PLANNING COMMISSION
REGULAR MEETING
AGENDA

Thursday, August 2, 2018
7:00 p.m.

Council Chamber · Shoreline City Hall
17500 Midvale Ave N
Shoreline, WA 98133

	Estimated Time
1. CALL TO ORDER	7:00
2. ROLL CALL	7:01
3. APPROVAL OF AGENDA	7:03
4. APPROVAL OF MINUTES	7:04
a. July 5, 2018 Draft Minutes	
b. July 19, 2018 Draft Minutes	

Public Comment and Testimony at Planning Commission

During General Public Comment, the Planning Commission will take public comment on any subject which is not specifically scheduled later on the agenda. During Public Hearings and Study Sessions, public testimony/comment occurs after initial questions by the Commission which follows the presentation of each staff report. In all cases, speakers are asked to come to the podium to have their comments recorded, state their first and last name, and city of residence. The Chair has discretion to limit or extend time limitations and the number of people permitted to speak. Generally, individuals may speak for three minutes or less, depending on the number of people wishing to speak. When representing the official position of an agency or City-recognized organization, a speaker will be given 5 minutes. Questions for staff will be directed to staff through the Commission.

5. GENERAL PUBLIC COMMENT	7:05
6. STUDY ITEMS:	7:15
a. Potential Expansion of Green Building Mandate to Commercial Zoning	
7. DIRECTOR'S REPORT	8:00
8. UNFINISHED BUSINESS	8:10
9. NEW BUSINESS	8:11
10. REPORTS OF COMMITTEES & COMMISSIONERS/ANNOUNCEMENTS	8:12
11. AGENDA FOR June 7, 2018	8:14
12. ADJOURNMENT	8:15

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DRAFT

CITY OF SHORELINE

SHORELINE PLANNING COMMISSION
MINUTES OF REGULAR MEETING

July 5, 2018 Shoreline City Hall
7:00 P.M. Council Chamber

Commissioners Present	Staff Present
Vice Chair Mork	Rachael Markle, Director, Planning and Community Development
Commissioner Davis	Steve Szafran, Senior Planner, Planning and Community Development
Commissioner Lin	Uki Dele, Surface Water & Environmental Services Manager
Commissioner Maul	Nora Daley-Peng, Senior Transportation Planner
Commissioner Malek	Carla Hoekzema, Planning Commission Clerk

Commissioners Absent
Chair Montero
Commissioner Craft

CALL TO ORDER

Vice Chair Mork called the regular meeting of the Shoreline Planning Commission to order at 7:00 p.m.

ROLL CALL

Upon roll call by Ms. Hoekzema the following Commissioners were present: Vice Chair Mork, and Commissioners Davis, Maul and Malek. Commissioner Lin arrived at 7:05 p.m. and Chair Montero and Commissioner Craft were absent.

APPROVAL OF AGENDA

The agenda was accepted as presented.

APPROVAL OF MINUTES

The minutes of June 21, 2018 were approved as amended.

GENERAL PUBLIC COMMENT

There were no general public comments.

STUDY ITEM: 2018 COMPREHENSIVE PLAN AMENDMENT – 2018 SURFACE WATER MASTER PLAN

Staff Presentation

Ms. Dele advised that for the past few years, staff has been working with consultants, Brown and Caldwell and FCS Group to update the 2011 Surface Water Master Plan, which is a supporting component of the City's Comprehensive Plan. She referred to the draft 2018 Surface Water Master Plan, noting that in addition to the updated plan, the Capital Facilities Element will be amended to reference the 2018 Surface Water Master Plan instead of the 2011 plan. She also advised that the Surface Water Master Plan is intended to implement the policies of the 2012 Comprehensive Plan, and no policy changes are recommended.

Ms. Dele explained that the City has been doing basin planning since 2009 to identify needs in each basin, as well as activities that will help address those needs. The basin planning identified 116 projects at an estimated cost of $50 million to address them. The update includes a process for implementing these projects. It also addresses drainage and water quality challenges associated with growth, increasing regulations and aging infrastructure. The plan will guide the utility for the next 6 years and provides recommendations for the City Council to consider relative to capital improvement projects, rate structure, and policy.

Ms. Dele advised that the updated plan uses an asset management approach that manages the utility's assets and programs at the lowest lifecycle costs, while meeting the expectations of the customers. The 2018 Surface Water Master Plan represents the progress in master planning and provides a transparent process for articulating how the elements of the plan will be implemented. The draft plan updates the Level of Service (LOS), evaluates the operations and drainage system conditions, identifies the gaps and develops recommendations for meeting the gaps, creates a plan and process for implementing the recommendations, and analyzes the cost of implementation.

