

Date: October 8, 2019

To: Shannon Moeller, AICP
Planner II/Code Amendment Specialist

From: Carlos Hernandez and Bill Fox
Fox Tuttle Hernandez Transportation Group

RE: 2014 to 2019 Parking Study Technical Memorandum

Five Year Key Findings

- Peak parking demand does not exceed supply during most days and times
- Parking is overprovided and underutilized at most locations
- Retail parking demand has been declining
- Office parking demand has been increasing
- Maximum and minimum ranges based on TDM programs is recommended

Preliminary Recommendations

The following recommendations are based on approximately 5 years of parking field work, prior direction from Transportation Advisory Board (TAB), and policy guidance in the Access Management and parking Strategy (AMPS).

- The current **retail** parking minimum for non-district areas of 3.3 per 1,000 sf should be updated in the parking code to a minimum of 1.9 and a maximum of 2.5 per 1,000 sf.
- The current **office** parking minimum for non-district areas of 3.3 per 1,000 sf should be updated in the parking code to a minimum of 1.5 and a maximum of 2.5 per 1,000 sf.
- The current **industrial** minimum for non-district areas of 2.5 per 1,000 sf should be updated in the parking code to a minimum of 0.75 and a maximum of 2.0 per 1,000 sf.
- The current **multi-family residential** minimum for non-district areas of 1 per unit for one bedroom and 2 per unit for 3 bedrooms should be updated in the parking code without a minimum and a maximum of 1 per unit.

Project background

This memo summarizes the results of a parking study conducted in the City of Boulder from the Summer of 2014 to the Spring of 2019. The purpose of the parking study is to provide the Transportation Advisory Board and Planning Board with actual parking data from selected sites around the city, to inform potential changes to Boulder's parking code. Changes to the parking code were a recommendation of the Access Management and Parking Strategy (AMPS) project that was adopted in 2015. The City of Boulder's on-going Transportation Demand Management

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(TDM) program update also utilizes the parking ratio data to gain feedback on the before and after role of TDM plans at individual properties.

City staff and FTH presented the initial parking study results to City Council in the fall of 2015. The presentation included parking data collected in 2014 and 2015. Per direction of City Council at the fall 2015 meeting, city staff directed FTH to collect more data. Parking data was collected through 2018. The summary of all data is presented in this technical memorandum and attached presentation.

Summary of parking data and recommended rate changes

Between 2014 and the spring of 2019, the Fox Tuttle Hernandez Transportation Group (FTH) conducted a comprehensive city-wide parking study of multi-family residential, retail, office, industrial, lodging, mixed-use (residential) and mixed-use (commercial) sites around the City of Boulder. Approximately 16,300 parking spaces were observed at different times over the five-year period. Data collection was completed at peak and off-peak times typically before the end of the spring or fall semester at the University of Colorado. Supplemental studies were also collected at retail sites near peak holidays. Examples are Whole Foods the day before Thanksgiving and Target the week before the University of Colorado fall semester begins.

Sites were chosen in the interest of obtaining a representative sample of the entire city. Therefore, sites adjacent to the Community Transit Network and bike network were evaluated as well as sites with fewer destinations and higher reliance on motor vehicle access. Follow up phone calls and in person conversations with site managers were also conducted to confirm building occupancy. Only commercial and residential sites that appeared to be near or at full occupancy were studied. Finally, follow-up calls to some of the residential sites were made to determine the ratio of students to non-students for those complexes to enable better understanding of parking patterns of university students.

For all commercial sites, parking demand was sampled 3 times: weekday afternoons between noon and 2 pm, Friday evenings between 5:30 and 7:30 pm, and Saturday afternoons between noon and 2 pm. For all residential sites, parking demand was sampled once on weekdays after 8 pm. For all office sites, parking demand was sampled once on weekday afternoons between 2 and 3 pm. Mixed-use sites were sampled 4 times in order to ensure the peak demand was captured considering the unique and more complex demand fluctuations at those sites. These samples were taken on Friday afternoons between noon and 2 pm, Friday evenings between 5:30 and 7:30 pm, Saturday afternoons between noon and 2 pm, and Saturday evenings between 5:30 and 7:30 pm. Additional mid-week samples were conducted at four commercial retail sites in August and September. Parking supplies were determined at the time of the first demand observation at all sites, and any significant changes in supply that occurred during subsequent samples were noted and taken into account. Supply rates were observed in the field on study days and adjusted when necessary for temporary supply constraints such as special events taking place in the lot.

