

THE BUILT ENVIRONMENT AND PUBLIC HEALTH: USING VISUALIZATION TECHNIQUES AND ANALYSES TO BETTER INFORM DECISION MAKERS AND IMPACTED COMMUNITIES

SOUTHERN CALIFORNIA PUBLIC HEALTH ASSOCIATION

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IMPACTS OF THE BUILT AND NATURAL ENVIRONMENT ON HEALTH

How we design and build communities have direct impacts on the physical and mental health of the people who live, work, and play within their borders.

- **Communities' physical developments through their built and natural environment influence the quality of life, health, and life expectancy of individuals.**
- **The physical development of communities through land use, transportation, and design may have negative consequences on their residents' health, stemming from obesity and other chronic diseases (such as heart disease, diabetes, and cancer) to injuries and deaths related to traffic and bicycle/pedestrian safety, and mental health issues, such as depression and psychological stress.**
- **Land and roadway development decisions also have direct bearing on access to schools, housing, jobs, health care, and the overall wellness of people.**

HEALTHY COMMUNITY DESIGN IMPACTS

Healthy Community Design principles assist to:

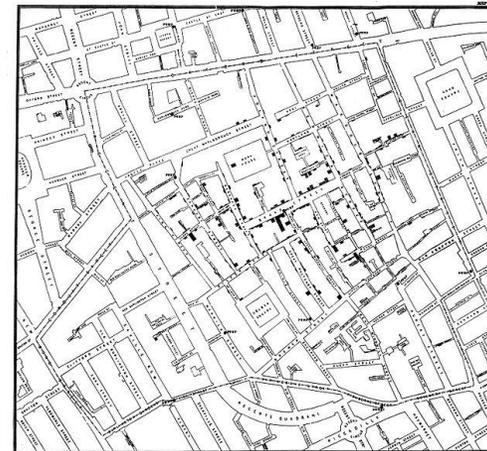
- Promote physical activity
- Improve air quality
- Lower risk of injuries
- Improve healthy eating habits
- Increasing social connections and sense of community
- Reduce contribution to climate change

How do we convene a better understanding of these benefits to decision makers and impacted communities?

SPATIAL PROBLEM SOLVING

- *John Snow- British doctor in the 1800s*
- *Saved many lives by finding source of sickness (Cholera) and recommended a way to stop spread*
- *He saw patterns where people were getting sick and figured out that it was a water pump as the source (by seeing patterns in a map)*

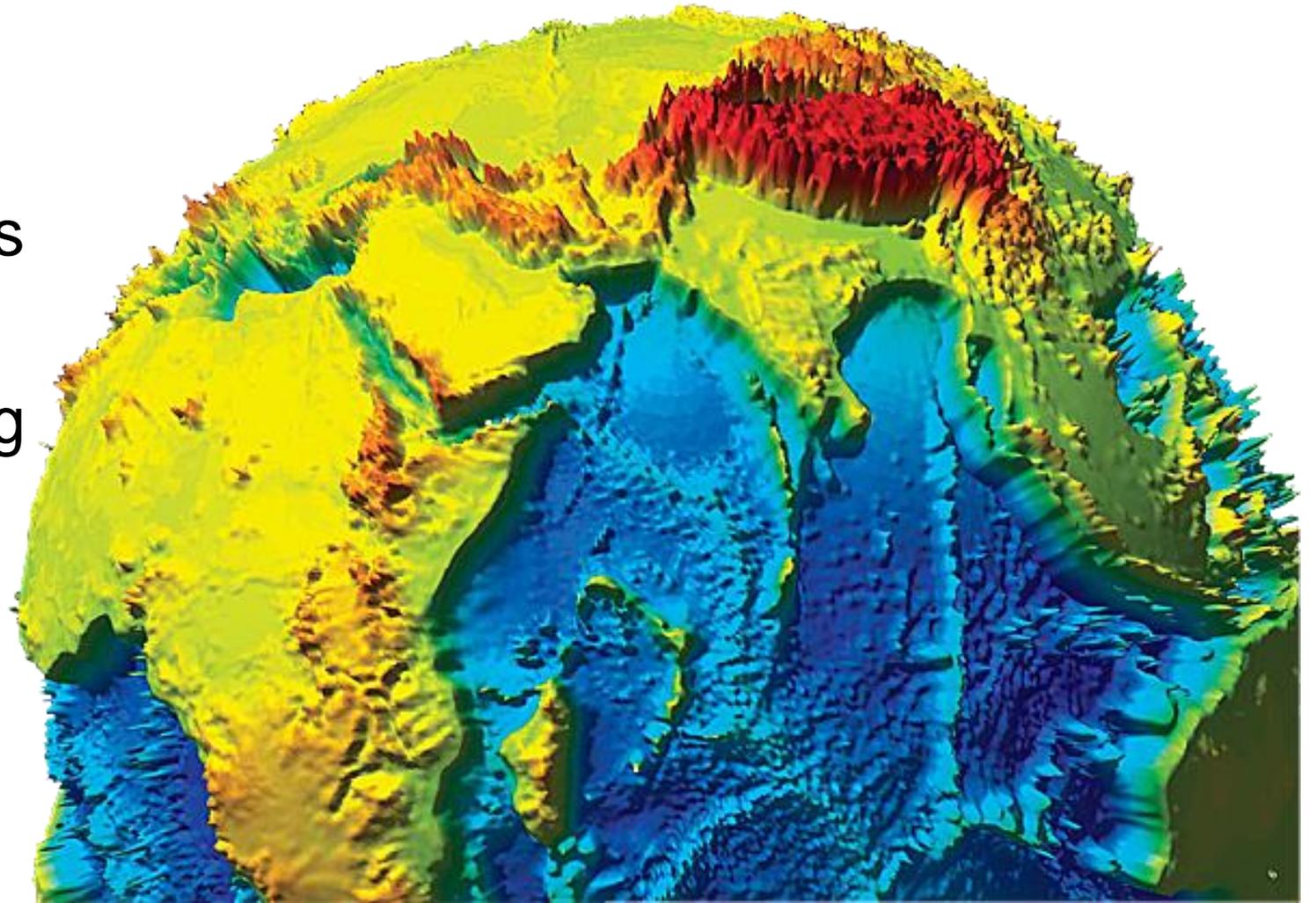
Exploring data using Geographic Information Systems (GIS) turns data into information into knowledge



