Walkability for Northville

Northville Downs, Street Connectivity, Mobility

By Dan Burden, Blue Zones
Director of Innovation and Inspiration

QUALIFICATIONS

Dan Burden's lens is specific to walkability, downtowns, active transportation, parks, waterfronts and related livability issues. Dan has worked with Michigan DOT, MML and SEMCOG on 300 neighborhoods and towns in Michigan, with more than 60 neighborhoods in SE Michigan. Dan has learned from walking with many, including Northville in 2016 (MML), and in this report he shares his insights and recommendations for building the next walkability leg of Northville's legacy.

East Aurora, NY

Northville, 2016

Resources, Participants & Acknowledgments

These individuals, organizations and resources provided Dan a helpful and sound base for this review and recommendations:

Northville Master Plan Update, 2022
Sustainability Team
River Restoration Task Force
Mobility Network Study
Nicholas Bayley, engineering, OHM Advisors
Walkability Study, Northville Sustainability Team
Northville Non-Motorized Plan, 2014
Northville Downs Preliminary Plan Review, 2019
John Katers, Roundabouts specialist, OHM Advisors
City of Northville Secondary Streets Design Standards

OTHER:
Economics of Place, Michigan Municipal League
Low Impact Development Manual for Michigan
Jeff Speck's Walkable City RULES
NACTO Street Design Guide

OUR CANVAS

Main Street
Hutton Street
E. Cady Street
Griswold Street
S. Center Street
Beal Street
Fairbrook Street
River Street
Main Street
7 Mile
7 Mile
Hines Drive
Northville Downtown Development
E Main St
W Main St
Genitti's Hole-in-the-wall
Koji
Northville District Library
W Cady St
E Cady St
S Main St
R & R Fire
Russ Fogg Dr
Northville Pl
Wagon Wheel Lou
Medical Clinic of Northville
Elizabeth's Bridal Manor
Northville Downs
Walled Lake Branch
Fairbrook St
S Wing St
Gerald St
Ellsworth Landscape Supplies
Papa John's Pizza
Northville Athletix
Sheldon R
Google Earth

Community-Identified: Values and Areas of Concern

- The City of Northville's small-town charm should be preserved above all,
- Northville has a distinctive village vibe, open & welcoming to walkers, town explorers & cultural & commercial visitors. This should not be lost...
- I am hopeful the master plan will reflect a commitment to the historical integrity of the downtown, vibrant retail and restaurants on the north end and community (commons) space to walk and gather.
- High quality architecture, reasonable density, more dining and retail, and accessible open spaces are high priorities.
- **Aesthetic diversity**, within historically sensitive style and **neighborly scale and massing,** is expected and encouraged.
- #1 daylight the river
- New development should include green space.

Review Background and Goals

The 49-acre Northville Downs site is ideally located within an easy walk or bike ride to downtown Main Street. An early presentation by the developer was not fully sensitive to the community vision and the many opportunities of this site. Through its planning commission and special committees (Sustainability Team, River Restoration Task Force, Mobility Network Team), Northville is offering additional guidance on its short term and long-term desire to achieve well-planned and well-integrated infill development. By carefully adhering to walkability, livability, smart growth and traditional town building principles, the Northville Downs site will:

- Respect, complement and honor historic neighborhoods
- Accommodate the growth and housing diversity needs of the community,
- Achieve aesthetic qualities,
- Address traffic dominance speed and volume,
- Provide Intersection and crossing safety,
- Provide attractive and functional walk/bike connections to downtown and trails
- Achieve stream restoration, a riverwalk and overall greening, open space and placemaking
- Reduce parking, drainage and heat island impacts
- Create pace and provide for social uses of streets

WALKABILITY KEY CONCEPTS

"Streets and their sidewalks - the main public places of a city - are its most vital organs."
- Jane Jacobs

Walkability

Walkability requires many professions to work with one another.

To become inviting to walking many features are needed:

1. **A Place to Walk** through setback sidewalks and crossings
2. **Placemaking** through greening
3. **Security** is provided by building placement and orientation

The simple needs of automobiles are more easily understood and satisfied than the complex needs of cities.

Jane Jacobs, Death and Life of Great American Cities , 1961

Illustrations by Steve Price

"We believe that our communities are at the core of the economic turnaround, and that 'place' is the huge economic driver.

It's time to say, 'enough is enough,' and focus on what really matters: creating dynamic, walkable, sustainable communities and regions where people want to live. It's time to start talking about the importance of place as the economic development strategy that will create a positive, dynamic future for Michigan."

Michigan Municipal League (MML)

The Economics of Place:

The Value of Building Communities Around People

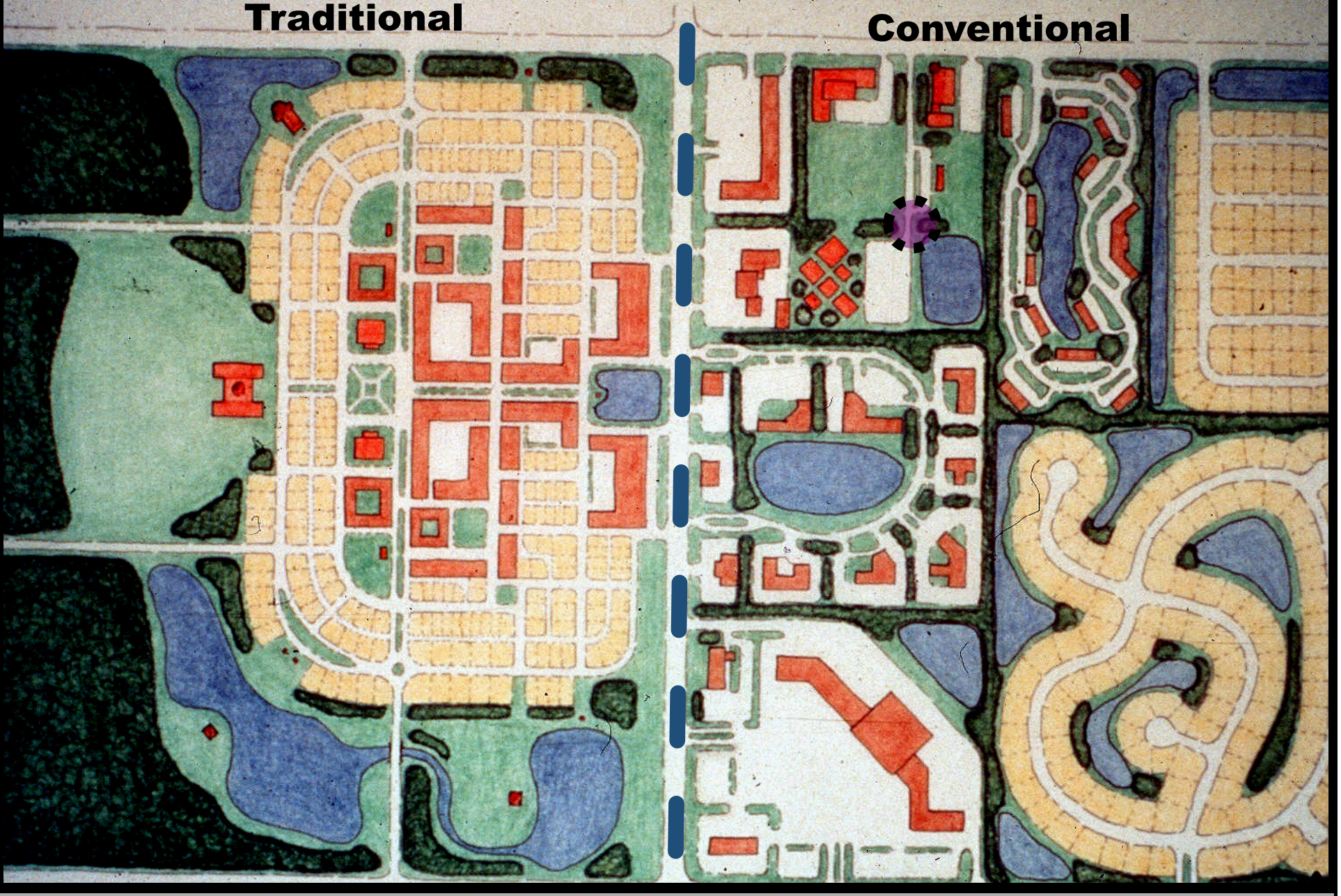
Key Walkability and Town Building Principles

- Place the highest density toward the town center
- Moderate or lower density, such as single family, can be placed farthest from the center
- Place higher density toward transit streets

IF THIS COUPLE COULD LIVE WHERE THEY MIGHT LIVE CAR LIGHT OR CAR FREE, DO THEIR SHOPPING, FIND ENTERTAINMENT AND NATURALLY BUMP INTO OTHER PEOPLE THEIR HEALTH, HAPPINESS AND LONGEVITY INCREASE -- AND SOCIETY/HEALTH COSTS GO DOWN.

