

# Parking and Traffic in High Density Areas – Myths, Realities, and Solutions

*San Diego APA  
Making Density Work*

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**Nelson | Nygaard**  
Transportation Planning  
for Livable Communities

# Parking & Traffic

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1. Identifying the Problems
2. Effects of the Problems
3. Solutions to the Problems

# Preliminary Recommendations

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## Identifying the Problems

# Minimum Parking Requirements

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## Purpose

- ❖ Palo Alto: *"to alleviate traffic congestion"*?
- ❖ Poway: *"to promote public safety"*?
- ❖ In reality, minimum parking requirements *prevent spill-over parking problems*



*Palo Alto, CA – parking requirements adopted in 1951*





# Minimum Parking Requirements - Source



## Example: Office Parks

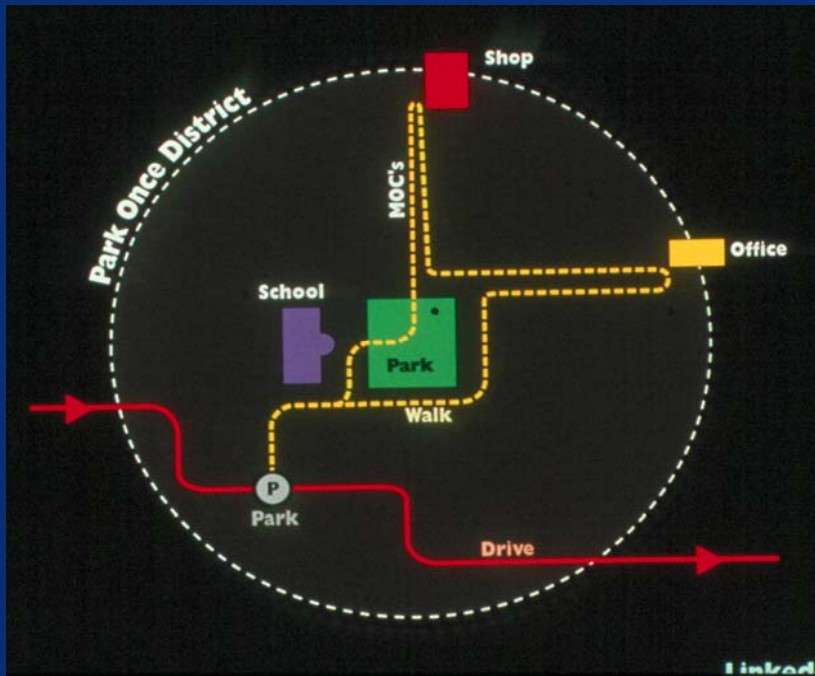
Peak Occupancy Rates, in spaces per 1000 sf of building area:

Lowest:	0.86 spaces
Average:	2.84 spaces
Highest:	5.58 spaces

Typical requirement:  
4.0 spaces/1000 sf

Source: *ITE's Parking Generation (3<sup>rd</sup> ed., 2004)*

# Demand vs. Requirement: Downtown Palo Alto



## Observed peak occupancy:

- 1.91 spaces per 1,000 s.f.

## Peak occupancy w/ 10% vacancy:

- 2.1 spaces per 1,000 s.f.

## Existing Requirement:

- 4 spaces per 1,000 s.f.
- Would require 5,210 more spaces than observed demand to bring downtown to 4 spaces per 1,000 sf requirement
- At \$51K/space = \$298 million

# Parking Demand in Four Mixed Use Districts

City	City Pop.	Mode Split (Employee Commuting)							Occupied Parking Spaces per 1,000 sf (non-res)
		<i>Drove Alone</i>	<i>2 or More Person Carpool</i>	<i>Transit</i>	<i>Bicycle</i>	<i>Walked</i>	<i>Other Means</i>	<i>Worked at Home</i>	
Chico	59,900	61%	12%	1%	11%	13%	1%	1%	1.7
Palo Alto	58,600	80%	9%	4%	3%	3%	1%	0%	1.9
Santa Monica	84,100	74%	11%	11%	1%	2%	1%	0%	1.8
Kirkland, WA	45,600	77%	12%	4%	0%	2%	1%	4%	1.6