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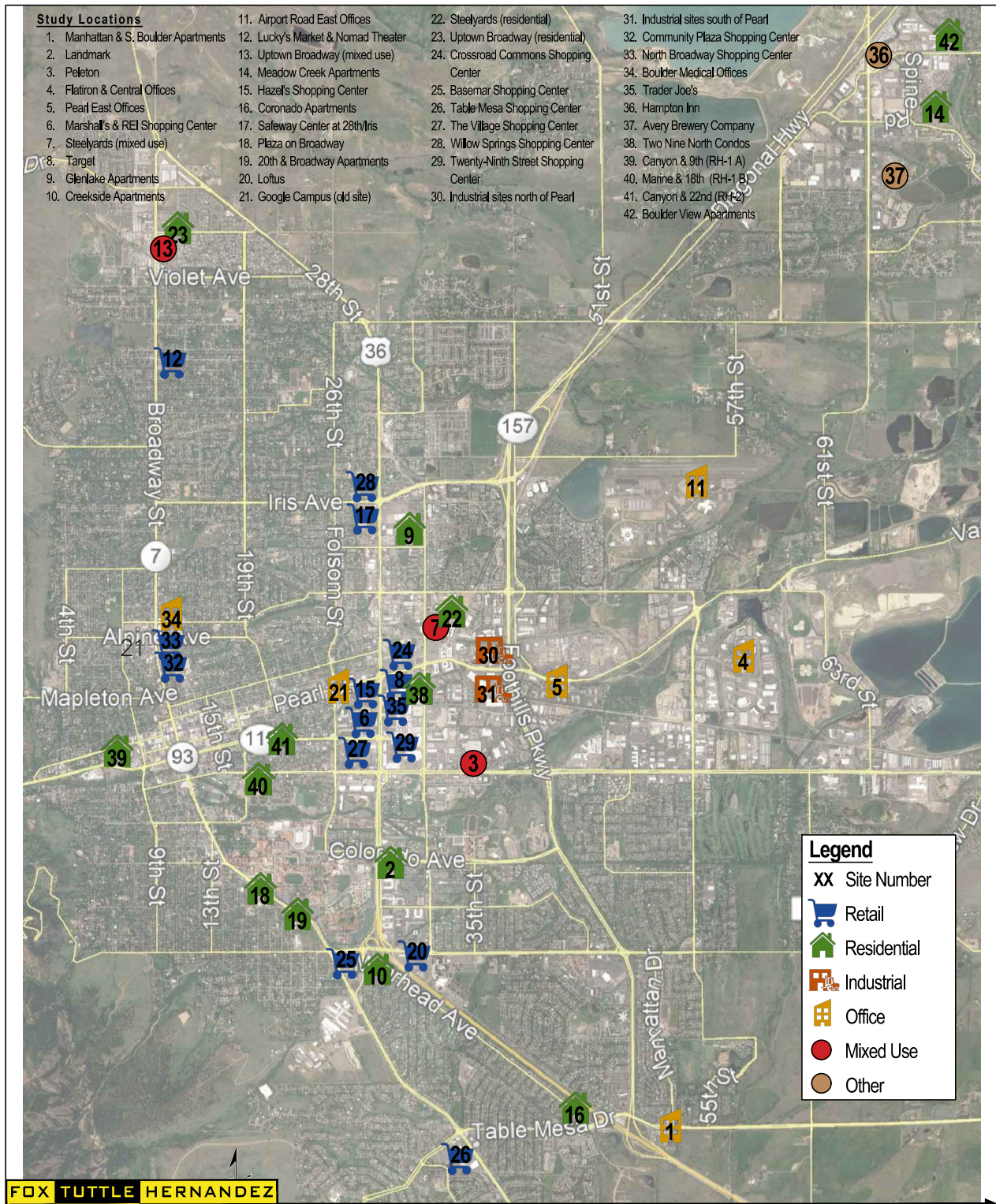
Results, once entered, were then used in conjunction with gross square footage figures and/or residential unit counts that city planning staff provided to determine the observed supply rates and peak demand rates for all sites. Most of the sites were studied over multiple peak and off-peak days between 2014 and 2018/2019. Table 1 below shows the observed parking demand average in prior years (2014 to 2016) and in 2018/2019

