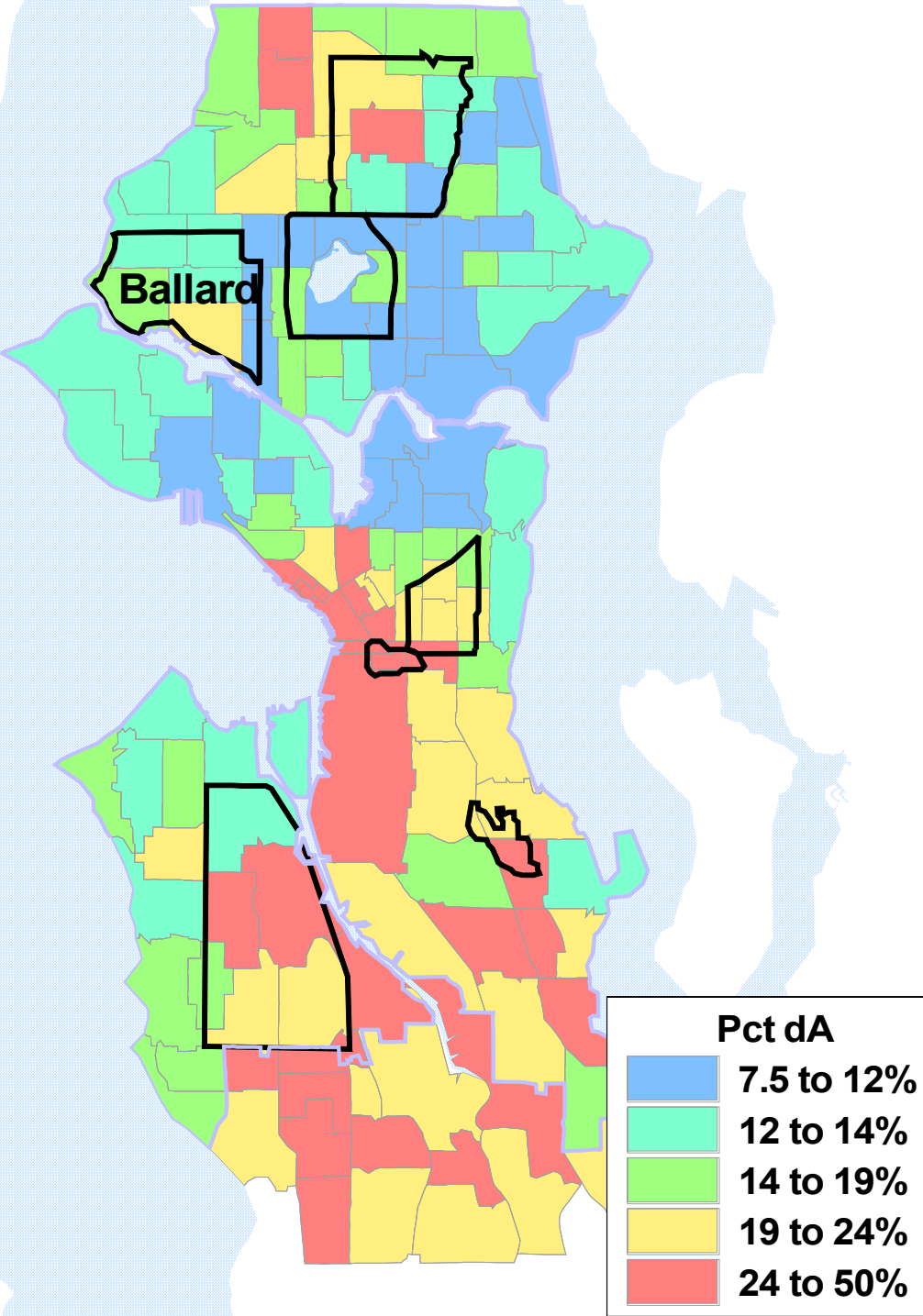
- Got GIS files from city (Seattle, Spokane)
- Mapped aspects of neighborhoods
- Computed measures of salient features to compare across neighborhoods
- Outcome: profile of features that may be useful to individuals in picking a place to live or visit—or as input for policy

Choosing “Neighborhoods”

- corresponded to residents’ perceptions of “a neighborhood”, rather than an arbitrary geographic unit like a census tract
- varied by location, ‘urban-ness’ and demographics
- were home to reasonable numbers of people with disabilities

Seattle Showing Target Neighborhoods

with tract-level
Census 2000
disability
prevalence
(age 5 +)
by quintile



Finding the Food Deserts

- Identify food stores: multi-product grocery stores, single-product stores, 7-11-style food marts
- Identify accessible fixed-route transit that serves accessible grocery stores
- Identify housing directly served by transit
- Areas not served = food deserts