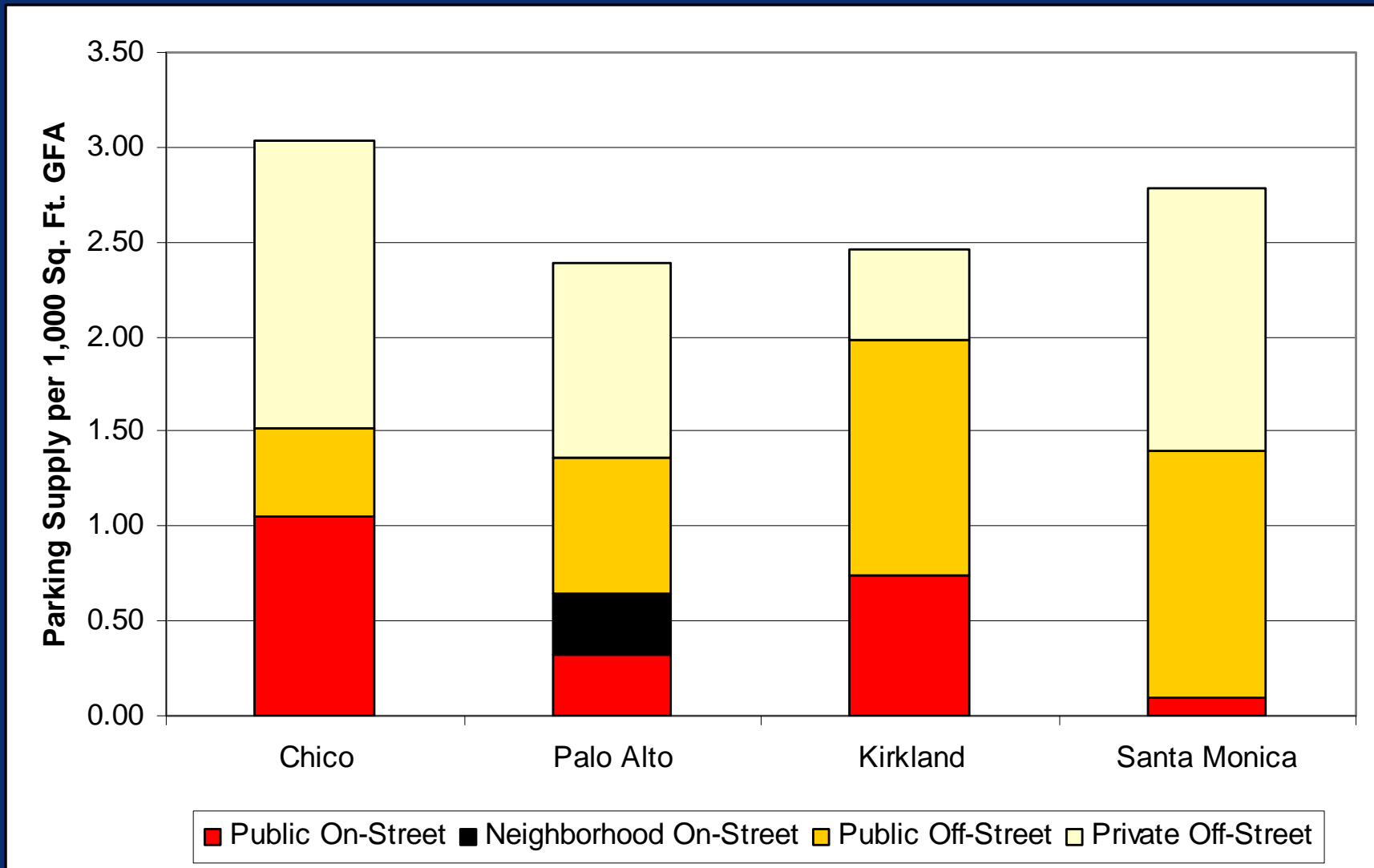


# Parking Demand in Four Mixed Use Districts

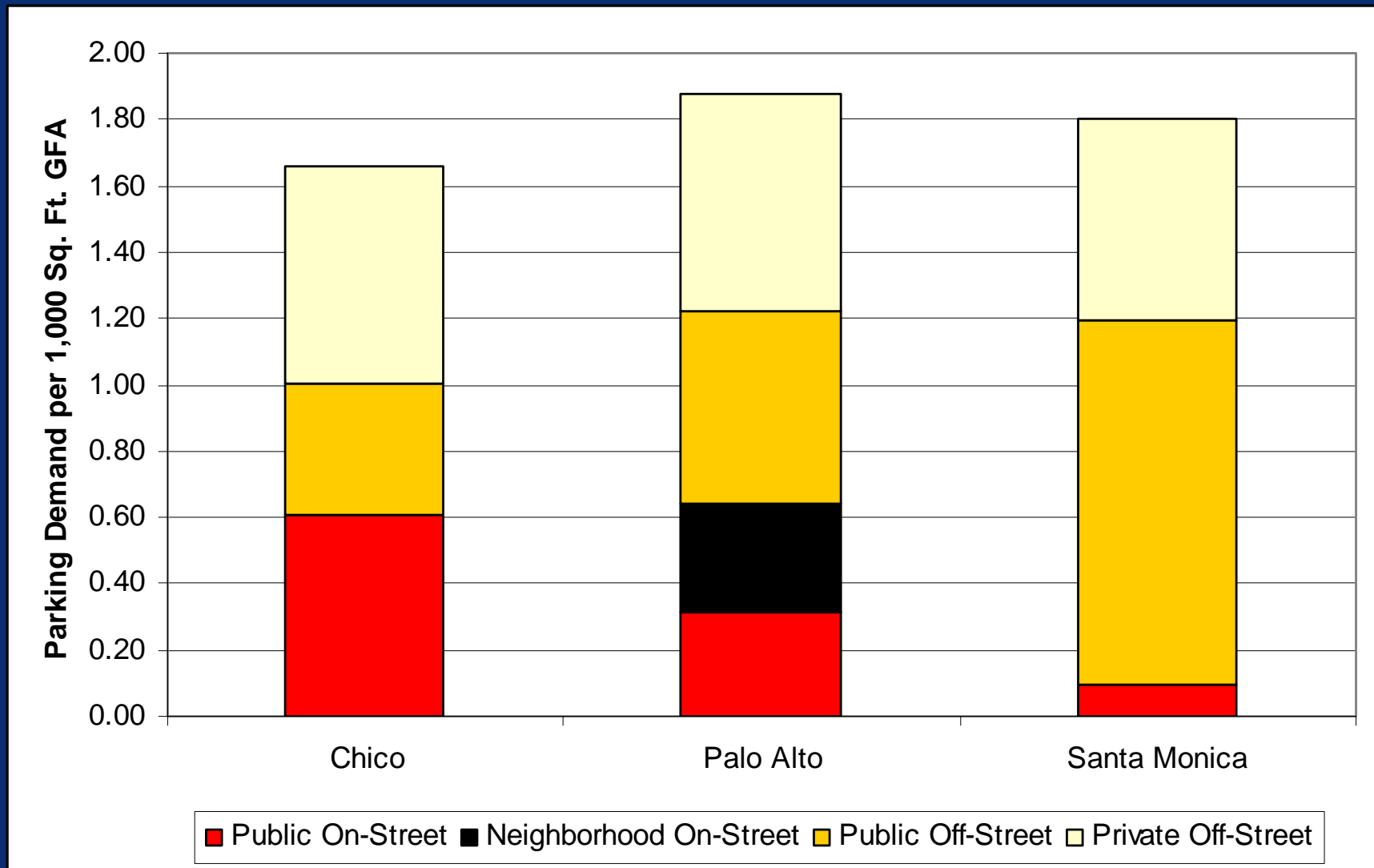
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- ❖ What accounts for the reduction in parking demand in the Main Street districts (compared to the conventional suburban development in *Parking Generation*)?
- ❖ **Likely factors** include:
  - Shared parking between land uses (by time of day and day of the week)
  - Shared parking within one land use type
  - Mode split (61-80% drive alone commute rate)
  - Prices
  - Walking between land uses