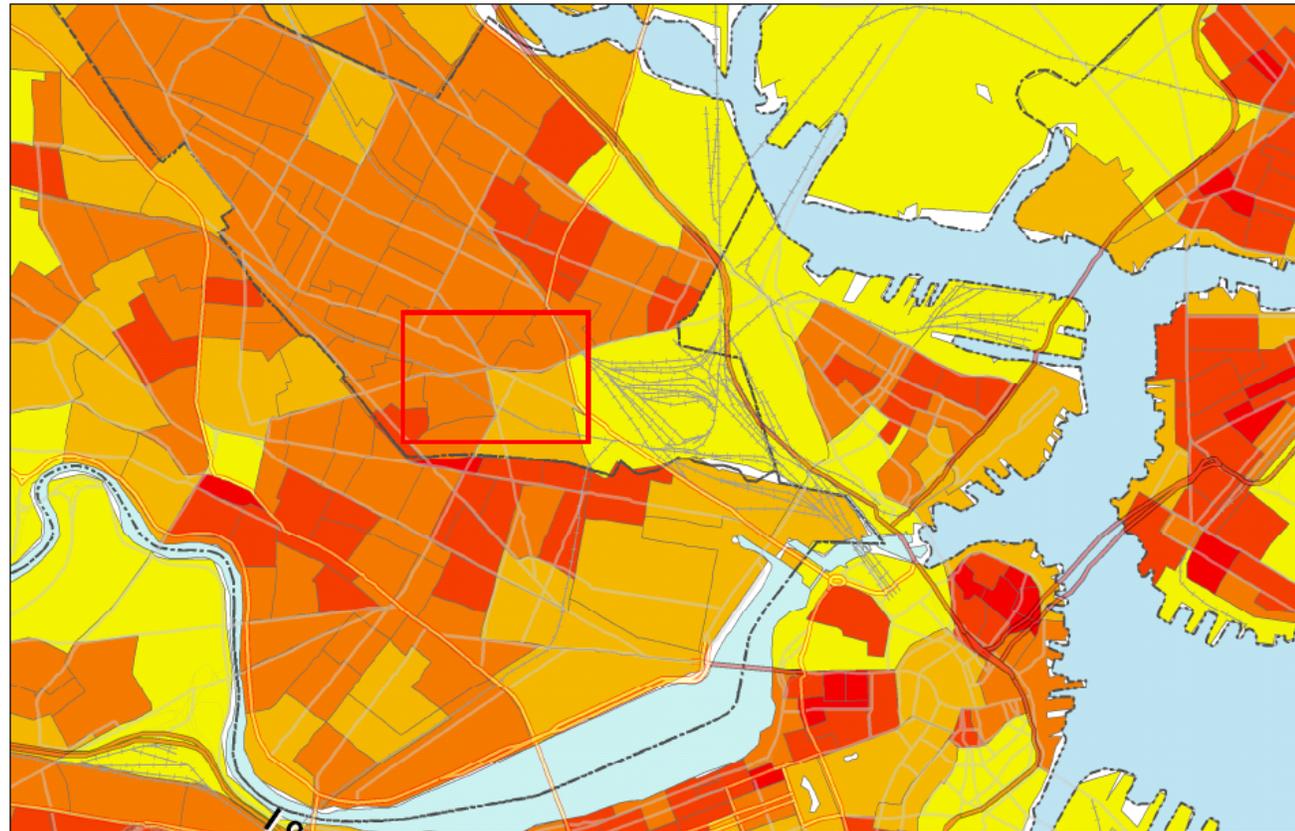
Geography is the Science of Our World

Increasingly Being Seen as a Framework for

- Understanding
 - Patterns
 - Relationships
 - Processes
 - Conceptualizing
 - Modeling
 - Visualizing
- ... Integrating
What We Know**



Maps are a form of communication that show: Similarities and differences between places



Population Density (Blockgroup)

