

TECHNICAL MEMORANDUM

Project: White Center Community Hub Mixed Use Project
10821-8th Avenue SW, Seattle, WA

Subject: Parking Assessment

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This memorandum summarizes the parking assessment completed for the White Center Community Hub project at 10821-8th Avenue SW in unincorporated King County. It estimates the project's peak parking demand by time of day on a typical weekday and Saturday. It also considers the effect that different parking management strategies would have on overall parking characteristics, including the ability to accommodate parking generated by meetings and events.

1. Project Description

The White Center Community Hub project would be developed and operated through a partnership between the White Center Community Development Association (WCCDA), Southwest Youth and Family Services (SWYFS), Food Empowerment Education Sustainability Team (FEEST), YES! Foundation, and HealthPoint. The project is additionally supported through Community Roots Housing, King County Department of Community and Human Services, and Communities of Opportunity. The new development would include a mix of residential, clinic, educational, office, and community space, summarized in Table 1.

Table 1. White Center Community Hub – Proposed Program

Land Use	Size
Multifamily Residential	76 affordable units
Clinic	2,500 square feet (sf), 6 exam rooms, 10 HealthPoint staff members
Social Service Center (SWYFS)	4,700 sf, including a small 500 sf short-term day care room. Up to 19 SWYFS staff members.
Education Facility	4,500 sf, 3 classrooms (17 students each) 3 SWYFS teachers during daytime, 4 YES! staff members after school
Community Room	2,400 sf
Community Service Building (office space)	5,300 sf for community service organizations including WCCDA, FEEST, Yes. Up to 29 staff members in addition to those listed for above uses
Parking	87 spaces

Source: Sundberg, Kennedy, Ly-Au Young Architects, December 2020

2. Parking Assessment

The project proposes to construct a surface parking lot with 87 spaces. Parking demand for the proposed project was derived using different methodologies for the residential and non-residential components, described in the following section.

2.1. Parking Demand Rates

Residential

Parking demand generated by the residential component of the project was estimated using the *King County Multi-Family Residential Parking Calculator*.¹ This tool, also known as the *Right-Size-Parking Calculator (RSPC)* was originally created by King County Metro in 2012 as part of a study that examined the relationship among several variables to help better plan parking supply throughout the County. The County recognized that constructing too much parking supply can result in higher levels of automobile ownership, vehicle travel, congestion, and development costs. With a grant from the Federal Highway Administration, Metro compiled information about multi-family residential parking use at more than 200 developments in King County over the winter and spring of 2012. Parking occupancy was recorded on Tuesdays, Wednesdays, and Thursdays between midnight and 5:00 A.M. in each multi-family development studied. Metro then developed a statistical model to estimate parking use based on building and environmental characteristics. King County updated the calculator in 2018 using new data collected at 75 additional sites throughout the county in 2017. The *RSPC* is one of the largest databases of residential parking demand in the country, and reflects local travel characteristics in Seattle.

The site location and anticipated residential characteristics were entered into the King County RSPC, which projects a peak parking demand rate of 0.81 vehicle per unit for the proposed residential program. This would equate to a peak demand of 61 parked vehicles. It should be noted that this estimate reflects the plan to provide free parking to residents; the parking model output indicates that pricing of parking would reduce the peak parking demand to as low as 0.70 vehicle per unit (54 vehicles). The typical distribution of residential parking demand throughout the day (weekday and Saturday), discussed in detail in Section 2.4, was obtained from the Institute of Transportation Engineers (ITE) *Parking Generation Manual*² for Mid-Rise Multifamily Housing (ITE Land Use Code [LU] 221). Although the peak residential parking demand (which typically occurs overnight) would be the same on weekdays or weekends, the hourly distribution of parking demand would vary between them.

Community Room

The parking demand rates and hourly distribution for the community center were obtained from the *Parking Generation Manual* for Recreational Community Center (LU 495) for both weekdays and Saturdays. ITE describes this use as a stand-alone public facility that often can include classes and clubs for adults and children, a day care or nursery school, meeting rooms, athletic facilities, and/or a restaurant or snack bar.