Locational Efficiency

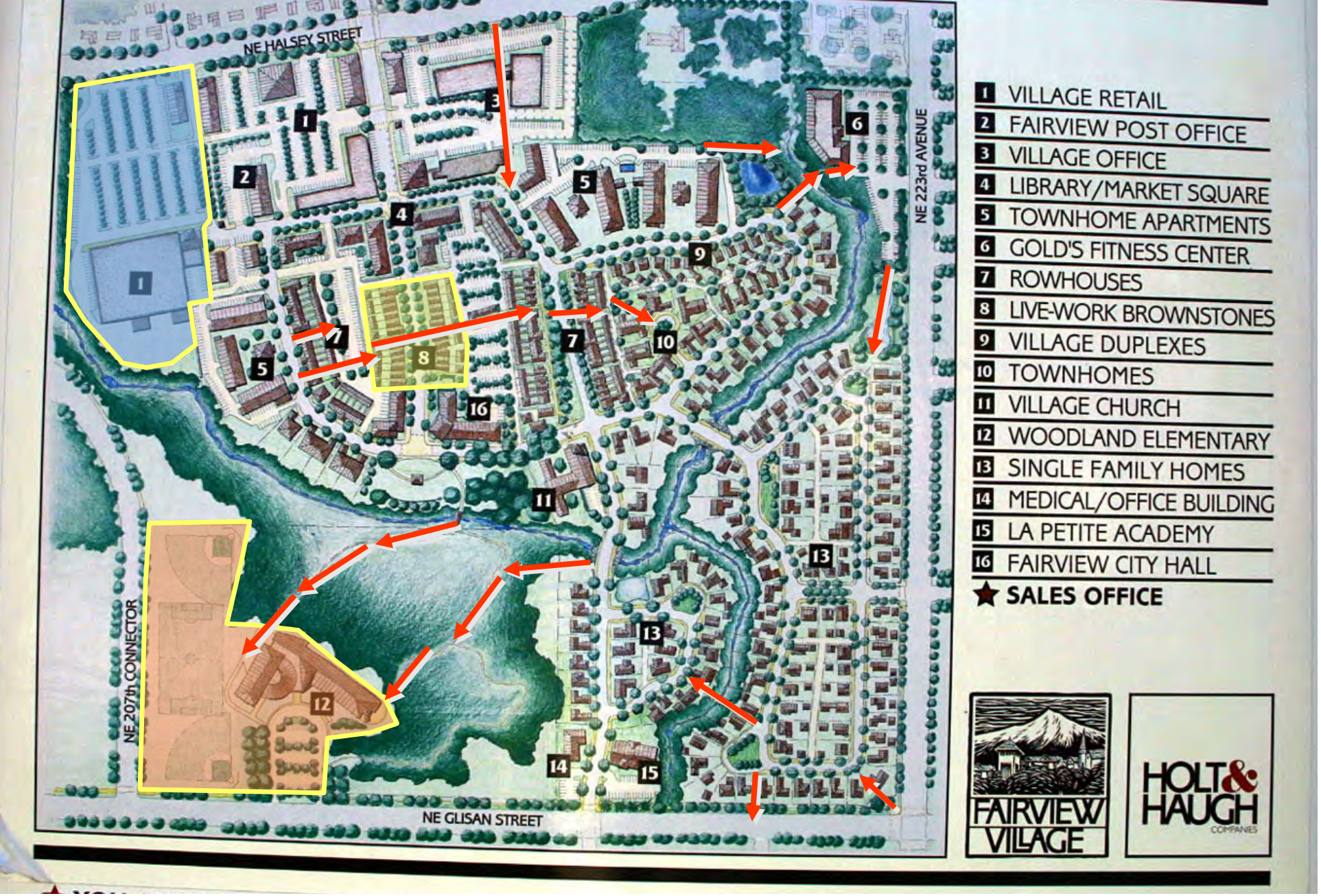
The most effective way to reduce energy consumption is to locate homes of all types in areas where households could replace some automobile use with transit use, leading to reductions of 39 to 50 percent in household energy use.



To achieve greater open space, reduce the number and size of parking lots, provide attractive walking environments and honor established homes requires more compact use of space.

The Northville Downs design follows the traditional vs the conventional land form, but it has some imperfections. A few changes will enhance its walkability, livability and economic benefits. Big pluses include:

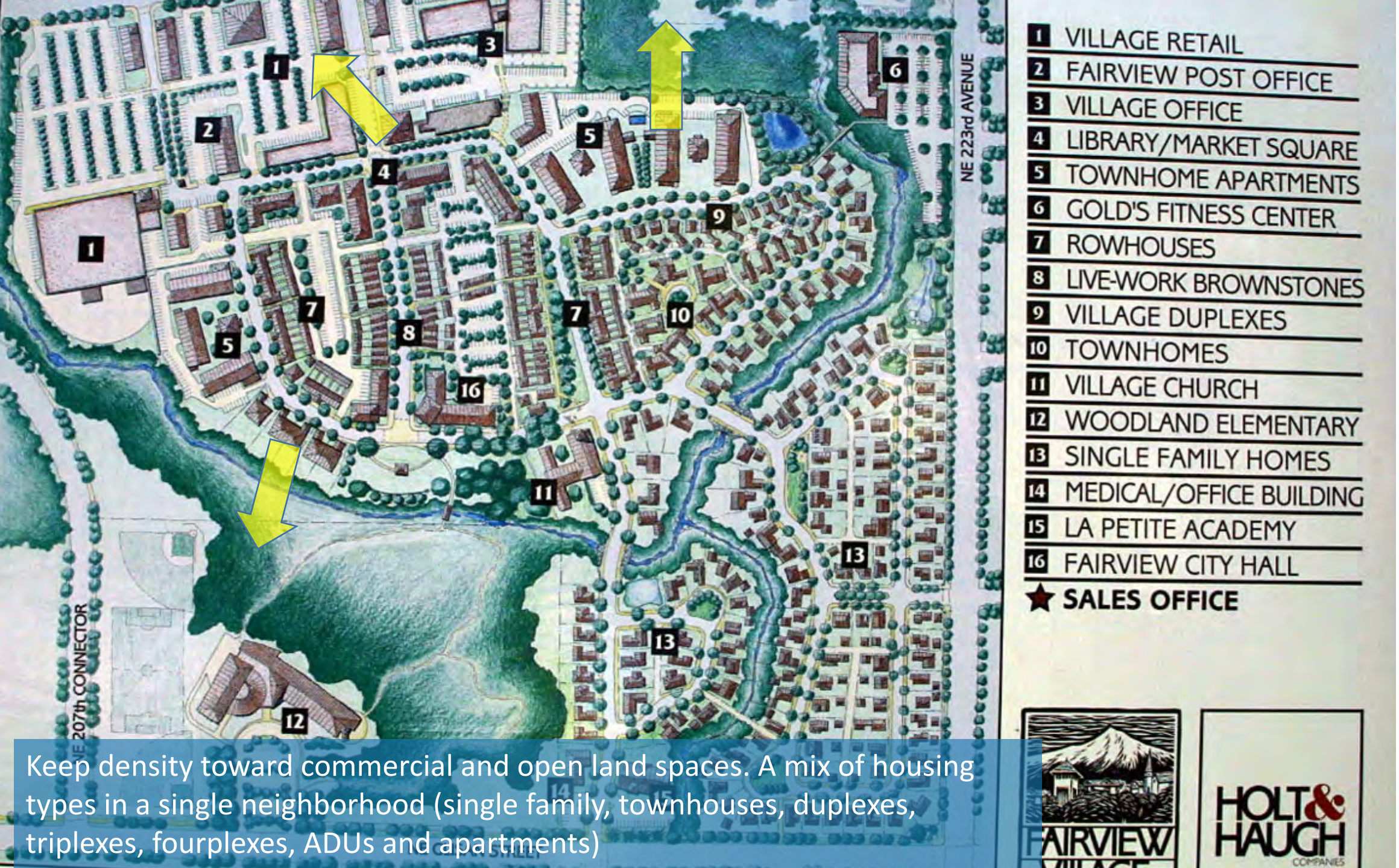
- Adding exterior street and trail connections
- Density at the center
- Added density toward downtown
- Greater on-street parking, including perimeter streets
- More eyes on open spaces



A modern traditional neighborhood in the Portland, Oregon area achieved high walkability by applying:

- Density where it matters,
- Mix of building types
- Interior mixed uses,
- many walking links,
- Honoring their stream,
- Pocket Parks,
- Civic uses
- Homes watching over public spaces.

Fairview Village, Oregon



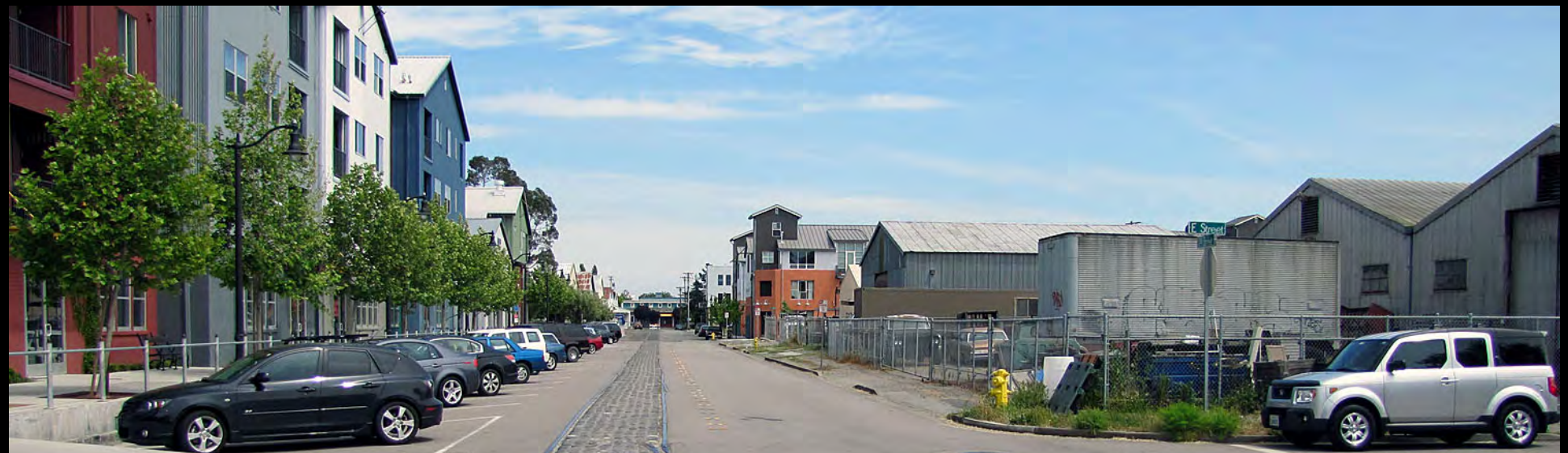
Keep density toward commercial and open land spaces. A mix of housing types in a single neighborhood (single family, townhouses, duplexes, triplexes, fourplexes, ADUs and apartments)

Source: Fisher & Hall Urban Design

Once we understand the context of a place, its history, its culture, its climate, its topography, its land settlement patterns, then we can start the design process in earnest.

Now that we know the new land use, we can design the street!

