

Form-Based Code Circuit Training!

PAW Boot Camp

Mercer Island, November 15, 2019

Bob Bengford AICP
Scott Bonjukian AICP
Ian Crozier AICP



Training Exercises

1. Form-based codes calisthenics
2. Code initiation sprints
3. Land use reverse lunges
4. Housing diversity aerobics (including a VPS drill)
5. Community design jumping jacks
6. Block frontage bench dips
7. Site design sit-ups
8. Building design stair climb
9. **Parking push-ups**
10. **Lessons learned stretches**



Parking Push-Ups

Why Are We Concerned About Parking?

Parking effects everything we plan for:

- Transportation systems
- Housing market
- Economic development
- Environment
- Urban design and character
- Building form and site layout

Aesthetics, Cost, Pollution, Safety, Etc.



Retail Parking

1-1/2 Hours Complimentary with Validation

Public Parking Rates

All Taxes Included

Rate With Validation

1-1/2 Hours or Less	Free
1-1/2 to 2 Hours	\$ 8.00
2 to 3 Hours	16.00
3 to 4 Hours	26.00
4 to 12 Hours	31.00
12 to 24 Hours	51.00

HB 1923 – Key Housing and Parking Provisions

Planning Grant Options

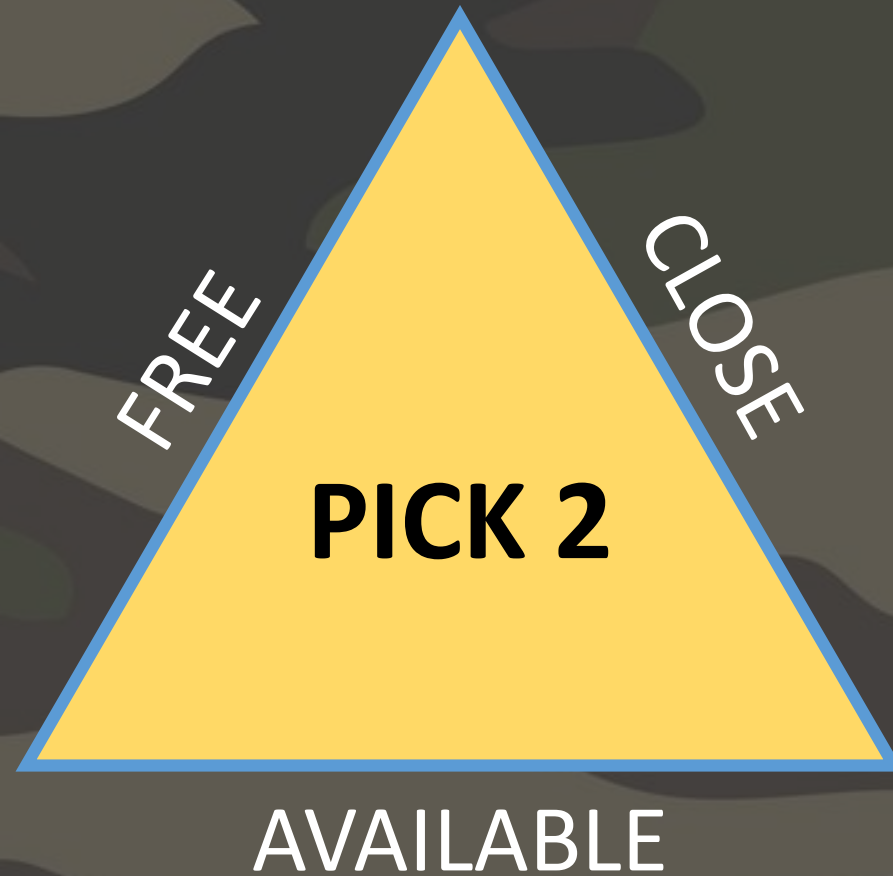
- For transit-oriented zoning updates, minimum must be no more than 0.5 parking spaces per bedroom in multifamily zones
- No parking may be required for ADUs

New RCW 36.70A.620 for housing within $\frac{1}{4}$ mile of good transit (with exceptions):

- Very and extremely low-income housing: Minimums limited to 1 space per bedroom or 0.75 spaces per unit
- Disabled and senior housing: No minimums allowed for residents, but allowed for visitors and staff

Is Parking A “Necessary Evil”?

Yes, But It's A Balance



What Planners Can and Can't Control

Influences on Travel

- Land use mix and distribution
- Demographics (age, income)
- Jobs that require driving
- Private parking rates
- Transit availability and quality
- Bicycle network safety
- Fuel prices
- Weather

Shaping the Impacts of Parking

- Parking availability and quantity
- Allowing alternative amounts and uses of parking
- Parking lot location and entries
- Parking lot/structure design
- Employer/developer incentives
- On-street parking prices
- Local environmental regulations

Typical (Outdated) Parking Codes

- Detailed requirements for a litany of land uses
- Assume everyone and their dog is driving
- Little or no flexibility for unique situations or community context
- Minimal or no requirements for landscaping and screening
- Silent on relationship to buildings, streets, and pedestrian circulation

LAND USE	REQUIRED PARKING
RESIDENTIAL	
Single Family/Duplex	2 spaces per unit; tandem parking may be used to fulfill this requirement
Accessory Dwelling Unit	1 space; tandem parking may be used to fulfill this requirement
Multifamily: Studio Apartment	1 space per unit ³
Multifamily: Other Than Studio Apt.	2 spaces per unit ³
Senior Housing, Large and Small Scale	1 space per 2 units and 1 space for each employee @ peak times ³
Assisted Living Facilities:	
- Senior Assisted Care Facility	1 space for each 2 units + 1 space per employee @ max. shift
- Residential Care Facility	1 space for each 2 units + 1 space per employee @ max. shift
- Nursing Home	1 space per 3 beds
- Retirement Home	1 space per 3 beds
PUBLIC/QUASI-PUBLIC	
Banquet/Meeting/Reception	1 space per 75 sq. ft. GFA in dining or lounge areas or 1 space per 4 persons @ occupancy load, whichever is greater
Church/ Religious Facility, Funeral Home/Mortuary /Memorial Chapel	1 space per 4 seats
Community Center	1 space per 300 sq. ft. of offices, plus 1 space per 100 sq. ft. of weight rooms/workout and/or dance rooms, plus 1 space per 150 sq. ft. of multipurpose activity rooms, plus 1 space per 100 sq. ft. for restaurant/cafe or snack bar, plus 1 space per employee @ max. shift, plus additional for any stadiums/arenas or other uses according to standards established in Chapter 18.07 IMC
Day Care Operations ²	1 space per 6 attendees @ max. occupancy, plus 1 space per employee @ max. shift
Government:	
- Courthouse	3 spaces per courtroom, plus 1 space for each 30 sq. ft. of fixed seating in the courtroom. In addition, for the remainder of the courthouse, 1 space for each 300 sq. ft. of GFA
- Government Office Buildings	1 space per 300 sq. ft. GFA (like general office)

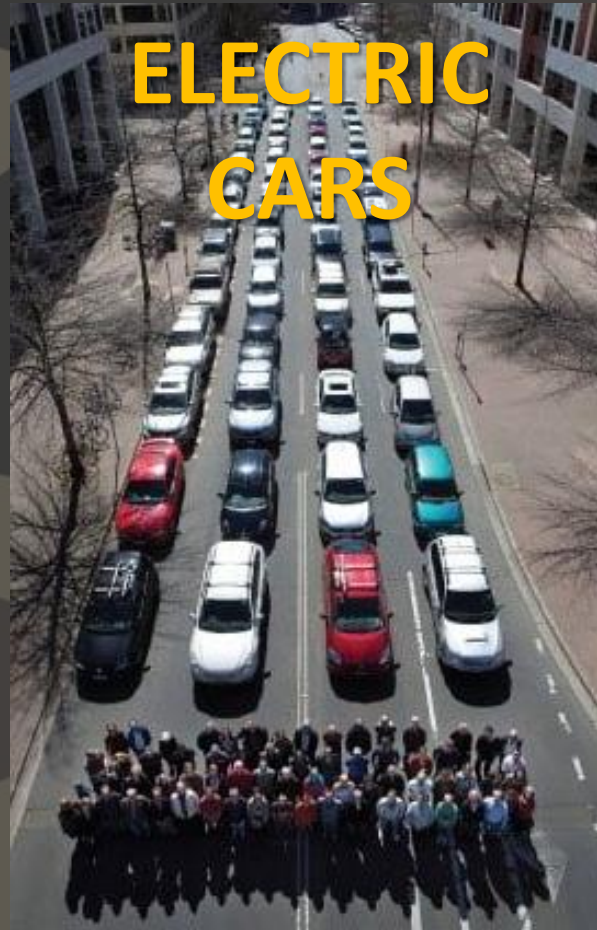
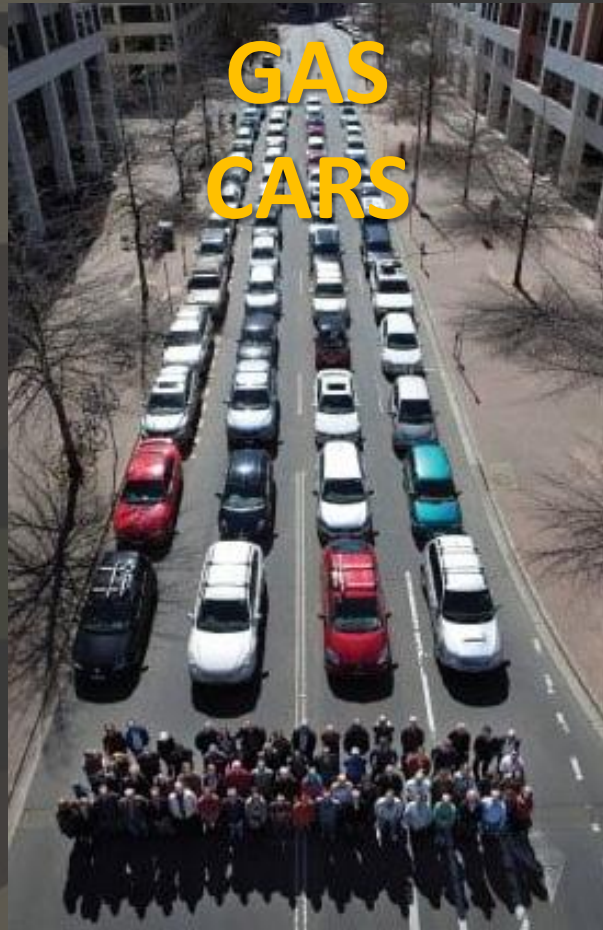
Not Everyone Drives

- Young
- Old
- People with disabilities
- Low-income
- Suspended license
- Environmentalists



