

Sustainable Neighborhood Analysis Protocol

It's a SNAP!



Gary Taipalus
Rocky Mountain Center for Sustainable Urbanism
Fentress Architects





People Realm



Johnson & Johnson Band Aid



Boulder

Hurley looking west near Fulton Avenue



Hurley looking west near Fulton Avenue



Hurley looking west near Fulton Avenue



Hurley looking west near Fulton Avenue



Steve Price Urban Advantage

SUSTAINABLE URBANISM is a walkable and transit-served urbanism integrated with high-performance buildings and high-performance infrastructure.

SOURCE: Douglas Farr,
*Sustainable Urbanism:
Urban Design With Nature*



Definition



Compactness



Completeness



Connectedness



Biophilia

Five Tenets of Sustainable Urbanism

SOURCE: Douglas Farr



Definition

A walkable neighborhood with defined center and edges
A diverse place in terms of building types, people, and uses



Compactness

A neighborhood with the density to create and support viable, long term neighborhood commercial opportunities and public transit



Completeness

A neighborhood where all daily needs can be met by foot and allows activities and relationships to be foot-powered



Connectedness

A neighborhood that provided abundant opportunities to walk & bike, and provides convenient access to good transit service



Biophilia

A neighborhood that encourages interdependence between humans and all other living systems by providing natural environments & systems

Community Design and Health

Connectedness

- Obesity, physical inactivity, CVD
- Air pollution and asthma
- ↑ Car crashes
- ↑ Pedestrian injuries
- Climate change contribution

Compactness

- Water quantity and quality
- Crime

Completeness

- Health disparities

Biophilia

- Mental health impact
- ↓ Social capital
- Food, Nutrition



Defined Center and Edges

A walkable neighborhood with defined center and edges

A diverse place in terms of building types, people, and uses



S.N.A.P.

If the statement is true - 10 points

If the statement is partially true - 3 to 7 points

If the statement is false - 0 points

Center and edges

There is a central place (plaza, park, town square, etc.) where people feel welcome and where they congregate

The neighborhood (or town) center includes offices, retail, residential and mixed-use buildings.

There are a wide variety of businesses within a 10 minute walk (2500 feet) from the neighborhood center.

The neighborhood has the greatest concentration of development (density and intensity) located at the center.

REVISE DESIGN



if less than 29

CONTINUE



if 29 or greater

_____ TOTAL

S.N.A.P.

If the statement is true - 10 points

If the statement is partially true - 3 to 7 points

If the statement is false - 0 points

Center and edges

There is a central place (plaza, park, town square, etc.) where people feel welcome and where they congregate

10

The neighborhood (or town) center includes offices, retail, residential and mixed-use buildings.

7

There are a wide variety of businesses within a 10 minute walk (2500 feet) from the neighborhood center.

6

The neighborhood has the greatest concentration of development (density and intensity) located at the center.

7

REVISE DESIGN

if less than 29

if 29 or greater

CONTINUE

30

TOTAL



Compactness

A neighborhood with the density to create and support viable, long term neighborhood commercial opportunities and public transit



Compactness

- Residents of mixed-use communities have more opportunities to walk and use transit
- For trips less than one mile (75% of trips), mixed-use communities generate up to 4-times as many walking trips



Physical Activity

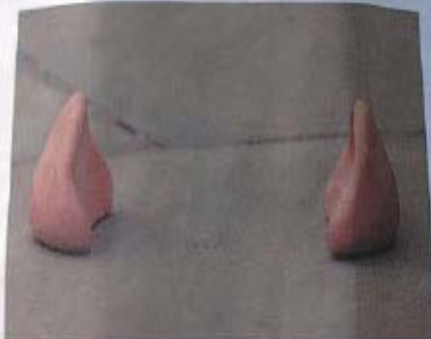
Physical Activity – Reduces a number of health risks

- Heart Disease; Diabetes; High Blood Pressure; Breathing Problems; Depression and Anxiety.
- Decreases the risk of colon (~50%) and breast cancer (~25%)
- Premature mortality

Healthy People 2010 Leading Health Indicators



LOST



LOVE HANDLES

Last seen before taking stairs instead of escalator.

Take a small step to get healthy.
Get started at www.smallstep.gov



Ad
Council.org

www.smallstep.gov

MISSING



DOUBLE CHIN

Last seen before starting to drink fat-free milk.