The ITE rates reflect typical day-to-day uses of community center facilities, and do not reflect demand generated by occasional large events that could occur. The additional parking generated by larger events will be discussed separately after the discussion of the cumulative parking generated by typical day-to-day use of all of the proposed facilities.

¹ King County Metro, <https://rightsizeparking.org/>, accessed October 2020.

² ITE, *Parking Generation Manual*, 5th Edition, 2019.

Educational Facility

The proposed educational facility—which would provide extension-type classes for high school age through adults during weekdays, and afterschool programs for middle school age children—is not a traditional educational institution, so no published rates are available for this specific combination of uses. Through review of the various ITE land use category descriptions, it was determined that the “Recreational Community Center” use described above, which includes provision of classes and clubs, most closely represents the planned use for this space.³ Although the same rates were used for the educational facility and community center use, parking estimates were developed separately for each use so that their associated demand could be differentiated.

Parking demand rates and hourly distribution for the educational facility were applied only for the weekday estimate. The analysis assumes that while the educational space could be occasionally used for some weekend events, this would fall under the “Special Event” category discussed later in Section 0 of this memorandum.

Clinic

The parking demand rates and hourly distribution for the clinic were obtained from the *Parking Generation Manual* for Clinic (LU 630) for weekdays. These rates are based on the clinic’s size (2,500 sf). ITE does not provide a Saturday rate for clinics. However, since the clinic is planned to be fully operational on Saturdays, the weekday peak parking demand rate and hourly distribution were assumed to also occur on Saturdays.

Office

The parking demand rates and hourly distribution for the office use were obtained from the *Parking Generation Manual* for General Office (LU 710) for weekdays. Although published parking rates for office use are readily available, there are two challenges associated with developing demand estimates for this component of the proposed project. First, the anticipated office sizes (many of which would be less than 100 sf in size) are much smaller than those inherent in the ITE rates (which reflect an average of about 350 sf per office employee); therefore, application of rates per square foot of office space would likely underestimate the associated parking demand. Second, there would be much overlap between the staff who use the offices and those associated with the other facilities described above; therefore, care must be taken not to double count parking demand generated by staff who would use the office spaces and additionally operate the various facilities at the site. To address these challenges, parking generated by the office use was estimated by applying a rate per employee, but only to employees not already accounted for in the other uses. As noted in Table 1, 29 employees are expected to work in the Community Services Building, which would include functions such as administration and other community support services.

The analysis assumes that office activity on Saturday would be lower than a weekday, but higher than a traditional office (which ITE indicates to be about 12% of the weekday rate). The peak parking rate for Saturday was assumed to be half of the weekday rate, but with similar hourly distribution.

³ Note, Junior/Community College (LU 540) was also considered, as this use provides daytime classes to people of driving age and can have sizable evening programs. Although it is expected that Community Center is a more representative use, application of Junior/Community College, assuming seven employees directly associated with this use, resulted in similar parking demand estimates.

2.2. Travel Mode Assumptions

Local travel mode shares for residential and office uses were derived from Journey-to-Work data compiled by the Puget Sound Regional Council (PSRC)⁴ for the analysis zone in which the site is located. The data indicate that about 80% of residents in the area travel by vehicle and 20% travel by other modes such as transit, walking and biking. This is consistent with the mode share derived from the Right-Size Parking Calculator, which estimated vehicle ownership for apartments at 81% to 84%. Therefore, no further adjustments were made for residential parking demand; however, it was assumed that 20% of the trips to the community center and educational facility would occur by non-vehicle modes. For employees in the area, the data indicate that 94% commute by vehicle and 6% commute by other modes. This adjustment was only applied to the office parking demand.