Description of Map of Ballard

- 1) the neighborhood boundary and streets
- 2) all food stores
- 3) the 5 big grocery stores
- 4) bus route 15, then routes 17, 18, 44, 46, 81
- 5) and with accessible transit stops.
- 6) Then housing: where people live. First are single family houses, of which there are 8,013. (from tax parcel data) Then we add the 432 multi-family apartments, in red and green indicating number of units in the building

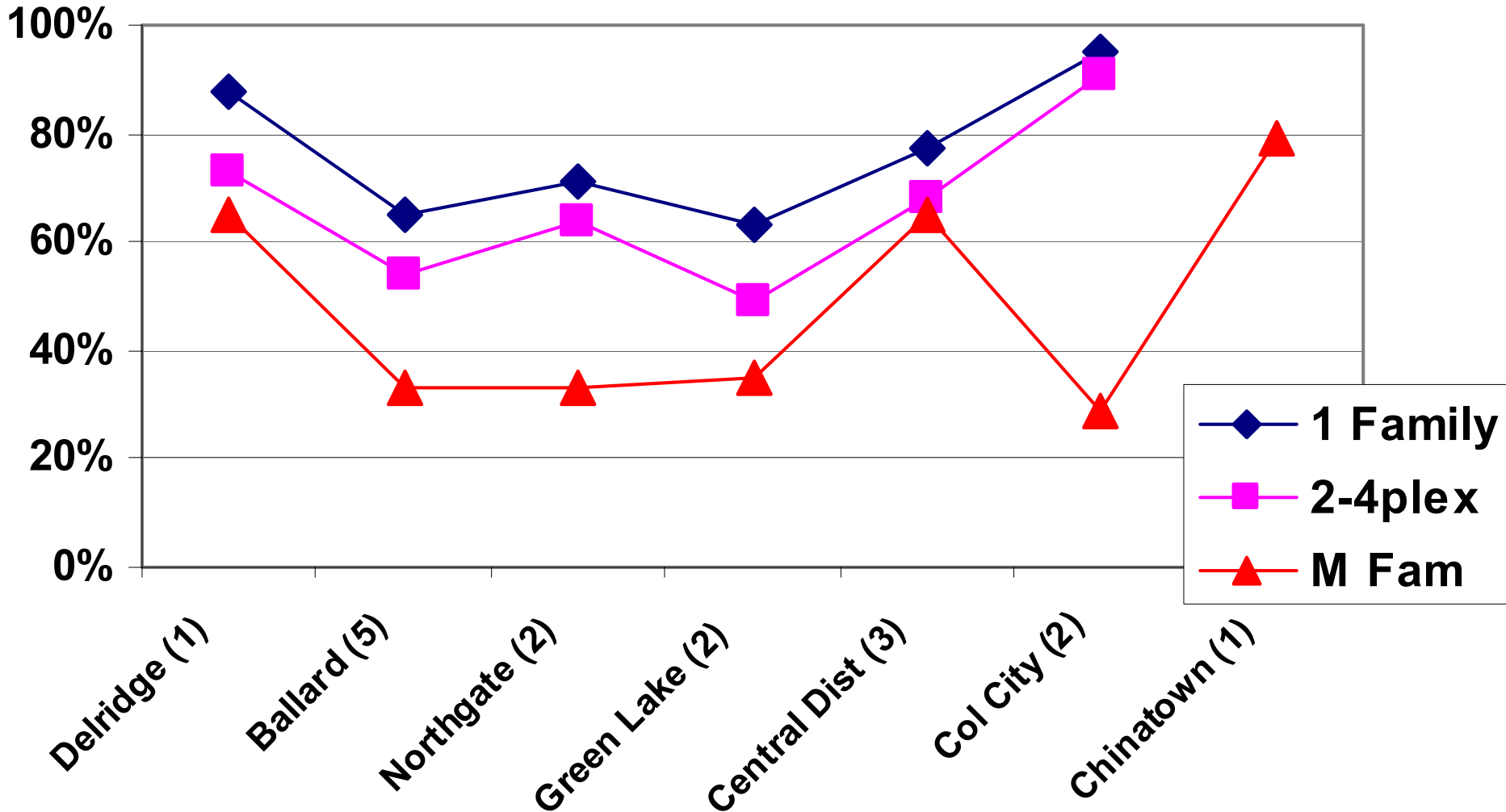
Mapping Ballard, con't

- What is a reasonable distance to expect a person to walk to a bus stop or to a store? If everyone can walk half a mile—the distance between those streets with bus lines—there is no part of Ballard that cannot reach a grocery store by transit.
- But a person with a walker, a mother with 2 young children, one in a stroller, or an older adult may not be able to walk that distance, wait, take the bus, get off and do their shopping, then reverse the process and walk the distance home with their groceries. The 'food desert' concept was developed with those vulnerable groups in mind.
- 150 meters is one figure we use—about a 10th of a mile. That is impossible for many, but let us use that. And for simplicity, let's look at only one grocery store, the new Safeway.