Ms. Dele advised that a key objective of the draft 2018 plan is to match the LOS provided by the utility with the expectations of the customers. LOS for the draft 2018 plan was developed through a series of interdepartmental workshops. In addition, community meetings and a web survey were offered to gauge the understanding of the customers, as well as their preferences for the LOS service targets. The information gathered during this process was used to identify the final LOS and associated LOS targets for the next six years. The LOS targets were used to develop a matrix of performance targets and performance measures, both of which provide a much higher level of detail and specificity. Performance targets were used to develop prioritization criteria for capital improvements projects and programmatic recommendations. Linking the prioritization criteria back to levels of service enabled the utility to better determine which projects and programs were likely to provide the greatest benefit toward achieving LOS. The results of the prioritization, in combination with estimated costs, were used to select and assemble projects and programs into solution sets or management strategies. Using this approach, they were able to combine the 116 projects into 40 high-priority projects, 6 new studies and 15 new programs.

Ms. Dele advised that the minimum management strategy would be to provide the current programs and projects that meet the minimum terms and the anticipated regulatory requirements. The proactive

management strategy builds on minimum management strategy to include the high-priority projects and new programs to meet the LOS the customers expect. The optimum management strategy would include all of the projects identified in the plan. She summarized that when developing the management strategy, it was helpful to articulate how the strategies relate to the projects and programs the City provides, the rates, and meeting the LOS.

Ms. Dele reported that, on August 7, 2017, the City Council approved the proactive management strategy and rates to manage the utility at that level for the next six years. The proactive management strategy addresses all LOS. It provides incremental improvement for LOS 1 at a reasonable cost, addresses the high-priority projects and positions the utility to be able to be at an optimum level over time. As part of the proactive management strategy, the City will be constructing 25 new projects, implementing 15 new programs and enhancing 9 existing programs that address the high-priority, long-term needs that were identified. She referred to the list of programs that will be implemented over the next six years.

Ms. Dele explained that the plan includes performance measures for each of the programs the utility will be implementing based on the proactive management strategy. These measures will be used to monitor the success of the programs to ensure they are effectively meeting the LOS targets and expectations. She briefly explained the rating system and how it would be used to collect data to evaluate and assess each of the programs. At the end of the six-year planning period, staff will be able to document and show how the utility is meeting the expectations of each LOS.

Ms. Dele advised that the public process for updating the plan included two open houses, one in 2016 and another in 2017. The open houses helped staff understand the residents' expectations for the utility. Web surveys were also used to reach out to residents who could not attend the open houses. About 49% of the surveyed residents indicated they preferred a proactive management strategy as opposed to the optimum management strategy. She reported that the project and the approach that was used received national recognition. It was presented at the National Stormwater Conference in 2017 and is featured in the May issue of the Stormwater Magazine. The public comment period on the draft plan ends July 9th. The Planning Commission will conduct a public hearing on the draft plan and the associated Comprehensive Plan amendment on October 4th. The City Council will have a discussion of the draft plan and Comprehensive Plan amendment on October 29th. Adoption is scheduled for November 26th.

Vice Chair Mork asked how the Salmon Safe Program interacts with the draft plan. Ms. Dele answered that the draft plan was provided to Salmon Safe for the certification process, and they are providing final recommendations for implementation. The initial recommendations have already been incorporated into the plan. She emphasized that LOS was developed to go beyond just meeting the permit requirements to include expectations for water quality, aquatic habitat, etc. These elements were not included in the previous plan.

Commissioner Maul noted that the City Council has already approved funding for 25 projects and asked when the remaining 15 high-priority projects would be addressed. Ms. Dele answered that the 25 projects are those that will be addressed during the next six years. The remaining 15 projects will be addressed as part of a later plan.

Public Comment

There were no public comments.

STUDY ITEM: 2018 COMPREHENSIVE PLAN AMENDMENT #4 MASTER STREET PLAN UPDATE AND #9 PEDESTRIAN SYSTEM PLAN UPDATE

Staff Presentation

Ms. Daley-Peng reviewed that the City Council's 2018-2020 Goals and Work Plan includes the following goal and action step:

- **Goal 2:** Improve Shoreline's infrastructure to continue the delivery of highly-valued public services.

- **Action Step 8:** Update the Transportation Master Plan (TMP) Pedestrian System Plan and sidewalk prioritization process and move the Master Street Plan from the TMP to Title 12 of the Shoreline Municipal Code.