1 Mile



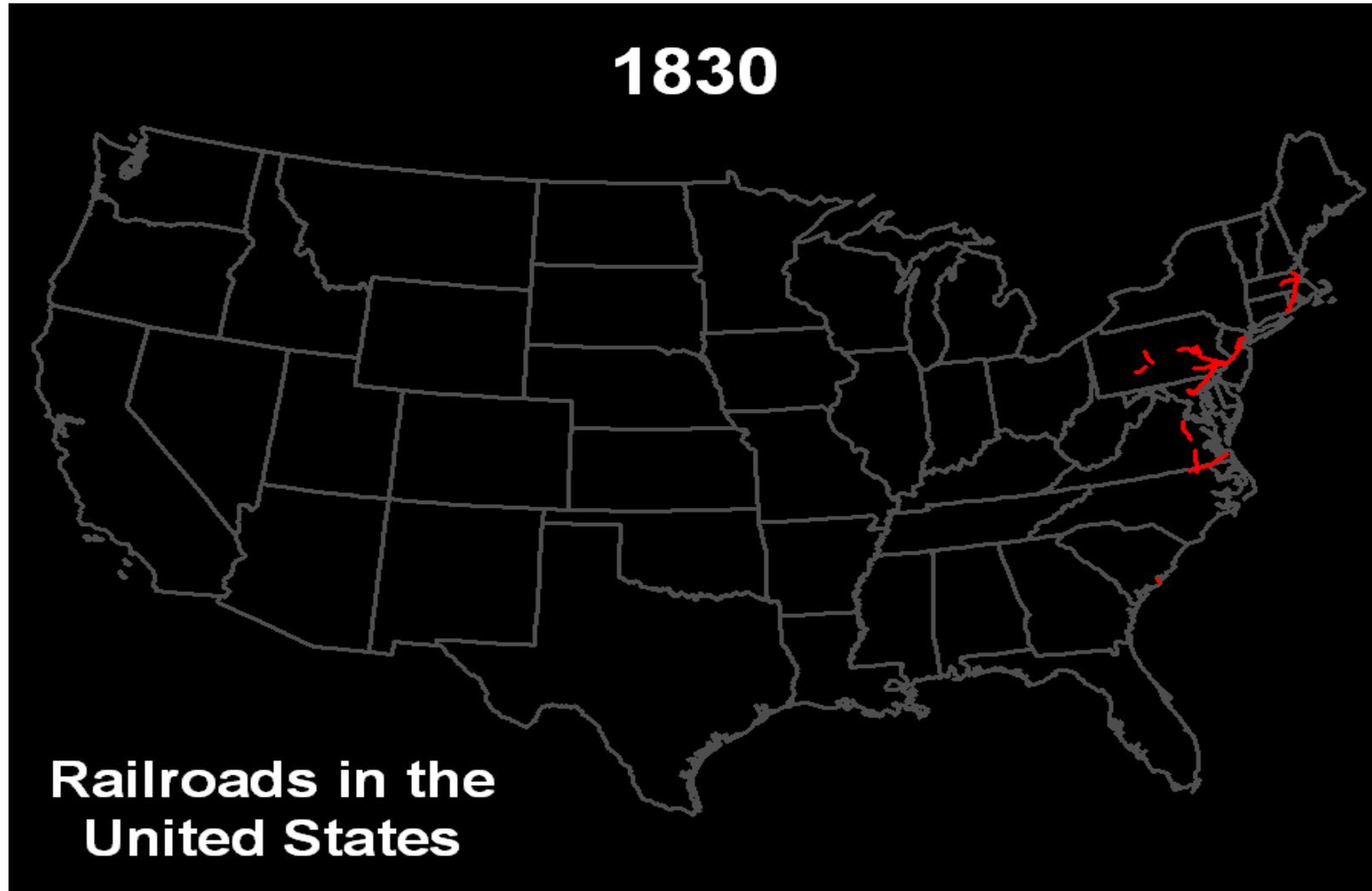
Map by Paul Cote, 2006
Street data: ESRI Streetmap, 2002
2000 US Census Blockgroups: Geolytics Inc.

Persons per Acre



Union Square does not seem to be distinct from its neighbors in terms of population density when examined at the blockgroup level of aggregation. This map does reveal, however an interesting area of higher population density a short distance to the south, just south of the Cambridge boundary, along Cambridge street. Although these people live a short distance to Union Square, their walking distance is much greater owing to the railroad tracks.

Maps help us conceptualize, reconstruct history, illustrate the present, or plan for the future.

