Planning Tools: Holistic Needs and Opportunities Assessment

Better Buildings Summit

May 10, 2016

9:45-11:00 AM

Today's Presenters

Erin Christensen Ishizaki
Mithun

Tabitha Harrison
Tenderloin Neighborhood Development Corporation

Holistic Assessments, Planning, and Design

Erin Christensen Ishizaki

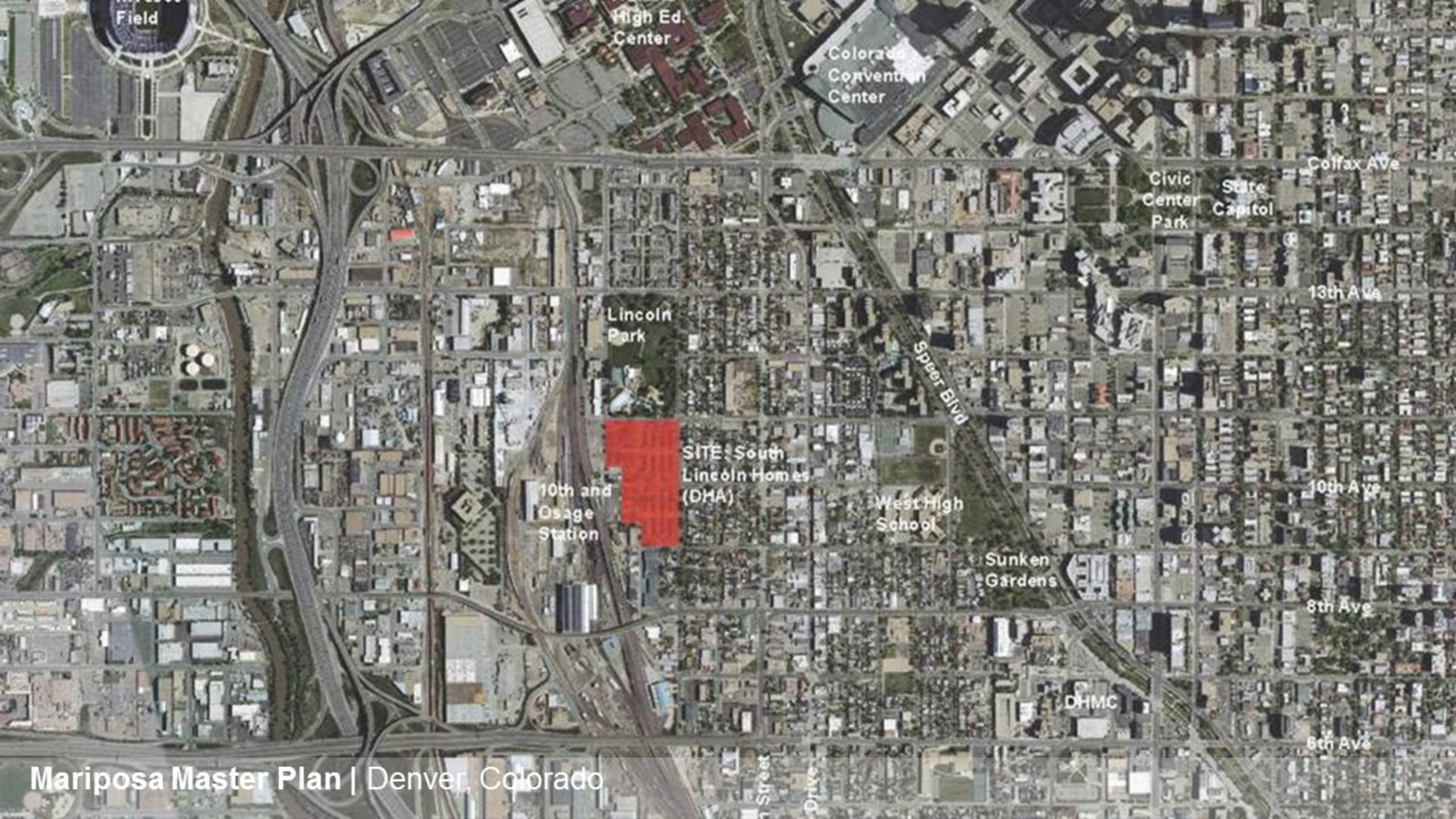
HOLISTIC

ASSESSMENTS, PLANNING & DESIGN

ERIN CHRISTENSEN ISHIZAKI, AIA, LEED ND AP
PARTNER, MITHUN

Broadway Family Apartments | San Francisco, California

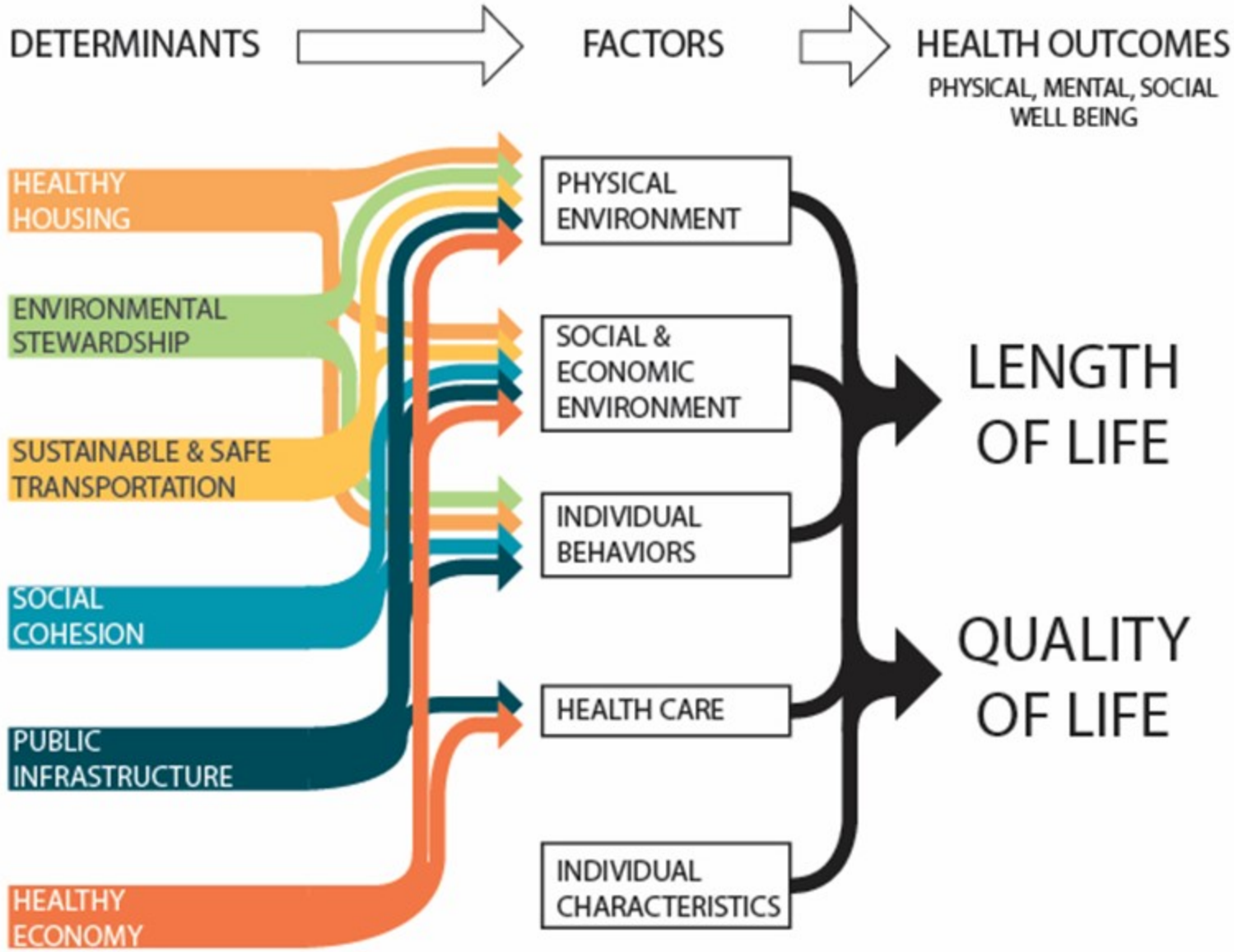
THE GOOD LIFE: A HOLISTIC VIEW

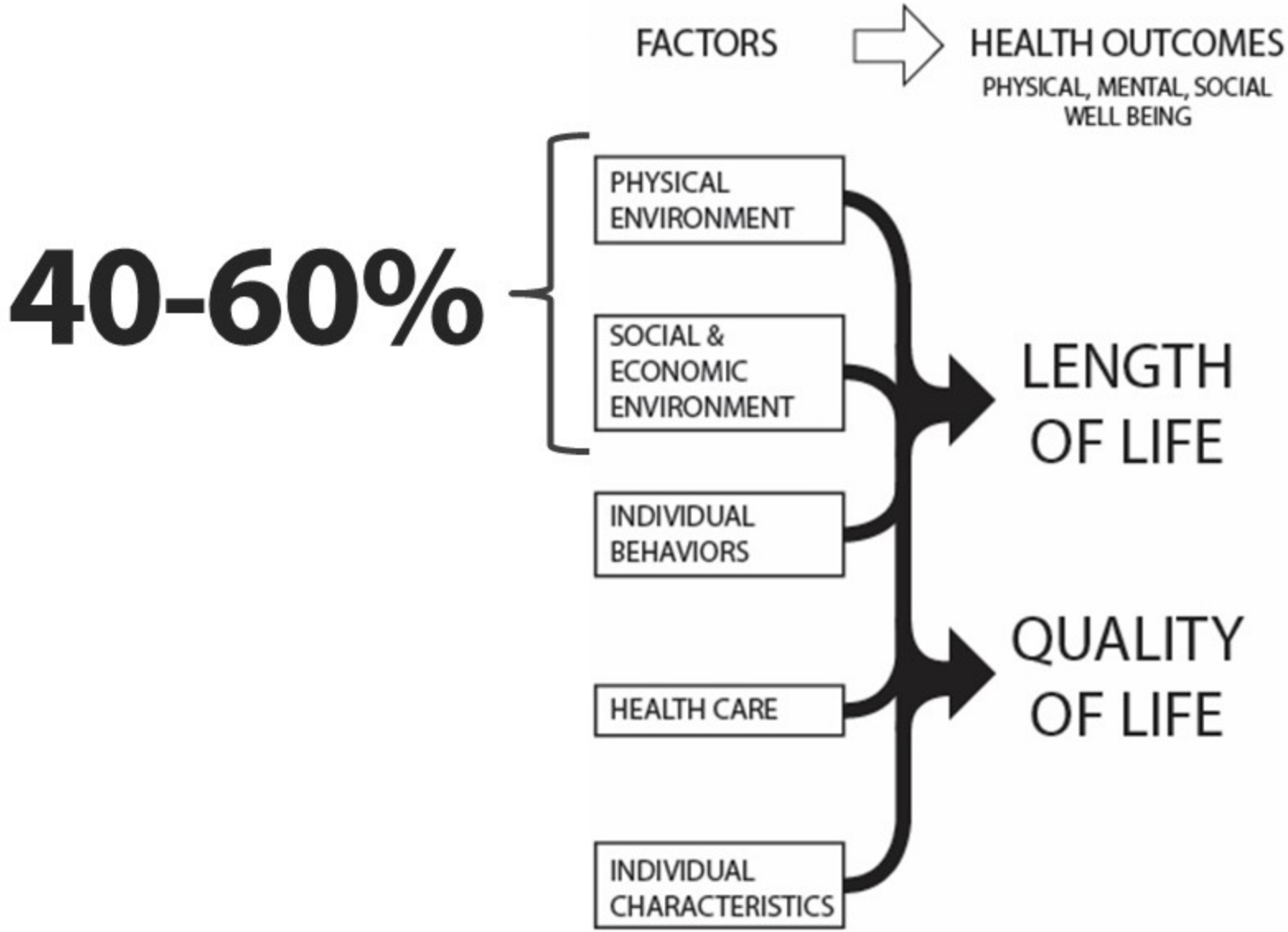


Mariposa Master Plan | Denver, Colorado

"As we talked to residents, we learned that having new housing would be great, but alone it wouldn't improve the quality of their lives or create a path to sustainability…"

Ismael Guerrero, DHA Executive Director


DETERMINANTS
FACTORS
HEALTH OUTCOMES
PHYSICAL, MENTAL, SOCIAL WELL BEING
HEALTHY HOUSING
ENVIRONMENTAL STEWARDSHIP
SUSTAINABLE & SAFE TRANSPORTATION
SOCIAL COHESION
PUBLIC INFRASTRUCTURE
HEALTHY ECONOMY
PHYSICAL ENVIRONMENT
SOCIAL & ECONOMIC ENVIRONMENT
INDIVIDUAL BEHAVIORS
HEALTH CARE
INDIVIDUAL CHARACTERISTICS
LENGTH OF LIFE
QUALITY OF LIFE


FACTORS
HEALTH OUTCOMES
PHYSICAL, MENTAL, SOCIAL WELL BEING
40-60%
PHYSICAL ENVIRONMENT
SOCIAL & ECONOMIC ENVIRONMENT
INDIVIDUAL BEHAVIORS
HEALTH CARE
INDIVIDUAL CHARACTERISTICS
LENGTH OF LIFE
QUALITY OF LIFE

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COMMUNITY ENGAGEMENT AND NEEDS ASSESSMENT

- CulturalAudit™ and use of Health Impact Assessment
- Multi-stakeholder Advisory Committee
- Community Design Workshop (Charrette) Process
- Resident surveys, specialized engagement with youth, elderly, cultural groups

PEQI audit results at South Lincoln Homes

PEQI Intersection and Street Scores

0 - 20	Environment not suitable for pedestrians
21 - 40	Poor pedestrian conditions
41 - 60	Basic pedestrian conditions
61 - 80	Reasonable pedestrian conditions
81 - 100	Ideal pedestrian conditions