Driverless Cars Are Still Cars

They're not coming to save us



Town Center vs. Suburban Contexts



Parking Demand

Same distance – but sometimes, a different willingness to walk



Parking Demand

Same distance – but sometimes, a different willingness to walk



Development Feasibility Example

2.6 acre town center block

Proposal for 4-floor, 25,000 SF
footprint mixed-use building



Development Feasibility Example

Program

- Ground floor – 6,250 SF restaurant and 18,750 SF retail (*25% and 75%*)
- 3 floors residential - 85 units averaging 1.5 bedrooms = 128 bedrooms (*700 SF per unit @ 80% efficiency*)

Parking code

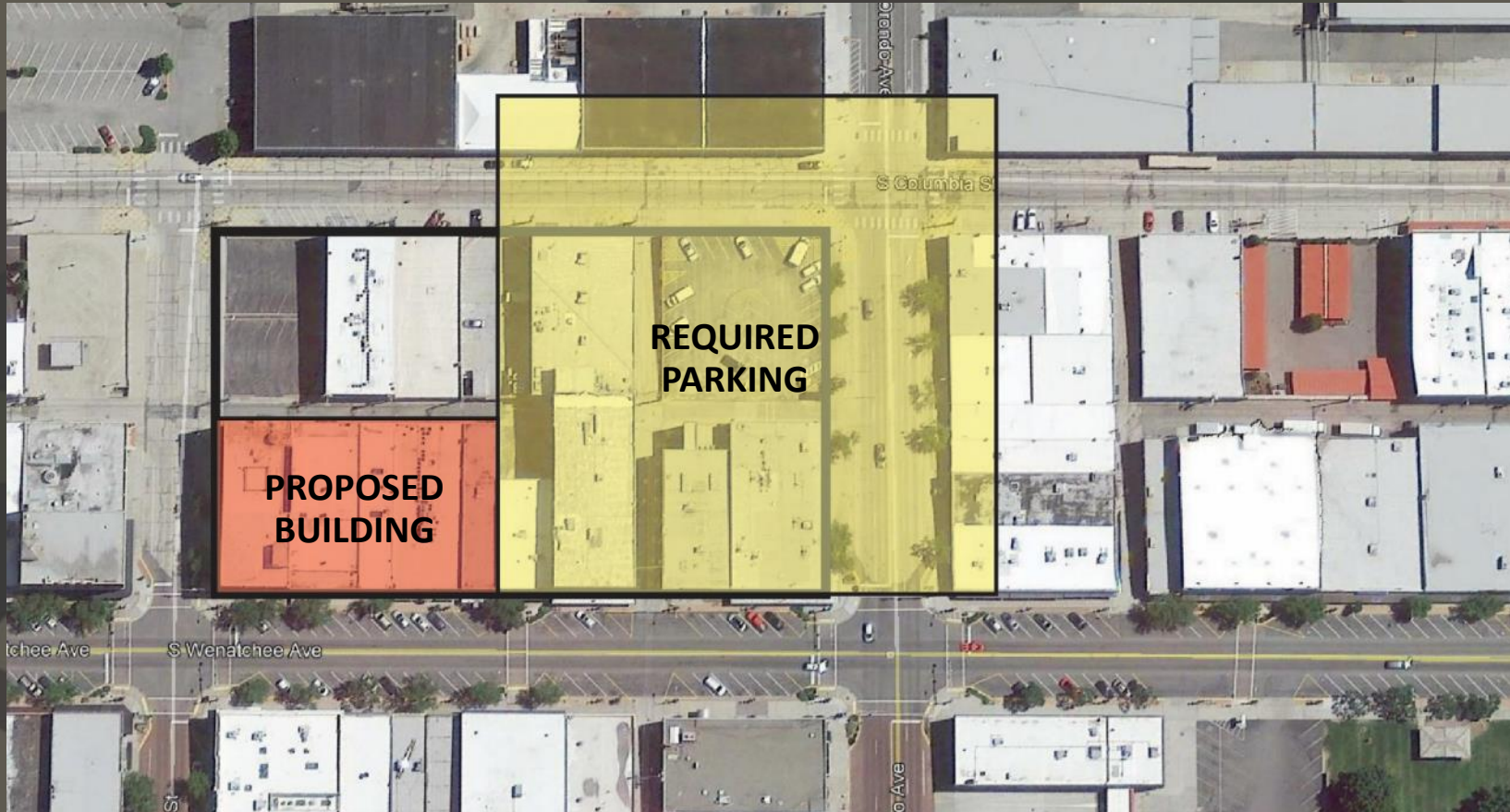
- 1.5 spaces per bedroom (!) = 191 spaces
- Restaurant, 10 spaces per 1,000 GFA = 63 spaces
- Retail, 2.85-4 spaces per 1,000 GFA = 59 spaces

Minimum required spaces = 313

Development Feasibility Example

Parking Area: 400sf x 313 spaces = 125,200sf (2.9 acres)

Unbuildable without expensive structured parking – if it is even feasible with geotechnical conditions, height limits, and market economics.



Various Approaches

...To aligning your parking policies with community goals and desires, market realities, and fostering sustainability

Levels of Parking Policy Complexity

1	Require plentiful parking for everything and everywhere
2	Adjust parking minimums for key locations and land uses based on actual use (or remove and let the market decide, where appropriate)
3	Create parking maximums, alternative compliance options and incentives, and parking lot/structure design standards
4	Coordinate parking policy with multi-modal transportation investments to reduce the need for driving and parking

Today's Focus

Incremental opportunities to right-size the quantity and quality of parking

Levels of Parking Policy Complexity

1

Require plentiful parking for everything and everywhere

2

Adjust parking minimums for key locations and land uses based on actual use (or remove and let the market decide, where appropriate)

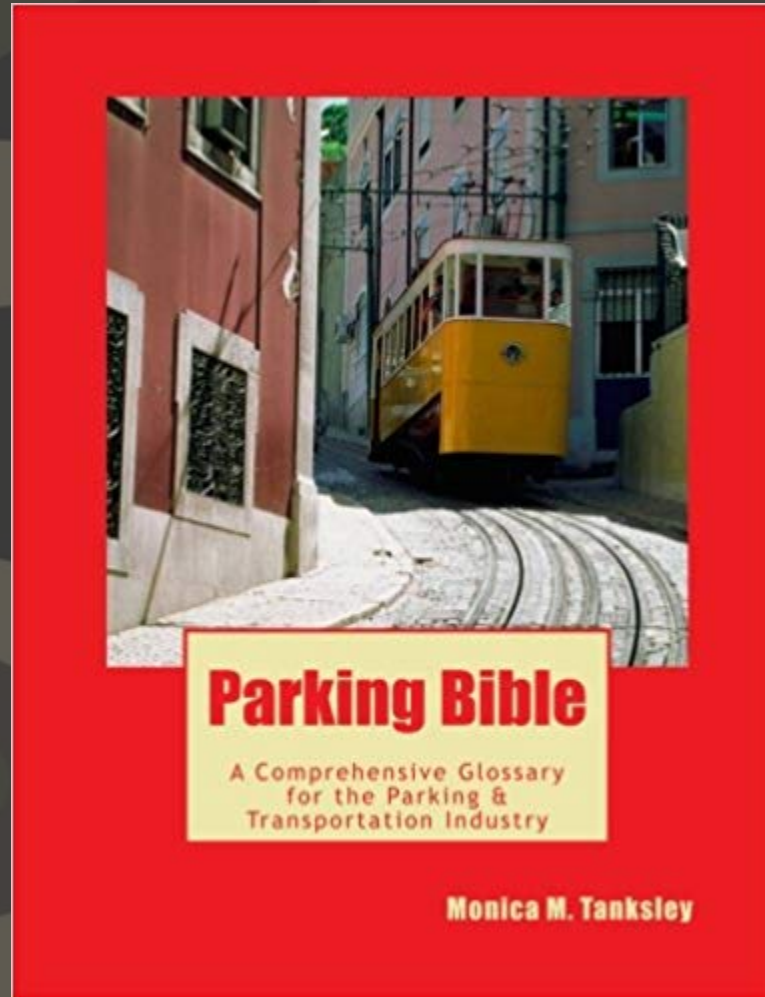
3

Create parking maximums, alternative compliance options and incentives, and parking lot/structure design standards

4

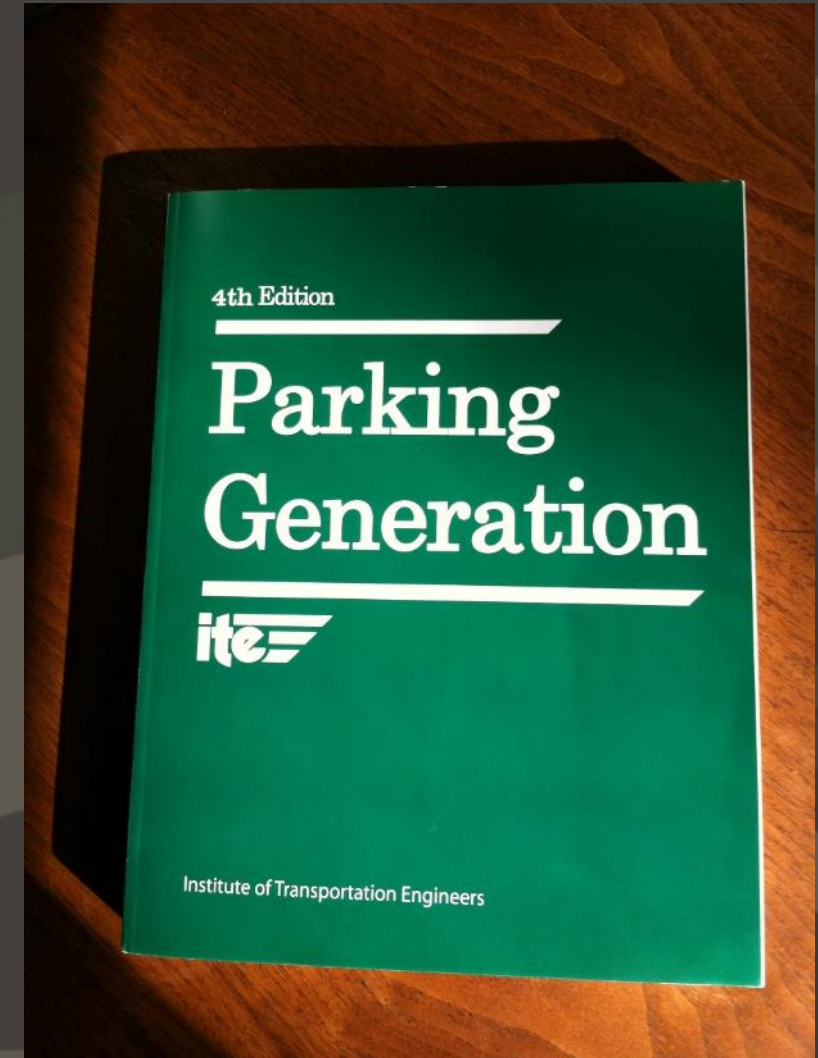
Coordinate parking policy with multi-modal transportation investments to reduce the need for driving and parking

How Did Parking Numbers Come To Be?



How Did Parking Numbers Come To Be?