Ms. Daley-Peng explained that in both the Master Street and Pedestrian System Plans there are some elements that are too specific for a policy document and are much better suited for a regulatory document. In addition, there are parts that are redundant with the Engineering Development Manual (EDM), and there is inconsistency or the possibility of future inconsistency with the recent Sidewalk Prioritization Plan. The removal of these parts from the TMP would allow for future updates to the EDM's street matrix and the Sidewalk Prioritization Plan outside of the Comprehensive Plan amendment process's annual limitation. She stressed that public scrutiny would still be part of any update to either of the two documents. She reviewed the proposed changes, noting that they would be prepared in legislative format during the summer for a public hearing in the fall.

Amendment 4

Ms. Daley-Peng explained that the Comprehensive Plan's Transportation Element references the TMP as a supporting analysis document, and Chapter 7 and Appendix D of the TMP are specifically related to the Master Street Plan. The Master Street Plan is structured as a Comprehensive Plan document, which includes policies and implementation strategies. In contrast, Appendix D is more similar to development regulations, serving to implement the policies and strategies contained in Chapter 7 and other sections of the TMP. It consists primarily of a table that identifies specific street segments and their functional classifications, as well as specific roadway cross-sections, existing right-of-way width, existing curb-to-curb width, required right-of-way width and planned curb-to-curb width. The current EDM, which was last updated in 2016, contains Appendix F (Street Matrix). The biggest difference between Appendix D of the TMP and Appendix F of the EDM is in their tables. The EDM's Street Matrix includes additional columns that denote required widths (on both sides of the road) for sidewalks, amenity zone, curb, parking, travel lane, bicycle lane, etc. In other words, the EDM's Street Matrix is used to regulate development activities and operates appropriately as a development regulation.

Ms. Daley-Peng explained that, as proposed, Amendment 4 would incorporate the Master Street Plan, Appendix D, into the EDM, which sets forth minimum engineering requirements for site and right-of-way work related to development within the City.

Amendment 9

Ms. Daley-Peng reviewed that after a year-long process, the City Council approved the 2018 Sidewalk Prioritization Plan (SPP) on June 4th. The project started with the baseline of the TMP's Pedestrian System Plan, which was created in 2011. She provided a map, which illustrates a combination of 75 miles of existing sidewalk and 70 miles of new sidewalk. She explained that although the map does not differentiate between existing and new sidewalks or identify priorities, there are elements in the TMP that address prioritization based on seven criteria that focused primarily on proximity to key destinations (schools, parks and transit) and projects that could be combined with other funding or capital improvement projects. The criteria did not address safety or equity. The 2018 SPP expanded the criteria to address both safety and equity, while still addressing proximity and connectivity.

Ms. Daley-Peng advised that staff worked closely with the Sidewalk Advisory Committee (SAC) and solicited public input to develop the 2018 SPP, which included measurable metrics for each of the four criteria. For example, for safety, they reviewed the City's collision history and mapped the hot spots where there is need for additional safety and protection for pedestrians. Other metrics under safety include looking at the volume and speed of traffic on streets. For equity, they looked at income levels across the City, and they also mapped communities with concentrated populations of disabilities, communities of color, communities with limited English speaking, and age. The idea was to find out where there is the most need and dependency on sidewalks. For proximity, they studied quarter-mile walksheds around parks, and they also mapped schools, transit and shopping/retail. For connectivity, they looked at how it all comes together and where the City can leverage its investments. It was important to find the gaps in the existing sidewalk network that could be filled to provide more value. She summarized that using the criteria, each project was scored based on a point system.

Ms. Daley-Peng explained that the SAC consisted of 15 members who were appointed by the City Manager. They met for 12 meetings over a year and formed four committees around the following topics: funding, communications, prioritization process, and sidewalk treatments. There were two open houses, and the SAC met with the City Council at two dinner meetings. They produced a video of how it is to navigate the City's current sidewalk network and put together final recommendations to the City Manager. The public outreach process included two open houses, which were followed by on-line surveys. They prepared a "frequently answered questions" document and maintained a webpage. She also presented to the Council of Neighborhoods. She briefly explained the content and participation of the open house meetings, as well as the on-line surveys. In all, 577 members of the community participated.

Ms. Daley-Peng said the scorecard was applied to the projects that were developed in 2011 and the projects were reprioritized based on the updated set of criteria. She briefly reviewed the high-priority, medium-priority and long-term priorities. The priorities were also measured by quadrants in the City to recognize the importance of a geographic distribution of improvements across the City. She explained that the package of 33 high-priority projects equates to $95 million, and full build-out of the vision (70 miles)

would cost $414 million. She referred to the matrix, which lists each of the projects and documents how each one scored based on the metrics. It also includes a brief description of each projects. The matrix will be used over the next many years to implement the SPP.