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	INDICATOR	MARIPOSA PRE-REDEVELOPMENT BASELINE
HOUSING	PERCENT OF POPULATION LIVING BELOW POVERTY LEVEL	37.05%
	PERCENT OF HOUSEHOLD INCOME SPENT ON HOUSING	12.75%
	HOUSING INDOOR ENVIRONMENT (AIR QUALITY, TEMPERATURE, HUMIDITY)	n/a
TRANSPORTATION	AVERAGE TRANSIT COMMUTE TIME IN MINUTES	24.60
	COST OF TRANSPORTATION AND HOUSING AS % OF AVERAGE INCOME	26.18%
	NUMBER OF TRAFFIC INJURIES/ COLLISIONS/ FATALITIES	Data Collection in Progress
ENVIRONMENT	PERCENT OF RESIDENTS WITH ACCESS TO OPEN SPACE/ NATURE WITHIN NEIGHBO	26%
	AIR QUALITY - PARTICULATE MATTER	n/a
	VMT PER CAPITA PER DAY	24.4
SOCIAL COHESION	PROPORTION OF POPULATION WITHIN 1/2 MILE TO COMMUNITY GATHERING SPA	100%
	TOTAL CRIME RATE PER 1,000 PEOPLE	247.9
	PERCENTAGE OF POPULATION WHO FEEL SAFE ALONE AT NIGHT IN NEIGHBORHOC	49%
PUBLIC INFRASTRUCTURE	PROPORTION OF POPULATION WITHIN 1/2 MILE KEY RETAIL	100%
	NEIGHBORHOOD SCHOOL PERFORMANCE	n/a
	% PERSONS AGE 25+ WITH LESS THAN 12TH GRADE EDUCATION	38.57%
	# OF HEALTHY FOOD OUTLETS WITHIN 1/2 MILE OF NEIGHBORHOOD	0
ECONOMY	UNEMPLOYMENT RATE	10.63%
	AVERAGE ANNUAL INCOME COMPARED TO THE SELF-SUFFICIENCY WAGE	1.04 / 1.0
	NUMBER OF BUSINESSES AND NUMBER OF JOBS/SQ MI. IN NEIGHBORHOOD	Data Collection in Progress

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PRE-REDEVELOPMENT HEALTH BASELINE AND PRIORITY ISSUES

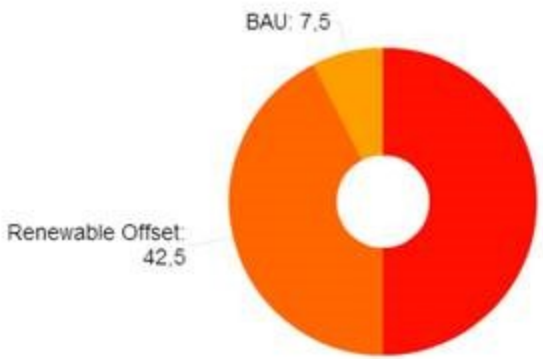
- **Increase Physical Activity**: 55% of community is obese or overweight
- **Increase opportunity for healthy eating:** Only 13% have 5 or more servings of high fiber food
- **Improve ped & bike opportunities**: Only 28% exercise aerobically 3 times a week

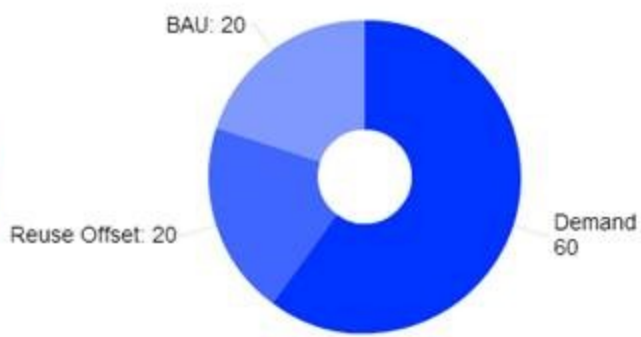
- **Improve mobility and traffic safety:** 65% do not have any type of motor vehicle; 54% take the bus
- **Better access to health care**: 41% are not Denver Health patients and 30% don't have a medical home
- **Reduce crime:** 51% don't feel safe alone at night in the neighborhood – violence, gangs, drugs