No adjustments were made that assume higher use of alternative travel modes beyond what is inherent in the rates that were applied. Any management measures or incentives implemented to encourage alternative travel modes and/or discourage driving alone would reduce overall parking demand. This is discussed in more detail in Section 2.6 of this memorandum.

2.3. Summary of Parking Rate Assumptions

Table 2 summarizes the parking demand rates applied to the preliminary parking estimates, based upon the assumptions discussed above.

Table 2. Summary of Parking Demand Rates and Assumptions

Land Use		Adjusted Peak Parking Rate ^a	Size	Peak Parking Demand (vehicles)
Multifamily Residential	Weekday	0.81 vehicles / unit	76 units	62
	Saturday	0.81 vehicles / unit		62
Clinic	Weekday	3.89 vehicles / 1,000 sf	2,500 sf	10
	Saturday	3.89 vehicles / 1,000 sf		10
Education Facility	Weekday	1.66 vehicles / sf	4,500 sf	7
	Saturday	1.66 vehicles / sf		7
Community Room	Weekday	1.66 vehicles / sf	2,400 sf	4
	Saturday	1.52 vehicles / sf		4
General Office	Weekday	0.80 vehicle / employee	29 employees	23
	Saturday	0.40 vehicle / employee		11

Source: Heffron Transportation, December 2020.

- a. Parking rate for residential use derived from King County Multi-Family Residential Parking Calculator (King County Metro, <https://rightsizeparking.org/>, accessed October 2020). All other rates derived using ITE parking rates adjusted for non-vehicle modes of travel.

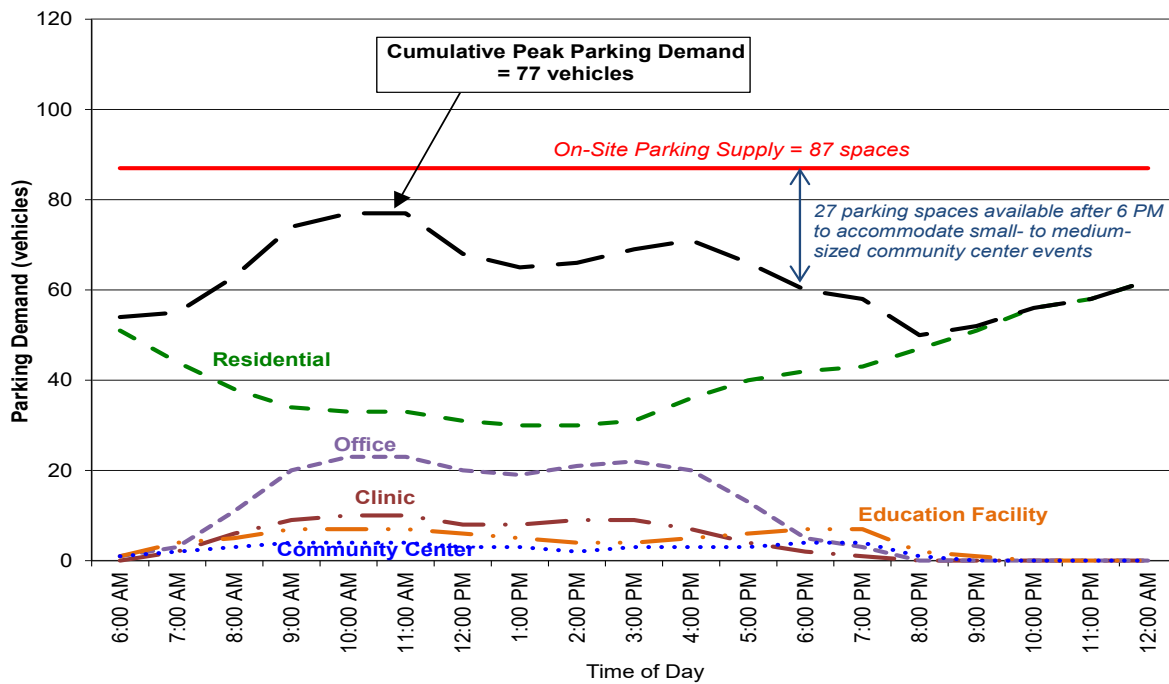
⁴ Puget Sound Regional Council, Journey-to-Work database, based upon the 2006 – 2010 American Community Survey, for Transportation Analysis Zone 351.