**Table 1: Peak Parking Demand Comparison (2014/2016 to 2018) by Land Use Type
(Not Including On-Street Parking)**

Land Use Type	2014 to 2016 Observed Peak Parking Demand Average	2018/2019 Observed Peak Parking Demand Average	Units
Multi-family Residential	0.84	0.96	Spaces/dwelling unit
Retail	2.61	2.34	Spaces/1000 sq. ft.
Office	2.15	2.46	Spaces/1000 sq. ft.
Industrial	0.96	0.72	Spaces/1000 sq. ft.
Lodging	0.88	0.39	Spaces per room
Mixed-use (Residential)	1.05	0.99	Spaces/dwelling unit
Mixed-use (Retail)	1.58	1.27	Spaces/1000 sq. ft.

The 42 sites studied between 2014 and 2018/2019 are illustrated on Figure 1 on the next page.

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- Study Locations**
1. Manhattan & S. Boulder Apartments
 2. Landmark
 3. Peleton
 4. Flatiron & Central Offices
 5. Pearl East Offices
 6. Marshall's & REI Shopping Center
 7. Steelyards (mixed use)
 8. Target
 9. Glenlake Apartments
 10. Creekside Apartments
 11. Airport Road East Offices
 12. Lucky's Market & Nomad Theater
 13. Uptown Broadway (mixed use)
 14. Meadow Creek Apartments
 15. Hazel's Shopping Center
 16. Coronado Apartments
 17. Safeway Center at 28th/Iris
 18. Plaza on Broadway
 19. 20th & Broadway Apartments
 20. Loftus
 21. Google Campus (old site)
 22. Steelyards (residential)
 23. Uptown Broadway (residential)
 24. Crossroad Commons Shopping Center
 25. Basemar Shopping Center
 26. Table Mesa Shopping Center
 27. The Village Shopping Center
 28. Willow Springs Shopping Center
 29. Twenty-Ninth Street Shopping Center
 30. Industrial sites north of Pearl
 31. Industrial sites south of Pearl
 32. Community Plaza Shopping Center
 33. North Broadway Shopping Center
 34. Boulder Medical Offices
 35. Trader Joe's
 36. Hampton Inn
 37. Avery Brewery Company
 38. Two Nine North Condos
 39. Canyon & 9th (RH-1 A)
 40. Manne & 18th (RH-1 B)
 41. Canyon & 22nd (RH-2)
 42. Boulder View Apartments

Legend

- XX Site Number
- Retail
- Residential
- Industrial
- Office
- Mixed Use
- Other

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CITY OF BOULDER PARKING STUDY
PARKING STUDY LOCATIONS (YEARS 2014 TO 2018)