- No one really knows
- It's not clear there is a scientific basis for most community's parking codes
- Many cities rely on the requirements of other cities, which may repeat mistakes without proper context
- The ITE Parking Generation handbook provides decent occupancy survey data, but the sample sizes are small, seem to involve free parking, and do not account for transit service



Effects of Parking Supply

- Oversupply leads to **induced demand**: Increased automobile ownership, vehicle miles traveled, and congestion.
- **Parking is expensive to build**. Construction of parking in multi-family projects costs between \$20,000 - \$40,000 per stall (10-20% of construction cost), which has an impact on rent charged to tenants.
- On average, multi-family buildings in King County supply **40% more parking than is utilized**.
- **Too little parking can have negative impacts** on marketability of multi-family housing projects, and on-street parking spillover impacts when on-street parking is not sufficiently managed and priced

Right Size Parking

- King County research project and development tool with broader use for general trends
- Ongoing research based on 200+ multifamily properties throughout King County



Right Size Parking – Online Map + Calculator

Enter a location...

Parking/Unit Ratio (Number of Stalls/Unit)
>0.50 ≤1.22

No Parcels Selected

Building & Parking Specifications | Location Characteristics | Parking Impacts

The preset values below represent subregional (CBD, Urban and Suburban) average/median values (from field work) for building (with no affordable units) and parking specifications. These represent the default values, as a starting point, for which parking use ratios are estimated. Scroll down to view parking optimization estimates and guidance on unbundled and affordable housing options.

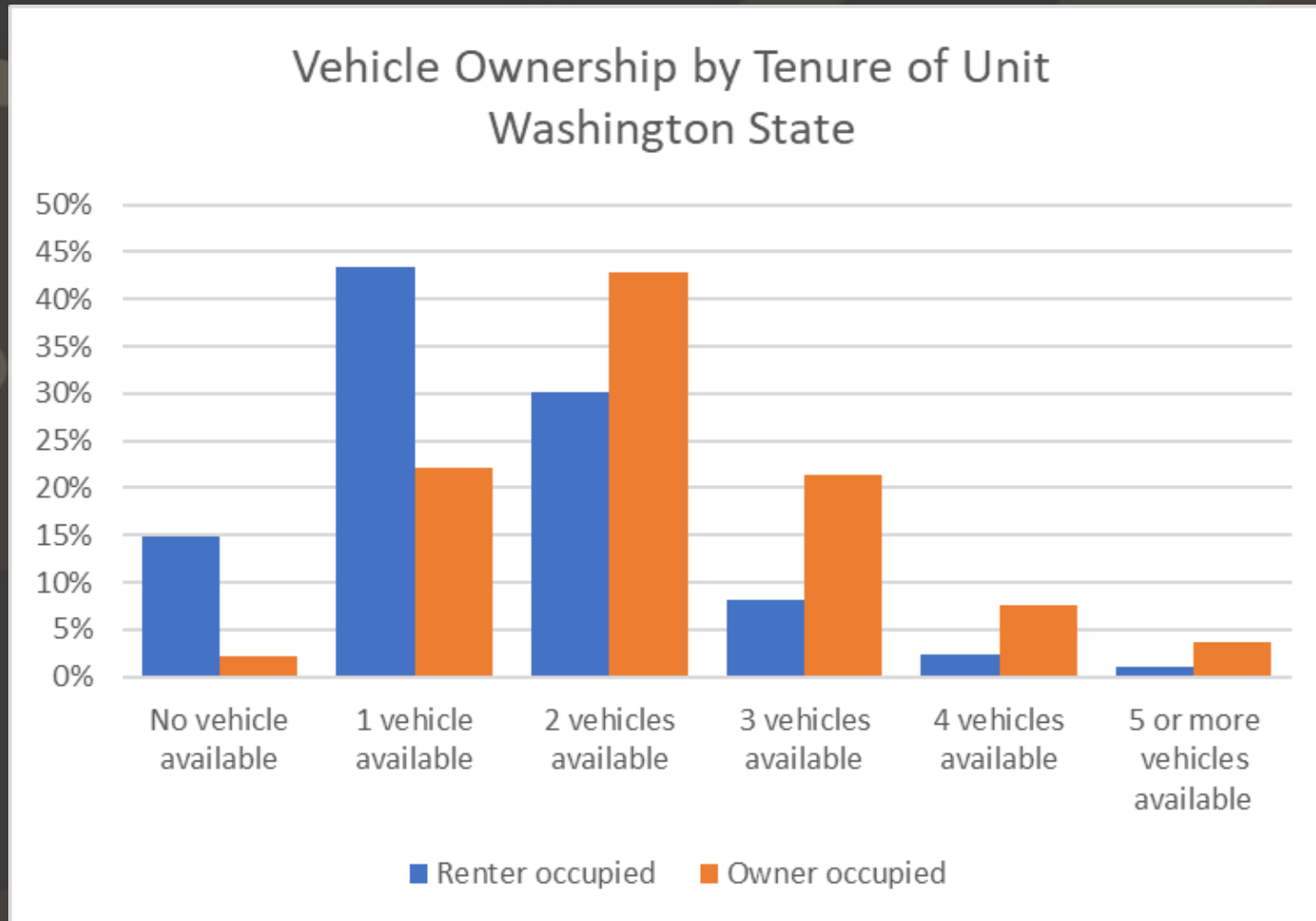
	NUMBER OF UNITS	AVERAGE RENT (\$)	RESIDENTIAL AREA (SQ FT)
STUDIOS:	<input type="text" value="20"/>	<input type="text" value="\$975"/>	<input type="text" value="550"/>
1 BEDROOMS:	<input type="text" value="60"/>	<input type="text" value="\$1,150"/>	<input type="text" value="750"/>
2 BEDROOMS:	<input type="text" value="60"/>	<input type="text" value="\$1,450"/>	<input type="text" value="950"/>
3+ BEDROOMS:	<input type="text" value="10"/>	<input type="text" value="\$1,575"/>	<input type="text" value="1200"/>
TOTAL:	150	\$1,275	125,000
AFFORDABLE UNITS:	<input type="text" value="20"/>		
PARKING			
PARKING STALLS:	<input type="text" value="150"/>		
PRICE PER STALL (\$/MO):	<input type="text" value="\$50"/>		

Optimized Parking Supply and Market Price
Modeled parking utilization per building is **nn** parked cars and this estimate has a range of **nn - nn** cars per building.

Map data ©2019 Google | Terms of Use | Report a map error

<https://rightsizeparking.org/>

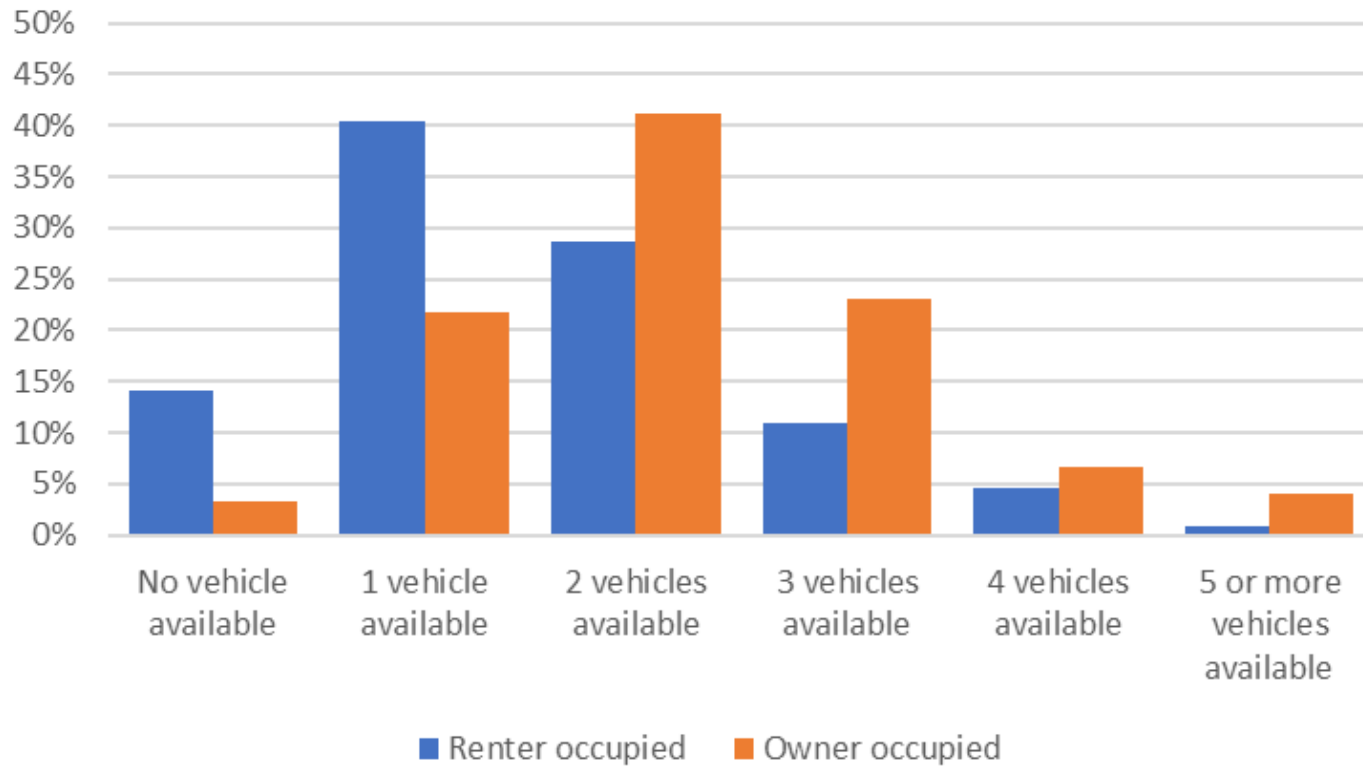
Multifamily Parking Ratio Considerations



- Parking is an equity issue when it affects housing cost and the environment
- Rental households are **6 times more likely** to have no cars than owner households
- If rental households do have cars, 1 is most common
- If owner households have cars, 2 is most common

Multifamily Parking Ratio Considerations

Vehicle Ownership by Tenure of Unit
Chelan County



The same trends are true even in rural areas

Don't Forget Commercial - #BlackFridayParking

If the lot is not full all day on Black Friday, it may be oversized

 Mike Christensen, MCMP, CNU-A, AICP Candidate
@MRC_SLC

It's Black Friday Parking Day! strongtowns.org/journal/2017/1... via @StrongTowns #BlackFridayParking




 nicowags • Follow

nicowags My subtle commentary on the idiocy of minimum parking requirements #blackfridayparking #zoning #strongtowns @strongtownspics


154w

dear_ndugu Oh my God! Have you ever seen Rte. 1 in Maryland next to I-95? Miles and miles of abandoned big boxes.

154w Reply

 Strong Towns
@StrongTowns


Our national obsession with parking wastes countless acres of land and millions of dollars. Know a parking lot near you that's too big even for the busiest shopping day of the year? Snap a photo and share it with hashtag #blackfridayparking bit.ly/2BtKre6



 dougaul #blackfridayparking 5th level empty, 1 car parked. Entire garage, about 1000-1200 spots total was probably 30-40% full.

