

Tackling Food Insecurity in the San Diego Promise Zone

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APCG 2021 Annual Meeting



Food Insecurity in San Diego County

“We often think about food in terms of individual choices, family celebrations, and our cultural heritage. An estimated 1,000,000 San Diegans (1 in 3), however, have a relationship with food that is dominated by scarcity. These households—including families with children, veterans and military families, and senior citizens—do not always have access to enough food for an active healthy life. Why? Because of what they earn, where they live, or other gaps in our food system.”

San Diego Hunger Coalition. (2021). *Hunger in San Diego County*.

Retrieved October 10, 2021, from <https://www.sandiegohungercoalition.org/>

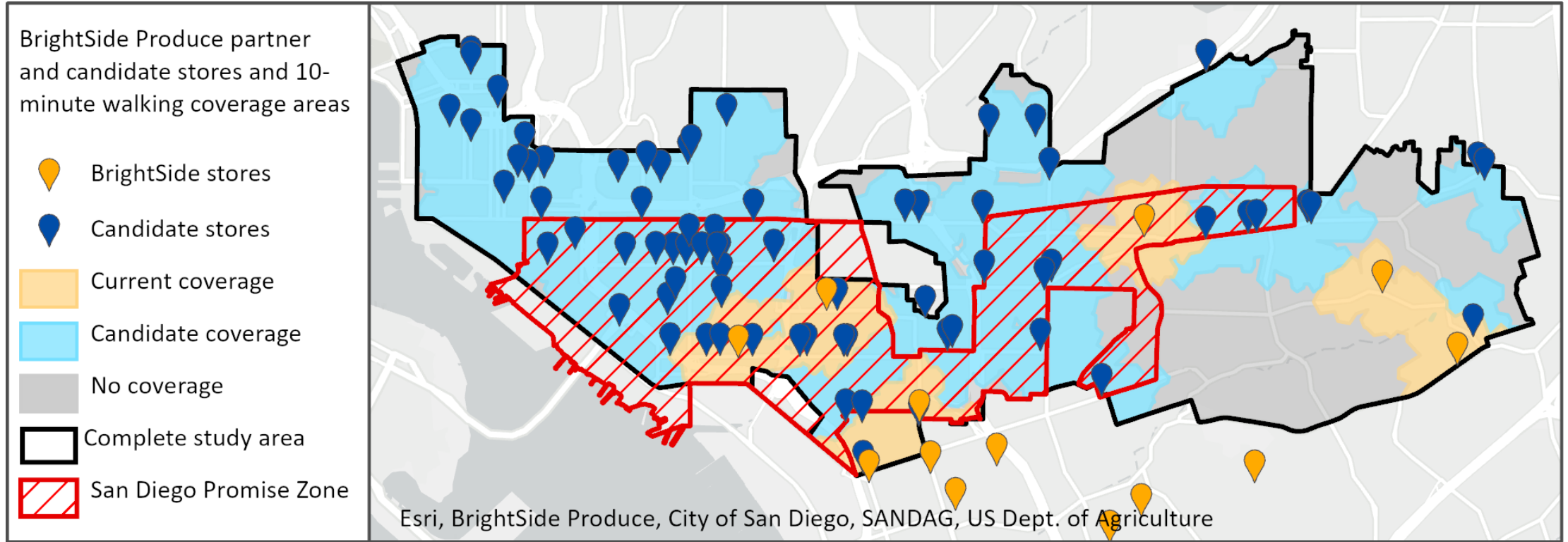
BrightSide Produce



- Social venture housed within the Center for Regional Sustainability at SDSU
- Bring fresh produce into underserved communities through distribution partnerships with small, local businesses
- 13 stores in National City, 6 stores in the City of San Diego
- The San Diego Promise Zone is a federally recognized region with high poverty rates and low access to healthy food
- Goal: Ensure all San Diego Promise Zone residents have access to fresh produce within a 10-minute walk of home



BrightSide Produce, <https://brightside.sdsu.edu>



- Coverage potential of all SNAP-accepting candidates (73)
- BrightSide Produce can establish 10-12 new partnerships
- Must optimize selection of candidates

Site Suitability Analysis

- Assess candidate suitability, in terms of community need/access and individual site characteristics
- ArcGIS Business Analyst
- Multi-criteria, weighted analysis → Scores assigned from 0 to 1
- Selection of weights (BrightSide priorities, testing of biases)
- High scores indicate likelihood of a successful, high-impact partnership
- Criteria included community demographics, business/resource distribution, and on-site audit results (2019, 2021)