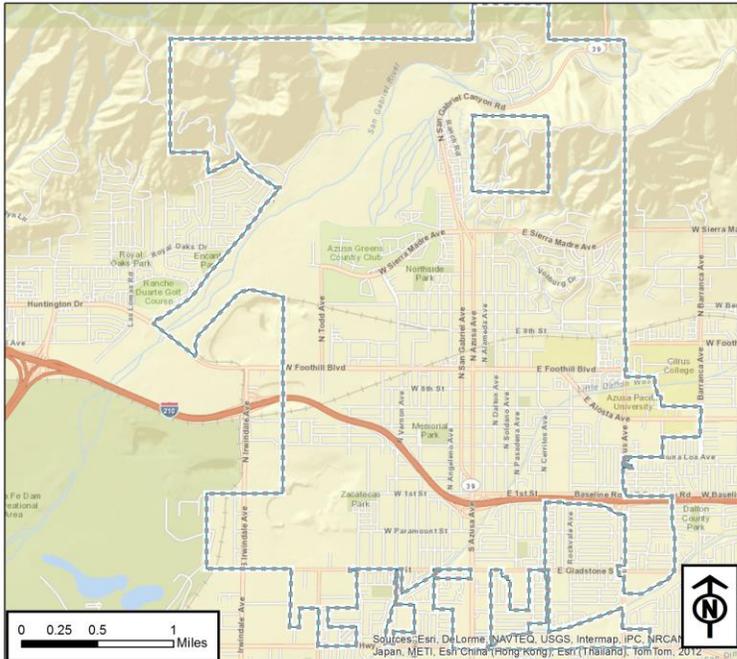


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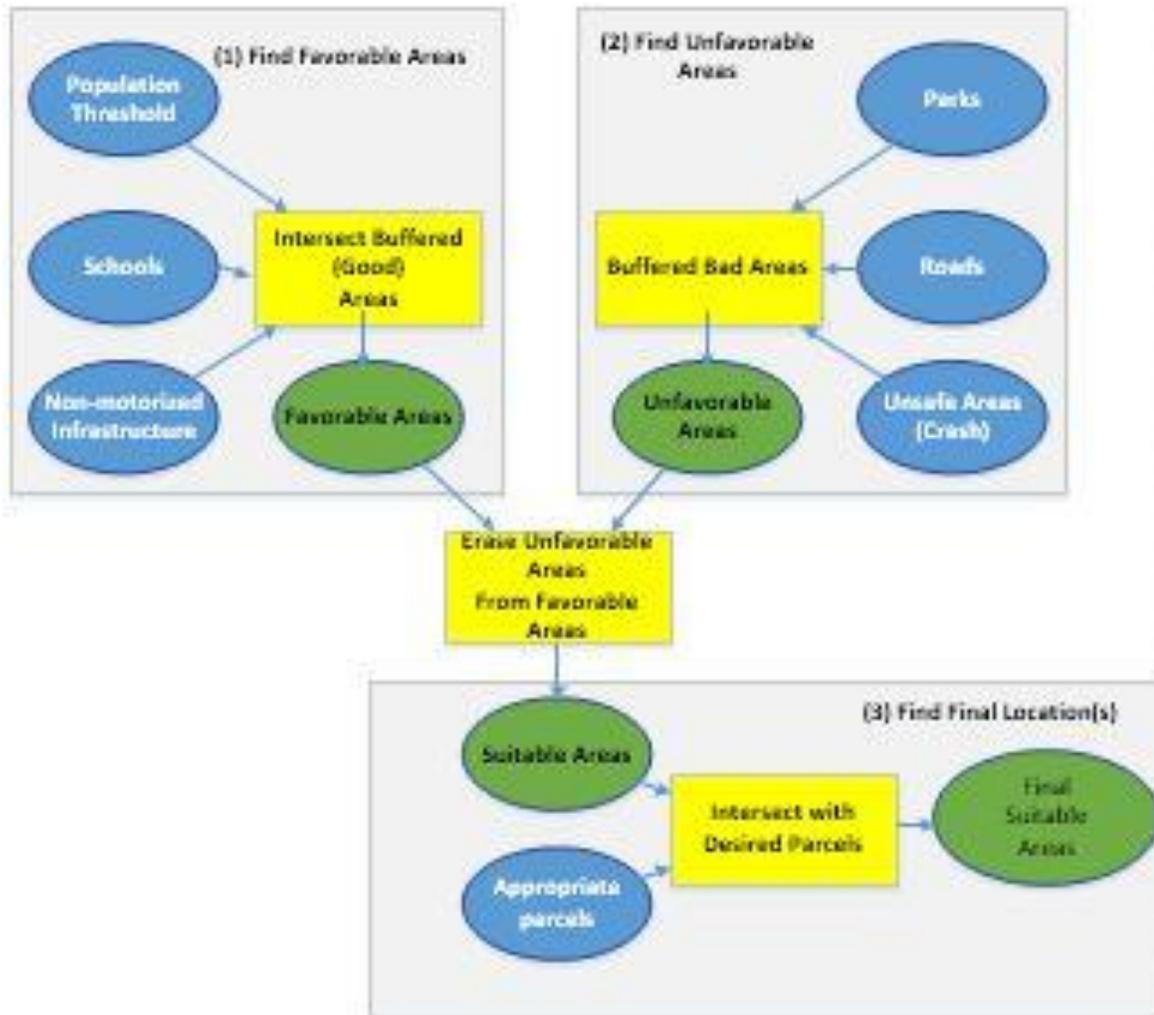
CITY OF AZUSA PARK ACCESSIBILITY

City of Azusa Park, California



| Azusa Local Parks Summary | |
|---------------------------|-----------------------------|
| Azusa | 15 parks |
| Avg. Park size | 4.3 acres |
| Min. Park size | 0.2 acres |
| Max. Park Size | 15.09 acres |
| Azusa Park Density | 1.4 acres per 1,000 persons |
| CA Standard Park Density | 3.0 acres per 1,000 persons |

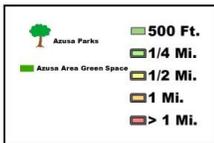
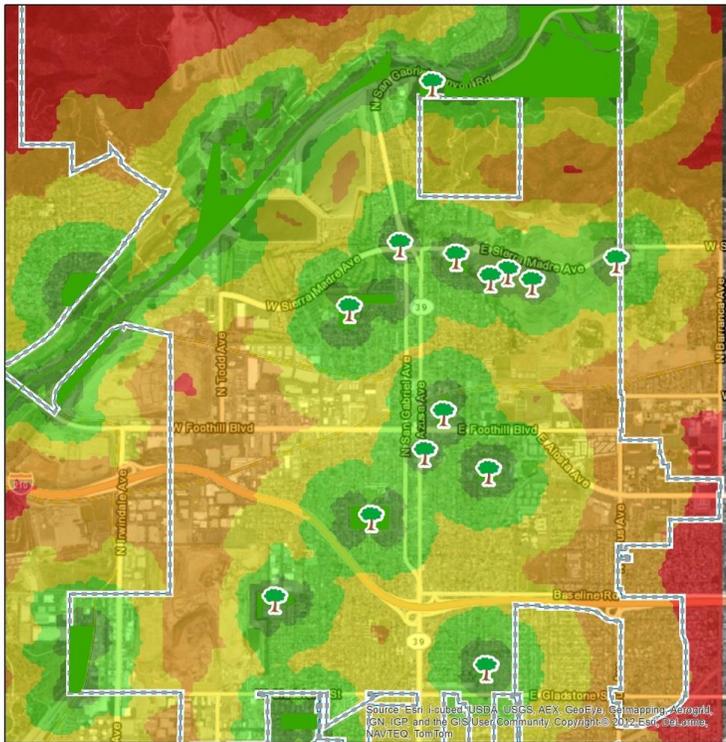
VISUALIZE AND MODEL SUITABLE AREAS



| Data Layer | Criteria | Tool/Function | Parameters |
|---------------|---------------------------|------------------------------------|----------------------------------------|
| Schools | 1/2 mile from | Buffer | 1/2 mile |
| Parks | Outside at least 1/2 mile | Buffer Along Roads (Cost Distance) | 1/2 mile |
| Bicycle Lanes | 1/4 mile from | Buffer | 1/4 mile |
| Streets | 1/2 form from Freeway | Buffer | Type= Freeway |
| Crash | Outside highest quartile | Kernel Density | Outside Highest |
| Land Use | Inside | Select | Vacant or Agriculture inside good area |

PARK AREA ANALYSES

City of Azusa Walk Accessibility to Local Parks

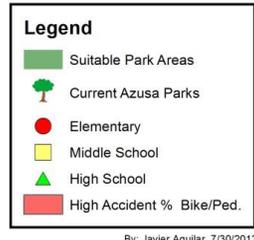
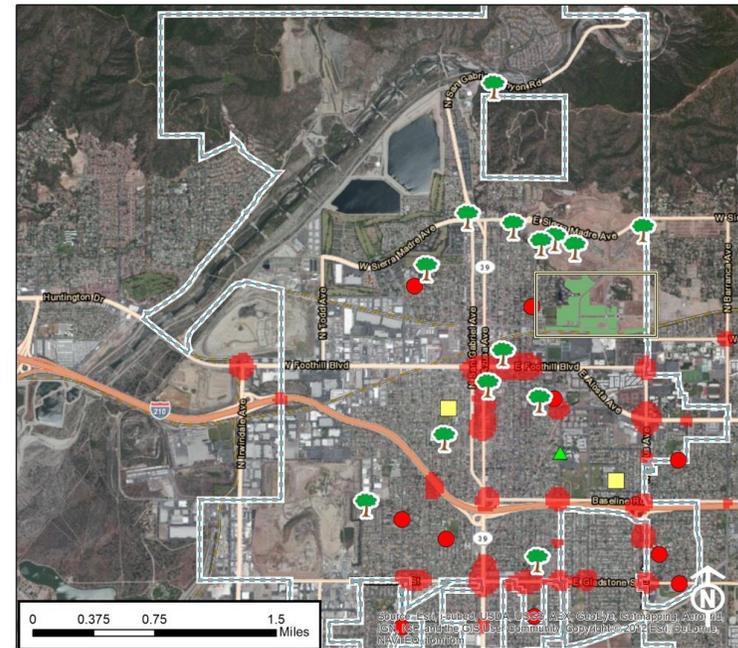