102w



 schaeafadelics Empty parking spots in front of Target on Maryland Parkway in Las Vegas #blackfridayparking

102w

Towns Removing/Overhauling Parking Minimums

You're not alone – many resources and peer cities are available!

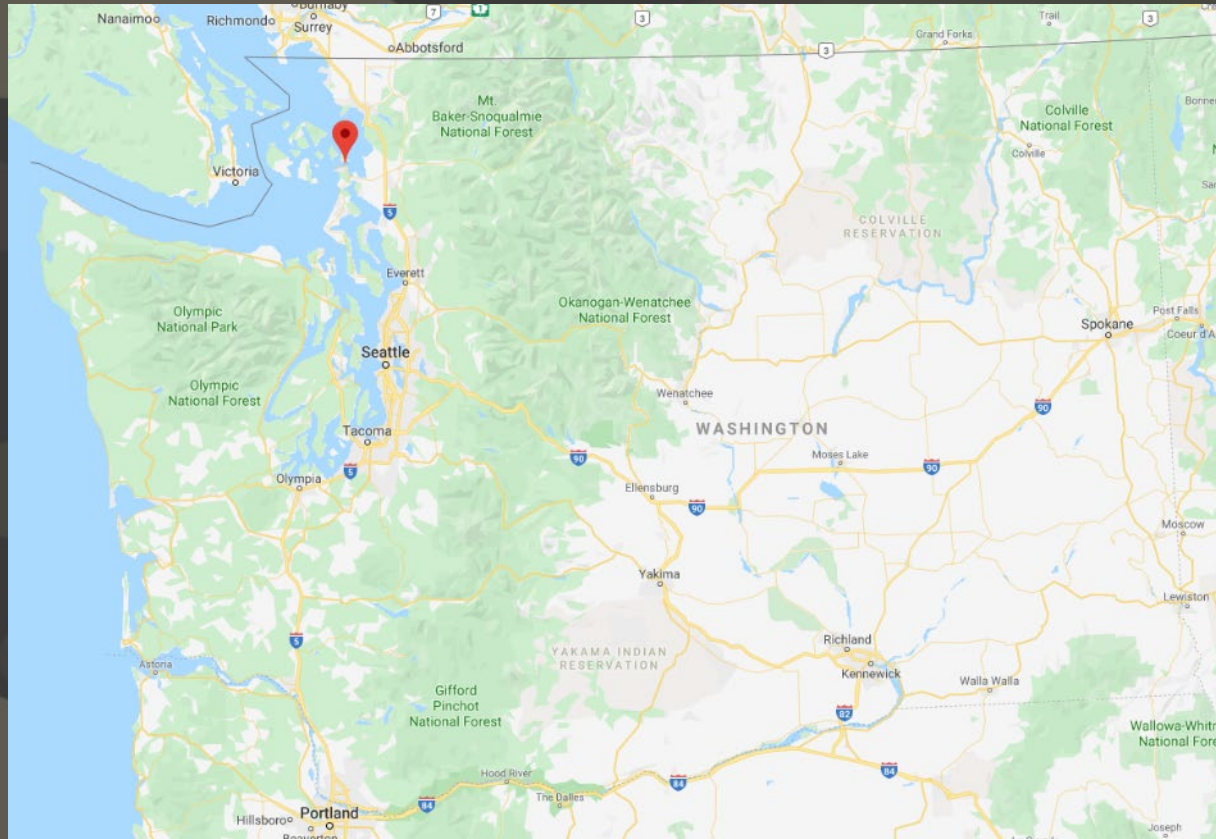


<https://www.strongtowns.org/journal/2015/11/18/a-map-of-cities-that-got-rid-of-parking-minimums>

Incremental Steps for Right-Sizing Quantity

- Reducing and removing parking minimums requires political support and public education
- Incremental options (pilot programs):
 - Location: Start in business districts and areas served by good transit
 - Rate: And/or offer a percent reduction less than 100%
- Guest parking ratios can help justify major residential reductions in areas concerned about street parking
- Parking maximums for large in-town uses (retail, multifamily, office, institutional, etc.) can be supported by a parking survey

Case Study: Anacortes, WA Development Regulations Update



Anacortes Parking Study

- In 2015 Transportation Solutions, Inc. conducted a parking study as part of the Comprehensive Plan update.
- Scope: Downtown and waterfront
- Purpose: Help the community understand the relationship between parking and land use, identify parking strategies, and find potential changes to land use policy.

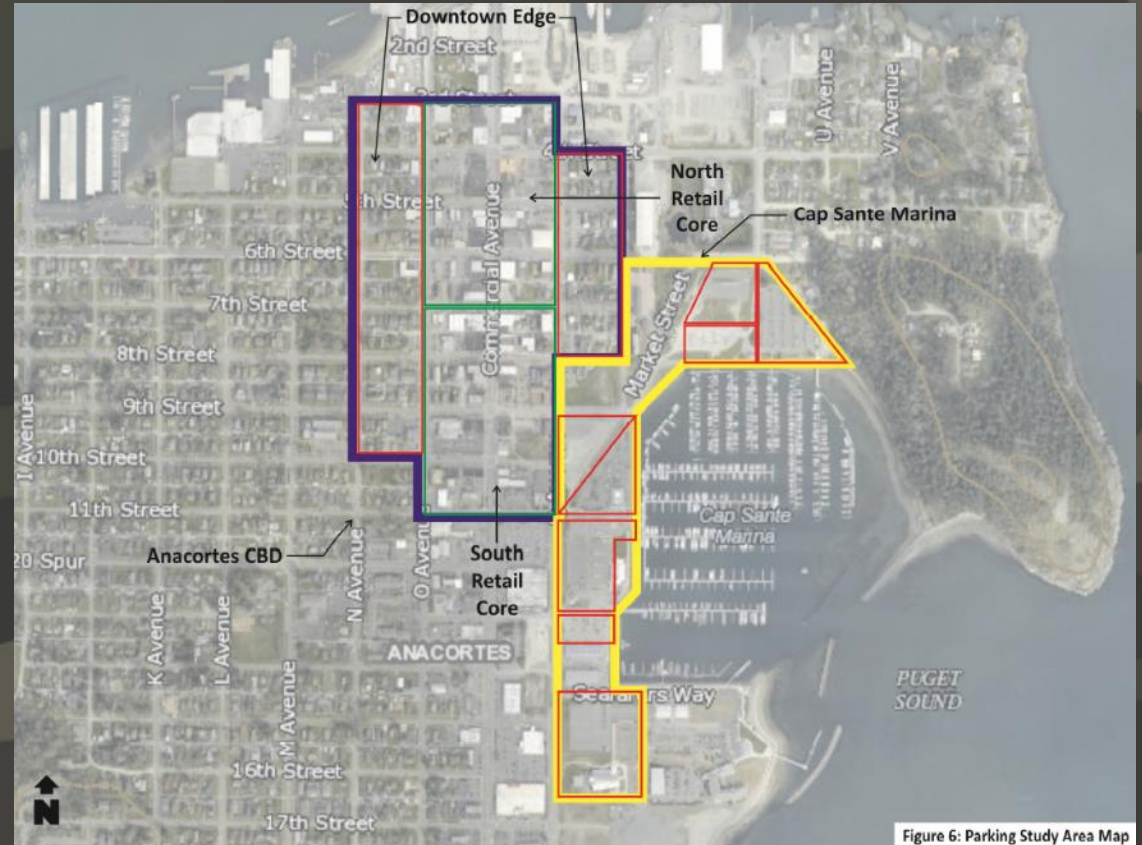
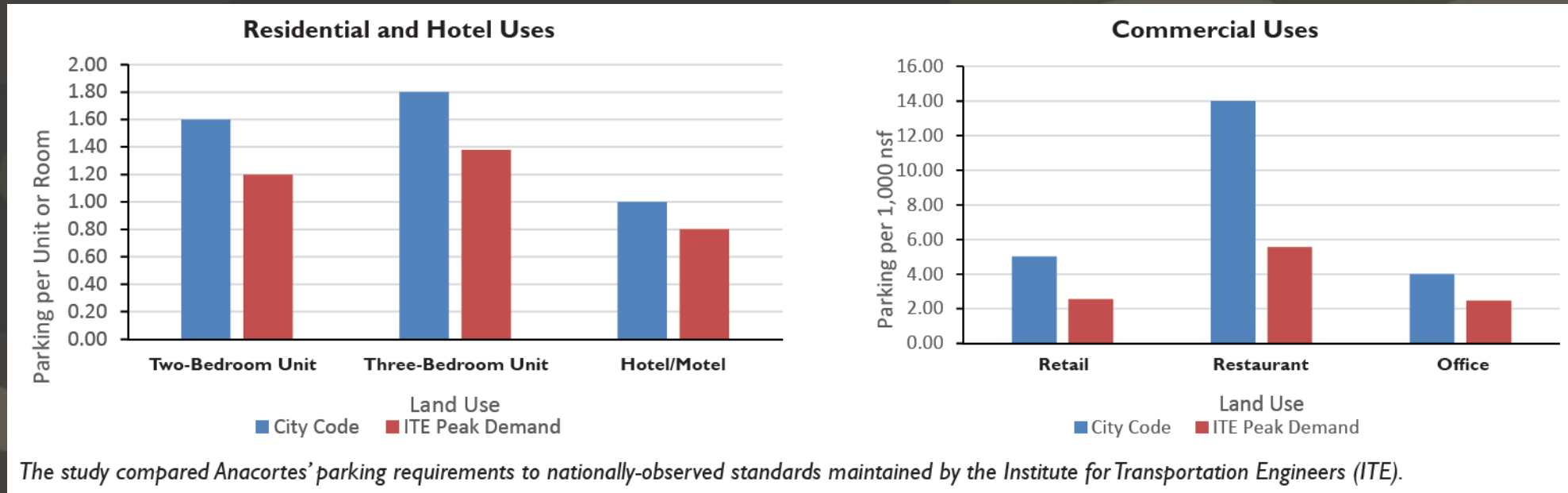


Figure 6: Parking Study Area Map

Anacortes Parking Study - Key Findings

- Anacortes' parking requirements were generally higher than actual need.
- For residential development, the number of parking spaces required is roughly **20% more than the peak demand**.
- Restaurant parking requirements **exceed actual parking needs by 250%**.