2.4. Cumulative Parking Demand

Peak parking demand for the different uses would occur at different times of day. For example, peak residential demand occurs overnight when most residents are at home; for clinics the peak demand typically occurs in late morning, and for community centers it typically occurs in early evening. Because of these different parking profiles, the mixed-use nature of this project could allow some of the parking on the site to be shared by the different uses. The result is that fewer spaces would be needed than if each of these uses were located on their own site.

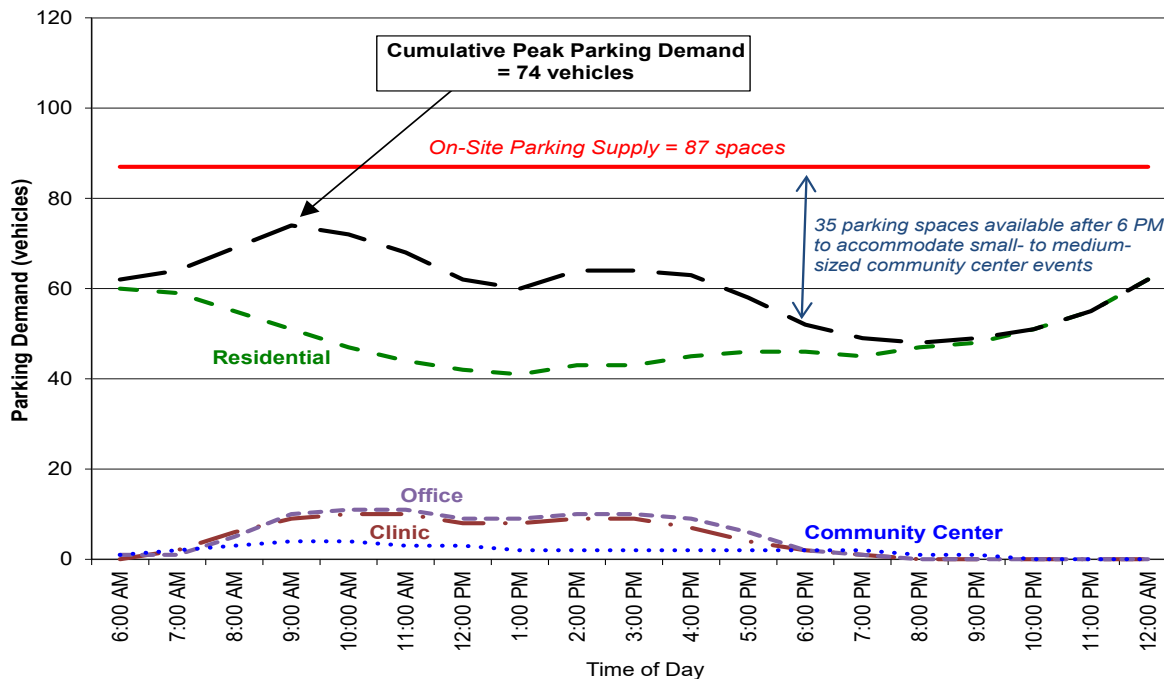
Figures 1 and 2 below show the cumulative parking demand if all parking spaces on the site are shared among the various uses. Figure 1 shows the weekday conditions and Figure 2 shows Saturday conditions.

Figure 1. Cumulative Parking Demand – Weekday



Source: Heffron Transportation, Inc., December 2020.

Figure 2. Cumulative Parking Demand – Saturday



Source: Heffron Transportation, Inc., December 2020.