0 2.25 4.5 9 Miles



By: Javier Aguilar
7/30/2013

City of Azusa Park Siting Analysis



By: Javier Aguilar, 7/30/2013

RECOMMENDATIONS

- **General Plan Guidelines** are being updated in early 2014. Have a public health element become required in general plans.
- **Health Impact Assessments** in large and medium size land use and transportation projects in order to better the public health impacts on surrounding communities.
- **Build partnerships** with school districts, non-profits, water districts, air quality districts, and local elected official to have a comprehensive approach to healthy community designs. In addition, work with non-profits to help other needs of clients, like food banks, counseling, legal services, and so forth.
- **High poverty rates, high school drop rate, citizenship status, and income less earnings** impact access to health care. It would be helpful to have built environment designs and supporting programs to help address jobs, job training, school retention, and safety.

ANNOTATED BIBLIOGRAPHY

- 2012 Annual Planning Survey Results 2013. Governor's Office of Planning and Research, Sacramento, California. *This document is an annual survey of California counties, cities, and town to inquire on the status of their general plan, local land use issues, and other statewide areas of concern.*
- A Citizen's Guide to Planning 2001. Governor's Office of Planning and Research, Sacramento, California. *This guide provide an easy to read explanation of the planning process in the State of California. It starts with the state law and the tools used for cities and counties to implement their physical development. It exist important document to have an understanding how the process works.*
- A Guide for Health Impact Assessment 2010. California Department of Public Health, Sacramento, California. *This guide provides a framework to understand written Health Impact Assessments. It recommends to integrate the process into Environmental Impact Assessment which heavily impact general plan and the physical development of cities and counties.*
- California's Climate Future: The Governor's Environmental Goals and Policy Report 2013. Governor's Office of Planning and Research. *This document looks at California at 50 million residents in the next 20-30 years. It recommends strategies and steps to be taken in public health, equity, climate change, and economics.*
- Climate Action Team Report to Governor Schwarzenegger and California Legislature 2010. California Environmental Protection Agency. *This document help California legislators to move on climate change corrective measure and tools to use monitor. Climate change measures helped open the way to include public consider to land use and infrastructure policy.*
- State of California General Plan Guidelines 2003. Governor's Office of Planning and Research, Sacramento, California. *These guidelines provide the basic elements and requirements that cities and counties need to follow in order to create the proper policy for its residents. This document also provide the history planning for the state and milestone legislation for the state.*
- Update to the General Plan Guidelines: Complete Street and the Circulation Elements 2010. Governor's Office of Planning and Research, Sacramento, California. *These updated guidelines provide policy to make multi-modal transportation an important consideration in the general plan. Multi-modal includes Bicycle and Pedestrians facility to encourage accessibility, physical activity, and safety measure for these modes.*