Anacortes Parking Study – On-Street Findings

- Downtown has 2,114 parking stalls, about 55% of which are on-street
- During peak summer weekday times, about 50% of all Downtown parking spaces are occupied
- More than 90% of people visiting Downtown park for two hours or less



Anacortes Parking Study – Recommendations

- Conduct comprehensive review of zoning code and align parking requirements with desired land-use changes
- Reduce parking requirements for retail and commercial uses
- Tailor requirements for specialty land-uses such as high density multifamily
- Distinguish Downtown parking requirements from citywide parking requirements
- Lower minimum parking standards to no more than 15% of forecasted needs
- Establish an in-lieu fee policy to improve or fund public parking lots

Anacortes Parking Update - MAKERS' Approach

Lower minimums across the board

Use	Minimum
Single-family detached	1 per unit
Single-family detached, small lot (<5,000 square feet) <i>[NEW]</i>	1.2 per unit
Single-family attached (townhomes, duplex, triplex) <i>[NEW]</i>	Based on number of bedrooms (multifamily)
Cottage housing <i>[NEW]</i>	1.2 per unit
Multifamily, one-bedroom or studio	1.0 1.2 per unit
Multifamily, two-bedrooms	1.4 1.6 per unit
Multifamily, three or more bedrooms	1.6 1.8 per unit
Hotel/motel	1 per guest room
Office	2.5 4 per 1,000sf NFA
Personal services	2.5 3 per 1,000sf NFA
Restaurant	5 14 per 1,000sf NFA
Retail or shopping center, less than 15,000 square feet	3 5 per 1,000sf NFA
Retail or shopping center, more than 15,000 square feet	3 4 per 1,000sf NFA
Light manufacturing or industrial	1.5 per 1,000sf NFA

Anacortes Parking Update - MAKERS' Approach

Implement maximums for the major/large land uses

Use	Minimum	Maximum <i>[NEW]</i>
Single-family detached	1 per unit	
Single-family detached, small lot (<5,000 square feet) <i>[NEW]</i>	1 2 per unit	
Single-family attached (townhomes, duplex, triplex) <i>[NEW]</i>	Based on number of bedrooms (multifamily)	
Cottage housing <i>[NEW]</i>	1.2 per unit	
Multifamily, one-bedroom or studio	1.0 1.2 per unit	1.5 per unit
Multifamily, two-bedrooms	1.4 1.6 per unit	2 per unit
Multifamily, three or more bedrooms	1.6 1.8 per unit	2 per unit
Hotel/motel	1 per guest room	1.5 per guest room
Office	2.5 4 per 1,000sf NFA	4 per 1,000sf NFA
Personal services	2.5 3 per 1,000sf NFA	3 per 1,000sf NFA
Restaurant	5 14 per 1,000sf NFA	8 per 1,000sf NFA
Retail or shopping center, less than 15,000 square feet	3 5 per 1,000sf NFA	5 per 1,000sf NFA
Retail or shopping center, more than 15,000 square feet	3 4 per 1,000sf NFA	4 per 1,000sf NFA
Light manufacturing or industrial	1.5 per 1,000sf NFA	2 per 1,000sf NFA

Anacortes Parking Update - MAKERS' Approach

Plus:

- Reduce minimums by 50% in the CBD zone
- No minimum for ground-floor commercial uses in the CBD zone
- Building expansions of less than 50% in non-residential zones are exempt from conforming to the minimum



Anacortes Parking Update - MAKERS' Approach

Provide **Director discretion** for uncommon uses:

- Hospitals
- Passenger terminals
- Most commercial indoor and outdoor recreation
- Vehicle sales/rental
- Marijuana facilities
- Public/civic, religious, resource, and institutional uses

The applicant must supply one of the following:

1. Documentation regarding actual parking demand for the use.
2. Technical studies prepared by a qualified professional relating to the parking need for the proposed use.
3. Documentation of parking requirements for the proposed use from other comparable jurisdictions.

Adjustment Opportunities

Minimums may be reduced in all commercial and multifamily zones if:

1. Reduce up to 50% if supported by a parking study

Adjustment Opportunities – Parking Study

- May be based on scientific data, census data, transit service, academic studies, similar uses in the city or comparable cities, or other sources accepted by the director
- May be required for adjusting minimum and maximum quantitative requirements, determining times of peak parking demand, and determining impacts to on-street parking
- Must be prepared by either a professional engineer with expertise in traffic and parking analyses or an equally qualified individual authorized by the director

Adjustment Opportunities – Carpooling

Minimums may be reduced in all commercial and multifamily zones if:

1. Reduce up to 50% if supported by a parking study
2. For non-residential uses >5,000 GSF, two parking spaces may be replaced by one space reserved for employee carpools, up to a 10% reduction



Adjustment Opportunities – Bike Facilities

Minimums may be reduced in all commercial and multifamily zones if:

1. Reduce up to 50% if supported by a parking study
2. For non-residential uses >5,000 GSF, two parking spaces may be replaced by one space reserved for employee carpools, up to a 10% reduction
3. For non-residential uses >5,000 GSF provide long-term bicycle parking facilities, up to a 5% reduction

Adjustment Opportunities – Bike Facilities

Provide showers, changing rooms, and day-use lockers near secure, long-term bicycle parking (intended to support employee commutes).

Separate short- and long-term bike facility design guidelines are provided.



Adjustment Opportunities – Car-Sharing

Minimums may be reduced in all commercial and multifamily zones if:

1. Reduce up to 50% if supported by a parking study
2. For non-residential uses >5,000 GSF, two parking spaces may be replaced by one space reserved for employee carpools, up to a 10% reduction
3. For non-residential uses >5,000 GSF provide long-term bicycle parking facilities, up to a 5% reduction
4. For new residential uses with >20 dwelling units, three parking spaces may be replaced by one space reserved for a car-sharing provider, up to a 15% reduction.

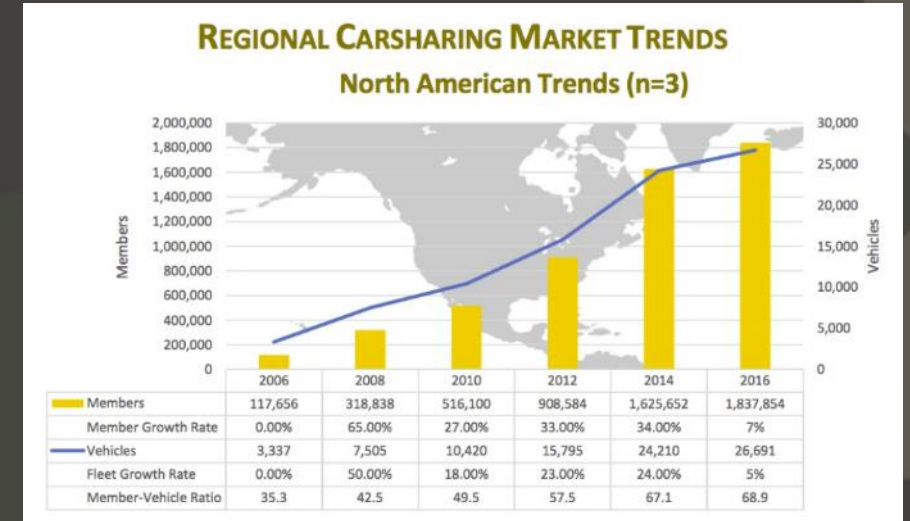
Adjustment Opportunities – Car-Sharing

- Requires long-term agreement between the property owner and a car-sharing provider.
- The agreement must be recorded with the title to the property before a certificate of occupancy is issued.
- **Car-share provider definition:** Membership-based and licensed business that offers use of motor vehicles 24 hours a day and seven days a week to members who reserve vehicles in advance, and that charges members for the time and/or miles.



Adjustment Opportunities – Car-Sharing

- A Transportation Research Board/National Academy of Sciences study (2005) found, on average, each shared car takes about 13 private cars off the road
- The benefits of car-ownership without the downsides
- Popular with more than millennials – 15% of Zipcar members are over 50 years old
- Cars sit unused 90-95% of their lives
- **Downside:** Private operator must be present in your community (not currently in Anacortes)



Adjustment Opportunities – Car-Sharing

Scott's own research: Save about \$8,000/year

The Northwest Urbanist

The Benefits of Living Car-Free

Posted on [January 16, 2018](#)



Yes, you can take a Zipcar camping! (Photo by the author)

2016 Trips

Date(s)	Destination	Purpose	Car	Miles Driven	Total Cost	Split?	Individual Cost
February	San Juan Islands	Recreation	Chrysler 200	300	\$137.20	Y	\$68.60
March	Renton	Shopping	Ford Escape	34	\$51.61	Y	\$25.81
March	Snoqualmie Pass	Skiing	Jeep Patriot	144	\$69.70	Y	\$34.85
April	n/a	n/a	Mazda 2	8	\$32.45	n/a	\$32.45
May	Renton	Shopping	Ford Focus	32	\$36.31	N	\$36.31
June	Renton	Shopping	Subaru Crosstrek	33	\$33.72	N	\$33.72
June	Capitol Hill	Errand	Ford Transit 150	3	\$26.35	N	\$26.35
August	Tukwila	Shopping	Honda CR-V	30	\$48.24	Y	\$24.12
August	n/a	n/a	Honda Civic	5	\$25.23	N	\$25.23
September	Mount Rainier	Hiking	Honda Civic	190	\$95.61	Y	\$47.81
September	Golden Gardens	Recreation	Volkswagen Golf	21	\$65.69	Y	\$32.85
September	Puyallup	Recreation	Ford Focus	75	\$61.29	Y	\$30.65
October	n/a	n/a	Honda Civic	14	\$18.47	n/a	\$18.47
September	Pullman	Recreation	Hyundai Elantra	656	\$294.00	Y	\$147.00
October	Eastern Washington	Camping	Subaru Impreza	314	\$232.84	Y	\$116.42
November	Ballard	Recreation	Honda Civic	12	\$34.02	Y	\$17.01
December	Northgate	Shopping	Honda Fit	15	\$29.04	N	\$29.04
December	Kirkland	Recreation	Honda Fit	38	\$38.00	Y	\$19.00
2016 Totals				1,924	\$1,329.77		\$765.67

2017 Trips

February	Puyallup	Family	Honda CR-V	101	\$67.45	N	\$67.45
April	Downtown	Errand	Honda Fit	2	\$13.71	N	\$13.71
April	Skagit County, Anacortes	Recreation	Subaru Impreza	182	\$87.06	Y	\$43.53
May	Northgate	Shopping	Honda Fit	20	\$37.99	N	\$37.99
June	Northgate	Shopping	Honda Fit	25	\$37.77	N	\$37.77
June	Whidbey Island, Everett	Recreation	Honda Fit	175	\$86.00	Y	\$43.00
July	Camano Island	Recreation	Honda Civic	144	\$90.71	N	\$90.71
July	Interbay	Recreation	Honda Civic	24	\$90.71	Y	\$45.36
July	Eastern Washington	Camping	Subaru Crosstrek	760	\$388.77	Y	\$194.39
August	Renton	Recreation	Volkswagen Golf	51	\$38.89	Y	\$19.45
August	Auburn	Recreation	Volkswagen Golf	56	\$52.74	Y	\$26.37
August	Renton	Shopping	Honda Odyssey	32	\$32.85	N	\$32.85
September	Olympic Peninsula	Camping	Subaru Crosstrek	307	\$251.52	Y	\$125.76
October	Tukwila	Shopping	Honda Civic	64	\$86.00	Y	\$43.00
December	Capitol Hill	Errand	Mazda 3	12	\$30.93	N	\$30.93
2017 Totals				1,955	\$1,393.10		\$852.26