Accessible Transit Access to Healthy Food by Type of Housing, Ballard

	Single family	2,3,4-plex	Multi Family	All parcels
N in Ballard	7975	1005	509	10,687
Access to ≥ 1 store	2781	465	338	4490
Percent of total	35%	46%	66%	42%
No access	65%	54%	33%	58%

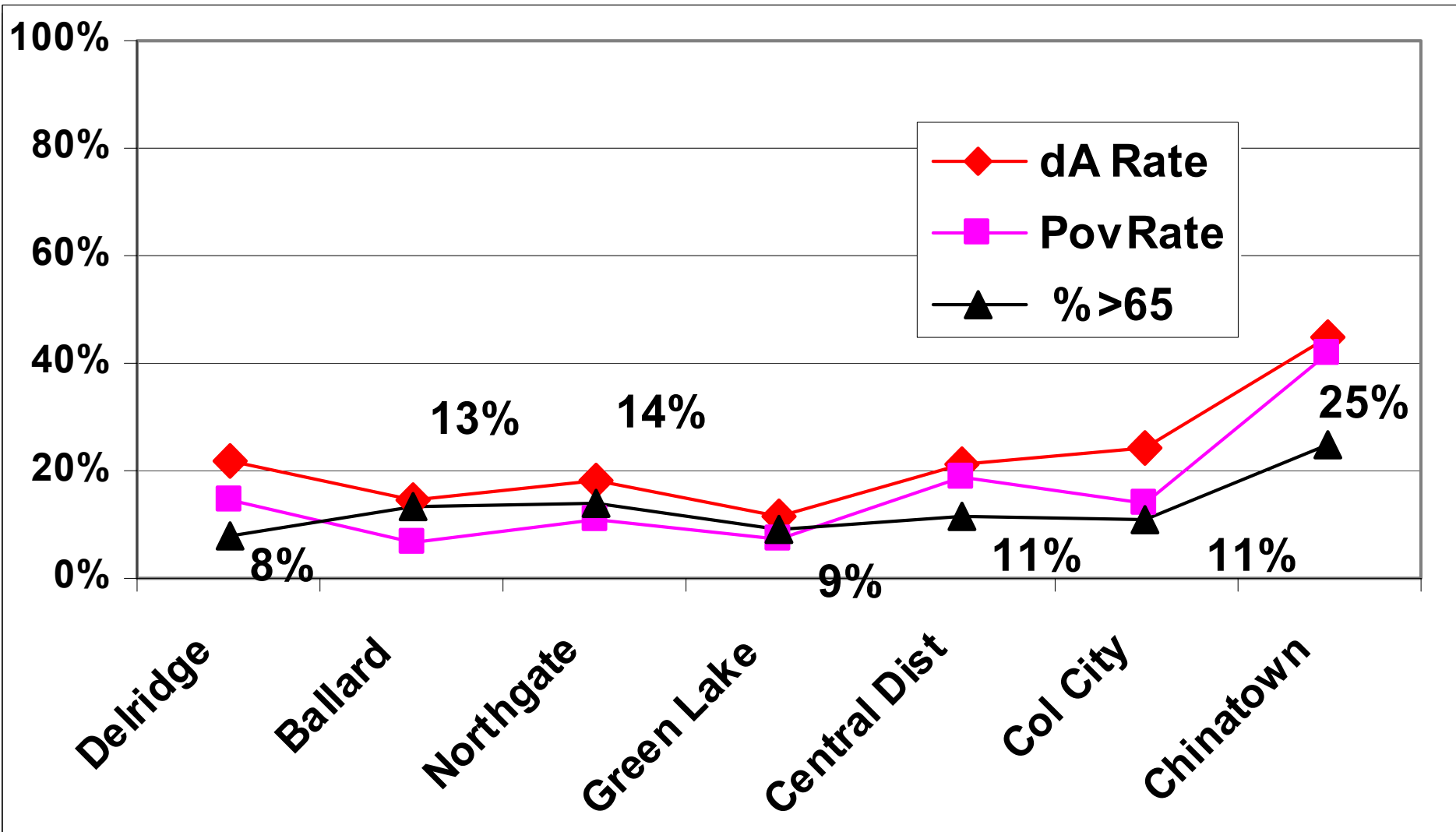
% of Housing w/o Transit Access to Grocery Store, by Neighborhood