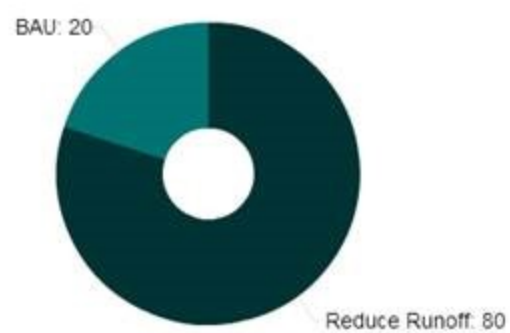
HDMT Healthy City Elements	Community Priority Issues	Plan Response
Healthy Housing	HH.4: Healthy, quality housing Median Income is $38,000 compared to $55,000 citywide.	800-900 High Performance Units
Sustainable Transportation	ST.2: Affordable, accessible public transportation options 67% of residents say transportation is an obstacle to employment.	Coordinated Shuttles + Bike Infrastructure
Social Cohesion	SC.2: Promote personal safety Neighborhood crime rate is 15.2 per 1000 compared to 5.7 per 1000 citywide.	Active Streets + Open Spaces
Environment	ES.3: Affordable, high-quality food access Only 13% have recommended servings of high fiber food.	New Community Gardens
Healthy Economy	HE.2: Increase jobs and equity in income and wealth 75% of residents are unemployed.	Job Training Spaces + Partners
Public Infrastructure	PI.5: Park, open space, rec access 55% of residents are obese or overweight, 77% have high blood pressure.	Variety of Open Spaces + Access/Linkage to Spaces

ENVIRONMENTAL SUSTAINABILITY

- LEED-ND Gold & Enterprise Green Communities
- CO_2 – capped at 8 lbs / SF
- Energy: 50% demand reduction / 85% renewables
- Potable Water: 40% demand reduction / graywater pilot
- Stormwater: 80% runoff reduction / quality treatment







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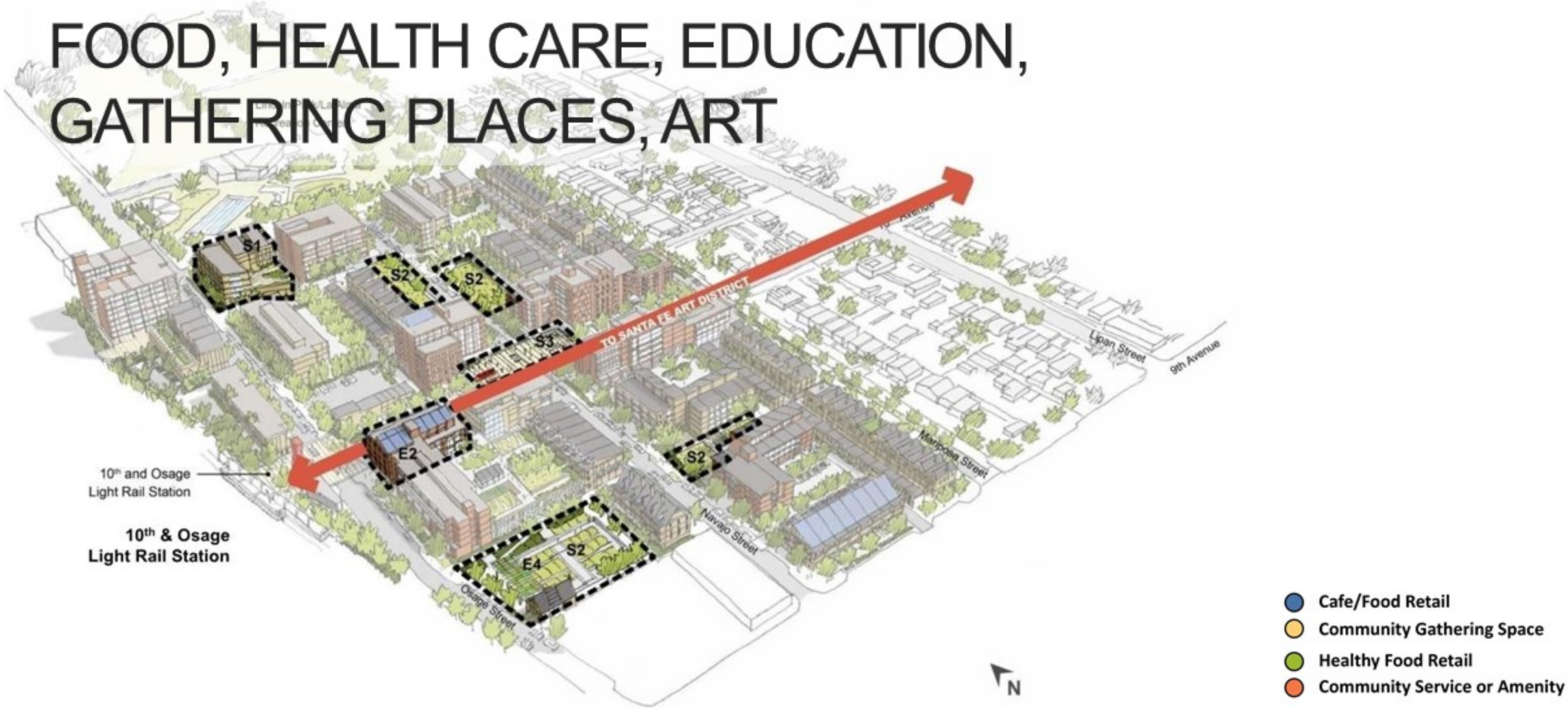
GET CONNECTED

FOOD, HEALTH CARE, EDUCATION, GATHERING PLACES, ART



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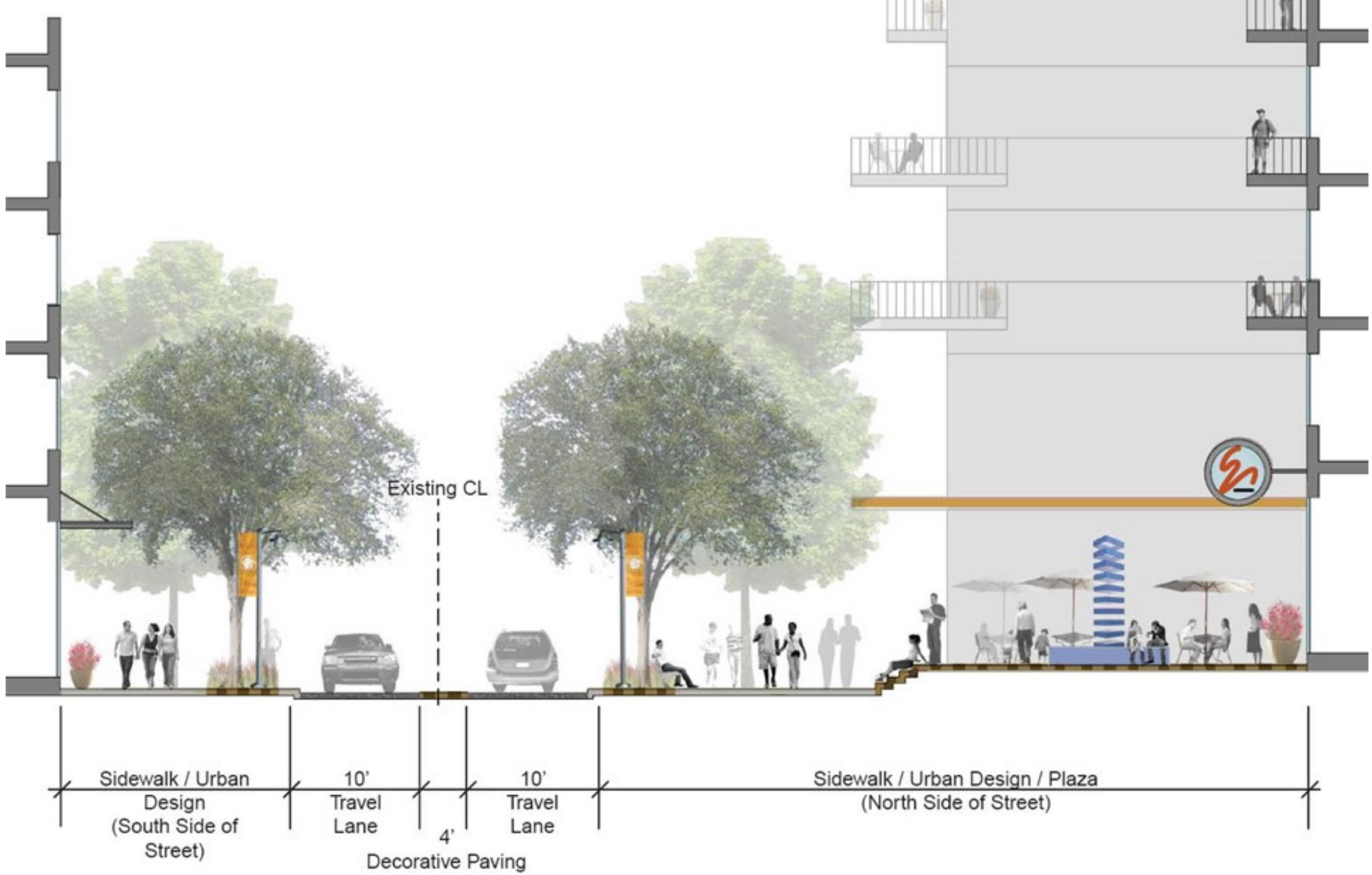