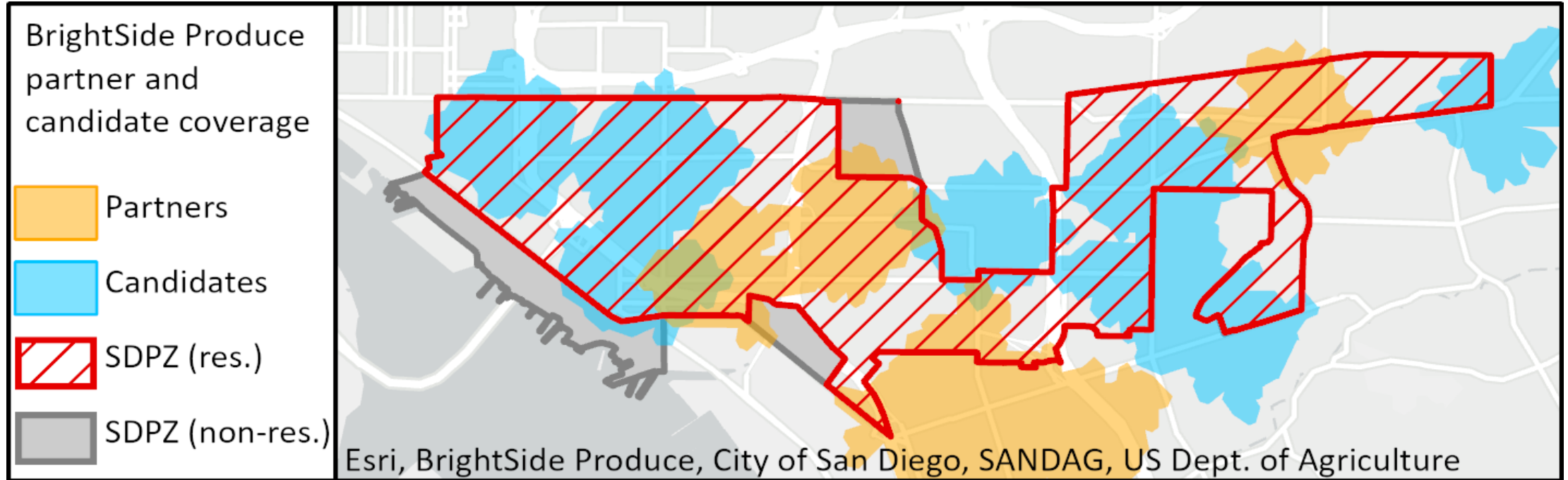


Site Suitability Criteria

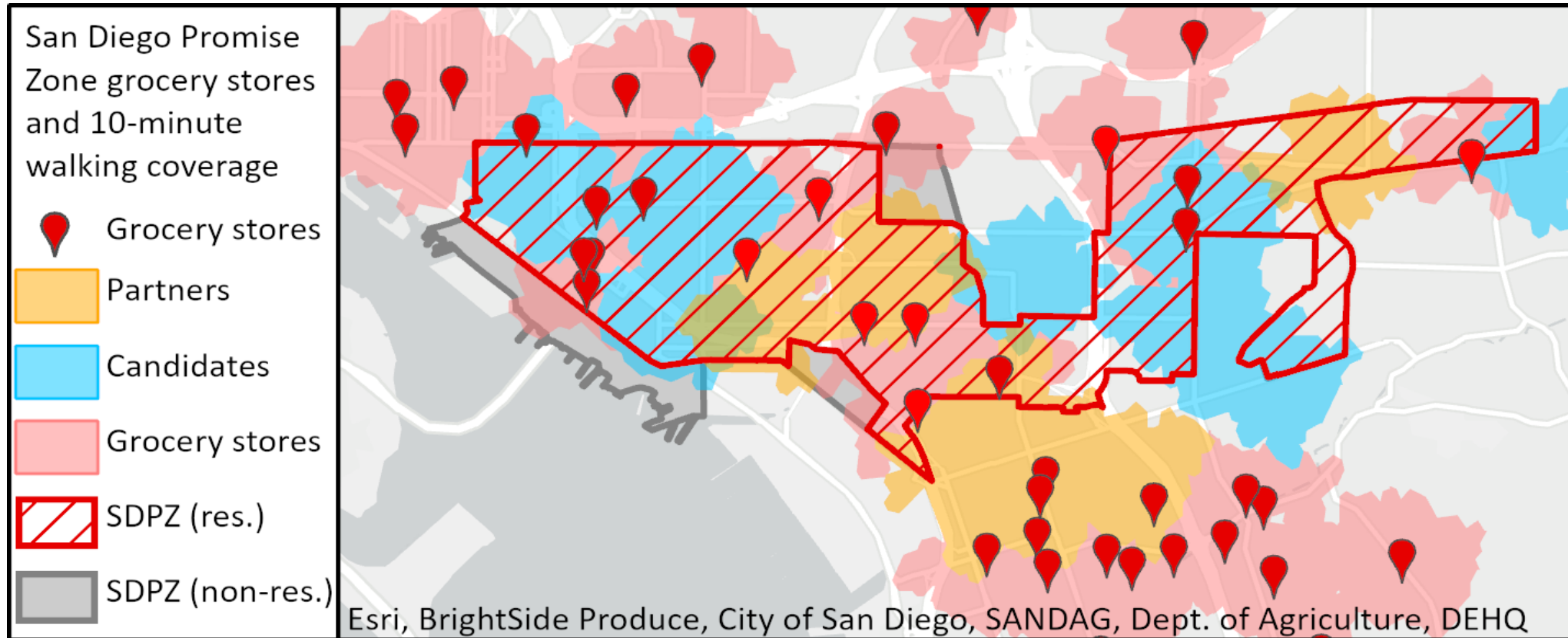
| Site Suitability Criteria | Influence | Criteria Selection Rationale | Source |
|---|-----------|--|--|
| Total population | Positive | Larger populations generate higher demand | Esri |
| Percent of households receiving food stamps/SNAP | Positive | Households dependent on SNAP may be restricted to shopping at businesses that accept EBT | Esri, American Community Survey (ACS) 5-year estimates |
| Average consumer spending on fresh fruit | Inverse | Areas with low spending on fresh fruit may benefit from increased access to produce | Esri, Bureau of Labor Statistics |
| Number of grocery stores within the service area | Inverse | Areas with high access to grocery stores have lower demand for BrightSide Produce | Department of Environmental Health and Quality (DEHQ) |
| Number of fast-food franchises within the service area | Positive | Areas with high access to fast food may benefit from accessible healthy choices | Department of Environmental Health and Quality (DEHQ) |
| Number of schools within the service area | Positive | Proximity to schools suggests higher accessibility | SANDAG |
| Number of public transit stops within the service area | Positive | Proximity to public transit stops suggests higher accessibility | SANDAG |
| Number of BrightSide Produce partners within the service area | Inverse | Nearby BrightSide Produce partners reduce the demand for additional partners | BrightSide Produce |

Site Suitability Criteria

| Site Suitability Criteria | Influence | Criteria Selection Rationale | Source |
|---|-------------|--|----------------------------------|
| Parking lot at candidate site | Positive | Dedicated parking is desirable to customers | BrightSide Produce on-site audit |