2016-2017 Averages

1,940 \$1,361.44 \$808.96

Fee-In-Lieu

- Placeholder to give the City time for developing a downtown parking plan
- Would allow up to 50% reduction, plus another 50% with a parking study
- Funds required to fund shared public parking facilities



Parking for ADUs

- One parking space is often required – but small lots not designed for extra parking will not be able to comply
- Baby step: Allow on-street parking to count for the required space
- Big step: Remove the requirement
- State House Bill 1923 encourages removal as one option to receive planning grant

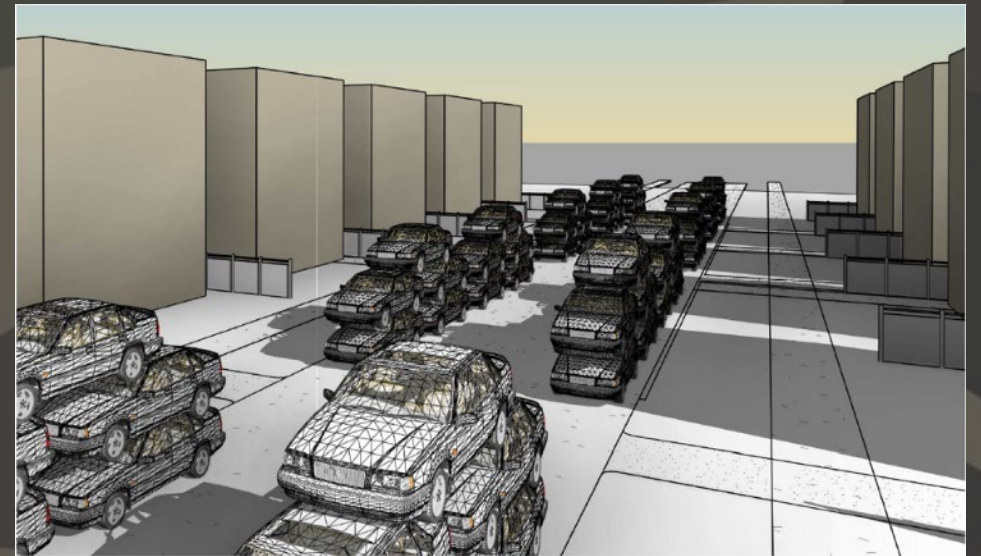


Image courtesy of Clara Park, Van Ness Feldman

Residential Guest Parking

- In our research, about half of parking codes explicitly address guest parking, and half do not
- Calling out guest parking can help ease a transition to lower base parking requirements, and also address a practical need
- Consider that different housing types and demographics have different guest needs – overnight visitors, party-goers, nursing care, etc.
- Don't overdo it and allow flexibility



Residential Guest Parking – Anacortes

Housing Type	Guest Parking Requirement
Single-family	1 per 2 units
Cottage	1 per 4 units
Duplex or Triplex	1 per 4 units
Townhouse	1 per 4 units
Multifamily	<ul style="list-style-type: none">• 1 per 8 units• 1 per 10 units if the multifamily use parking is provided entirely by structured parking

- CBD zone is exempt
- On-street parking may fulfill the requirement
- Multifamily *1 per 10* provision encourages structured parking, and also acknowledges that structured parking is already expensive as it is

Residential Guest Parking – Other Cities

City	Guest Parking Requirement
Renton	<ul style="list-style-type: none">• In two residential zones, 10% of the minimum required spaces must be set aside for guest parking (as opposed to being extra spaces).• Other zones in Renton don't have a specific guest requirements.
Shoreline	One extra space per 10 dwelling units. This can be partially or wholly reduced if a traffic study demonstrates on-street parking is adequate.
Redmond	One extra space per 5 dwelling units.
Kent	No specific guest parking requirements.
SeaTac	No specific guest parking requirements.
Bothell	No specific guest parking requirements.

Transit-Oriented Parking

- Concept: High-quality transit service reduces need for residents, workers, and shoppers to own cars and get to destinations by car
- High-quality urban environment encourages walking and short trips
- Station areas: The better the transit, the larger the area. Typically 5-10 minute walk or $\frac{1}{4}$ to $\frac{1}{2}$ mile radius.
- Other cities provide a variety of examples on how to approach parking around transit



Transit-Oriented Parking - Examples

A sampling of the variety of distance and reduction techniques

City	TOD Reduction	Resulting Ratio Examples
Bothell	Reduction opportunity within 600 feet (1/8 mile) of bus stops scheduled to run weekdays 7-9am and 4-6pm <i>Majority employee parking: 4% per bus run, up to 40%</i> <i>Majority non-employee parking: 2% per bus run, up to 20%</i>	<ul style="list-style-type: none"> • 1.6 per dwelling unit • Office, 0.60 per 300sf • Retail, 0.80 per 300sf • Restaurant, 0.80 per 300sf
Shoreline	Flat 25% reduction for all uses within 1/4 mile of a light rail station (two opening by 2024).	<ul style="list-style-type: none"> • 0.56 per studio and 1 bedroom • 1.13 per 2+ bedrooms • Office, 0.75 per 500sf • Retail, 0.75 per 400sf • Restaurant, 0.75 per 75sf
SeaTac	Variable reduction for most uses within 1/4 mile of light rail station (two existing). <i>35% - Residential</i> <i>40% - Government, business services, manufacturing</i> <i>30% - Recreational and cultural, retail and commercial</i>	<ul style="list-style-type: none"> • 0.65 per studio • 0.98 per 1 bedroom • 1.3 per 2+ bedrooms • Professional office, 0.60 per 300sf • Retail, 0.70 per 250sf • Restaurant, 0.70 per 150sf

Case Study: Seattle Frequent Transit Lawsuit

- Neighborhood lawsuit delayed a 57-unit building with no parking in Phinney Ridge over definition of “frequent transit”
- Previous definition: “Transit service headways in at least one direction of 15 minutes or less for at least 12 hours per day, 6 days per week, and transit service headways of 30 minutes or less for at least 18 hours every day.”
- Neighbors argued the Route 5 bus was frequently off-schedule and did not qualify. Hearing Examiner agreed.
- City updated its definition to refer to published scheduled arrival times rather than actual arrival times



<https://seattletransitblog.com/2018/02/23/city-pushes-apartments-opposed-lack-onsite-parking/>

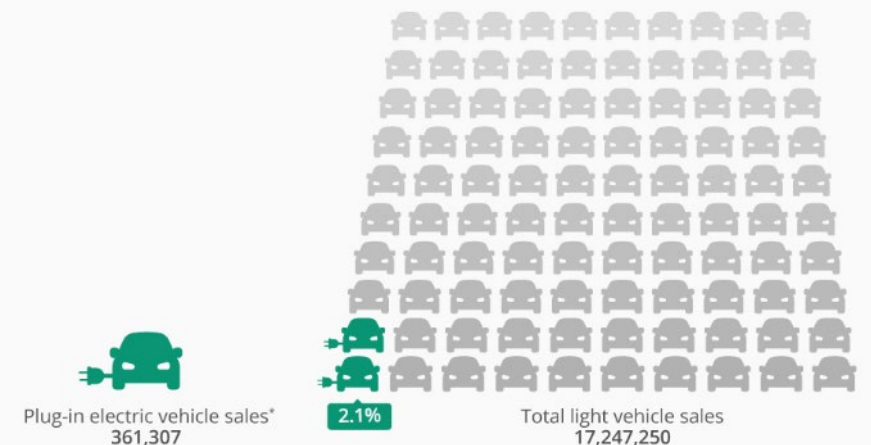
Electric Vehicle-Ready Parking

- Reduced parking for electric charging spots doesn't make sense – fuel type does not change reasons to drive
- Shoreline example: 10% of the minimum required spaces must be ready for electric vehicle infrastructure, if the chargers are not also provided
- In other words, wiring conduit and electrical capacity must be prepared up front to prepare for future installation



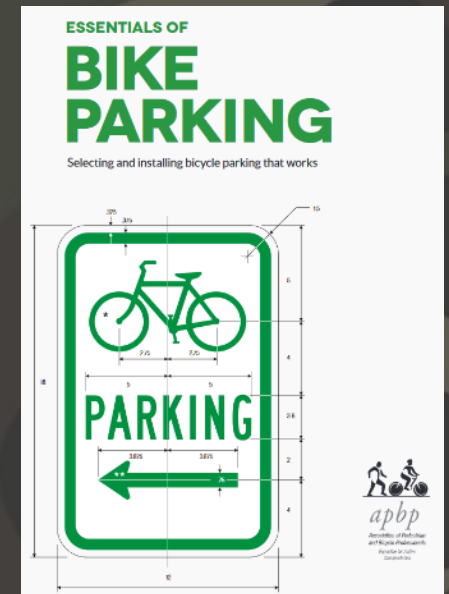
Electric Mobility Has a Long Way to Go

Estimated plug-in electric vehicle and total light vehicles sales in the U.S. in 2018



Bicycle Parking – Anacortes Example

- Don't base on proportion of car spaces
- Distinguish between short-term parking and long-term parking – different security vs. convenience considerations
- At a minimum, two short-term and two long-term spaces per development
- Refinements after substantial research from APBP “Bicycle Parking Guidelines” (2010), City of Redmond code (“Bicycle Capital of the Northwest”), Census commute data
- Guidance provided for on-street bike parking managed by property owners



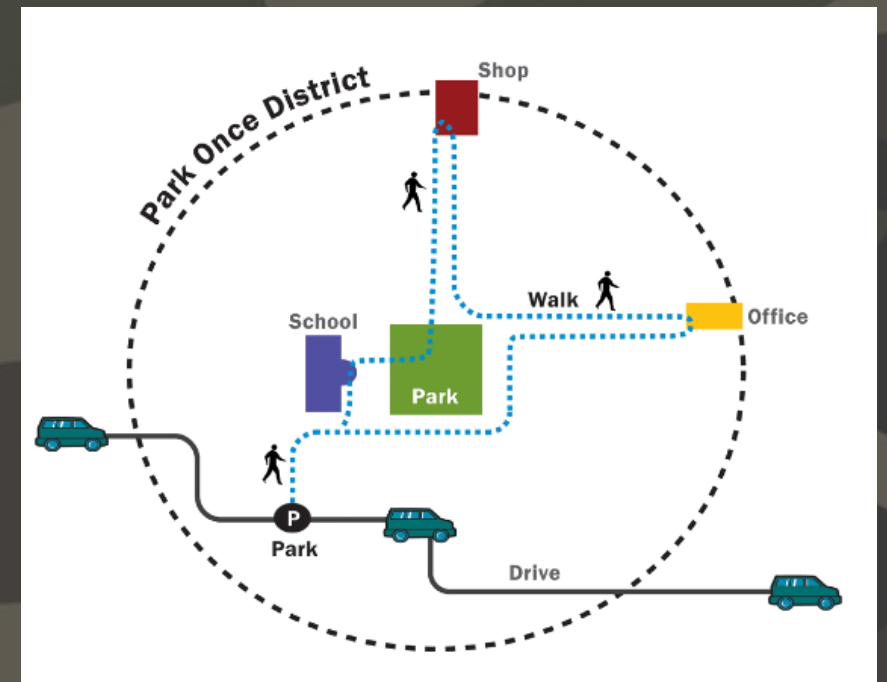
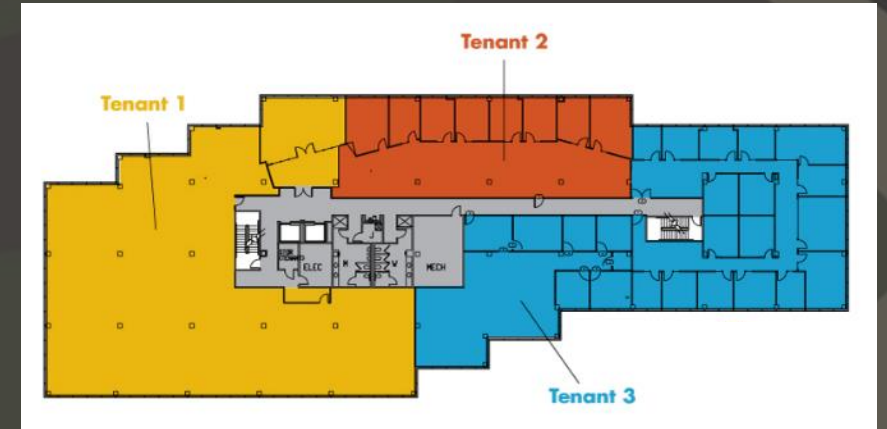
Bicycle Parking – Anacortes Example