Existing CL
Sidewalk / Urban Design (South Side of Street)
10' Travel Lane
10' Travel Lane
4' Decorative Paving
Sidewalk / Urban Design / Plaza (North Side of Street)

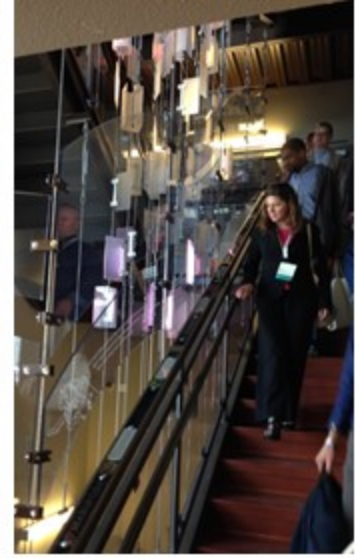
HARDWARE & SOFTWARE

Enhancements to design

- Active Design Staircase
- Community Gardens
- Greenhouse
- Outdoor Adult Exercise Equipment
- Composting
- Accessibility to bicycles

Programming for behavior change

- Health Navigator
- Prevention Training Center Healthy
- Cooking Classes
- In-Unit Home Energy Monitors



Mariposa 2012 Indicator Report Card

	INDICATOR	CITY OF DENVER BASELINE	MARIPOSA PRE-REDEVELOPMENT BASELINE	MARIPOSA STATUS UP-DATE	MARIPOSA TREND
HOUSING	PERCENT OF POPULATION LIVING BELOW POVERTY LEVEL	14.29%	37.05%	45.05%	▲
	PERCENT OF HOUSEHOLD INCOME SPENT ON HOUSING	28.1%	12.75%	13.44%	▲
	HOUSING INDOOR ENVIRONMENT (AIR QUALITY, TEMPERATURE, HUMIDITY)	n/a	n/a	Monitoring recommended	
TRANSPOR-TATION	AVERAGE TRANSIT COMMUTE TIME IN MINUTES	27	24.60	20.05	▼
	COST OF TRANSPORTATION AND HOUSING AS % OF AVERAGE INCOME	47.4%	26.18%	29.83%	▼
	NUMBER OF TRAFFIC INJURIES/ COLLISIONS/ FATALITIES	n/a	Data Collection in Progress	Data Collection in Progress	
ENVIRONMENT	PERCENT OF RESIDENTS WITH ACCESS TO OPEN SPACE/ NATURE WITHIN NEIGHBORHOOD	n/a	26%	32%	▲
	AIR QUALITY - PARTICULATE MATTER	n/a	n/a	<2.5 mm	
	VMT PER CAPITA PER DAY	33.6	24.4	14.7	▼
SOCIAL COHESION	PROPORTION OF POPULATION WITHIN 1/2 MILE TO COMMUNITY GATHERING SPACES	n/a	100%	100%	—
	TOTAL CRIME RATE PER 1,000 PEOPLE	68.62	247.9	157	▼
	PERCENTAGE OF POPULATION WHO FEEL SAFE ALONE AT NIGHT IN NEIGHBORHOOD	n/a	49%	Recommended survey	
PUBLIC INFRASTRUCTURE	PROPORTION OF POPULATION WITHIN 1/2 MILE KEY RETAIL	60 Walkscore (Update 2012)	100%	87 Walkscore	—
	NEIGHBORHOOD SCHOOL PERFORMANCE	n/a	n/a	30.8 Greenlee Elementary 38 Martinez Middle School	
	% PERSONS AGE 25+ WITH LESS THAN 12TH GRADE EDUCATION	21.11%	38.57%	n/a	
	# OF HEALTHY FOOD OUTLETS WITHIN 1/2 MILE OF NEIGHBORHOOD	n/a	0	1	▲
ECONOMY	UNEMPLOYMENT RATE	n/a	10.63%	15.2%	▲
	AVERAGE ANNUAL INCOME COMPARED TO THE SELF-SUFFICIENCY WAGE	1.49 / 1.0	1.04 / 1.0	1.06 / 1.0	▲
	NUMBER OF BUSINESSES AND NUMBER OF JOBS/SQ MI. IN NEIGHBORHOOD	n/a	Data Collection in Progress	551/ 308,205	

Blue text represents an indicator that was newly established in 2012.

Mariposa Master Plan | Denver, Colorado

Mariposa Master Plan | Denver, Colorado

PEOPLE

PERFORMANCE

PLACE

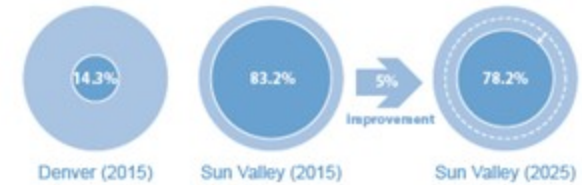
PEOPLE

ASSESSMENT TO UNCOVER USER NEEDS AND OPPORTUNITIES FOR HEALTH

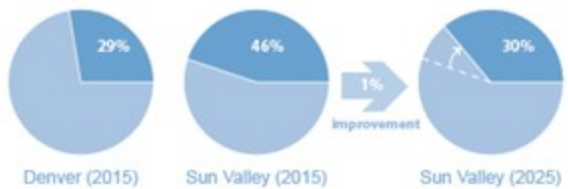
PRIORITIZE NEEDS

Sun Valley Redevelopment Plan | Denver, Colorado

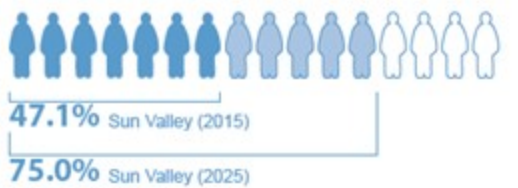
Measuring Success



Percent of Population Living Below Poverty Level



Cost of Transportation and Housing as a Percentage of Income



Percentage of Population Who Feel Safe Alone at Night in Neighborhood

	SV MP Baseline	City of Denver Baseline	Draft MP Target by 2025	Data Source
Neighborhood School Performance*	38.2	54.4	10% improvment	Colorado Department of Education
Percent of persons age 25+ with less than 12th grade education*	33.6%	21.10%	5% improvment	—
Number of healthy food outlets within 1/2 mile of neighborhood*	0-3	—	50% improvement or 90% of units have access	Geospatial mapping and anlysis performed by Mithun (verify)
Percent of population living below poverty level*	83.20%	14.29%	5% improvement	www.census.gov
Unemployment rate, including by race*	23.60%	4.20%	5% improvement	www.factfinder.census.gov
Average annual income as a percentage of the self-sufficient wage*	31%	149%	5% improvement	www.selfsufficiencystandard.org www.colponline.org
Cost of transportation and housing as a percentage of income*	29%	46%	30%	http://www.locationaffordability.info/lai.aspx
Percentage of population who feel safe alone at night in neighborhood*	47.10%	—	75%	DHA 2014 SV Resident Survey
Total crime rate per 1,000 people	267	66.4	100	Denver Police Department
Average commute time in minutes (all modes: transit and vehicular)	36.2	27	10% improvement	American Community Survey / www.ASAPfehrandpeers.com
Percent stormwater infiltrated in district**	—	—	75%	Baseline may be available from CityCraft report
% Urban tree canopy**	—	—	40%	Baseline may be available from CityCraft report
% Demand reduction for potable water**	—	—	50%	—
% Waste water diverted from sewer**	—	—	100%	—
Percentage of waste diverted from landfill/ recycled withing the district**	—	—	75%	—

DRAFT: For internal coordination only, not for publication or distribution.