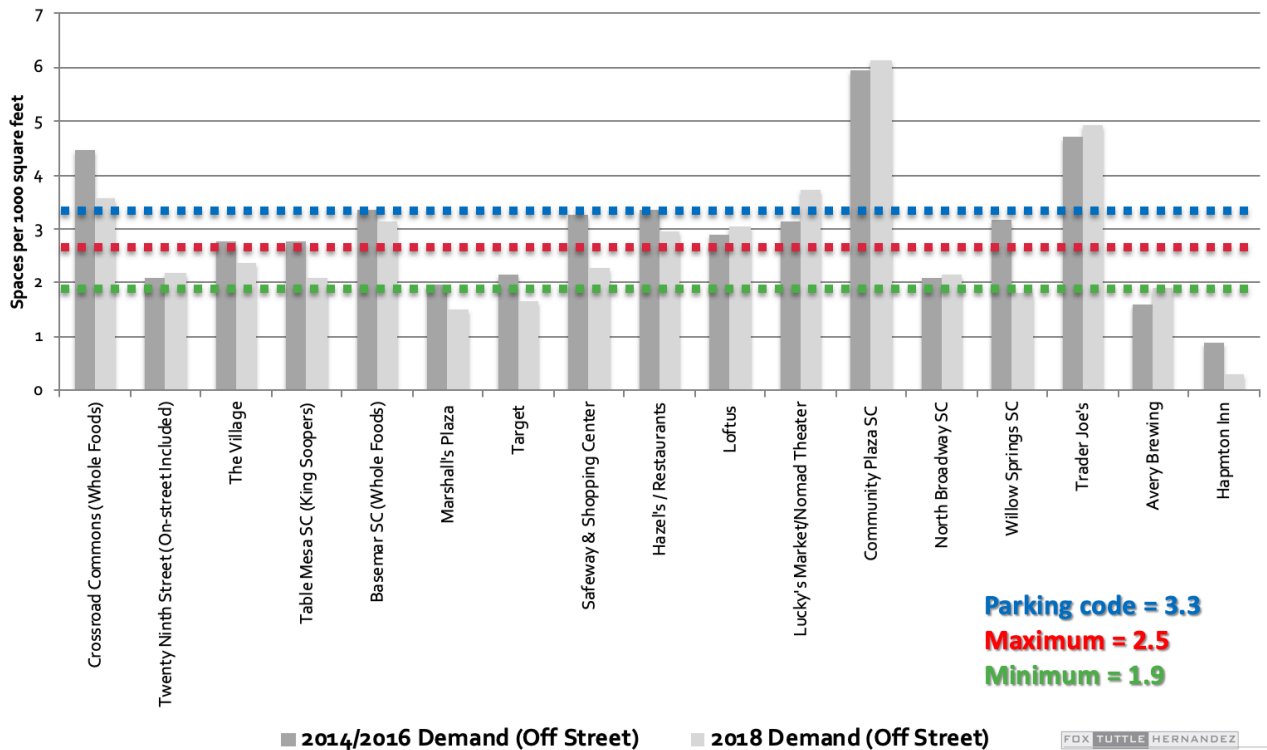
Project #	14015	Original Scale	NTS	Date	5/30/18	Drawn by	CRS	Figure #	1
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Retail Summary: FTH staff studied parking at 16 retail sites around the City of Boulder. Those sites had approximately 2.2 million square feet of retail land use with 9,030 parking spaces. Most of the sites had parking provided at 4 spaces per 1,000 square feet.

- The 2016 peak demand was approximately 65% occupied (2.61/1,000 sf)
- The 2018 peak demand was approximately 58% occupied (2.34/1,000 sf)
- Parking was oversupplied by 35 to 42%
- 3,000 spaces at the study sites were typically not used
- The current parking code is shown below, along with a recommended maximum and minimum for new projects or redevelopments that are not in a district
- The recommended ranges are based on the high and low peak demands that are shown below
- There are a few retailers shown below that exceed the maximum. They are one of a kind uses that were not considered typical in preparing the recommended ranges