More generalized than vehicle parking

Use	Short-Term, Minimum	Long-Term, Minimum
Multifamily, group living	0.5 per 10 dwelling units, and 2 minimum	5 per 10 dwelling units, and 2 minimum
Overnight lodging	0.5 per 10 guest rooms, and 2 minimum	0.3 per 10 guest rooms, and 2 minimum
Place of assembly, civic, indoor recreation, day care	Fixed seats: 3 per 100 No fixed seats: 0.20 per 1,000-square-feet of NLA 2 minimum	Fixed seats: 2 per 100 No fixed seats: 0.10 per 1,000-square-feet of NLA 2 minimum
Retail sales, general service, personal service	0.25 per 1,000-square-feet of NLA, and 2 minimum	0.10 per 1,000-square-feet of NLA, and 2 minimum
Restaurant/bar	0.5 per 1,000-square-feet of NLA, and 2 minimum	0.10 per 1,000-square-feet of NLA, and 2 minimum
Office	0.10 per 1,000-square-feet of NLA, and 2 minimum	0.20 per 1,000-square-feet of NLA
Medical	0.05 per 1,000-square-feet of NLA, and 2 minimum	0.05 per 1,000-square-feet of NLA, and 2 minimum
Industrial, utilities	0.05 per 1,000-square-feet of NLA, and 2 minimum	0.05 per 1,000-square-feet of NLA, and 2 minimum
Schools, pre-kindergarten and K-12	0.75 per 10 students of planned capacity, and 2 minimum	1 per 10 employees and 1 per 20 students of planned capacity, and 2 minimum
Colleges and universities	1 per 10 students of planned capacity, and 2 minimum	1 per 10 employees and 1 per 10 students of planned capacity, and 2 minimum

Other Considerations

- Non-residential building net square feet vs. gross square feet can be a 20-30% difference. Using **net square footage is a better link to trip demand** and could result in less wasted parking.
- Shared parking. Usually voluntary and not mandatory, and thus rarely implemented. At least basic provisions should be included in code in case the opportunity arises.
- Park-once districts: Allow multiple trips without moving the car, based out of a central public or private parking facility



Other Considerations

- Office workers tend to be the most flexible on commute options, and may respond best to incentives
- Affordable/subsidized housing needs less parking than moderate-high income housing
- Bars/taverns – Port Orchard exempts areas that serve alcohol from parking requirements (discourage drunk driving)



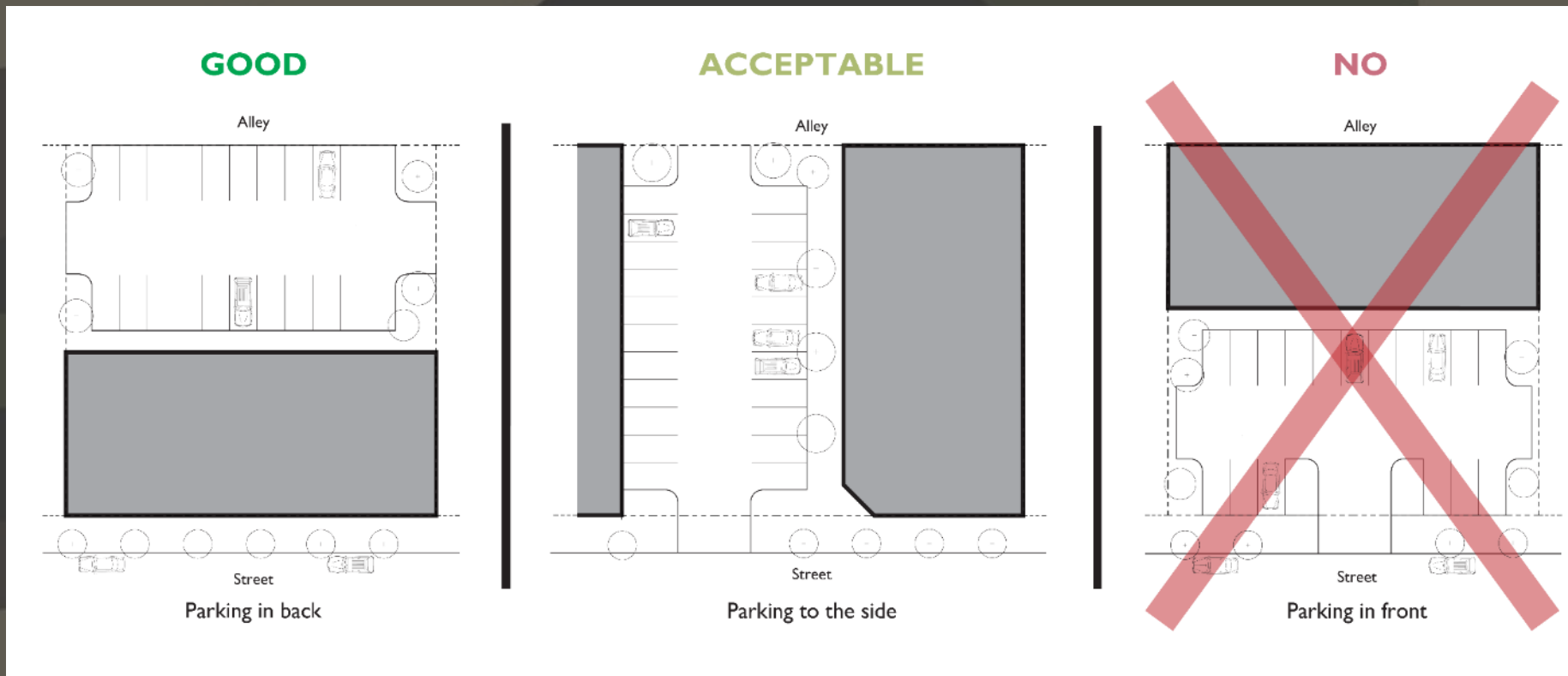
Best Practices in Parking Design

Urban Design Considerations

- Location of parking
- Parking lot landscaping
- Garage design and pedestrian sightlines

Parking Location

- In the highest-priority pedestrian areas, parking in back is often preferred (especially if alleys are available)
- Parking on the side can be acceptable in certain areas, with limits



Parking Lot Landscaping Types

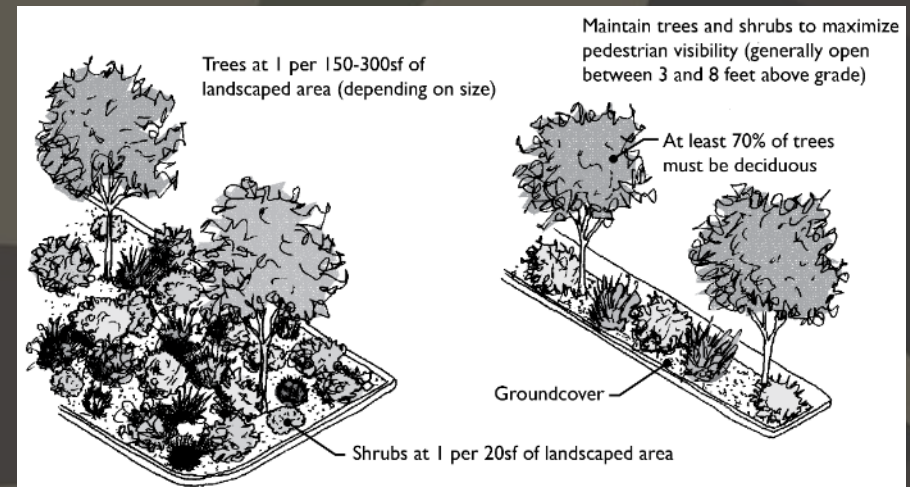
- Interior landscaping – to break up the monotony of parking stalls
- Perimeter landscaping – to screen/buffer parking from the street



Interior Landscaping Standards

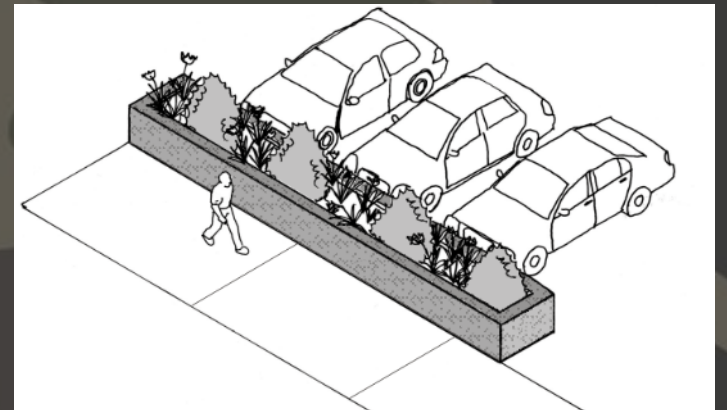
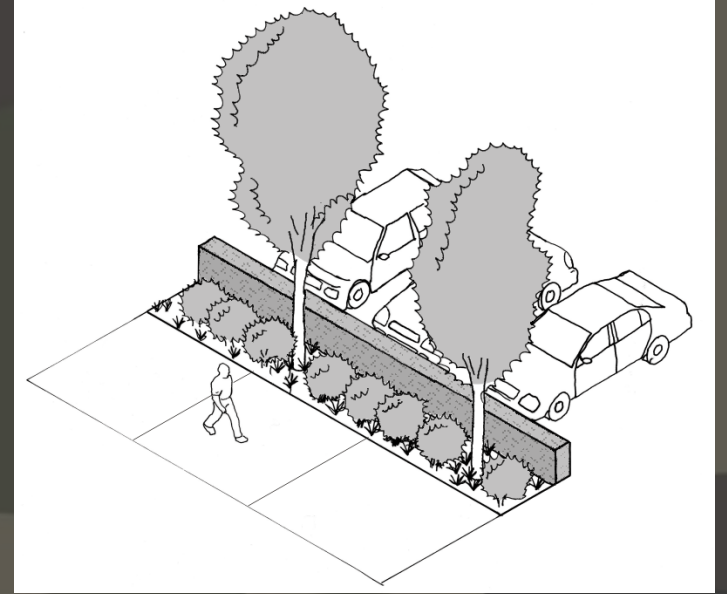
Methods and standards vary greatly. MAKERS' typical recommendations keep it simple:

- Required in lots with 20 or more spaces
- Constitute at least 5% of the parking area and distributed throughout the lot.
- Planting areas must have a minimum average width of 10 feet (measured inside the curb) and must be the same length as the parking stall or column.
- Type C (at right) landscaping must be used in required planting areas.