	SV MP Baseline	City of Denver Baseline	Draft MP Target by 2025	Data Source
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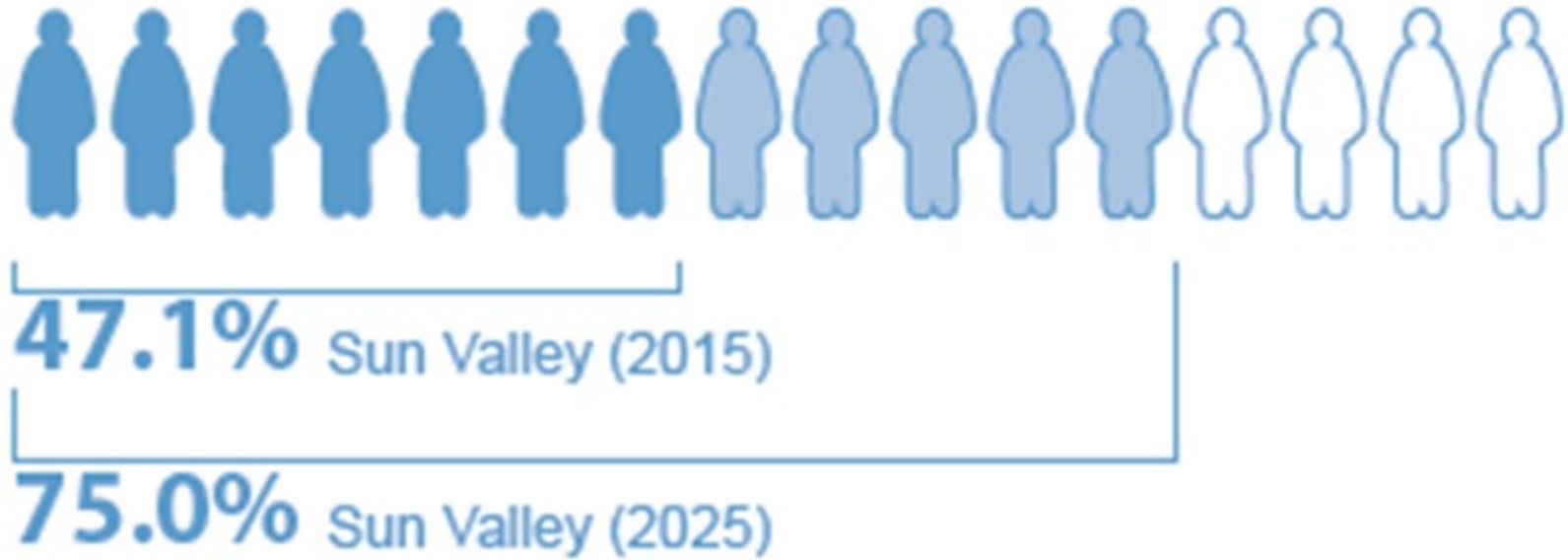
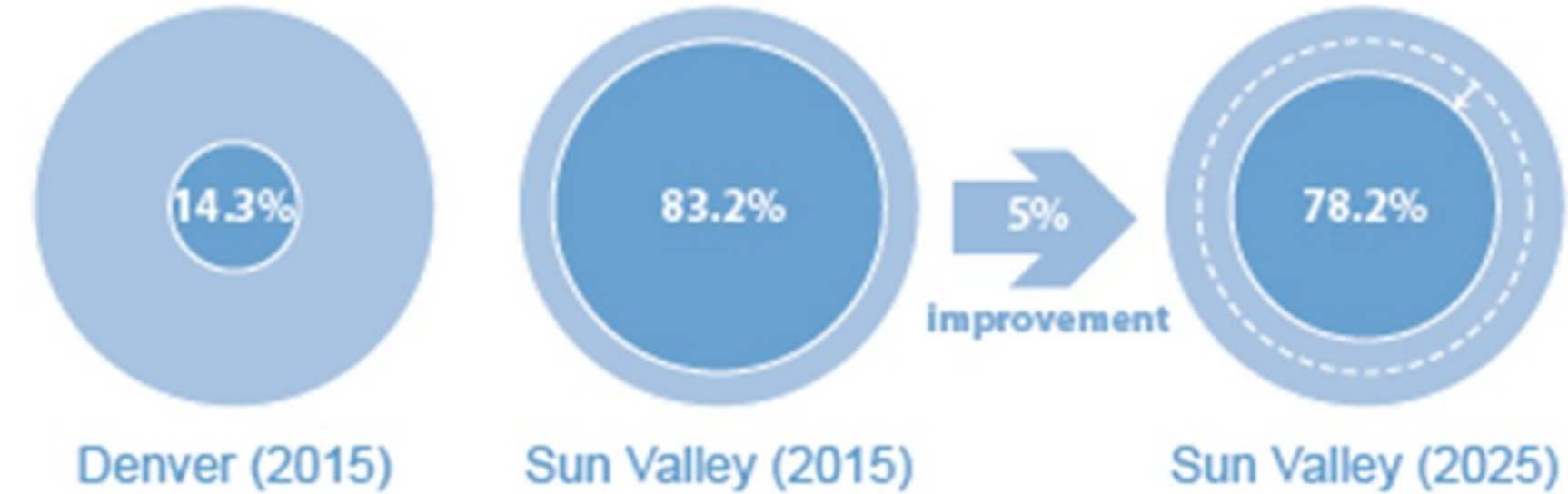


Percentage of Population Who Feel Safe Alone at Night in Neighborhood


14.3%
83.2%
5%
improvement
78.2%
Denver (2015)
Sun Valley (2015)
Sun Valley (2025)
Percent of Population Living Below Poverty Level

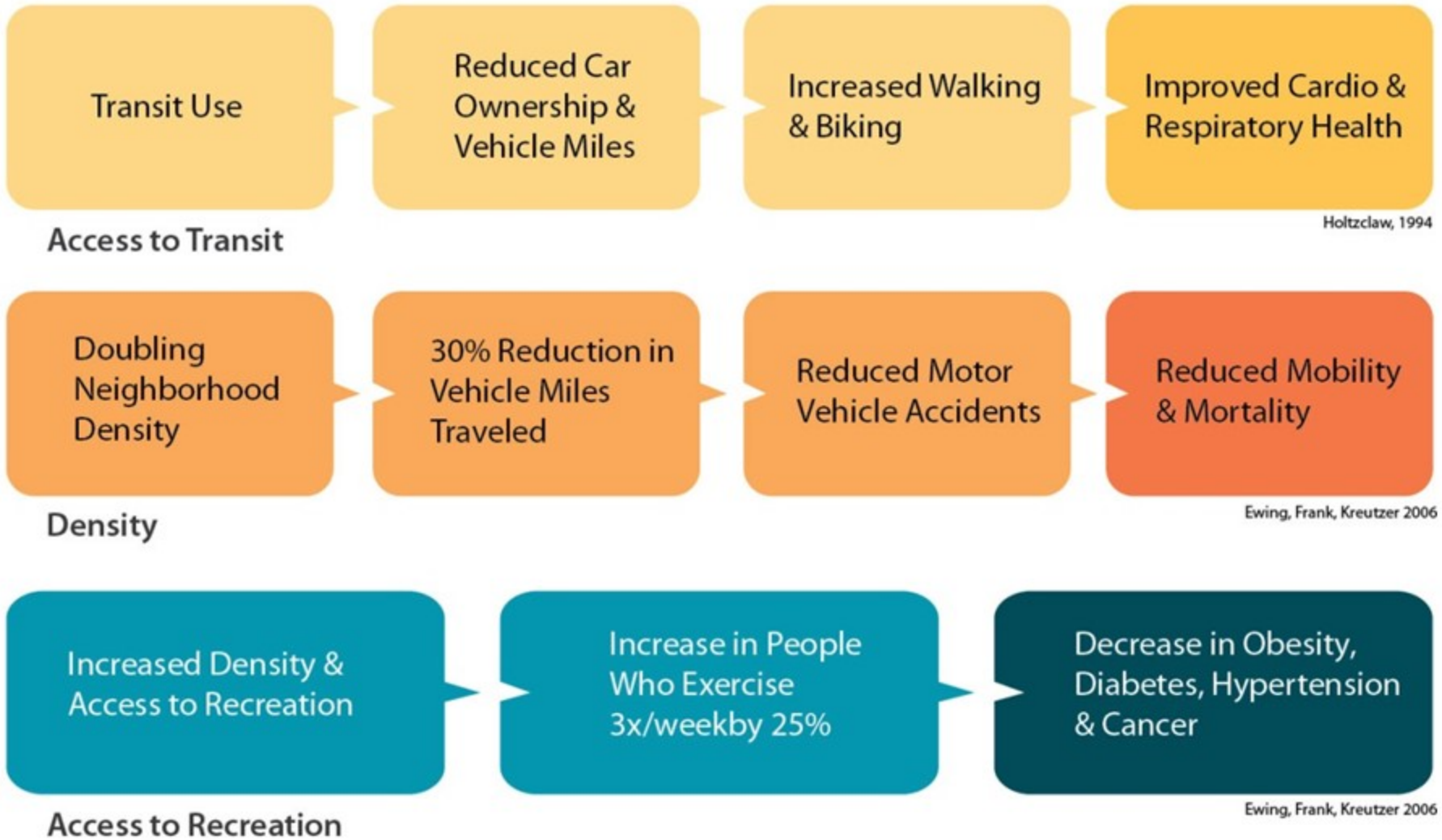
Sun Valley Redevelopment Plan | Denver, Colorado