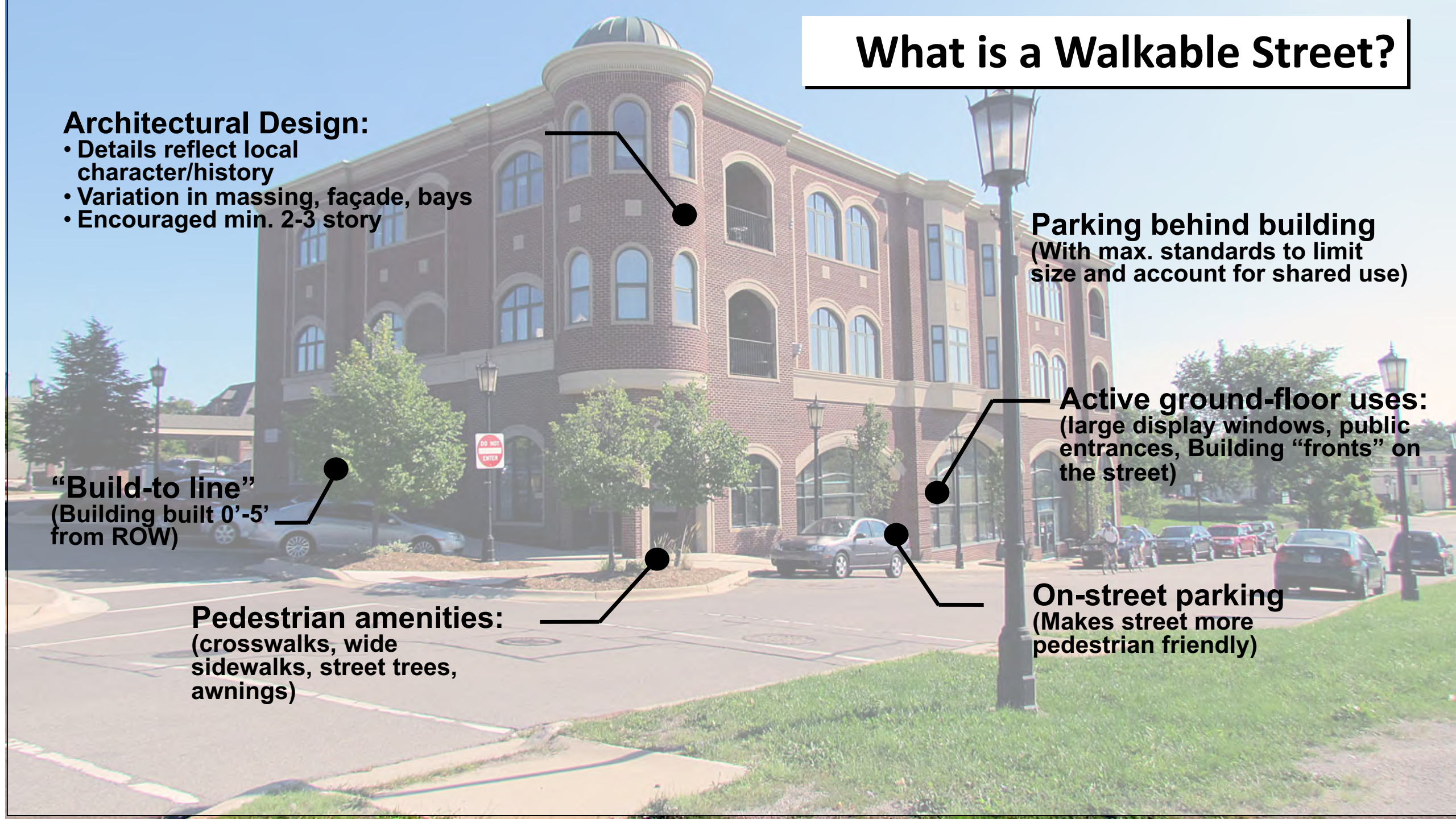
Petaluma, California



Key Walkability and Town Building Principles

- Green, open space, daylighting of streams;
- Minimize pavement and water runoff;
- Low speed, green and friendly streets;
- Apply complete streets principles;
- Safe, convenient and easy street crossings;
- Great walkable connections to downtown;
- Make walking and bicycling the natural, easy choice;
- Respect, complement and honor historic neighborhoods;
- Honor adjacent land uses, and historic/cultural context;
- Provide housing diversity by income and type;
- Provide locationally efficient housing.

What is a Walkable Street?



Architectural Design:
- Details reflect local character/history
- Variation in massing, façade, bays
- Encouraged min. 2-3 story

Parking behind building
(With max. standards to limit size and account for shared use)

Active ground-floor uses:
(large display windows, public entrances, Building "fronts" on the street)

"Build-to line"
(Building built 0'-5' from ROW)

On-street parking
(Makes street more pedestrian friendly)

Pedestrian amenities:
(crosswalks, wide sidewalks, street trees, awnings)

Northville Downs
Key Walkability Concepts

Eliminate the Super Block
Increase Street Connectivity
Apply Density in the best way
Eyes on the Street
Eyes on the Trail and Water
Other Opportunities

Internal Walkability Toolbox

- Target Speed (15-20 mph max)
- Curb Extensions and inset parking
- Compact Intersection design
- Enclosure (on-street parking, trees, buildings
- Narrow lanes, no turn lanes
- Terminating vista
- 50% rule (50% of space for people on foot)

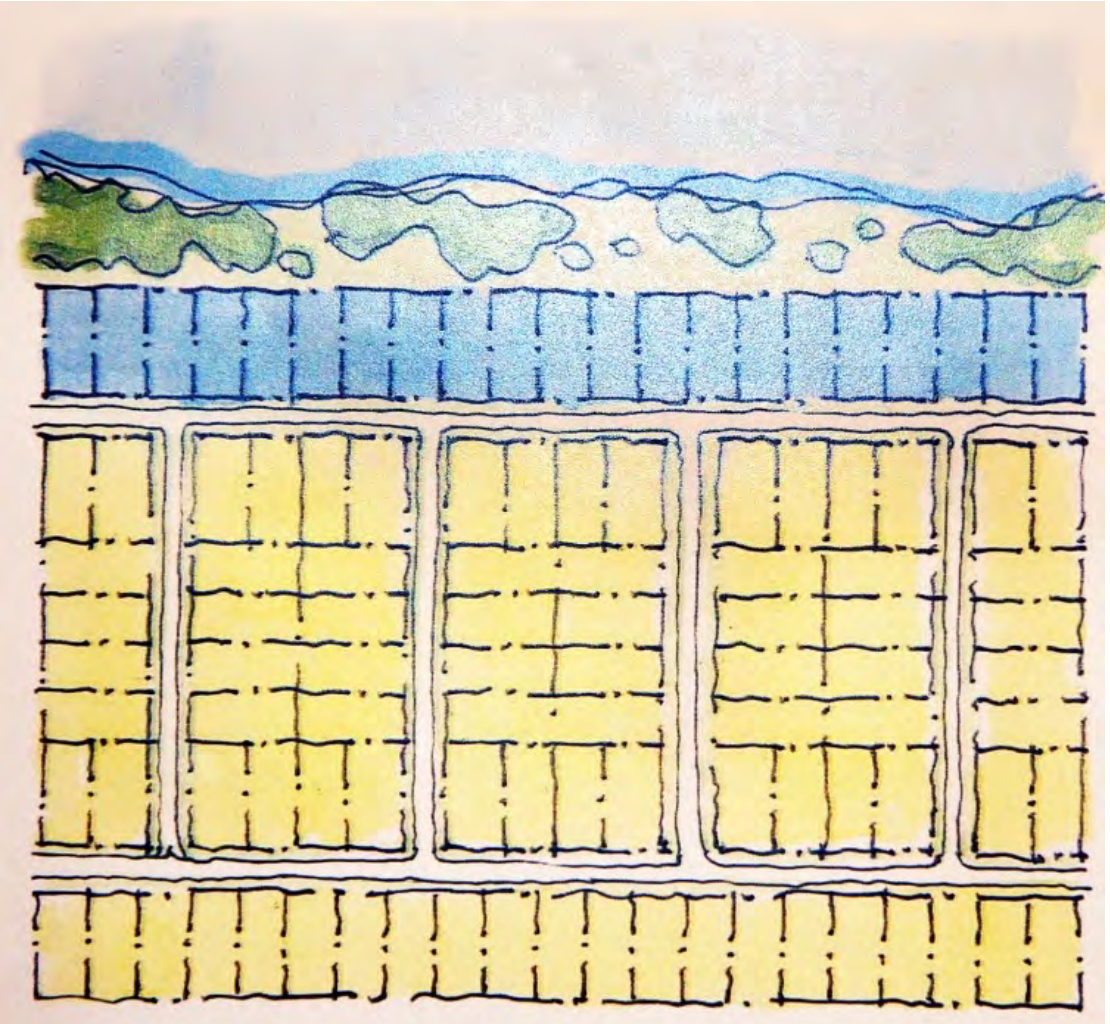
"Design is not just what it looks like and feels like. Design is how it works."
– Steve Jobs