CONCLUSION

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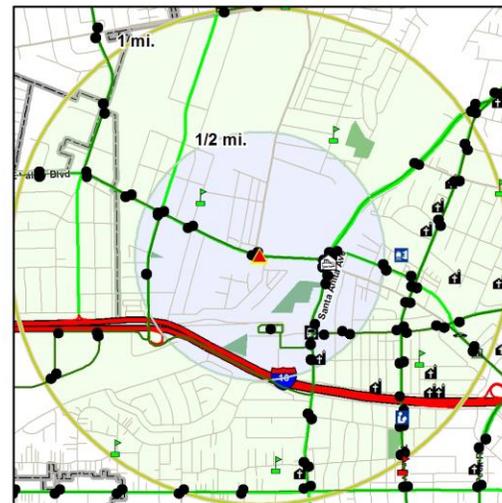
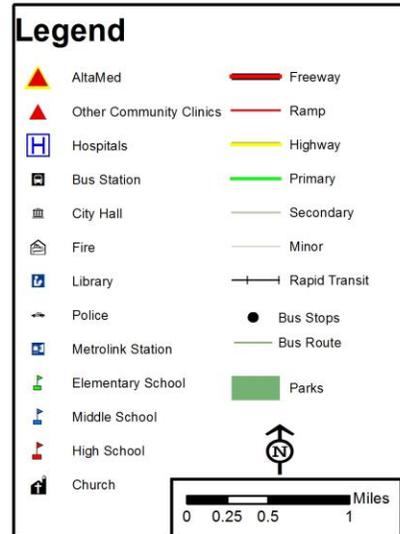
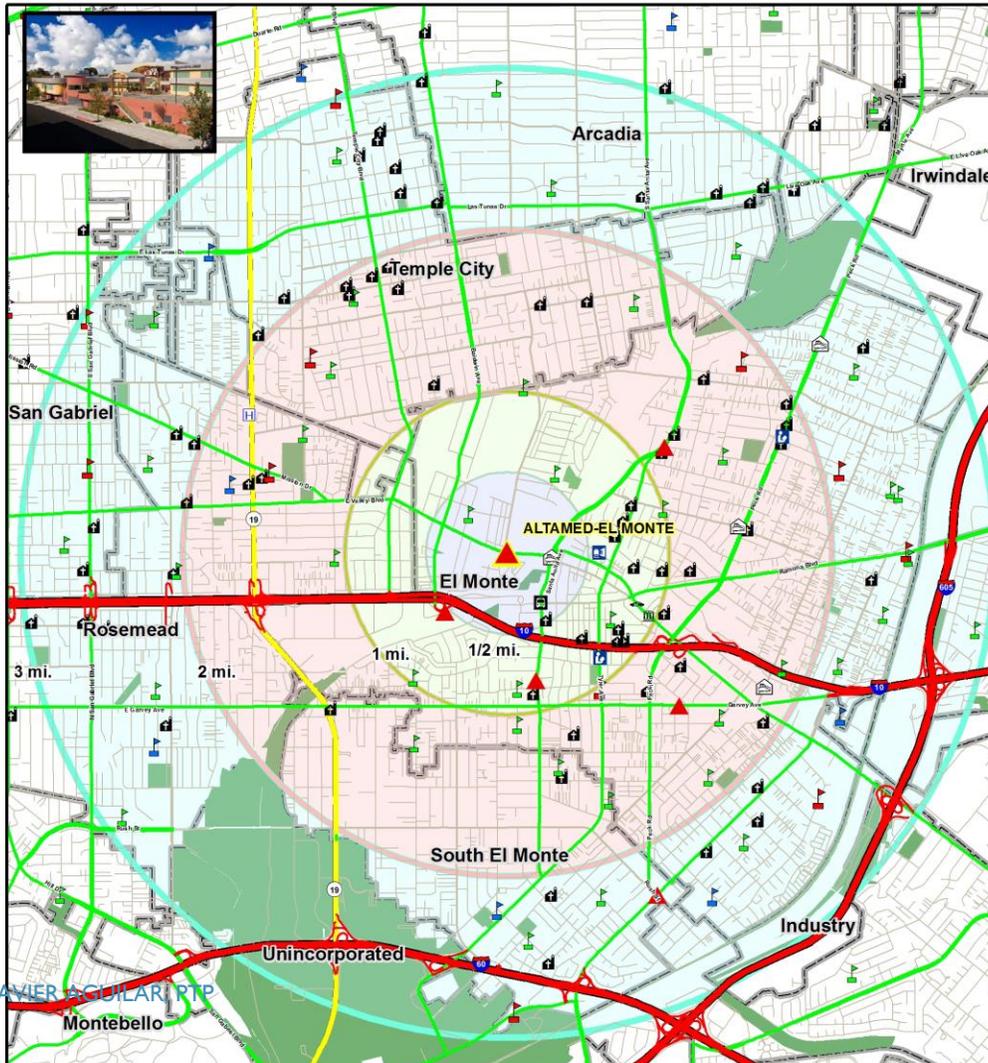
Thank you for coming



EL MONTE

ACCESS TO COMMUNITY CLINICS

AltaMed-El Monte Community Surroundings Map



Created By: Javier Aguilar 11/2013

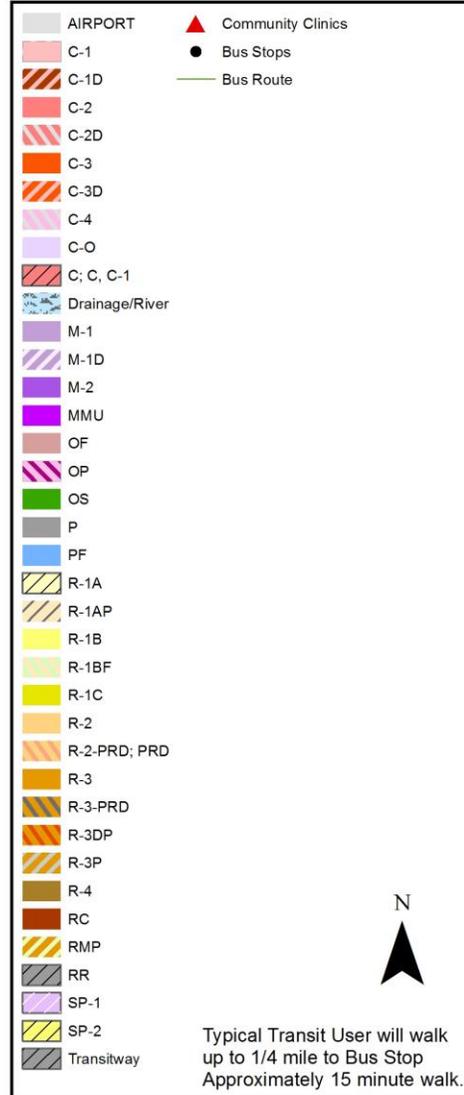
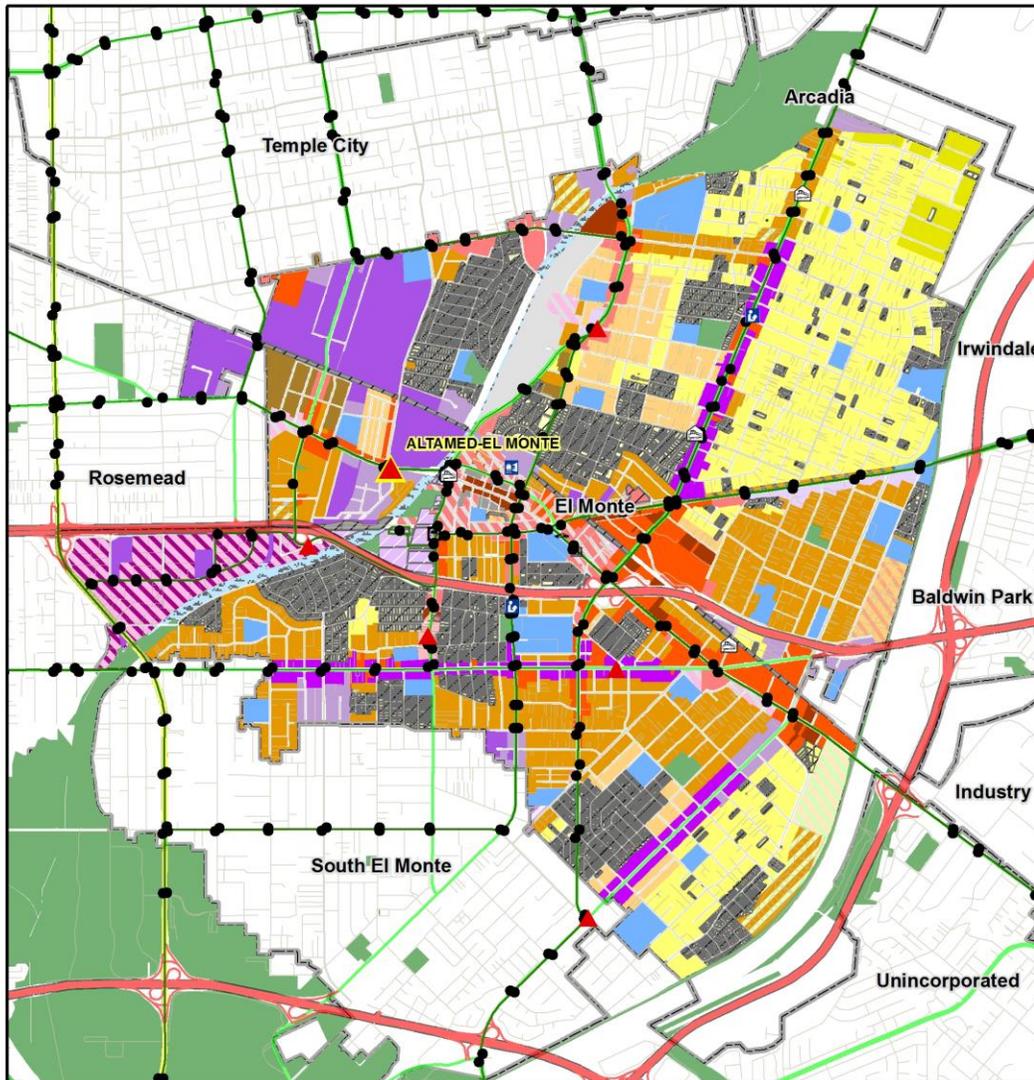
Access to take transit to General Hospital is 1/2 mile walk largest clinic with most services, Alta-Med.