ASSESSMENT METRICS: QUESTIONS TO ASK

1. Relevant to this context
2. Measurable and trackable data
3. Leads to strategies and actions
4. Influences plans and programs

5. One Metric **Many** Benefits

PERFORMANCE


Transit Use
Reduced Car Ownership & Vehicle Miles
Increased Walking & Biking
Improved Cardio & Respiratory Health
Holtzclaw, 1994
Access to Transit
Doubling Neighborhood Density
30% Reduction in Vehicle Miles Traveled
Reduced Motor Vehicle Accidents
Reduced Mobility & Mortality
Ewing, Frank, Kreutzer 2006
Density
Increased Density & Access to Recreation
Increase in People Who Exercise 3x/weekby 25%
Decrease in Obesity, Diabetes, Hypertension & Cancer
Ewing, Frank, Kreutzer 2006
Access to Recreation

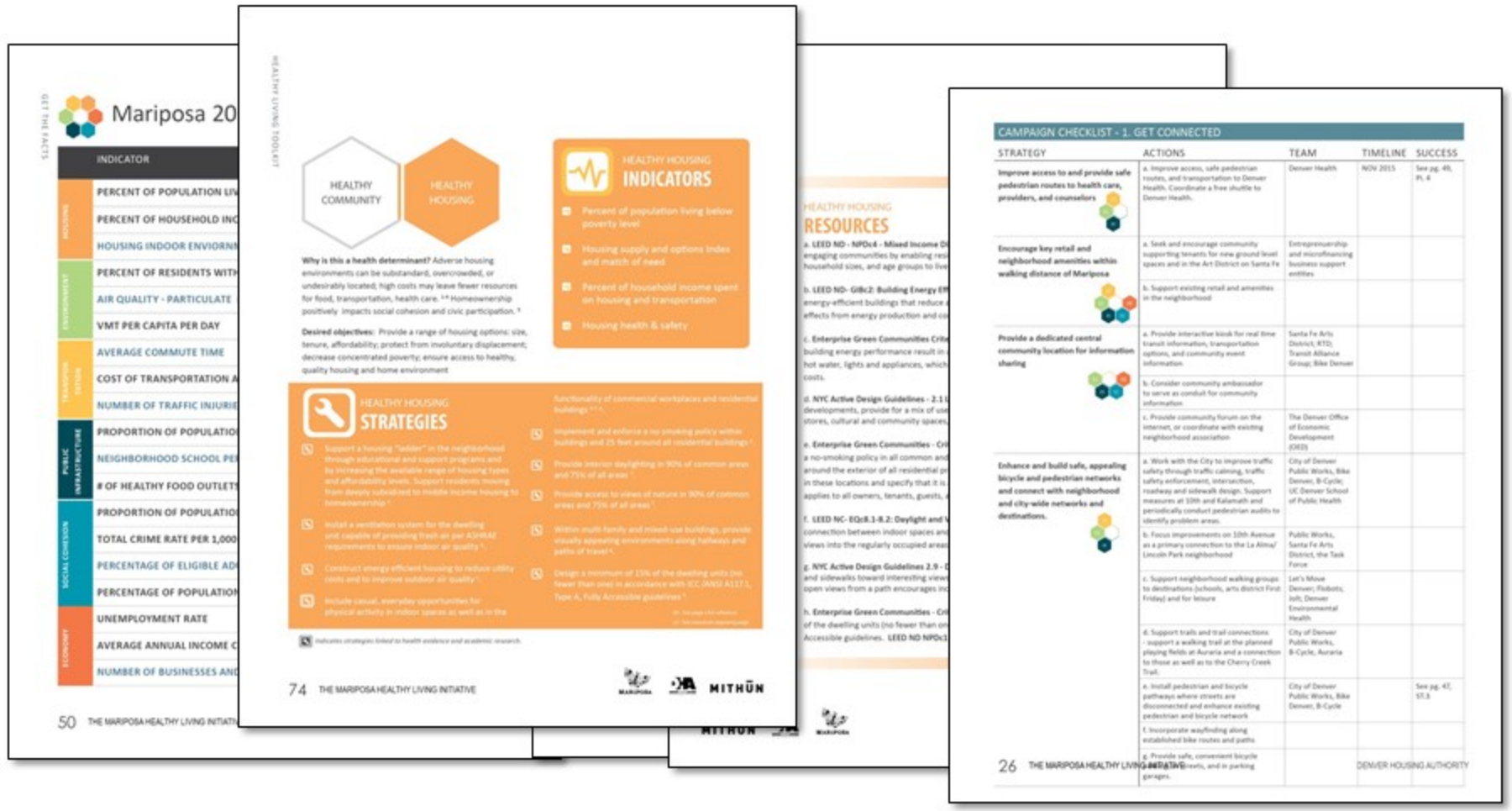
Ten Principles for
Building Healthy Places
Urban Land Institute
ACTIVE
DESIGN
GUIDELINES
PROMOTING PHYSICAL ACTIVITY
AND HEALTH IN DESIGN
BUILDING HEALTHY PLACES
TOOLKIT
STRATEGIES FOR ENHANCING HEALTH
IN THE BUILT ENVIRONMENT
Urban Land Institute
MARIPOSA
HEALTHY LIVING
TOOLKIT
HEALTHY HOUSING
SUSTAINABLE, SAFE
ENVIRONMENTAL ST
SOCIAL COHESION
PUBLIC INFRASTRUC
HEALTHY ECONOMY
10
THE
WELL
BUILDING STANDARD®
2015
ENTERPRISE
GREEN
COMMUNITIES
CRITERIA

MARIPOSA

HEALTHY LIVING TOOLKIT

Mariposa Healthy Living Toolkit

USING THE TOOLKIT



Mariposa Healthy Living Toolkit

HEALTHY HOUSING
STRATEGIES

- Support a housing "ladder" in the neighborhood through educational and support programs and by increasing the available range of housing types and affordability levels. Support residents moving from deeply subsidized to middle income housing to homeownership [a].
- Install a ventilation system for the dwelling unit capable of providing fresh air per ASHRAE requirements to ensure indoor air quality [b].
- Construct energy efficient housing to reduce utility costs and to improve outdoor air quality [c].
- Include casual, everyday opportunities for physical activity in indoor spaces as well as in the functionality of commercial workplaces and residential buildings [6-7, d].
- Implement and enforce a no smoking policy within buildings and 25 feet around all residential buildings [e].
- Provide interior daylighting in 90% of common areas and 75% of all areas [f].
- Provide access to views of nature in 90% of common areas and 75% of all areas [f].
- Within multi-family and mixed-use buildings, provide visually appealing environments along hallways and paths of travel [g].
- Design a minimum of 15% of the dwelling units (no fewer than one) in accordance with ICC /ANSI A117.1, Type A, Fully Accessible guidelines [h].

(#) - See page x for reference

(x) - See resources opposing page

Indicates strategies linked to health evidence and academic research.

Menlo Park Gateway | Menlo Park, California

PLACE
TRANSFORM COMMUNITIES,
TRANSFORM THE INDUSTRY.
EVALUATE, COMMUNICATE, IMPROVE!

Hunters View (before) | San Francisco, California

Hunters View | San Francisco, California

Hunters View | San Francisco, California

PEOPLE

PERFORMANCE

PLACE

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keywords: health, Mariposa

MITHŪN

Seattle | San Francisco

Portfolio-Wide Energy Benchmarking: Tools, Challenges, and Benefits

Tabitha Harrison

TENDERLOIN NEIGHBORHOOD DEVELOPMENT CORPORATION

Portfolio-Wide Energy Benchmarking: Tools, Challenges, and Benefits

TENDERLOIN NEIGHBORHOOD DEVELOPMENT

© Tenderloin Neighborhood Development Corporation, 2015.