# Parking Supply in Four Mixed Use Districts



# Parking Demand in Three Mixed Use Districts



# Preliminary Recommendations

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## Effects of the Problems











# Standard Parking Generation Rates Are Derived From Isolated, Single-Use Developments



# The Result of Minimum Parking Requirements

1. Institute High Parking Requirements, Single-Use Zoning
  - Creates segregated, automobile-oriented employment centers
  - Severe automobile congestion
  - Very high infrastructure costs
2. React by limiting density
  - Typical: "0.5 Floor to Area Ratio", 0.5 sf of building per 1 sf of land
  - City spreads out, transit cannot work
  - "Can't build on it, so we might as well pave it"

**Segregated  
Employment Centers**



**Sprawling Residential  
Subdivisions**



**Traffic Congestion &  
Long Commutes**





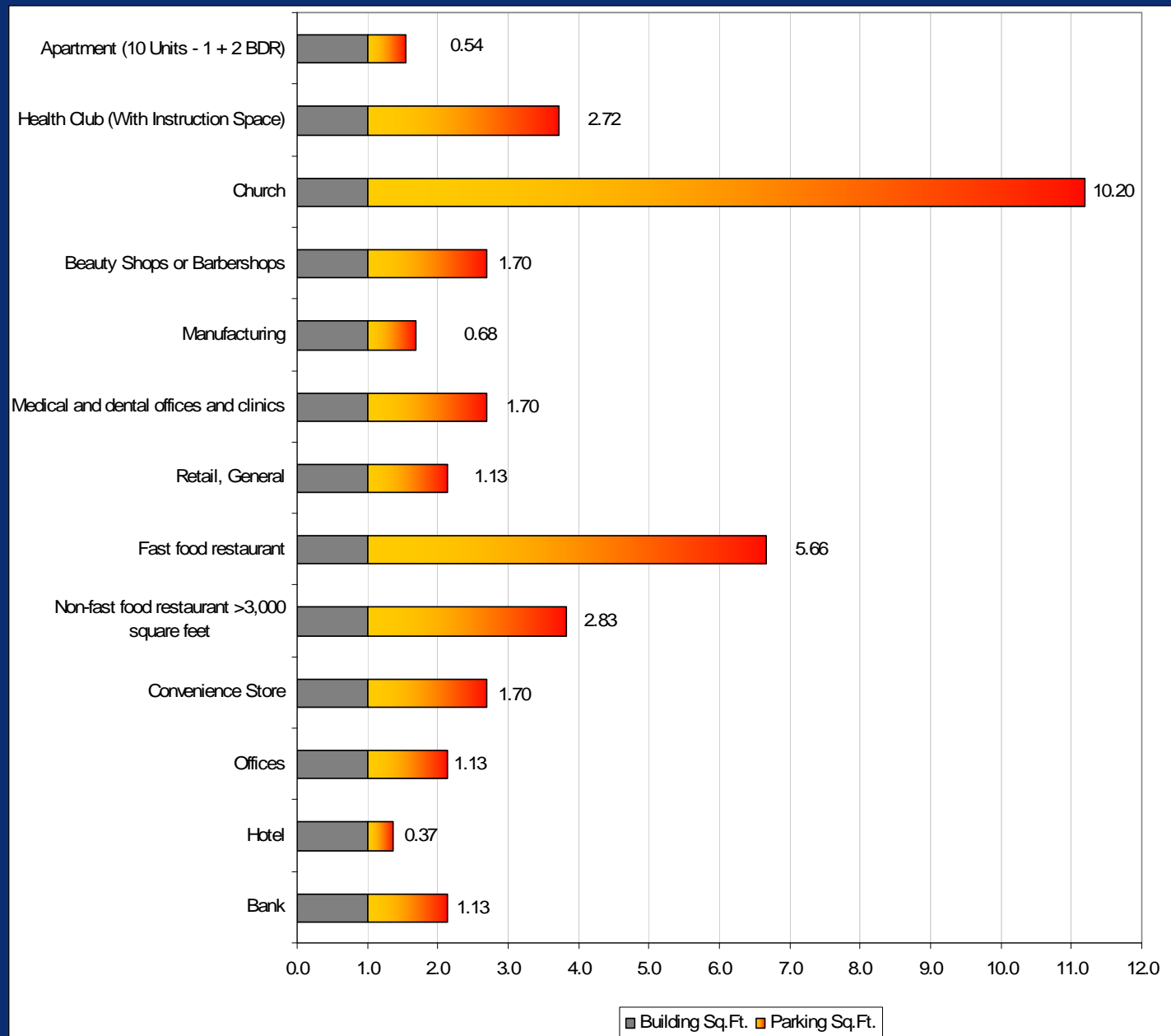
# Parking Requirements & Housing Affordability