Take a small step to get healthy.
Get started at www.smallstep.gov

QUART (246 mL)



MILK

FAT FREE



QUART (246 mL)



www.smallstep.gov

S.N.A.P.

If the statement is true - 10 points

If the statement is partially true - 3 to 7 points

If the statement is false - 0 points

Compactness

Construction is primarily infill, redevelopment, or renovation.

There is an abundance of accessory dwelling units (ADU) and live work units.

There is adequate population density to support neighborhood businesses and transit.

The concentrated, mixed-use neighborhood supports a district energy plant.

REVISE DESIGN



if less than 27

CONTINUE



if 27 or greater

_____ TOTAL

S.N.A.P.

If the statement is true - 10 points

If the statement is partially true - 3 to 7 points

If the statement is false - 0 points

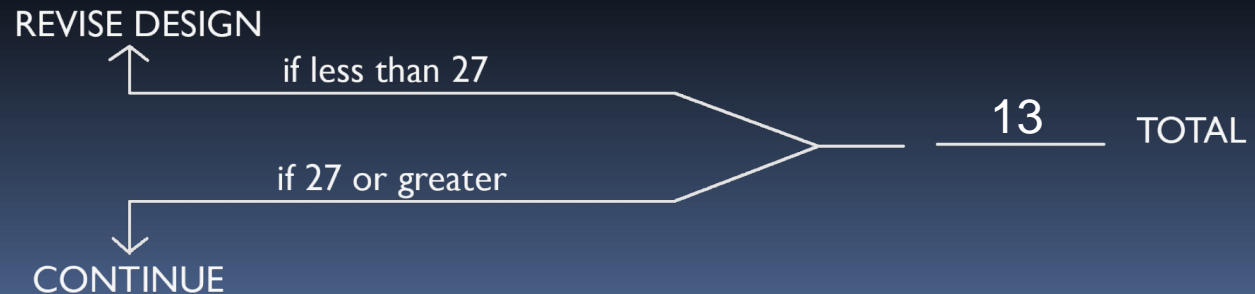
Compactness

Construction is primarily infill, redevelopment, or renovation. 7

There is an abundance of accessory dwelling units (ADU) and live work units. 3

There is adequate population density to support neighborhood businesses and transit. 3

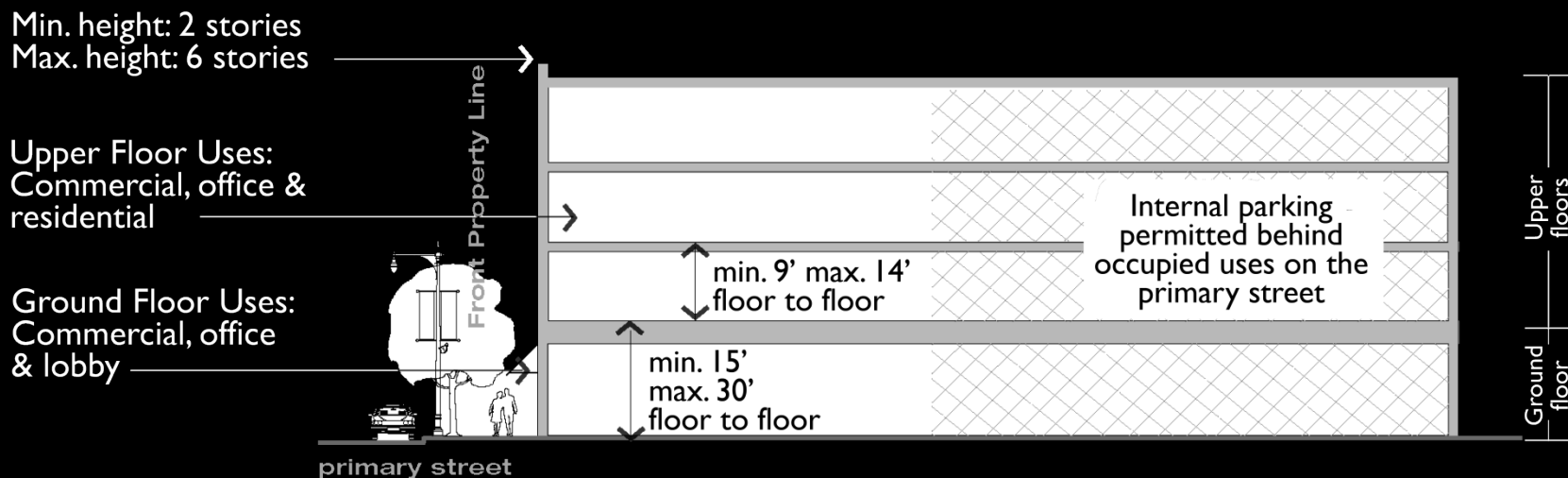
The concentrated, mixed-use neighborhood supports a district energy plant. 0