El Monte Bus Station: Metro Silver Line and Metro Bus #70 charge \$1.50 each way and Foothill Transit Silver Streak charges \$1.25. It is an unfriendly walk to the bus station.

Valley Boulevard has lots of traffics, wide streets makes crossing it stressful, land use are uninteresting with large parking lots to cater to large commercial and industrial uses.

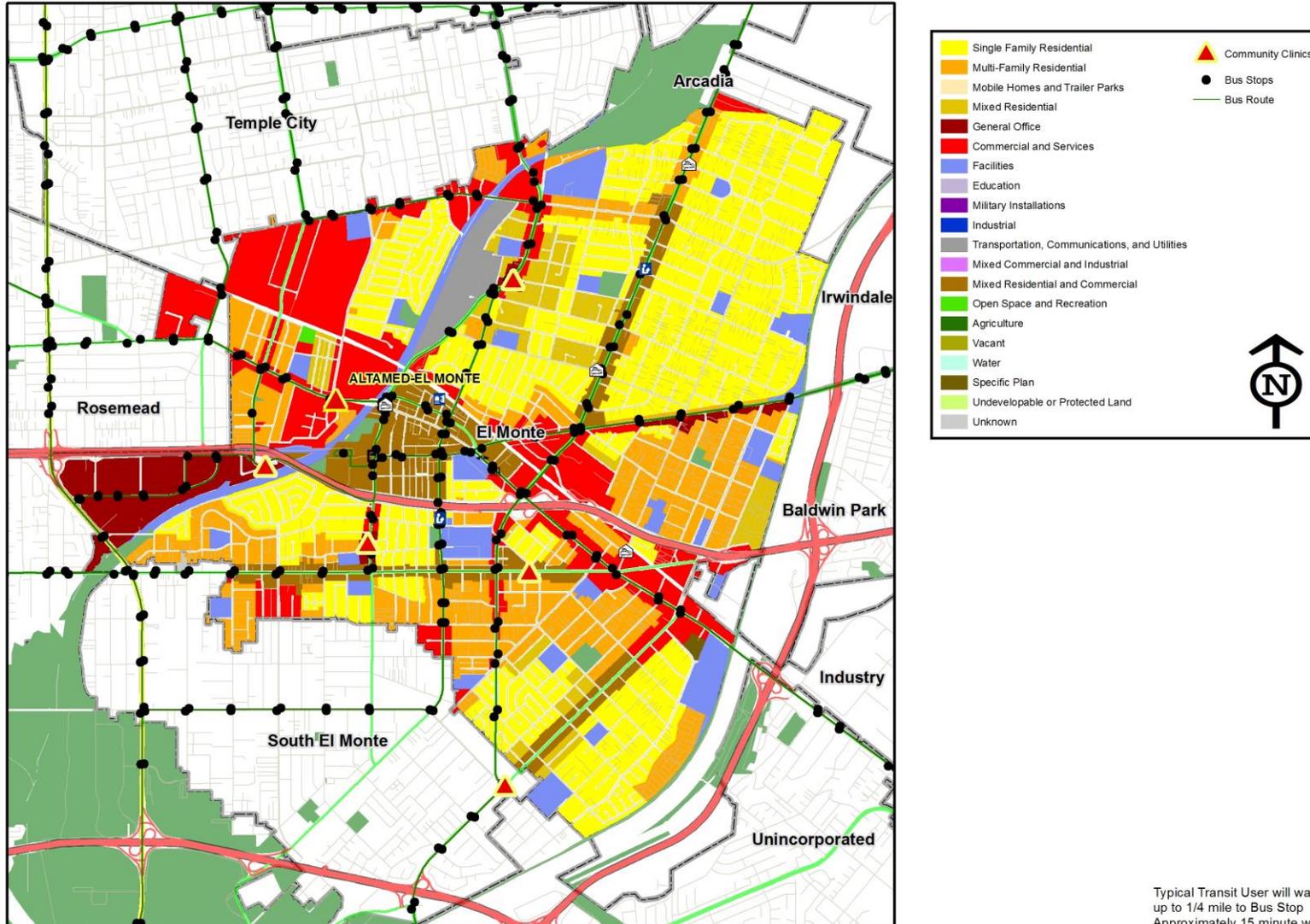
Travel time to hospital 15-20 minutes walk and add 20 -30 minutes bus trip.