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- ❖ 1961: Oakland's first parking requirement
- ❖ One space per unit for apartments
- ❖ Construction cost increases 18% per unit
- ❖ Units per acre decreases by 30%
- ❖ Land value falls 33%

- Typical office parking requirement: 4 spaces per 1,000 gross sq. ft.
- 1.13 sq. ft. of asphalt per sq. ft. of building area





Typical  
minimum  
parking  
requirements...

*...often require  
more parking  
than building*



# Form and Character



Palo Alto, CA - Mixed-use



San Jose, CA - Arcade



Brea, CA - Mixed-use



Palo Alto, CA - Retail street



Palo Alto, CA - Retail street



Pasadena, CA - Mixed-use



San Diego, CA - Mixed-use

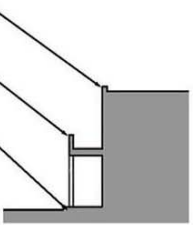
Typical Building Types:  
Work/live, Lofts over flex, Office over flex, Flats

Typical Building Height:  
3-5 Stories

Typical frontage types:  
Arcade, Gallery, Stoop, Forecourt, Storefront

Typical Setback:  
0'

Average Density:  
60-65 DUs/Acre





# Free Parking

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- ❖ An oversupply of parking results in “free” (employer-paid) parking - America’s most common fringe benefit
- ❖ Americans park free for 99% of all trips
- ❖ Federal government encourages employer paid parking
  - Parking at work is a tax-free benefit, if the employer pays for it
  - Smaller tax benefit for transit and van pools; no benefit for carpooling, walking
  - New benefit for bicycling

# Transit

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- ❖ Difficult competition with free parking
  - Example: Santa Clara Valley Transportation Authority (VTA) Light Rail
    - Very low ridership
- ❖ Trains ≠ Silver Bullet
- ❖ Transit Oriented Development vs. Transit Adjacent Development