 **Historic Highest Demand Rates for Retail Sites (Excluding On Street)**

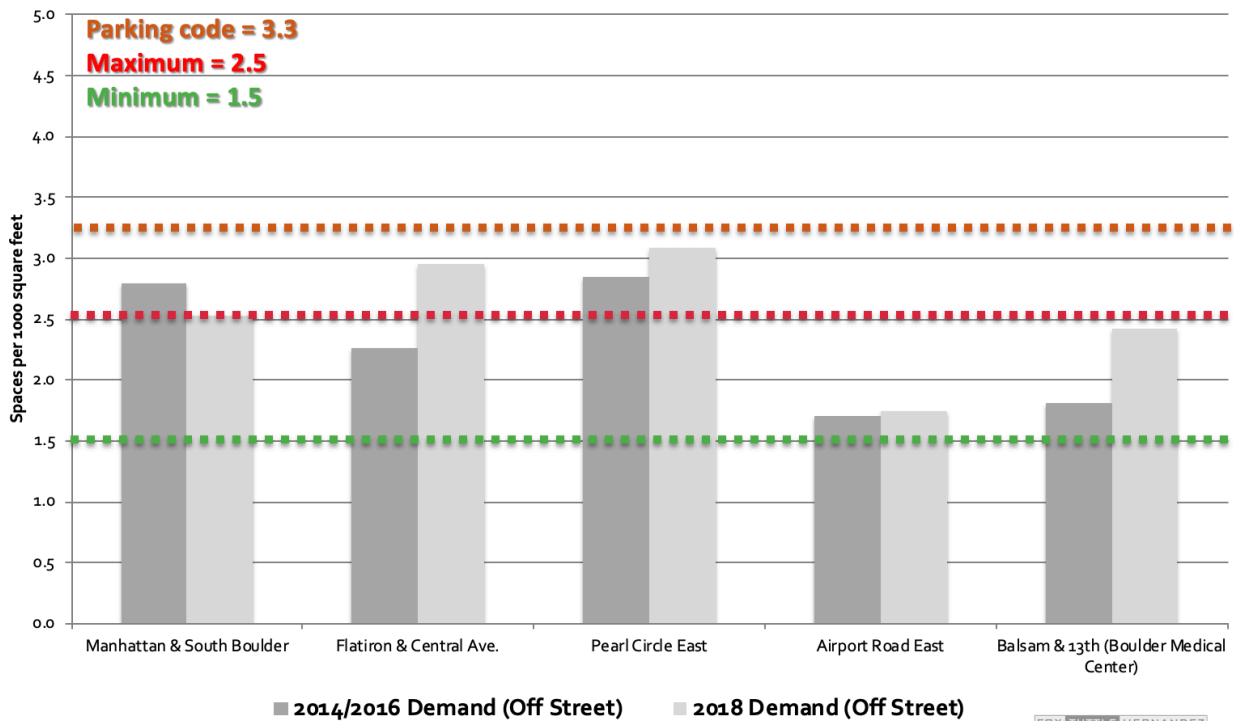


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Office Summary: FTH staff studied parking at 5 office sites around the City of Boulder. Those sites had approximately 527,000 square feet of office land use with 1,700 parking spaces. Most of the sites had parking provided at 3.2 spaces per 1,000 square feet.

- The 2016 peak demand was approximately 67% occupied (2.15/1,000 sf)
- The 2018 peak demand was approximately 76% occupied (2.46/1,000 sf)
- Parking was oversupplied by 24 to 33%
- 400 spaces at the study sites were typically not used
- The current parking code is shown below, along with a recommended maximum and minimum for new projects or redevelopments that are not in a district
- The recommended ranges are based on the high and low peak demands that are shown below
- Most of the offices below are within the proposed range

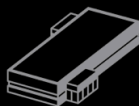
 **Historic Highest Demand Rates for Office Sites (Excluding On Street)**