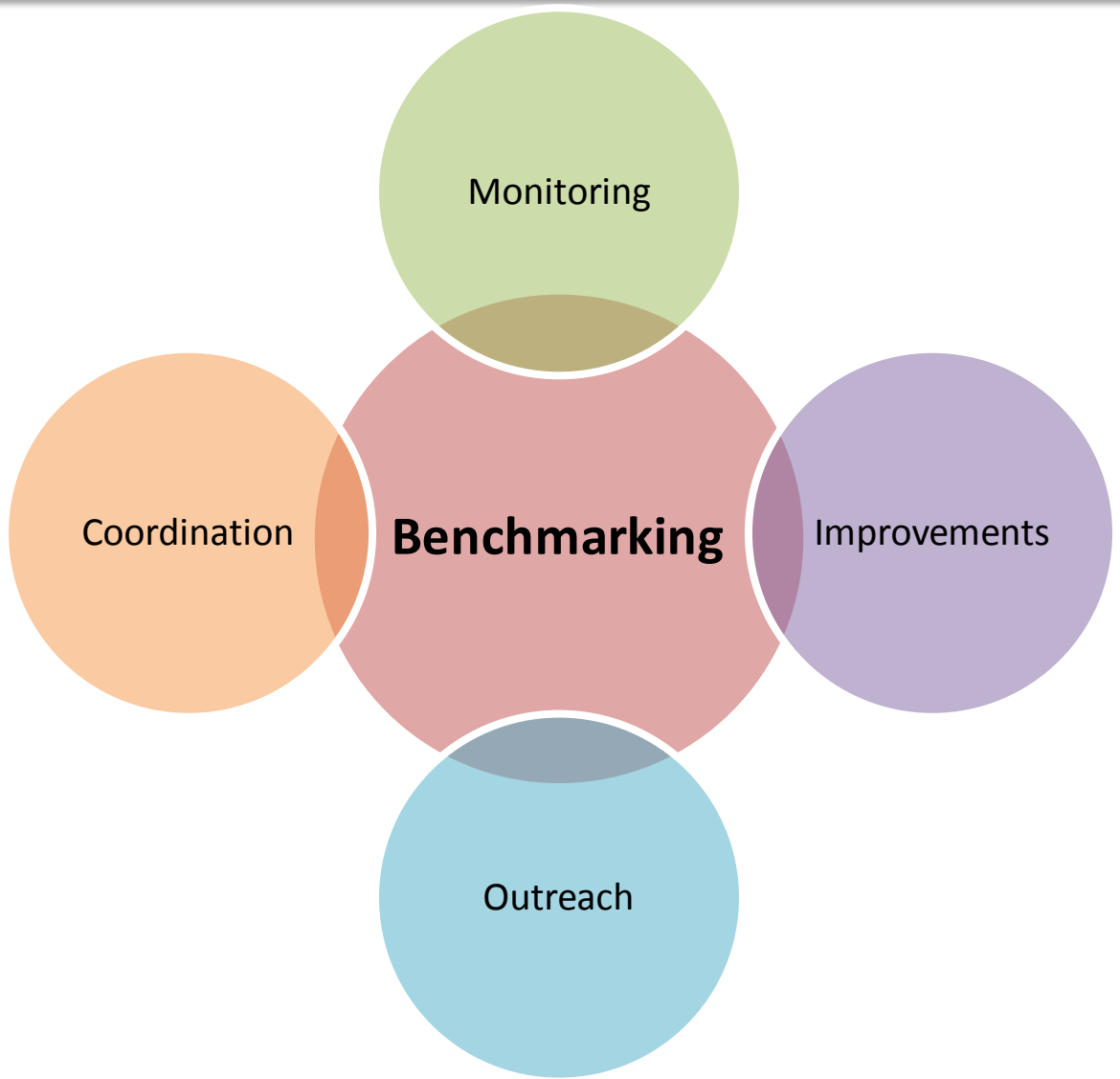
TENDERLOIN NEIGHBORHOOD DEVELOPMENT

Sustainability at TNDC

Monitoring	• Monthly Utility Analysis • Water Audits, Leak Detection
Improvements	• Lighting Improvements & Assessments • Solar Assessments & Repair/Replacement
Outreach	• Green Committee • Staff Events & Newsletter • Tenant Education Sessions
Coordination	• Housing Development • Asset Management • Tenant Services

TENDERLOIN NEIGHBORHOOD DEVELOPMENT

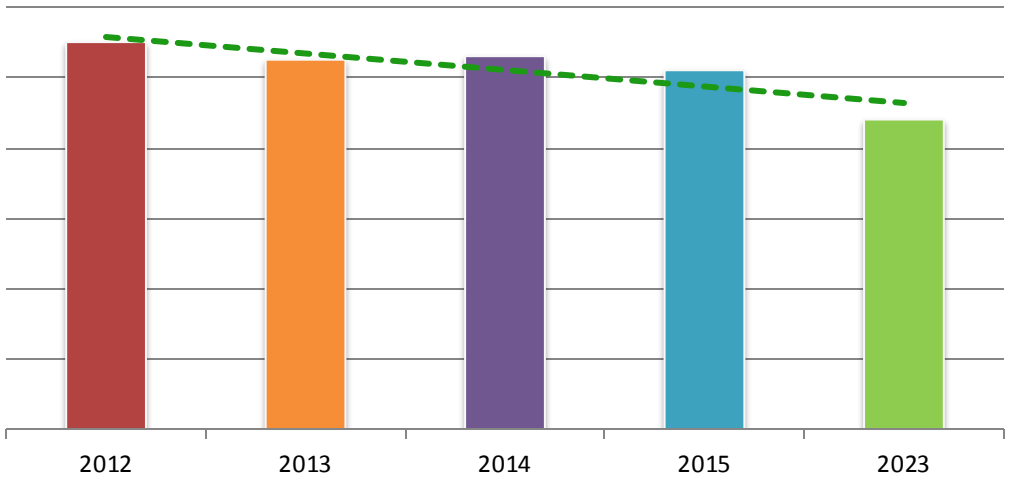
Sustainability at TNDC



- What is it?
  - Comparing apples to apples
  - Normalized data
    - “Intensity” (per-square-foot)
    - Weather
- Types
  - Building-level
    - Compare to peers* and self
  - Portfolio-level
    - Holistic
    - Granular

* Dependent on benchmarking platform. Portfolio Manager uses CBECS.

- Why should I care?
  - Better Buildings Challenge
  - Support goals with data
  - Understand where you are (and where you've been)
  - Develop an improvement map, spot priorities and trends



TENDERLOIN NEIGHBORHOOD DEVELOPMENT

Example: Electricity Benchmarking

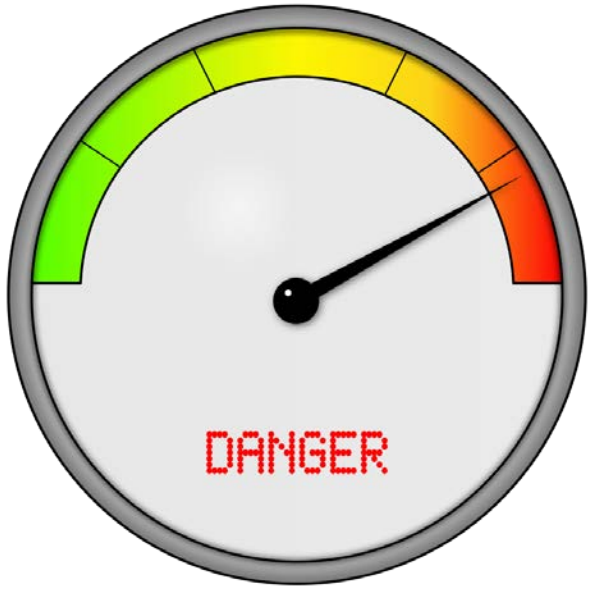
TNDC Benchmarking_Annual Electricity Use

Date Generated: 04/26/2016 07:49 PM EDT

Number of properties in report: 30

Property Id	Property Name	Year Built	Year Ending	Property GFA - EPA Calculated (Buildings) (ft²)	Electricity Use Intensity (kBtu/SF)	Electricity Use - Grid Purchase (kWh)
4371761	Civic Center Residence	1924	12/31/2015	58,608	40.75	699,959.90
4371748	Ambassador	1910	12/31/2015	53,909	29.27	462,392.40
4371765	Dalt Hotel	1919	12/31/2015	65,033	26.81	511,050.50
4371750	Polk St.	2008	12/31/2015	74,065	26.29	570,669.30
4371772	Maria Manor	1914	12/31/2015	46,800	25.24	346,206.90
4371749	West Hotel	1907	12/31/2015	37,687	24.67	272,514.50
4371756	Kelly Cullen Community	1910	12/31/2015	117,898	24.34	840,896.80

- Common Pitfalls
  - Incomplete or incorrect data
  - Time commitment
  - Lack of knowledge or understanding



- Plan first, act later
  - What are your goals?
    - Think long-term
    - Benchmarking is more than a reporting tool
  - Balance detail with clutter
  - Track related information and notes in a master spreadsheet or database

- Collect building data
  - As-built plans
  - Do it once, do it right
- Collect energy data
  - Understand each building's metering configuration
  - Track what you can, even if it's not complete (yet)
  - Explore utility provider offerings, websites

TENDERLOIN NEIGHBORHOOD DEVELOPMENT

Example: Metering Structure

Summary

2 Meters representing the energy consumption of **combination of common and tenant areas** for Pierce St. Apts (a single building).

About Sub-meters

If you have sub-meters to measure energy or water consumption for a specific purpose, and you also have a master meter (which measures total consumption), counting both of those meters would double count your consumption and skew your metrics (e.g., artificially increase your Site Energy Use Intensity). Learn More about configuring meters for performance metrics.

Energy Meters

Select all meters to be included in your Energy metrics. (Hint: All meters should be included unless they are sub-meters.)