Compactness

A neighborhood with the density to create and support viable, long term neighborhood commercial opportunities and public transit



Focus – building form vs. use regulation. Uses may change – buildings endure

Uses – mixed use, mixed housing types. Diverse services and population

Design – streetscape and public realm. Buildings shape space – create place



Completeness

A neighborhood that allows activities and relationships to be foot-powered; i.e., where all daily needs can be met by walking or bicycling.



Completeness: Health Disparities

About one-third of Americans do not drive

- Those with disabilities 20% have a disability that limits their daily activities
- Many low income cannot afford automobiles
- 21% of Americans over 65
- All children under 16





Durham, NC

S.N.A.P.

If the statement is true - 10 points

If the statement is partially true - 3 to 7 points

If the statement is false - 0 points

Completeness

The streets within the neighborhood are "complete streets" or "living streets."

There is an interconnected network of sidewalks, on-street bike lanes, and designated bike trails.

Residents have the opportunity to dwell, work, shop, and meet all their daily needs on foot.

The diversity of dwelling types accommodates and encourages an economically diverse neighborhood population.

REVISE DESIGN



if less than 32

CONTINUE



if 32 or greater

_____ TOTAL

<http://www.completestreets.org>





Connectedness

A neighborhood that provided abundant opportunities to walk & bike, and provides convenient access to good transit service

Sustainable and walkable

A residential complex in an auto dominated area.

Redevelopment of the site in compliance with a sustainable urbanization model.

People learn to Walk where conditions are pleasant

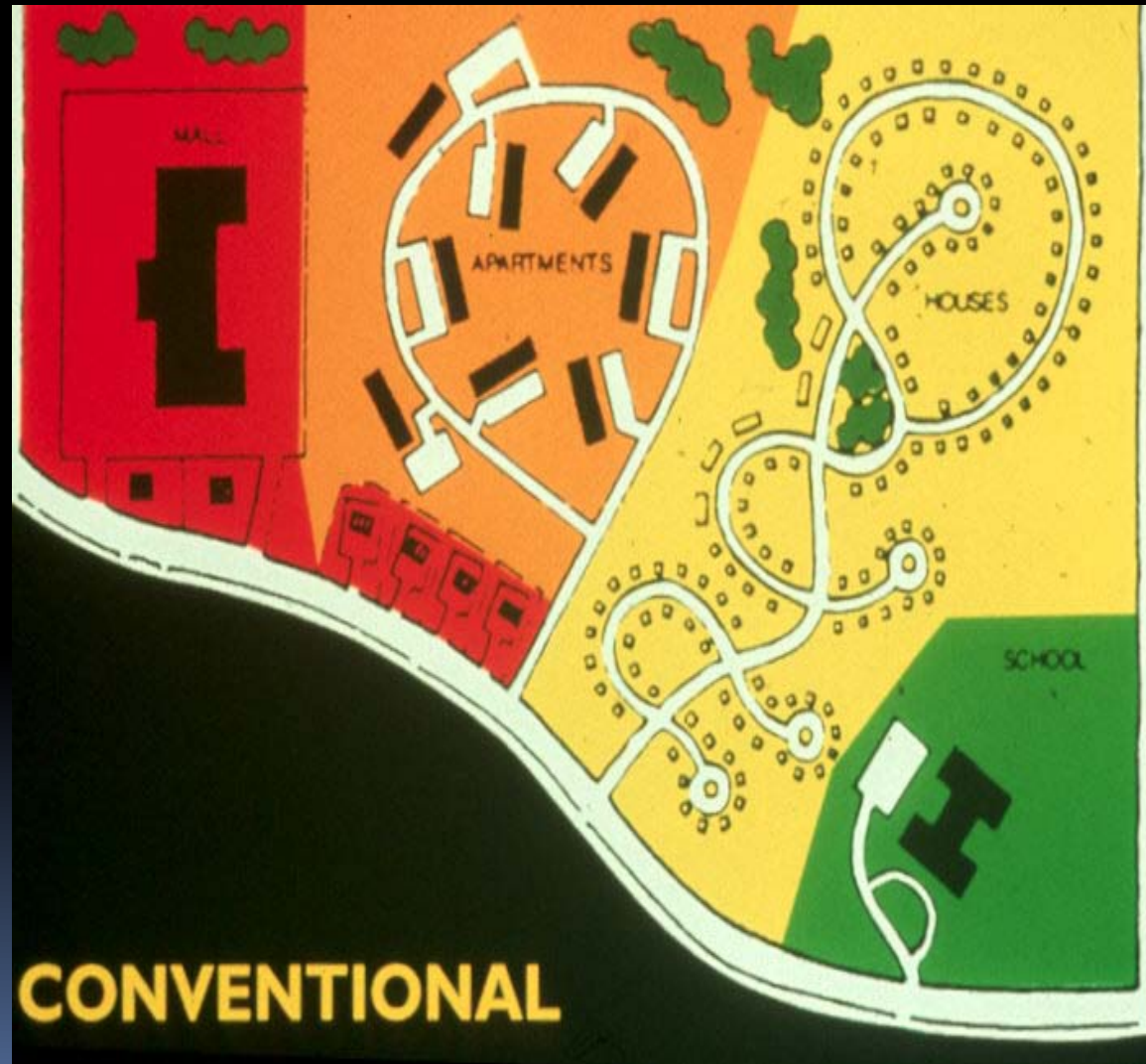
People learn to “Don’t Walk” where conditions are unpleasant