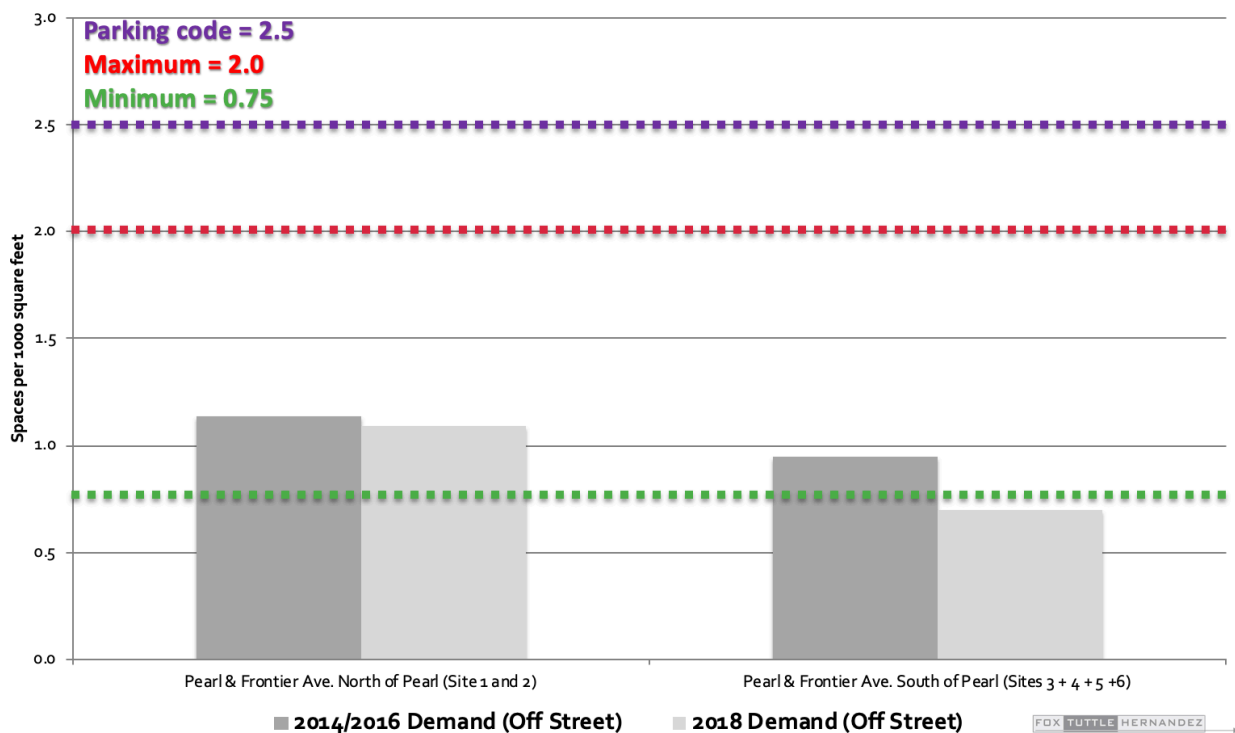
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Industrial Summary: FTH staff studied parking at 6 industrial sites around the City of Boulder. Those sites had approximately 311,000 square feet of industrial land use with 560 parking spaces. Most of the sites had parking provided at 1.8 spaces per 1,000 square feet.

- The 2014 peak demand was approximately 54% occupied (0.96/1,000 sf).
- The 2018 peak demand was approximately 40% occupied (0.72/1,000 sf)
- Parking was oversupplied by 46 to 60%
- 325 spaces at the study sites were typically not used
- The current parking code is shown below, along with a recommended maximum and minimum for new projects or redevelopments that are not in a district
- The recommended ranges are based on the high and low peak demands that are shown below
- The ranges are set higher due to the limited study sites and the robust nature of different types of industrial uses