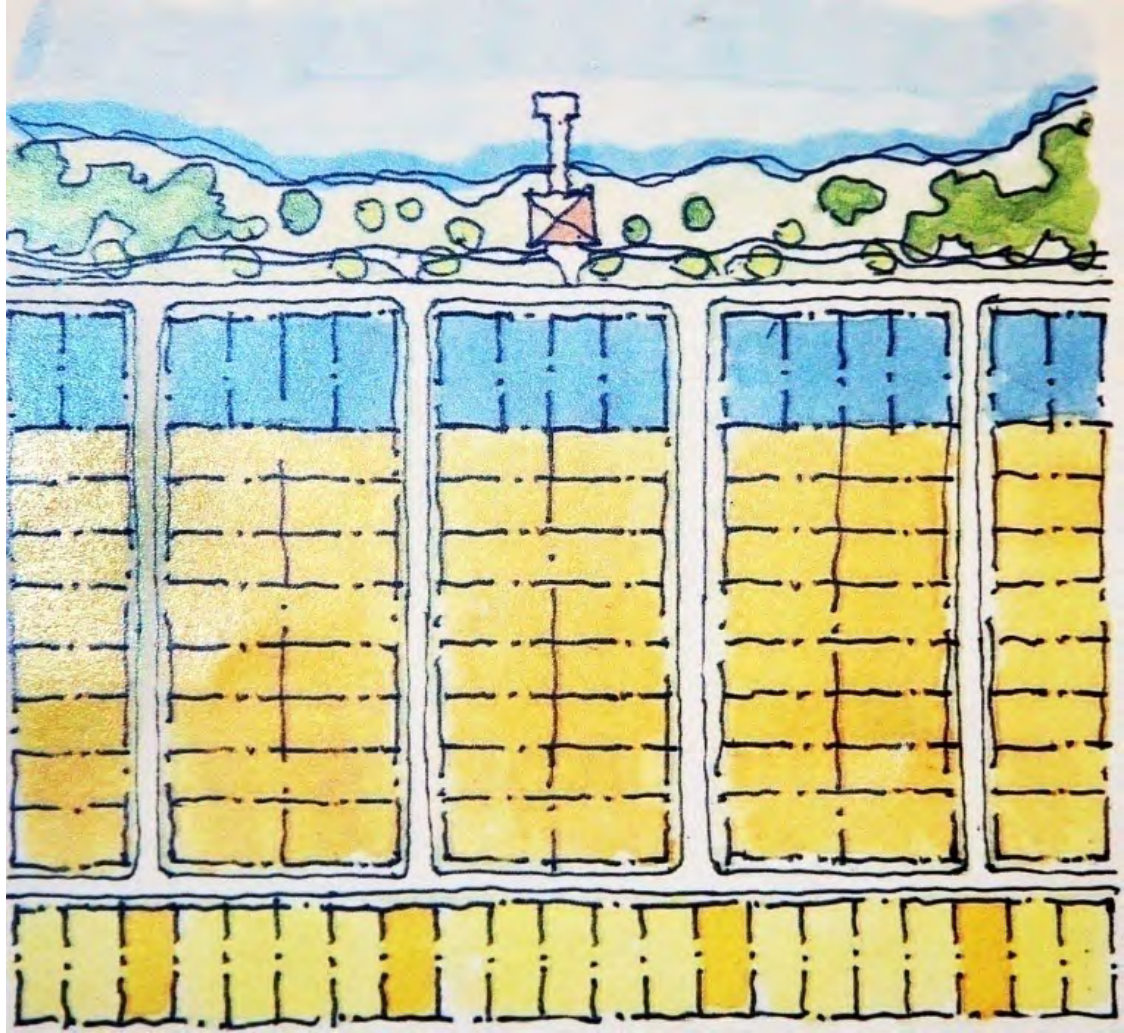
THINGS DONE WELL INSIDE THE NORTHVILLE DOWNS

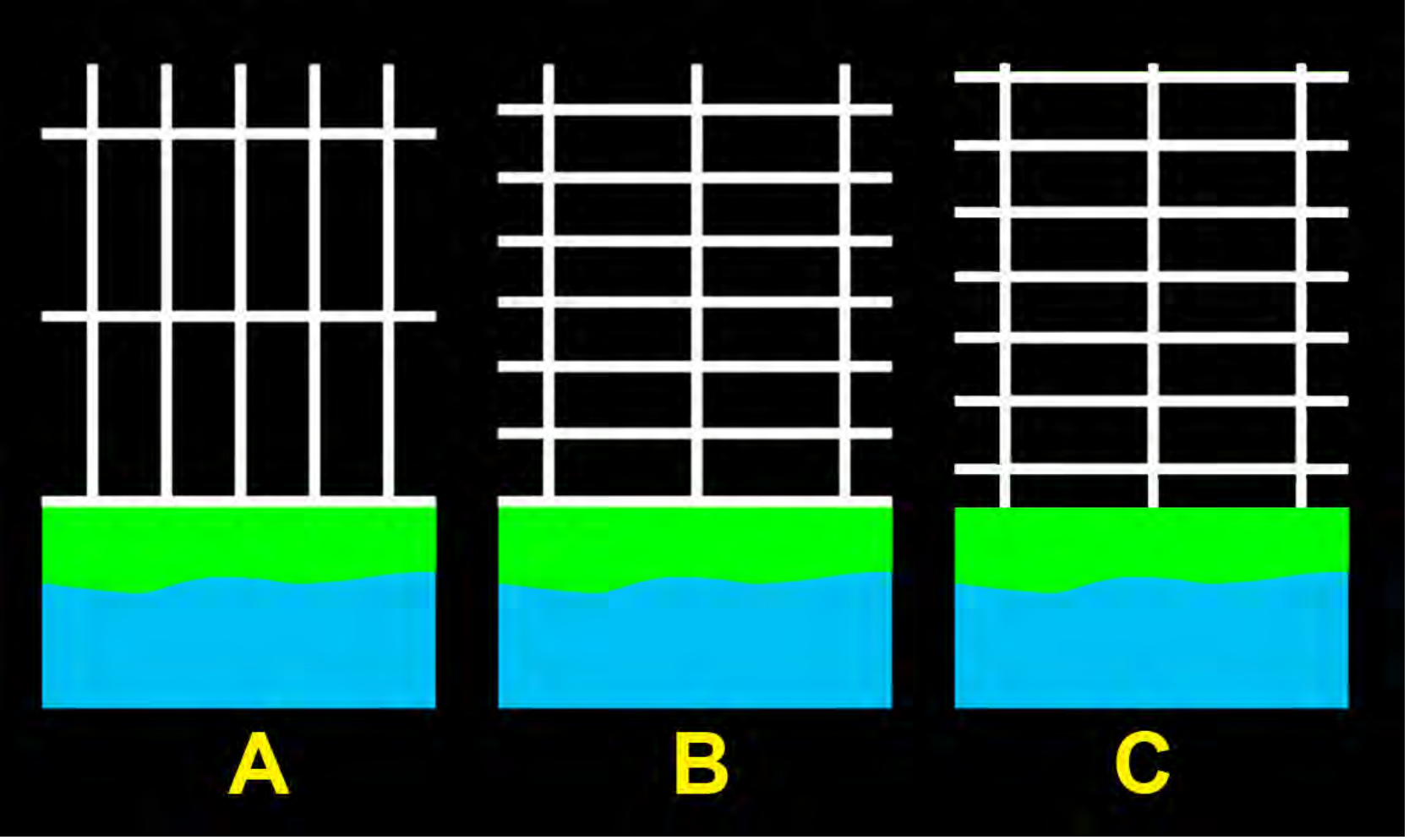
- Pocket Parks
- Links/connectors
- Daylighting creek
- Pedestrian bridge
- Natural spaces
- Inviting public spaces
- Use of alleys

Maximize Views and Access to Water

When patterns privatize the assets, home values plummet. Note how this version has a street and a trail to maximize access, and to increase the value to all residents and visitors







Connectivity

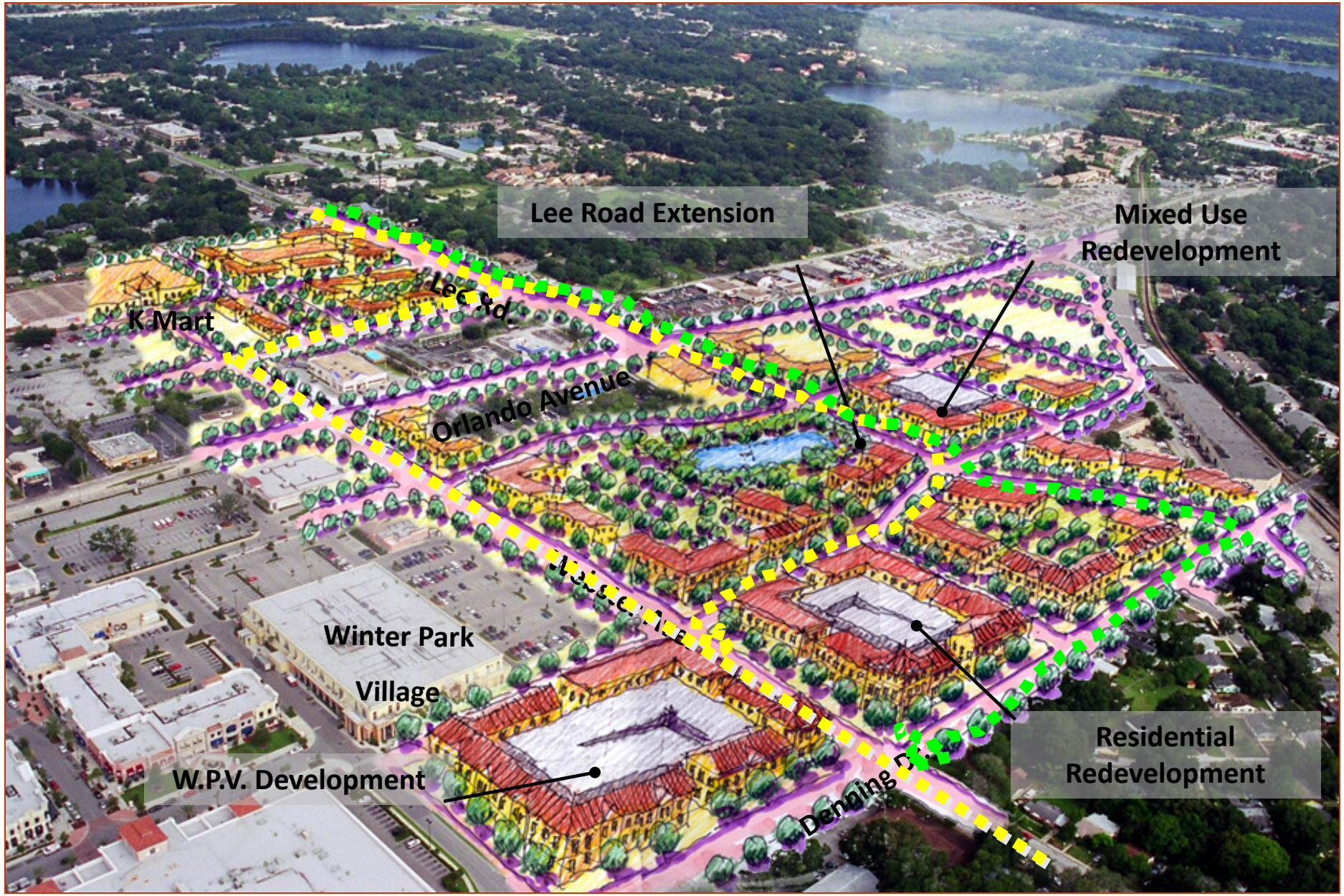
Which pattern creates the greatest walkability?