| More than 75% of the candidate's inventory is alcohol | Inverse | Candidates that stock alcohol may not be perceived as a place to shop for groceries | BrightSide Produce on-site audit |
| Amount of produce currently stocked | Ideal (1.5) | The ideal candidate already carries a modest amount of produce. The ideal score (1.5) equally prioritizes ranked scores of 1 or 2. Ranked scores: (0) No produce, (1) 1-3 types of produce, (2) 4-19 types of produce, (3) 20+ types of produce. | BrightSide Produce on-site audit |
| Quality of stocked produce | Ideal (2) | The ideal candidate may need help improving produce quality. Ranked scores: (0) No produce, (1) poor quality, (2) mixed quality, mostly poor, (3) mixed quality, mostly good, (4) good quality. | BrightSide Produce on-site audit |
| Auditor site recommendation | Positive | The auditor's expert opinion of the candidate as a BrightSide partner: (0) not suitable, (1) possibly suitable, (2) highly suitable. | BrightSide Produce on-site audit |



- 8 highly suitable candidates identified
- “Residential Promise Zone” = 5.7 square miles (6.4 sq mi total)
- Current partners (1.5 sq mi) + selected candidates (2.3 sq mi) = 68% coverage



- Add grocery stores and produce-carrying candidates = 5.1 square miles within a 10-minute walk to fresh produce (89.6% of the residential Promise Zone)

Closing Thoughts

- Artistry and subjectivity of site suitability – requires business insights, subject knowledge
- Importance of listening and relationship building (on-site audits)
- Several relevant criteria were not used due to multicollinearity (poverty, other consumer spending, other transit data) – could be substituted
- When multiple sites are suitable and provide overlapping coverage, linear optimization models can find the best grouping of sites
 - Location Set Covering Problem
 - Maximal Covering Location Problem



Thank you!

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