# Preliminary Recommendations

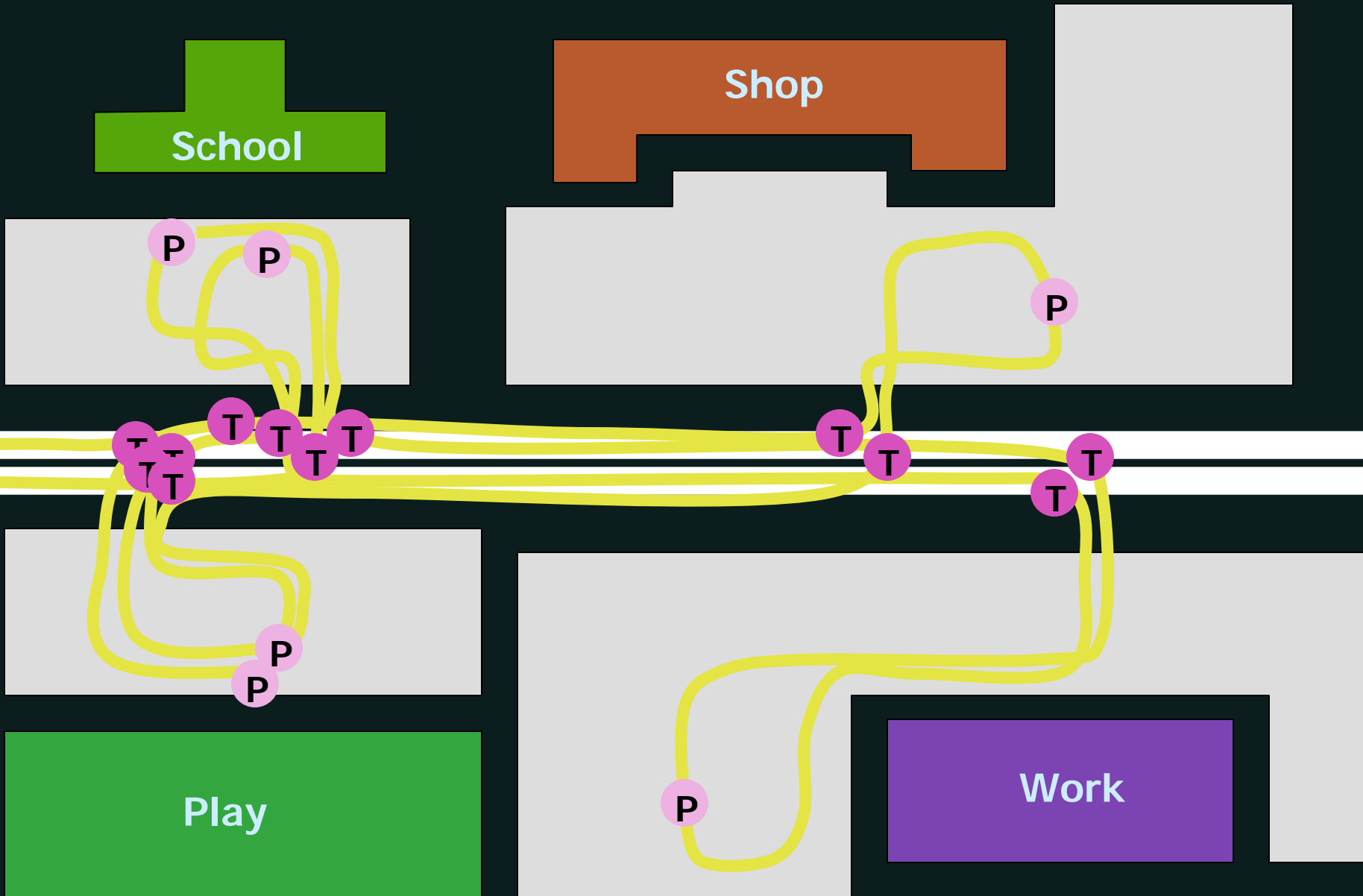
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## Solutions to the Problems