Which creates the greatest land value?

A Maximizes the value to the greatest number of Homes

SUPER BLOCK

This confluence stalls traffic movement 6 hours per day. Engineers proposed a $100M flyover solution


Lee Road Extension
Mixed Use
Redevelopment
K Mart
Lee Rd.
Orlando Avenue
Winter Park
Village
W.P.V. Development
Residential
Redevelopment
Denning Dr.

CRITICAL ERRORS

Current Proposal:

- FAILS to remove the Super Block
- Places too much burden on adjacent streets and intersections
- Tasks engineers with recovering from poor land use decisions
- Poor use of open space and other placemaking

OPPORTUNITIES

Proposal Recommendations:

- Eliminate the Super Block
- Place the pond in the flood plain
- Locate Densities to build a center
- Heal the citywide street system
- Open access and views to the water

Principles to Apply INSIDE the Northville Downs

- Place Density toward downtown
- If needed, build lighter density single family toward 7-Mile
- Consider higher density bordering and facing the park and waterfront
- Townhouses toward Center and 7-Mile

Principles to Apply INSIDE the Northville Downs

- Mixed income residential
- Age Friendly
- Biophilic Design (blend nature with urban form)
- Walk-first street design
- Eyes on street, parks, public spaces
- At least one social/retail street
- Green spaces and pockets parks within 3 minutes of all homes
- No street to operate above 20 mph
- Maximize on street parking, especially on perimeter
- Block perimeters of 800-1600 perimeter feet
- Consider 90-degree angled parking on both sides of Beal Street, then reduce size of parking lots

Consider a Festival Street or Open Street at the Center

- Festival Streets enliven the center, maximizing the identity of pace, maximizing the social use of the space
- Festival or open streets can be 200 feet to 800 feet in length
- Can be a two-way street
- Operates at 5-10 mph
  - The driving lane portion may only be open 4 hours per day (for deliveries)
  - The lane is 12-20 foot wide, which limits speeds and traffic volumes through the neighborhood.
  - The entries to this street terminates the street vista, greens the area and feels more like a park than a street.

Key Project Concept Checklist

- ❑ Flip the Density (Highest density toward the downtown)
- ❑ No parking lots to the exterior of the property. Incorporate designs where off-street parking is not seen from outside the neighborhood.
- ❑ Load appropriate surrounding streets with angled parking. This slows traffic, creates buffers to those walking and minimizes pavement. Consider porous pavement for parking. If parking is back-in then bike lanes can be added.
- ❑ Maximize density (town houses, apartments) on the downtown facing side, but do not overlook the center of the Northville Downs neighborhood, placing a plaza/park surrounded by 2-3 story mix of uses at the heart.
- ❑ Consider neighborhood friendly retail/office uses on the edges, such as a shared office work space, a UPS or Fedex copy shop, day care, craft shops, anything to invite greater sharing between residents and adjacent neighbors.
- ❑ Townhouse living areas should front the principal street or trail. Correct orientation of properties to watch over the street matters.

Expanded Checklist

- ❑ Can Hutton be brought across (from Cady to 7 Mile) as a connector street?
- ❑ Can Hutton Street have a full block that operates as an open/festival/flexible street
- ❑ Can we both slow speeds and maximize parking using perimeter streets
- ❑ Can the detention ponds be made more linear inside the 100 year flood zone?
- ❑ Can more eyes be applied to trails?

Internal Walkability Checklist

- ❑ High street connectivity
- ❑ Target Speed (15-20 mph max)
- ❑ Short Block lengths
- ❑ Curb Extensions and inset parking
- ❑ Compact Intersection design
- ❑ High Enclosure (on-street parking, trees, buildings
- ❑ Narrow lanes, no turn lanes
- ❑ Green Streets
- ❑ Open Streets (Festival Streets)
- ❑ Eyes on the streets and trails
- ❑ Mixed Use keeps trips internal
- ❑ Pocket Parks
- ❑ Parking and minimal paving
- ❑ External street or trail connections
- ❑ Effective use of density and central space

The People’s Bridge

Iconic bridge
Well lit day and night
Minimum 20-foot width
Terminating vista on each side
Sitting spaces
Public art
Well watched over
Added emergency response

External Street Solutions

- Complete Streets
- Street Parts
- Sidewalk Parts
- Apply the 50% rule
- The Role of Roundabouts
- Apply Target Speeds of 20, 25 and 30 mph
- Parking Solutions

External Walkability Toolbox

Apply the following Target Speeds to:

- Cady, 20 mph
- Hutton, 20 mph
- River, 20 mph
- Griswold, 20 mph
- Center, 25 mph
- 7 Mile, 30 mph

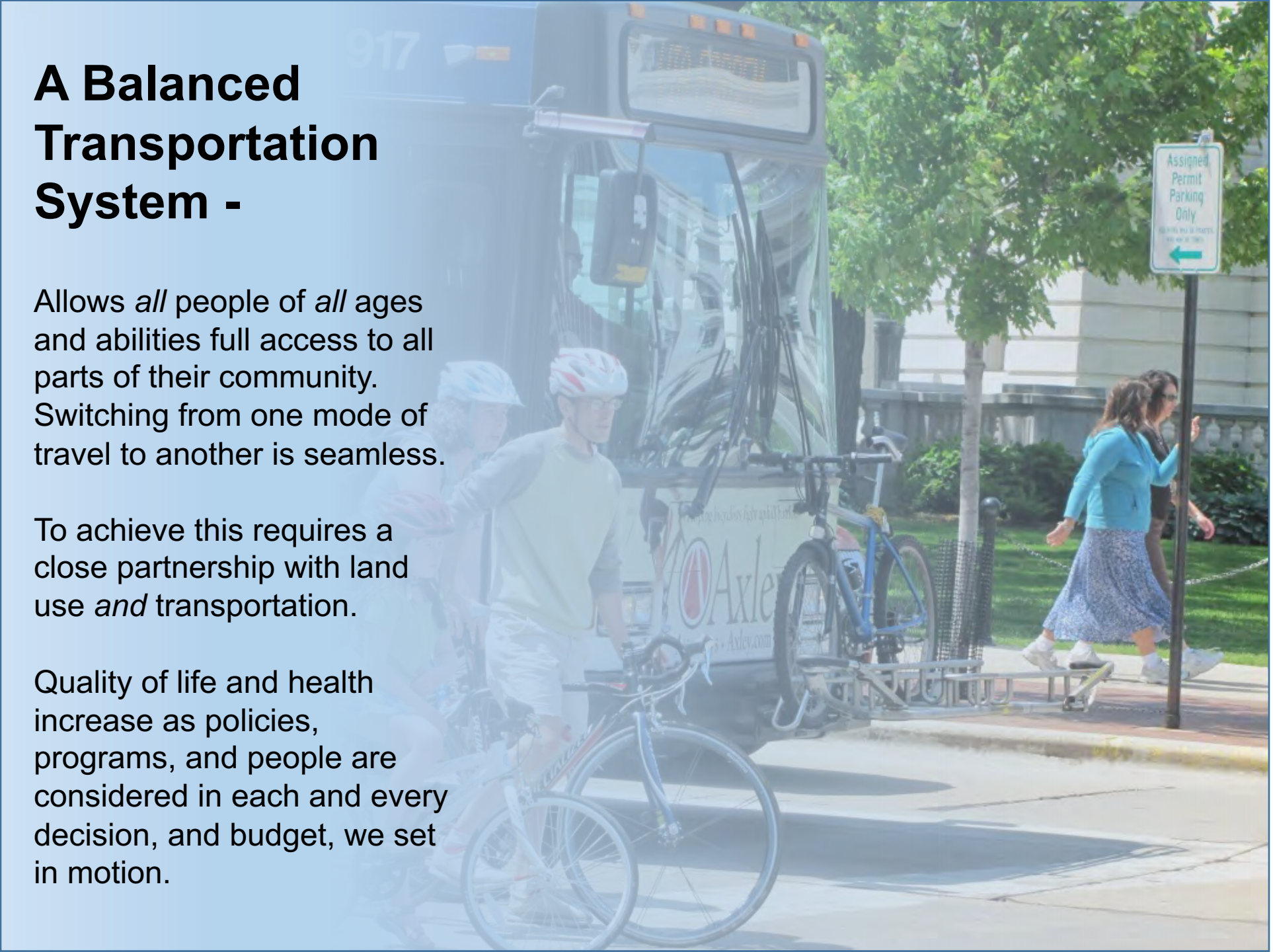
1. Target Speed (20-35 mph max)
2. Curb Extensions and inset parking
3. Intersection design (compact designs)
4. Midblock Crossings (Frequent)
5. Enclosure (on-street parking, trees, buildings)
6. Narrow lanes,
7. No turn lanes, except when necessary
8. Roundabouts and compact intersections
9. 50% rule (50% for people on foot)
10. Bike facilities to narrow and buffer streets
11. On-street parking to reduce speed
12. Green the streets

A Balanced Transportation System -

Allows *all* people of *all* ages and abilities full access to all parts of their community. Switching from one mode of travel to another is seamless.

To achieve this requires a close partnership with land use *and* transportation.

Quality of life and health increase as policies, programs, and people are considered in each and every decision, and budget, we set in motion.