	Name Meter ID	Type
☑	PierceG1 19163328	Natural Gas
☑	PierceE1 19163320	Electric - Grid

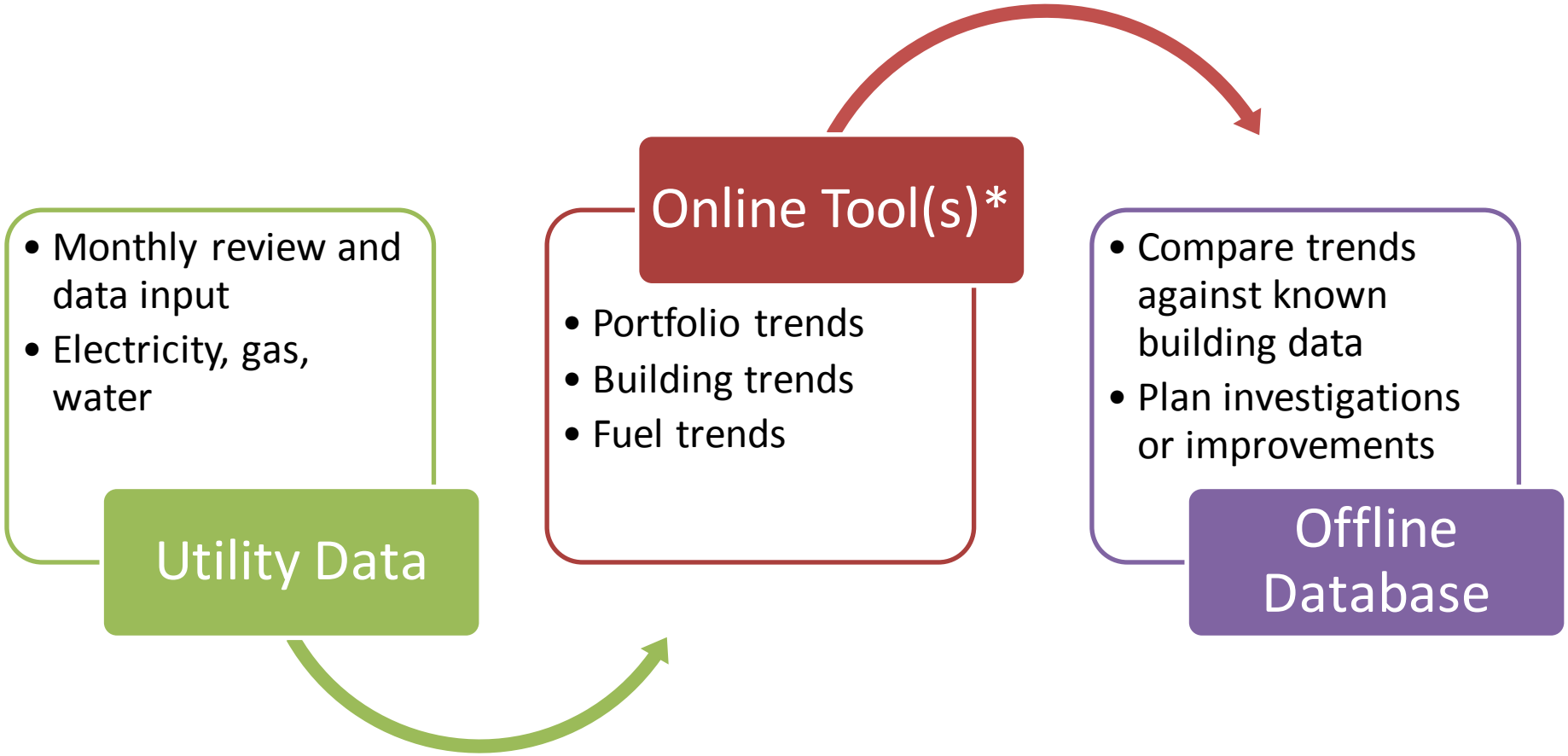
Total of 2 meter(s). Tell us what this represents:

* ○ These meter(s) account for the total energy consumption for Pierce St. Apts (a single building).
○ These meter(s) do not account for the total energy consumption for Pierce St. Apts (a single building).

These meters only account for:

* ○ Common areas only
○ Tenant areas only
◉ Combination of common and tenant areas
  * ☐ Tenant Heating
  ☐ Tenant Cooling
  ☑ Tenant Hot Water
  ☐ Tenant Plug Load/Electricity
  ☑ Common Area Heating
  ☑ Common Area Cooling
  ☑ Common Area Hot Water
  ☑ Common Area Plug Load/Electricity
○ Another configuration

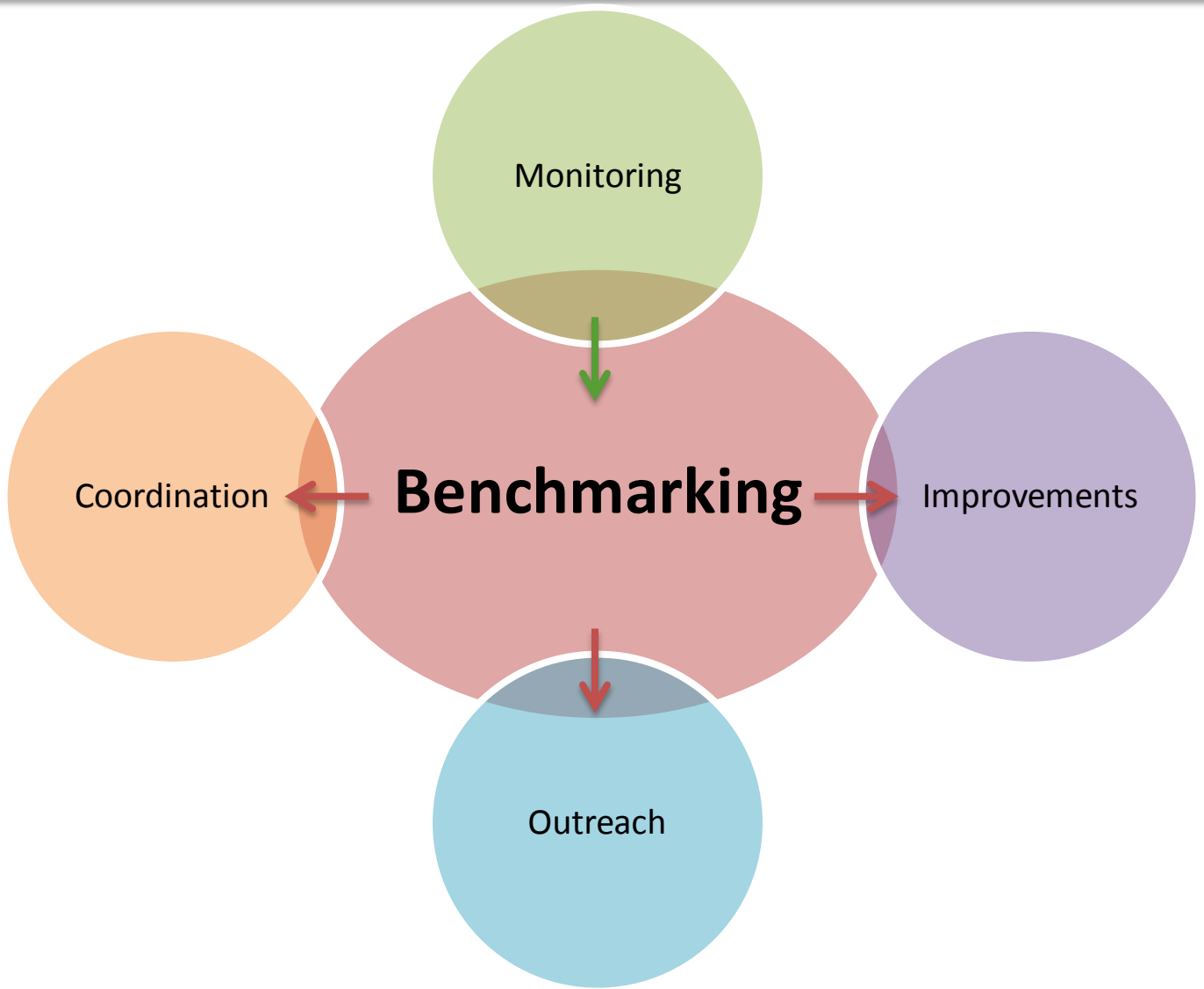
- Be realistic
  - Who will “own” the process?
  - Form internal partnerships to fill building science gaps
  - Consider seeking outside help
- Develop habits
  - Update energy data monthly
  - Establish data-driven program and project management



*Examples: Portfolio Manager, EnergyScoreCards, WegoWise, etc.

TENDERLOIN NEIGHBORHOOD DEVELOPMENT

TNDC Benchmarking



- Use benchmarking data to identify potential capital improvement projects
- Consider grouping similar projects together
  - Economies of scale
  - Reduced project management effort
  - Quicker turnaround

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Use benchmarking data to inform outreach and coordination efforts

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Questions

Discussion