Illustrations by Steve Price: Urban Advantage

Connectedness

- Poor connectivity reduces pedestrian mobility and trips
- As the number of intersections and blocks increases, number of walk trips increases
- As the number of cul-de-sacs and loops increases number of walk trips decreases



Physical Activity

Among women, walking ten blocks per day or more is associated with a 33% decrease in the risk of heart disease

Risk of low physical fitness is comparable to, and in some studies greater than, the risk of hypertension, high cholesterol, diabetes, and even smoking.

Americans want to walk and bike more



55% of Americans would prefer to drive less and walk more

STPP Survey

Educational Benefits of Exercise: Walking and Biking to School

- Increases concentration
- Improves mood and ability to be alert
- Improves memory and learning
- Improves overall performance



Connectedness: Traffic related Deaths and Injuries

- Leading cause of deaths among persons 1-24 years old
- Annual U.S. toll from motor vehicle crashes:
 - 42,000 deaths
 - 3 million nonfatal injuries
 - \$230 billion in costs



Sources: CDC, NCHS, 2004

Slowing down traffic

PEDESTRIAN INJURIES AT IMPACT SPEEDS

MPH

40



85% death

15% injured

30



45% death

50% injured

5% uninjured

20

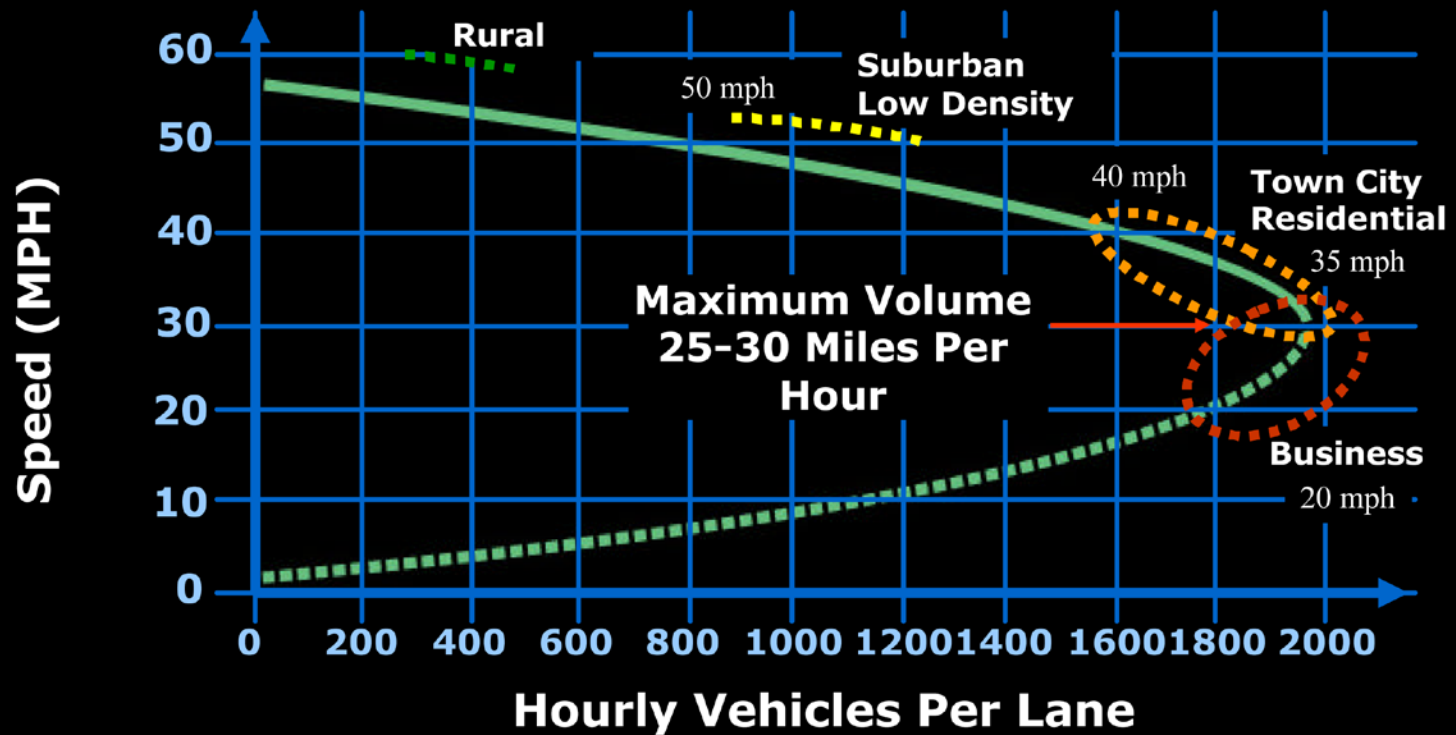


5% death

65% injured

30% uninjured

Speed-Flow Relationship



Pedestrian Safety

- Narrower streets are slower and safer
 - Longmont, CO study of 20,000 accidents
 - Found street width had the greatest relationship to injury accidents
 - Accidents/mile/year were higher on wider streets
 - 40-foot wide street 2.23 a/m/y
 - 36-foot wide street 1.21 a/m/y
 - 24-foot wide street 0.32 a/m/y

Source: "Residential Street Typology and Injury Accident Frequency," Swift and Associates, Longmont, CO, 1997

Healthier Streets

- Streets designed so drivers feel comfortable at slow speeds
 - ▣ 15-25 mph on neighborhood streets