The Benefits of Designing Streets for People

- Increases physical activity rates
- Encourages social connectedness
- Catalyzes small business development
- Increases property values
- Improves access and safety for all
- Advances social equity
- Reduces pollution and run-off
- Provides safe routes to school
- Makes the healthy choice the easy choice

Source: Victoria Transport Policy Institute
http://www.vtpi.org

Image: Portland, Oregon

A Baker's Dozen Keys to Successful Downtown Streets

1. A focus on people and place first;
2. Slow Streets (12-20 mph is best)
3. Narrow Lane widths;
4. Tight Curb Radii;
5. Two-way streets;
6. Short Block Lengths;
7. Sidewalk edges and buffers;
8. Ease of crossing the street;
9. On-street parking buffers;
10. Street trees;
11. Compact Intersections;
12. Curb Extensions (Bulb Outs)
13. Centerline Removal;

Principles to apply OUTSIDE the Northville Downs

- No streets operate above 25 mph, by design
- Additional street connectivity is provided to trails, downtown
- On-street parking helps slow traffic
- Walk/Bike comfortable, convenient and safe intersections (protected intersections and streets)
- People walking do not need to go more than 150 feet to well-designed crossings
- Strong connections to downtown

The Parts of a Street

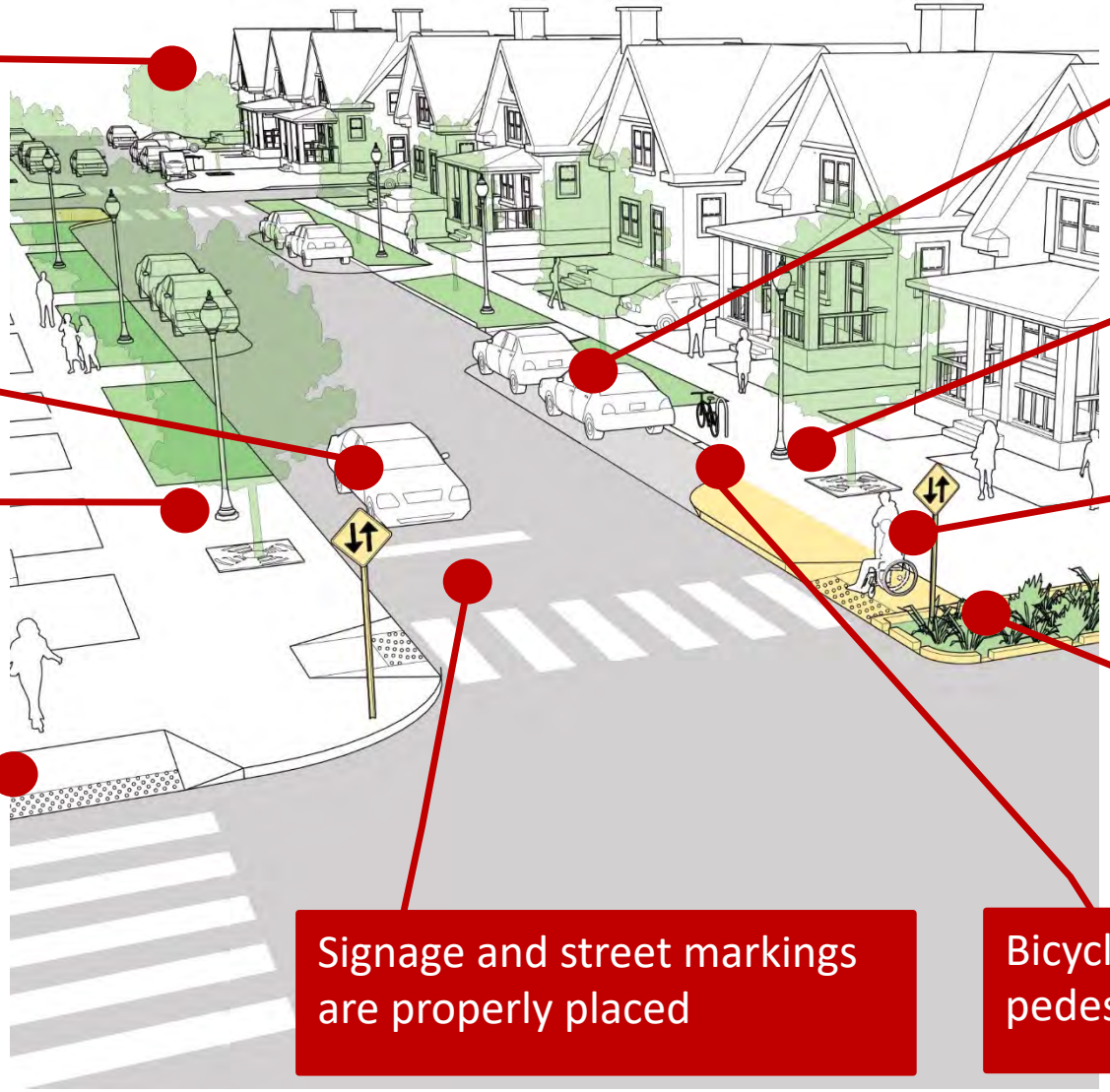
Designing for Appropriate Speed: Residential Areas

Buildings watch over the street

Narrow 10’ travel lanes reduce speeding and improve yielding behaviors

Pedestrian scaled street lighting is used

Curb extensions reduce crossing distances for pedestrians and reduce the turning speeds of vehicles, improving safety



On-street parking creates a buffer to the sidewalk

Street trees define the edge

Curb extensions and ramps advance accessibility

Rain gardens filter water and reduce run-off

Signage and street markings are properly placed

Bicycle parking keeps the pedestrian zone clutter-free

Image Source: National Association of City Transportation Officials (NACTO)

Apply the 50% Rule

To achieve walkability apply the **50% Rule**. One half of space is devoted to active transportation. Parking, bike lanes and other buffers are counted as walk-supportive space.

Brisbane, England

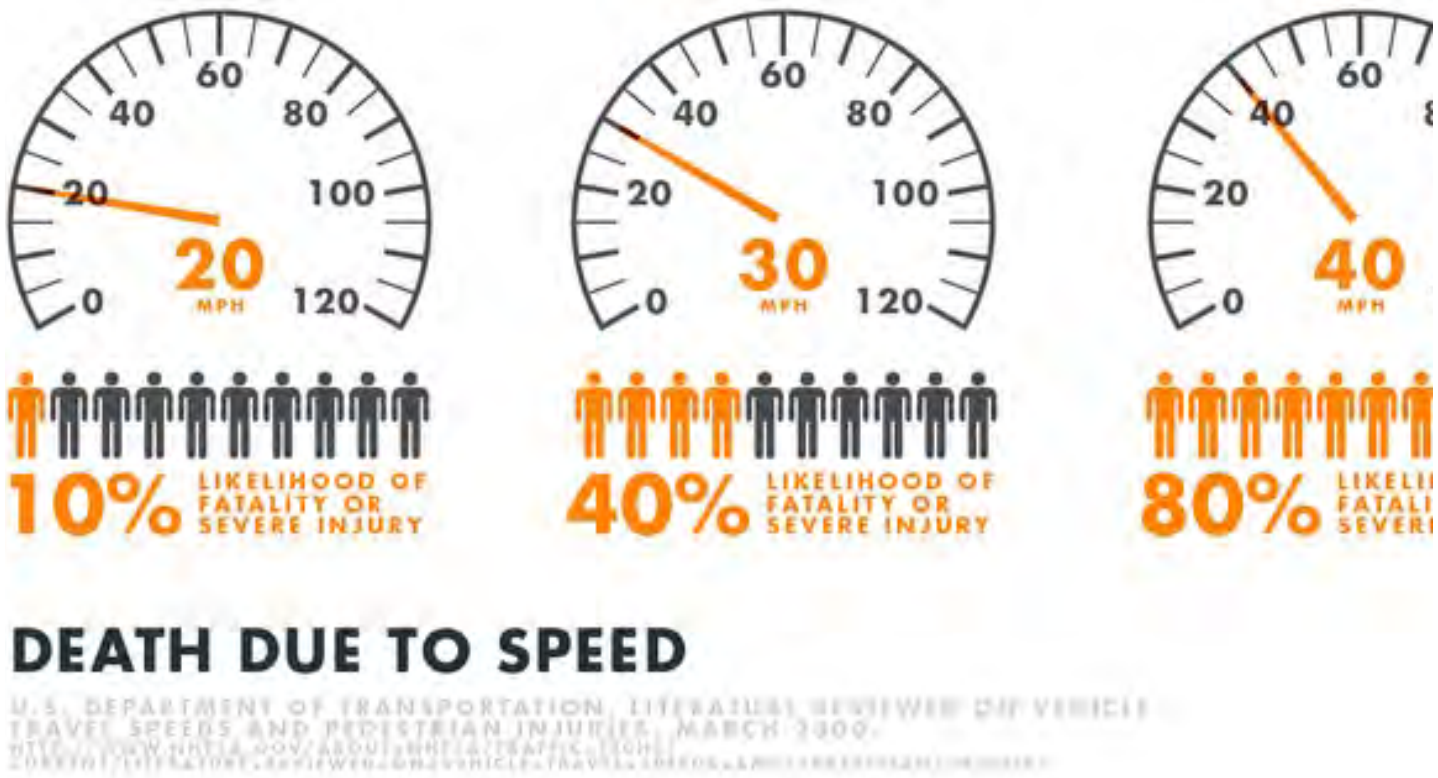
The Parts of a Sidewalk

Image Location: Birmingham, Michigan

Existing Conditions

A number of area streets are too wide, and not friendly to those wishing to walk or bike. Streets and intersections that need to be addressed include:

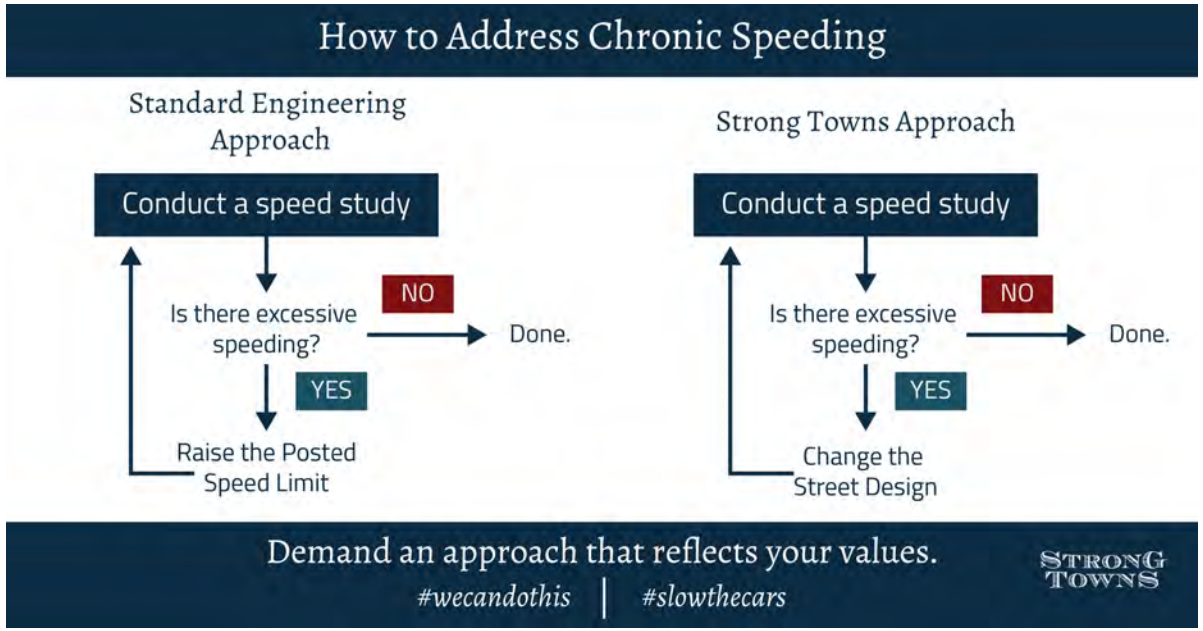
7-Mile	34’	7-Mile and Center/Sheldon
Center	40’	7-Mile and Hines Drive
Cady	26’	7 Mile and River Street
Beal	29’	Cady Street and Hutton Street
Griswold	35’	Cady Street and Griswold Street
Hutton	58’	River Street and Beal Street



The AAA Foundation for Traffic Safety analyzed NHTSA's NASS Pedestrian Crash Data Study data (July 1994 through December 1998), which showed that the average risk of severe injury for a pedestrian increased from:

10% at a 16-mph vehicle impact speed,
to 25% at 23 mph,
50% at 31 mph,
75% at 39 mph, and
90% at 46 mph (Tefft 2011).

The 85th Percentile



The 85th Percentile idea, based on the 1964 "Solomon Curve," says speed limits should be set at what 85 percent of drivers think is healthy.

It was created back when the highway system was still young, cars didn't approach speeds as quickly as they do today, and we didn't have the sort of statistics and research on traffic dangers we do today.

"Revise traditional speed-setting standards to balance 85 percentile approaches with safe systems approach that better incorporates crash history, safety of pedestrians, bicyclists."

Control Speeds at Intersections

Mini-circles and **painted intersections** in Redwood City's neighborhoods can reduce speeds to an appropriate level. They also provide the opportunity to establish gateway features and to advance local placemaking efforts.

Flowers, shrubs or trees in the mini-circle further calm traffic and beautify the intersection, but need to be properly maintained to avoid sight obstructions.

Images:
Upper Left: London, England
Upper Right: Portland, Oregon
Lower Left: Culver City, CA
Lower Right: Portland, Oregon

Roundabouts and Compact Intersections

This intersection at the University of Hawaii Maui campus was funded for a pedestrian overpass. Instead, we recommended solving the problem at the intersection by addressing the needs of the pedestrian and bicyclist at grade.

LaJolla Boulevard, tasked with carrying 23,000 Vehicles Per Day, was reduced from 5 lanes to 2 lanes. The result, significant new investment in buildings, more parking, greater safety, walking and bicycling, and motorists getting home sooner at significantly lower speeds (20 mph vs 40 mph)

LaJolla Boulevard, Bird Rock, California

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LaJolla Boulevard, Bird Rock, California

Can handle 25,000 vehicles per day

Can handle 25,000 vehicles per day

ROUNDABOUT

The size and number of lanes in a roundabout is driven by the number of vehicles that use the intersection.

Rather than ask this or any intersection to handle more anticipated traffic, address the core land use problems generating the problem.

7 Mile Road has an AADT volume of 7,035 vehicles per day (2009).

Hines Drive between Center Street and 7 Mile Road has an AADT volume of 10,200 vehicles per day (2009)

Griswold Street has an AADT volume of 7,018 vehicles per day (2012)

Understanding Intersections
-Efficiency & Safety-

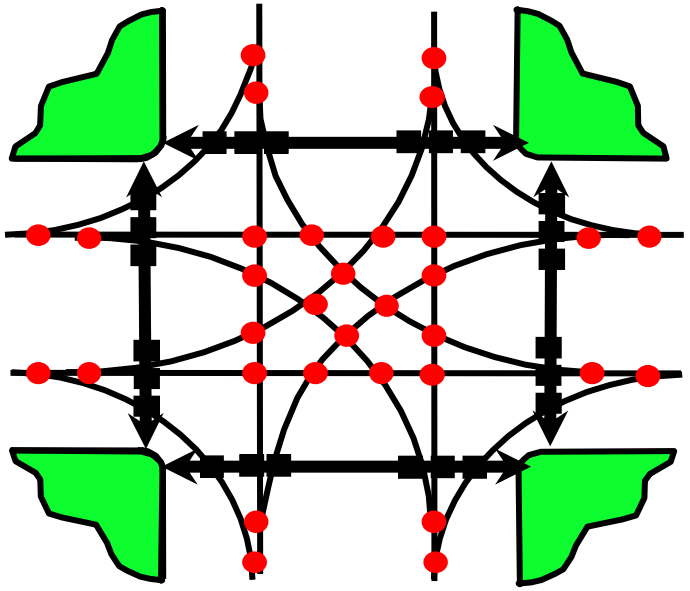
The intersection in the top image is inefficient and unsafe. It is dangerous to those wanting to cross and, therefore, it is hostile to businesses. Modified as a roundabout, the engineer has reduced the potential for personal injury crashes by 70 percent and, at the same time, has eliminated delays to motorists and pedestrians. Roundabouts carry 30-50 percent more traffic per lane.

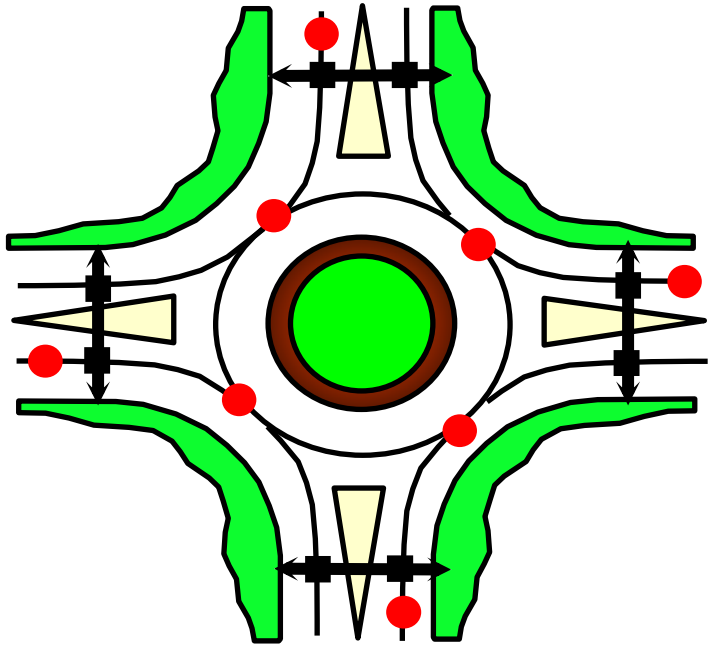
Once the community considers placemaking as central to urban design and transportation planning, an area will come alive and transform into a bustling environment for convenient services.

Such a change brings back life to the downtown and this arterial strip street. When intersections become true nodes (gathering places) land values can increase from $3-5/square foot to $15-35/square foot.

Image: U.S. 99, Gridley, California
Photo vision: Steve Price, Urban Advantage

Fewer Conflicts





● 32 Vehicle to vehicle conflicts

■ 24 Vehicle to pedestrian conflicts

● 8 Vehicle to vehicle conflicts

■ 8 Vehicle to pedestrian conflicts

Gateway Roundabout

A gateway roundabout is proposed at the intersection of Shelton Avenue/Center Street and 7 Mile Road/Hines Drive. "The design of the roundabout shall include the installation of HAWK Beacons or Pedestrian Hybrid Beacon (PBH) to allow for safe pedestrian crossing."

Traffic allowing, this design should be kept to a single lane, and, if needed an RRFB system should be considered.

If desired, a raised crossing on one or more legs can further keep speeds low.

Note, the Z's are facing the wrong way

This former 5-lane LaJolla Boulevard roadway was failing businesses along the street, and also minimizing the social life of the street. This single lane roundabout handles 25,000 Vehicles per day, supporting high levels of walking and bicycling.

Colorize Select Intersections

Consider any of the following stores, shops to further activate the neighborhood center:

- Small work center
- Drop-off laundry
- UPS or Fed-Ex
- Coffee shop
- Day Care
- Senior Center
- Wine & Cheese
- Bike shop
- Barber/Hair stylist
- Small outdoor cafe

Parking Toolbox

Parking Tools

This street can handle up to 5,000 vehicles per day. With parking maximized, traffic speeds are low. The presence of cars parking and unparking slows traffic.

Curb-to-curb the street is only 54 feet wide. The driving deck is 20 feet, each parking bay is 15 feet wide, plus a 2 foot valley gutter (15+2+20+2+15).