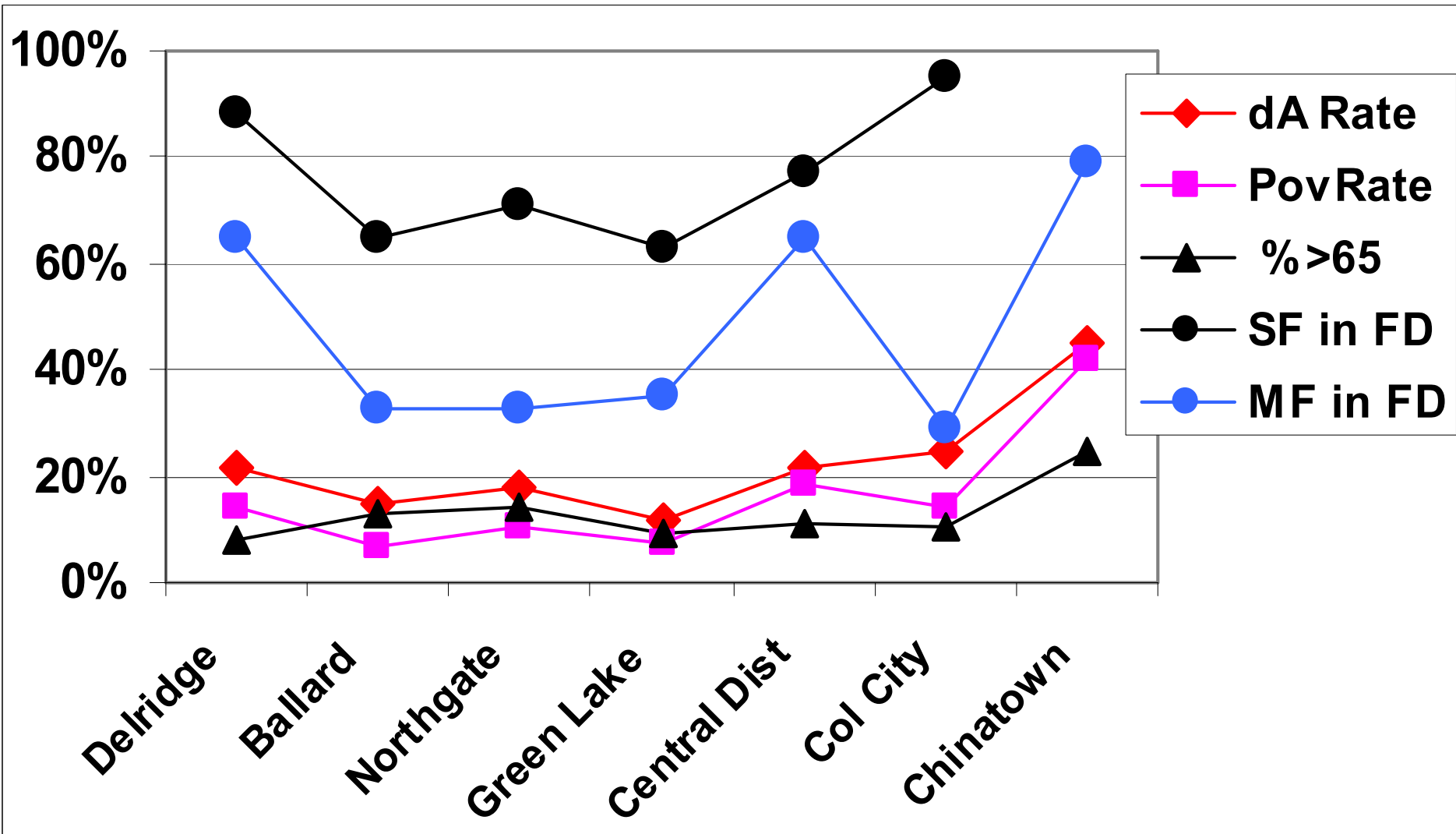
Columbia City
Neighborhood
Showing single (blue)
and multi-family (red)
housing and bands
around transit stops
serving grocery
stores



Neighborhoods by Disability, Poverty and Age >65



Disability, < Poverty and Food Desert Residence, Seattle Neighborhoods



Factors that Modify Boundaries of Food Deserts for the Transit-Dependent

- Individual abilities and limitations
- Bus routes
- Bus shelters and benches
- Terrain (hills, steepness)
- Quality of sidewalks and crosswalks
- Lighting
- Fears about safety
- Traffic congestion

Zoning:
Public
Policy
Affecting
the Food
Deserts

Improving Access to Healthy Food

- Change individuals
- Improve neighborhood environments
- Expand transportation options
- Rethink urban design
- Modify zoning
- Confront economic constraints

Questions and Thoughts

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