 - ▣ 25-35 mph on avenues and boulevards



S.N.A.P.

If the statement is true - 10 points

If the statement is partially true - 3 - 7 points

If the statement is false - 0 points

Connectedness

There are abundant opportunities to walk, ride, and bike around the neighborhood. _____

There is convenient access to reliable transit service to adjacent neighborhoods and regional destinations. _____

The majority of the streets connect with at least two other streets.
The distance between intersections generally does not exceed 450 feet
and the block perimeter does not exceed 1500 feet. _____

The street network is designed for maximum automobile speeds of 25
to 30 miles per hour (20 mph max near schools) _____

REVISE DESIGN



if less than 32

if 32 or greater



CONTINUE

_____ TOTAL



Biophilia

A neighborhood that encourages interdependence between humans and all other living systems by providing natural environments & systems



Biophilia: Access to Healthy Food, Farmers Markets, Community Gardens

- Support Farmers Markets, Community Gardens, Farm-to-School programs
- Support access to nutritious food in neighborhoods
- Zone out junk food



S.N.A.P.

If the statement is true - 10 points

If the statement is partially true - 3 to 7 points

If the statement is false - 0 points

Biophilia

The neighborhood contains parks, trails, greenways, and shaded boulevards.

Greens (small parks) and pocket parks are located within a 5 minute walk (1500 feet) from any neighborhood location

There are planting strips, street trees, and continuous sidewalks on both sides of all roads.

Urban agriculture and community gardening are encouraged and supported.

REVISE DESIGN



if less than 30



CONTINUE

if 30 or greater

_____ TOTAL

**Community design and
land use choices can
either promote or harm
human health**



For a variety of rating systems see:
<http://www.epa.gov/dced/scorecards/project.htm>