The analysis shows that shared parking is possible on the site and would retain a buffer of unused parking during the peak midday hours, which would reduce the need to circulate through the site to find available parking. The charts show that after 6:00 P.M., there would be an estimated 27 unused spaces available on a weekday and 35 available on a weekend to support special events. Further analysis of event parking is presented below.

The second parking scenario would convert 10 of the parking spaces into tandem spaces where each space could accommodate two stack-parked vehicles. Tandem spaces are difficult to share, since the inside vehicle can be “trapped” in the space if there is no way to have the outside vehicle moved. Therefore, tandem spaces are typically reserved for a single residential unit that may need to park more than one vehicle. It may also be possible for a tandem space to be shared by employees within the same department. However, the spaces could not likely be shared between different residents or different uses. If 10 spaces are converted to tandem space, it would increase the total site’s parking supply to 97 vehicles. As shown on the shared parking charts, some resident vehicles would remain parked on the site during all hours of the day. If some of those vehicles are associated with residents who own more than one vehicle, then the provision of tandem spaces would reduce use of the other 77 spaces on the site, opening up supply for other non-resident uses or event attendees. Therefore, tandem spaces are beneficial and, if provided, should be reserved for a specific residence or employment unit.

2.5. Special Events

The following three tiers of events have been identified for use of the community center space.

Meetings / Small Events – These would be the most common use of the facility, with typical attendance of 20 to 40 people. It is expected that smaller events would generate parking demand of 1 vehicle per 1.5 attendees (accounting for some drive-alone, but also use of carpools, transit, and walking). This results in an estimated parking demand of up to 15 to 25 vehicles for events of this size.

Medium Capacity Events – These include events with attendees at tables such as wedding receptions and banquets, which could have up to 180 attendees. This size of event tends to have higher vehicle occupancy and is expected to generate parking demand of 1 vehicle per 2 to 3 attendees.⁵ This results in an estimated parking demand of up to 60 to 90 vehicles for events of this size.

Large Capacity Events – These include events with attendees in rows of chairs such as lectures or community meetings, and could have up to 240 attendees. This size of event is expected to have vehicle occupancy ranges closer to 1 vehicle per 2 to 3 attendees. This results in an estimated parking demand of 80 to 120 vehicles for events of this size.

Based upon the analysis presented above, parking generated by meetings or small events could generally be accommodated on-site on Saturdays or weekday evenings.

It is expected that medium- to large-events would generate parking beyond what could be accommodated on site. While the available capacity could be increased to some degree with measures described in the following section, it is expected that there would be some parking overspill to the nearby street system and/or designated nearby off-site facilities (if shared parking agreements can be made).

⁵ An assumption of 2.0 attendees per parked vehicle is consistent with assumptions applied to evaluate events at the nearby Lakewood Park Learning Center (Heffron Transportation, July 12, 2007). Analysis completed for the High Point Library found that events that include children have a vehicle occupancy closer to 3.0 (Heffron Transportation, August 7, 2002).

2.6. Potential Measures to Reduce Parking Overspill

The following measures could be considered to reduce parking demand, or make more efficient use of available supply.

- Schedule medium and large events to occur on weekends or in the evenings when more on-site parking would be available.
- Reserve some residential spaces and create a residential permit system so that event attendees do not utilize all on-site spaces.
- Charge for parking, which could encourage employees and/or residents to use alternative modes of transportation and reduce overall parking demand. The site is directly served by two King County Metro bus routes that provide regular service to and from Downtown Seattle, West Seattle, Highland Park, South Park, Tukwila, Southcenter, and Burien.
- Subsidize transit fares for employees and/or clients to encourage use of this mode.
- Secure off-site parking for large events and notify event attendees that they must park off-site.

3. Conclusions

The site's on-site parking supply would accommodate parking supply generated by everyday use of the facility plus small events. Parking overspill to area streets is likely to occur for occasional medium and large special events. Overspill could be reduced with a combination of parking management strategies that may fluctuate depending on the type and expected attendance of each event.

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