# Mixed-Use Zones Act as a "Park Once" District

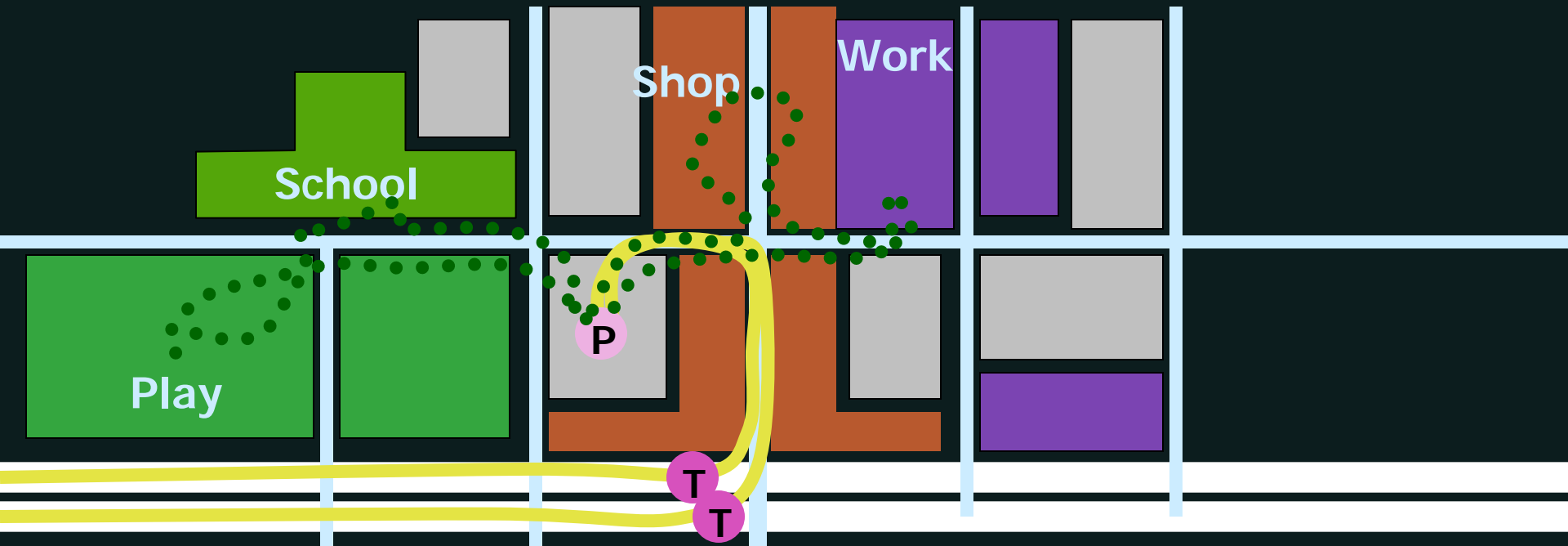


# Conventional Development





# Mixed Use, Park Once District



## Results:

- $< \frac{1}{2}$  the parking
- $< \frac{1}{2}$  the land area
- $\frac{1}{4}$  the arterial trips
- $\frac{1}{6}^{\text{th}}$  the arterial turning movements
- $< \frac{1}{4}$  the vehicle miles traveled

# Transit Oriented Development



# Parking Requirement Burden Lifted

- ❖ *Problem:* Pasadena's minimum parking requirements kept Old Pasadena's buildings from changing uses
- ❖ *Examples:*
  - Pawnshop: 2.5 spaces/1,000 sf
  - Restaurant: 20 spaces/1,000 sf
- ❖ *Solution:*
  - Parking requirements reduced by 25%
  - "Parking Credit Program": Pay in-lieu fee of only \$115 per year per space (2001) for each space not provided
  - Cost to meet parking requirement is now only 2.5% of previous cost



**Drivers pay two thirds of public parking garage costs**







# Petaluma, CA: Smart Code Results

## Key Policies

1. 'Park Once' Environment
2. Manage On-Street Parking
3. Create Parking Benefit Districts
4. Parking requirements drastically reduced, then abolished

## Effect

One year later:

**\$75 million project (theater, retail, apartments, office) submitted**

## Central Petaluma Smart Code

Central Petaluma Specific Plan - Chapter 11

Petaluma, California

January 27, 2003



# Successful Precedents

Reviving neighborhoods by abolishing minimum parking requirements:

- Coral Gables, FL
- Eugene, OR
- Fort Myers, FL
- Fort Pierce, FL
- **Great Britain  
(entire nation)**
- Los Angeles, CA
- Milwaukee, WI
- Olympia, WA
- Portland, OR
- San Francisco, CA
- Stuart, FL
- Seattle, WA
- **Washington, DC???**



# Recrafting Minimums

## ❖ Hercules Waterfront

- Blended non-residential rates allow turnover
- Residential rates by 1,000 square feet and not by unit
- No requirements for affordable & senior units



# Transportation Demand Management

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- ❖ Marketing Pricing
  - Unbundling of parking costs
  - Transparency of costs
- ❖ Parking Cash-Out
  - Equally subsidize all modes
- ❖ Parking Benefit Districts
  - Protect from “spillover” & return revenues
- ❖ In-Lieu Fees
  - Devote fees to common pool

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