El Monte Zoning Map



Predominant industrial zoning and other alike uses, make foot traffic and bicycling unattractive, near most community clinics. There are residential and multi-family uses near most clinics. All have good access to public transit access, but bus schedules and disable access may prove challenging for some patients.

El Monte General Plan Map



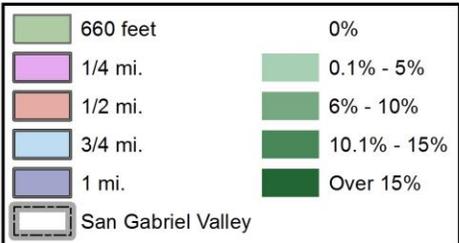
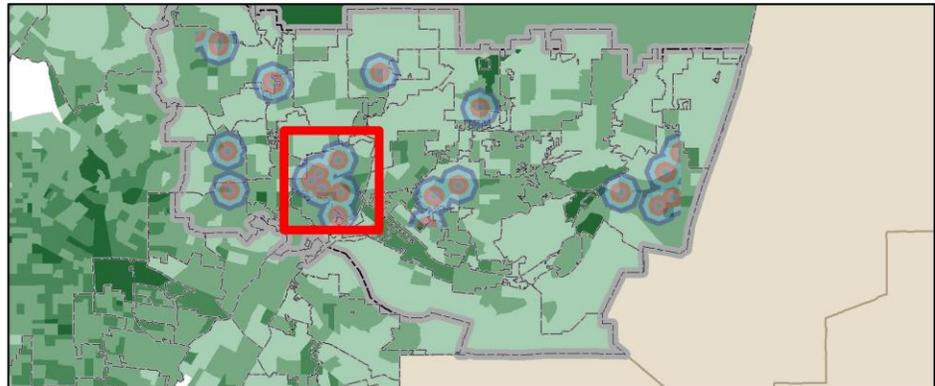
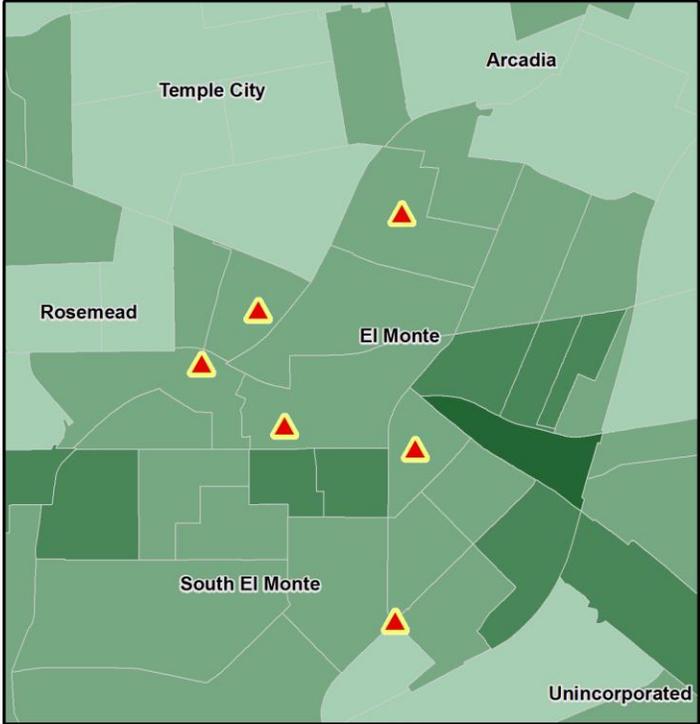
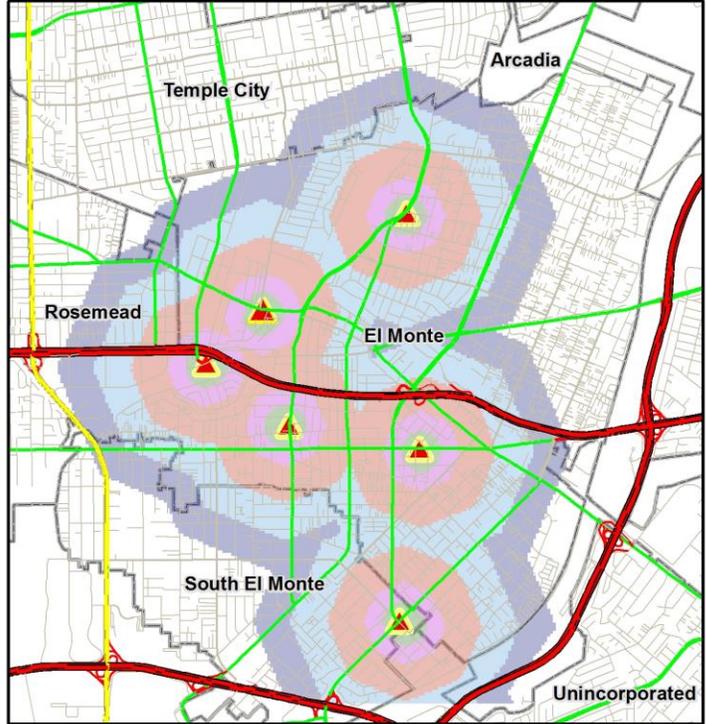
Typical Transit User will walk
up to 1/4 mile to Bus Stop
Approximately 15 minute walk.

Although many of the land use remain the same with the 2011 General Plan, there are some very promising transportation treatments that will make walking and bicycling better for El Monte residents.

Some major obstacles are the wide streets, will be treated with “roadway diets” to lessen the cross street travel distance.

More bicycle lanes are proposed on a few major thoroughfares.

**El Monte Walkability to Clinic and Poverty Rate
2011 ACS (Census Tracts)**



There are few areas in El Monte that do adequately reach disadvantaged communities. However, Baldwin Park, Irwindale, Industry, and part of Pomona need to better reach disadvantage communities.

Poverty Index