**Historic Highest Demand Rates for Industrial Sites
(Excluding On Street)**

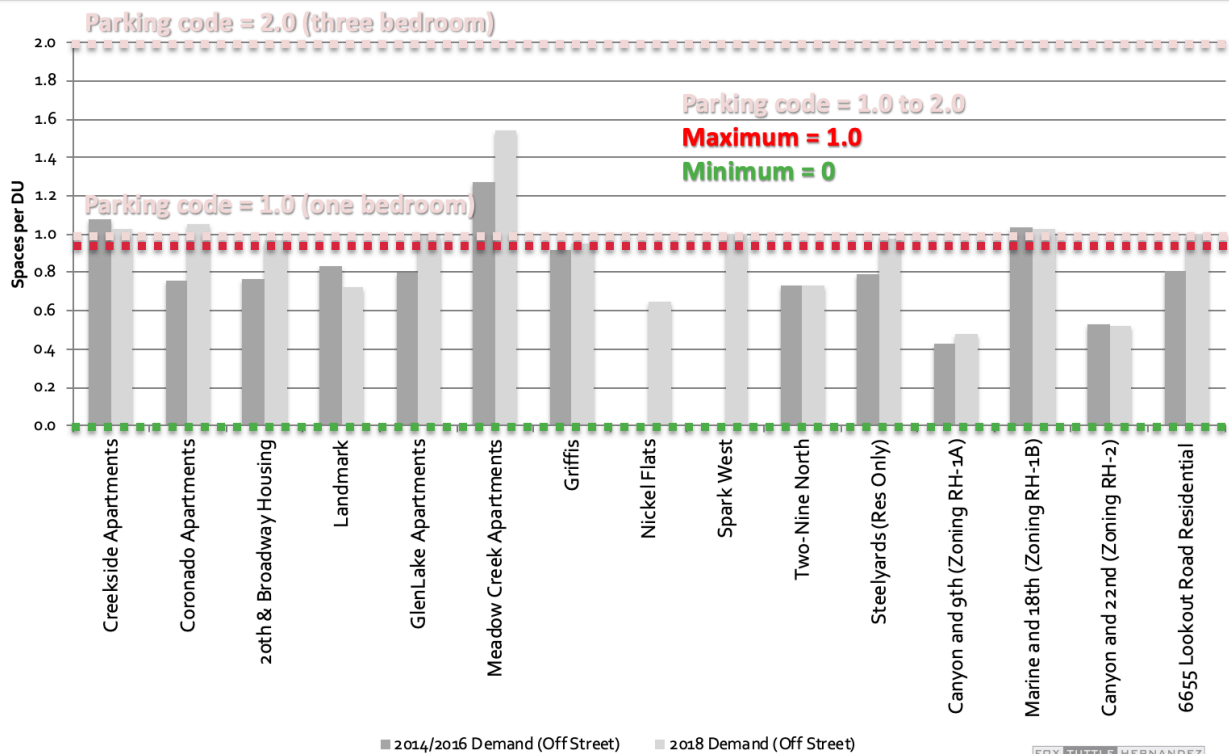


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Multi-Family Residential Summary: FTH staff studied parking at 16 residential sites around the City of Boulder. Those sites had approximately 2,300 dwelling units with 3,000 parking spaces. Most of the sites had parking provided at 1.3 spaces per 1,000 square feet.

- The 2014/2016 peak demand was approximately 65% occupied (0.84/dwelling unit)
- The 2018 peak demand was approximately 40% occupied (0.96/dwelling unit)
- Parking was oversupplied by 25 to 35%
- 750 spaces at the study sites were typically not used
- The current parking code is shown below, along with a recommended maximum and minimum for new projects or redevelopments that are not in a district
- The recommended ranges are based on the high and low peak demands shown below
- Most of the sites below are within the proposed range
- Only one site below is not within this range.

Historic Highest Demand Rates for Multi-Family Residential Sites (Excluding On Street)



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Key questions to consider moving forward

The following questions can be considered as part of upcoming conversations with the Transportation Advisory Board and Planning Board regarding the recommended parking rate adjustments:

- Does the Board have any questions about the data?
- Does the Board have any questions about the findings?
- Does the Board agree with the recommended ranges for parking minimums and maximums?
- Should the new requirement be a parking minimum, parking maximum, or both as shown?
 - If no minimum, should parking reductions be eliminated?
 - If maximum, should a new exception process be created to allow for more parking in certain circumstances and/or when requested?
- Should different parking requirements be created depending on zoning district/geographic area or by land use type, or a combination of the two?
- Does the Board agree that parking reductions should be linked with TDM requirements?
 - If TDM based parking reductions are kept, should the criteria for obtaining a parking reduction include monitoring?
 - If TDM based parking reductions are kept, should parking reduction criteria be simplified and made more predictable (e.g. a menu of specific options)?
- Is there support for automatic parking reductions in certain scenarios (e.g. along a high frequency transit corridor)?
- Is there support for encouraging and/or requiring shared parking?
 - Currently, a Use or Site Review is generally required to share parking across separate lots, should this process be made simpler?