Benefits of this parking plan include:

- Keeps traffic Speeds in the 15-20 mph range
- Bike and ped friendly
- More than doubles parking, compared with parallel
- Minimizes off-streety parking
- Can include rain garden drainage
- Easy street crossings for pedestrians

Parking Tools

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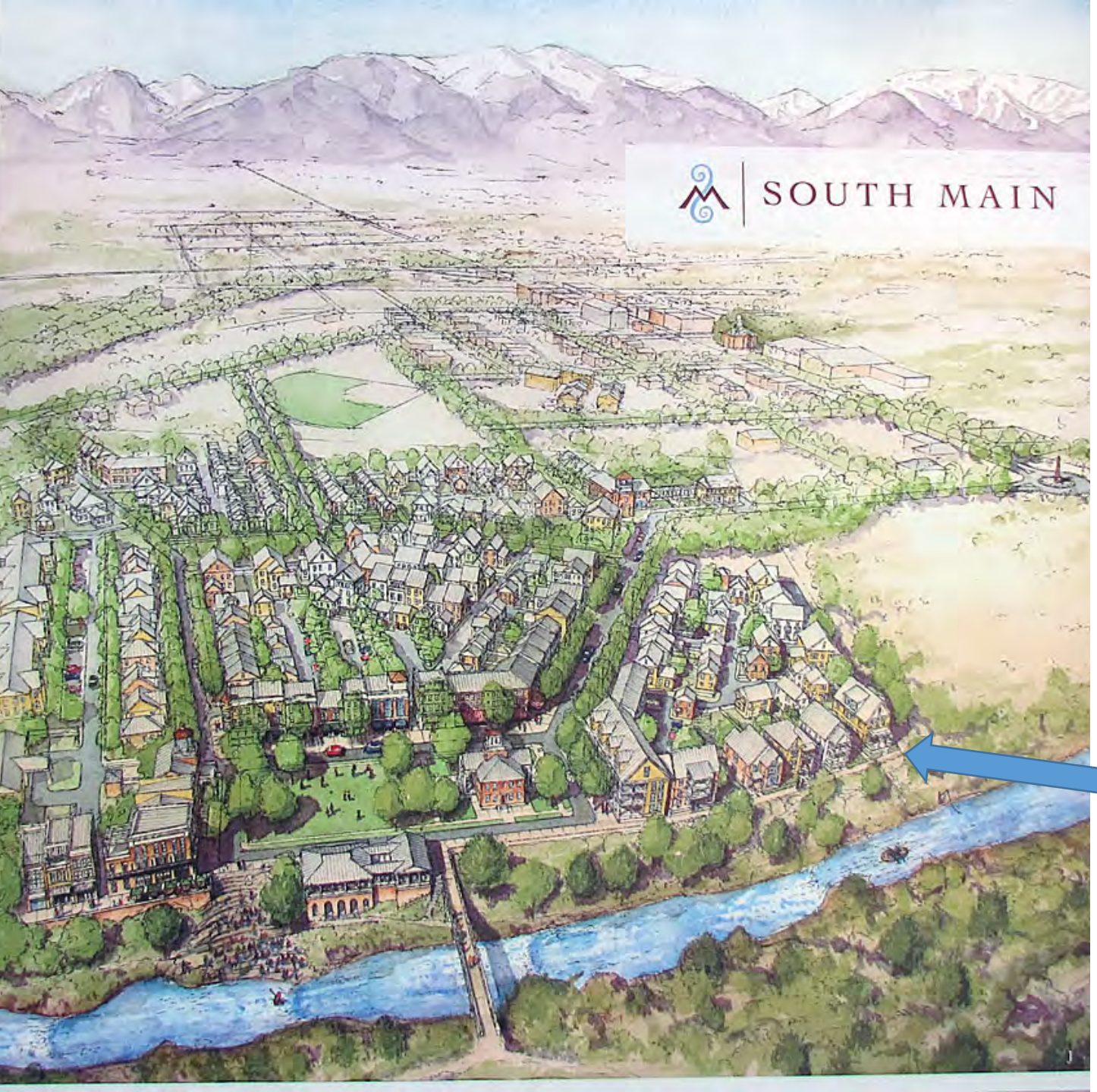
- Bike and ped friendly
- More than doubles parking, compared with parallel
- Minimizes off-streety parking
- Can include rain garden drainage
- Easy street crossings for pedestrians
- Great buffer to walking areas



Eyes On Open Spaces

South Main in Buena Vista, Colorado is a new neighborhood. When properly oriented, homes facing open space are sold at a premium. Their role to watch over open space is important.

South Main in Buena Vista, Colorado

Natural Play for Children

South Main in Buena Vista, Colorado

Outdoor Rooms

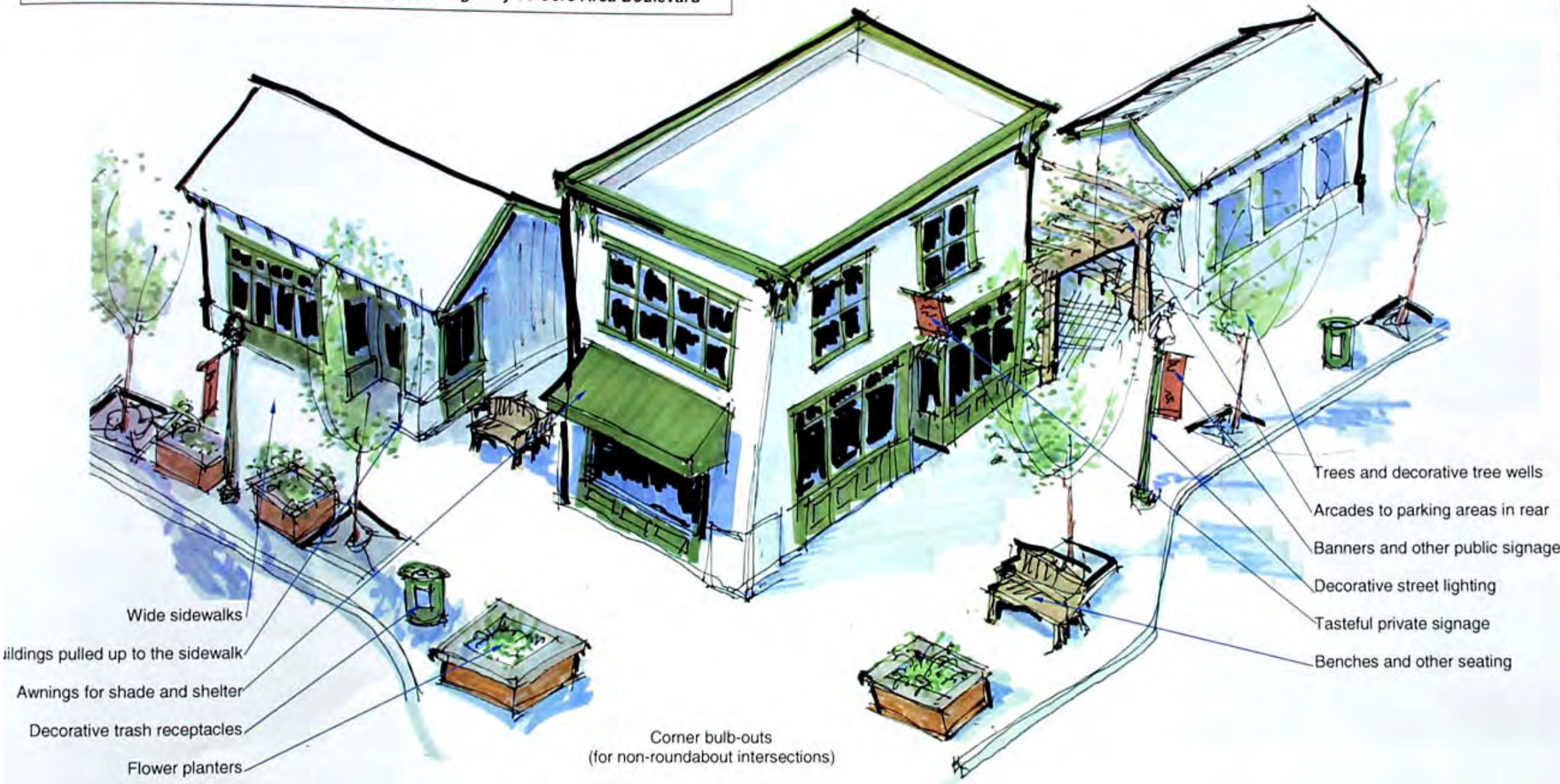
A potential post-pandemic outcome is recognition of all-season outdoor designs. Outdoor social space, both public and private is likely to become an attractor.

Carmelo's
Ristorante
RUN · WALK · JOG

Social Use of Space

RECOMMENDED STREETSCAPE DESIGN FOR CORE AREA

Figure x: Streetscape elements for the proposed Highway 99 Core Area Boulevard



Streets as Social Space

Wall Street, Asheville, NC (Curbless streets maximize social space)

Streets as Social Place

Wall Street, Asheville, NC (Curbless streets maximize social space)

Coquitlam, British Columbia (NEW INFILL MIXED USE BUILDINGS ARE ADDED)

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Coquitlam, British Columbia (Parking is flush with sidewalk)

Security

Homes Watching over the Trail and Riverfront

Proper home and other building orientation, with the most active side of the house or store facing streets, trails and open lands maximizes the safety, security and comfort of those walking, bicycling or just hanging out. N*atural surveillance* is important to the social and physical life of a neighborhood.

Eyes on the Trail

This trail in Victoria, B.C. has a small set of stores to welcome trail users. Most portions of this trail have “EYES” watching over the trail. The Northview Downs should incorporate eyes on the trail and important streets design.

EYES ON THE PARK

EYES ON THE PARK

Kirkland , Washington

Eyes on the Street

Consider any of the following stores/shops to further activate the neighborhood center:

- Small work center
- Drop-off laundry
- UPS or Fed-Ex
- Coffee shop
- Day Care
- Senior Center
- Wine & Cheese
- Bike shop
- Barber/Hair stylist
- Small outdoor cafe

Place is created through a combination of public and private partnerships. Placemaking comes alive when there are ten or more things to do in a compact area.

Next Steps

Next Steps

- Study, refine, localize the agreed upon recommendations
- Adopt a complete streets resolution and action plan
- Adopt the NACTO Street Design Guide
- Adopt a roundabouts-first policy
- Hire or contract a Northville Downs project ombudsperson
- Update the 2014 Non-motorized plan and include the above recommended guides and tools
- Prioritize the sidewalk and bike system within ½ mile of the project site

Next Steps: Gather Community Feedback

- What do you think?
- Which ideas do you like?
- Anything to add to the discussion?
- From who else should we hear?

Contacts

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