Perimeter Landscaping Standards

- Because context varies significantly, a variety of treatments can work on parking lot edges
- Where 5-10 feet landscape buffers are infeasible, low walls and raised planters can be an effective alternative
- Consider more flexibility along internal lot lines



Structured Parking Design

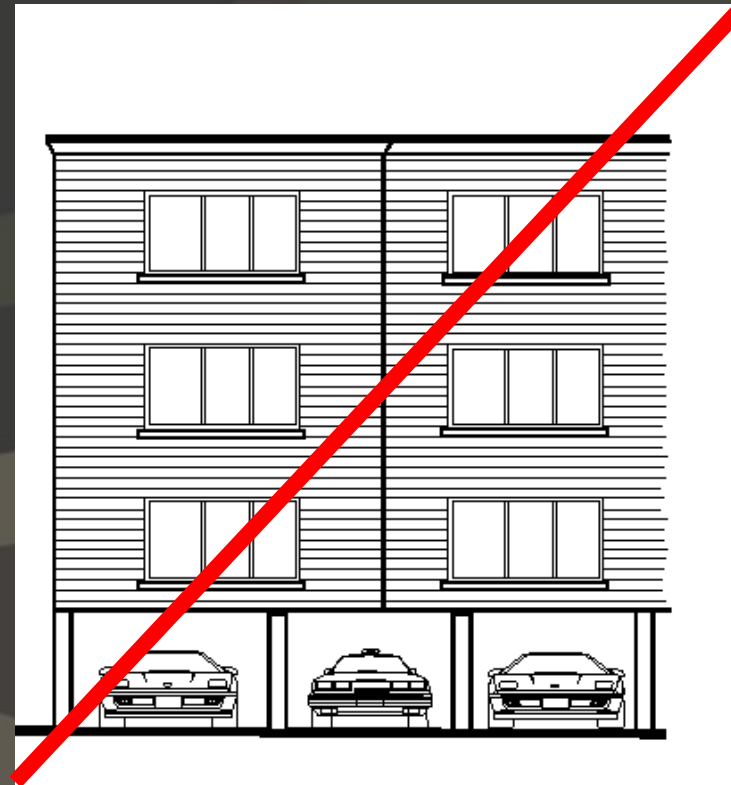
Order of preference

1. Hidden/underground
2. Wrapped by active uses (Texas Donut)
3. Exposed with appropriate treatment (in-structure or standalone)



Structured Parking Design – Hidden Examples

Avoid floating setups with buildings on stilts



Structured Parking Design – Texas Donut

Residential or commercial uses fronting parking garages



Structured Parking Design – Texas Donut

Left – Courtyard between garage and building

Right – Exposed parking visible from the alley is acceptable



Structured Parking Design – Design Treatments

- Goal: Integrate lower parking levels with the upper floors, and add visual interest to the façade
- This can be achieved through similar fenestration, articulation interval requirements, screening and grills, etc.



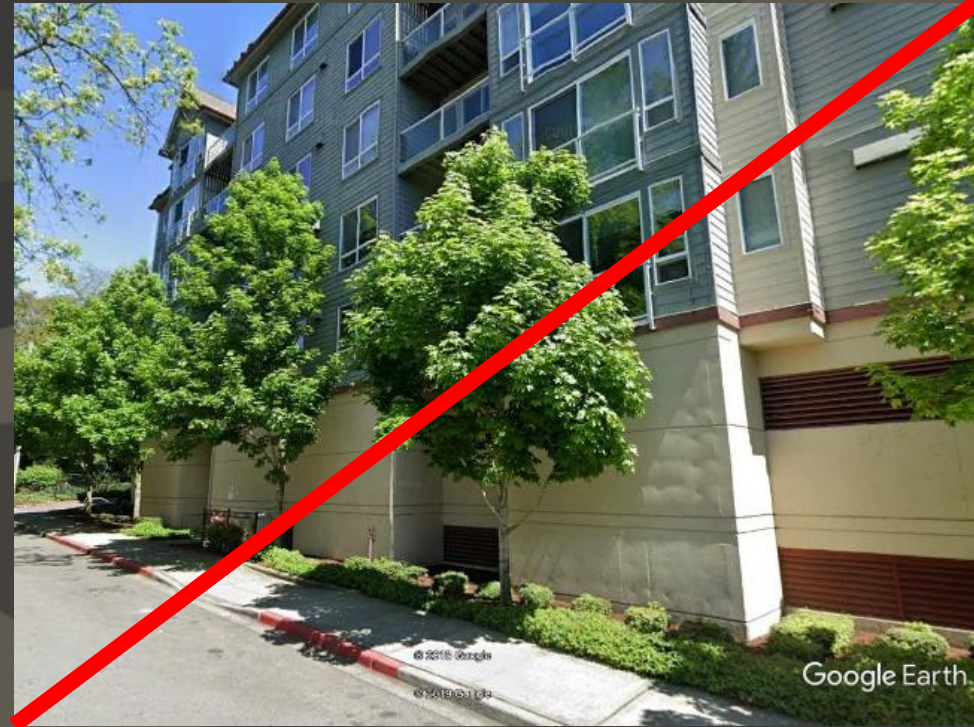
Structured Parking Design – Design Treatments

Avoid a “detached” look



Structured Parking Design – Design Treatments

These examples do not enhance the pedestrian realm



Structured Parking Design – Garage Entries

- Parking garage entries should be well-integrated into the design of the building and must not dominate the streetscape.
- They should be designed and sited to complement, not subordinate, the pedestrian entry.
- Direct visibility between pedestrians and motorists should be provided. Options include setback entries, cropped wall corners, wall openings, or other treatments to enhance safety and visibility.



Structured Parking Design – Freestanding

- The more visible the structure from public streets, the stronger design treatments are warranted
- Landscaped buffer elements such as setbacks and trellis structures are desirable



Resources

- <https://medium.com/sidewalk-talk/less-parking-can-mean-more-housing-heres-how-14b9e50fe646>
- <https://www.prnewswire.com/news-releases/study-americans-love-their-cars-yet-3-in-10-have-considered-handing-over-their-keys-300753760.html>
- <https://www.theatlantic.com/technology/archive/2016/01/the-decline-of-the-drivers-license/425169/>
- <https://news.gallup.com/poll/236813/adults-drive-frequently-fewer-enjoy-lot.aspx>
- <https://usa.streetsblog.org/2018/07/12/american-cities-are-drowning-in-car-storage/>
- <https://medium.com/sidewalk-talk/less-parking-can-mean-more-housing-heres-how-14b9e50fe646>
- <https://www.sightline.org/2019/10/02/in-mid-density-zones-portland-has-a-choice-garages-or-low-prices/>
- <https://urbanland.uli.org/development-business/developers-reduce-parking-via-car-sharing/>

Multi-Modal Transportation Investments

Investing in transit is making a difference in Seattle

But what about smaller towns?

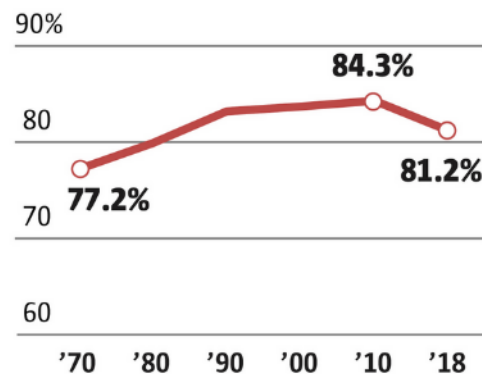
Seattle's rate of car ownership saw the biggest drop among big U.S. cities – by far

Nov. 2, 2019 at 6:00 am | Updated Nov. 2, 2019 at 3:53 pm



Car ownership lowest in decades

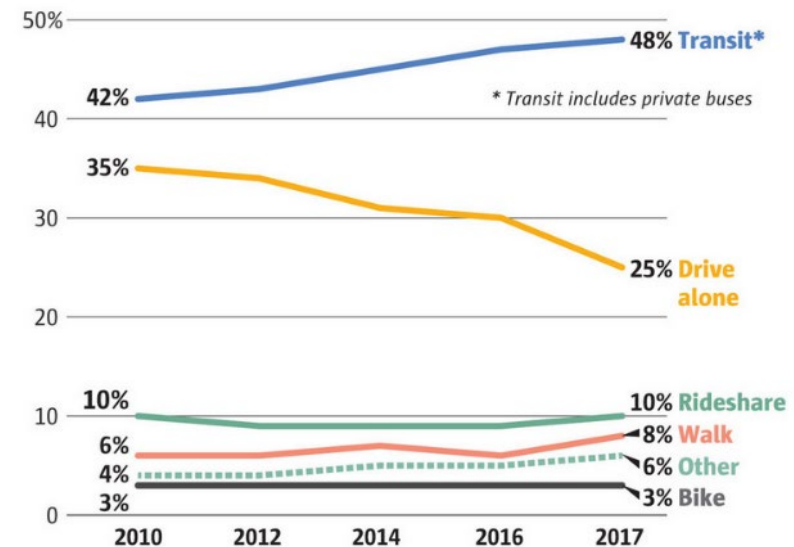
In 2018, about 81% of Seattle households owned at least one car, the lowest rate since the 1980s.



Source: U.S. Census, Social Explorer
JAMES ABUNDIS/ THE SEATTLE TIMES

How people commute downtown

Solo driving continues to decline in the central city, as transit and walking grow. People who use taxis, Uber or Lyft could appear as either "rideshare" or "other."



Source: Commute Seattle, Seattle Department of Transportation
MARK NOWLIN / THE SEATTLE TIMES



Lessons Learned Stretches

Lessons Learned

1. Determine what's most important - in terms of land uses, community design, and economic development objectives
2. Choose a “workable” regulatory approach – with special attention to the review process and available staffing/expertise
3. Look at a lot of case studies – both in terms of codes and actual communities
4. Involve the full range of stakeholders – help them foster a sense of ownership in the codes
5. Help participants understand the implications of various options
6. Pick your battles – it's OK to “parking lot” some items

Thank You!