Ms. Daley-Peng advised that Amendment 9 includes updates to the Comprehensive Plan's 2011 TMP Pedestrian System Plan, specifically Chapter 5, Pedestrian Plan, based on the recently approved SPP. In addition, Chapter 9, which brings together all of the recommended transportation improvements, would be updated to identify the new prioritizations. Other changes include updating the Comprehensive Plan's Element 4, specifically Policy T-49, and deleting Appendix H, which is a Pedestrian Projects Prioritization Plan. Instead of Appendix H, amendment 9 would reference the recently-approved Sidewalk Prioritization Plan.

Ms. Daley-Peng said the next step is to prepare the legislative format of the proposed changes and present at the public hearing on October 4th. The amendments would be presented to the City Council for discussion and adoption in the fall.

Commissioner Maul suggested it would be helpful for staff to provide a comparison of the two charts (Appendix D of the TMP and Appendix F of the EDM). Ms. Daley-Peng agreed to send links to the two documents.

Commissioner Malek noted that a lot of projects are happening on the border of Shoreline. For example, there is a 37-home project in Woodway that will requires access through Richmond Beach. He asked how the City is preparing to address these interlocal changes. Ms. Daley-Peng advised that the City will begin updating its TMP in 2019, looking not only at the street network, but also at traffic volumes, etc. She agreed that consideration of anticipated growth areas on the border of the City should also be discussed as part of this process.

Commissioner Malek voiced concern on behalf of the building community regarding potential "sidewalks to nowhere." It is difficult for some of the smaller residential streets that are historic and narrow to comply with all of the street and sidewalk improvement requirements. Hopefully, these streets can be identified as very low priority or some alternative, more modest measure could be allowed. Ms. Daley-Peng agreed that this issue needs to be addressed as part of the TMP update.

Public Comment

Brynn Smith, Shoreline, said she lives in Richmond Beach and is 15 years old. She directed her comments towards the intersection of 205th and 15th Avenue NW. She suggested that rather than the current prioritization of 67th, the sidewalk project in this location should be at least in the top 10% of priorities given its close proximity to the Klahaya Swim and Tennis Club, Hickman Park, and Syre Elementary School. She said she would have loved to be able to walk to the pool, park or school as a young child or even as an older youth, but it is not safe and there are no good alternative routes. She noted that there are a number of young children in her neighborhood who would benefit from a pedestrian improvement in this location.

Roger Smith, Shoreline, clarified that his daughter's comments were specifically related to 15th Avenue NW between 204th and 205th Streets. He explained that the 15th Avenue NW corridor has already been identified as a pedestrian access, with a walkway that is separated by a line from the traveled way up to Kruckeberg Botanic Garden. Beyond that, there is steep hill with a blind corner and it is not safe to walk. There are no good alternative routes for pedestrian and bicycles, either. He suggested that this spot improvement is unique compared to the other corridors that have been identified and prioritized. He and his daughter came to the meeting to highlight this location and ask that it be reprioritized higher.

Continued Commission Discussion

Director Markle advised that unless the Commission would like to receive another presentation on the proposed amendments, staff will move forward to prepare the strike-through legislative language as part of a staff report for a public hearing on the Comprehensive Plan amendments. The Commission agreed that no additional study session is needed prior to the public hearing on October 4th.

Commissioner Davis asked what opportunities the citizens have to bring forward smaller, spot areas for the City to address. Ms. Daley-Peng said the opportunity will be ongoing to reach out to staff and Council. The Neighborhood Traffic Safety Program also addresses issues such as needed spot improvements, crossings, traffic calming, etc. She said she took some notes of Mr. and Ms. Smith's comments. She is not sure if the issue could be addressed via a spot improvement or if a full-corridor of corridor-segment project would be needed. She emphasized the need to think about pedestrian improvements comprehensively.

Commissioner Malek said his comment about "sidewalks to nowhere" was intended to address low-traveled roads, but the Smiths were referring to a segment that could qualify as a collector-arterial, with a public park, school, etc. There is more interest in visits to the street other than just people living there, making the street faster moving and more dangerous for pedestrians.

DIRECTOR'S REPORT

Director Markle reported that the Hearing Examiner issued his decision on June 29th, denying BSRE's request for an extension of their Urban Center Permits. He also upheld the Snohomish County staff's position that they would deny the permit applications before even proceeding to an Environmental Impact Statement because there were substantial conflicts with the application and County code. The Hearing Examiner's decision can be appealed to Snohomish County Superior Court, and an appeal would need to be filed within 21 days of the decision. The decision means that the Urban Center application that had been vested all of these years is expired unless it is appealed and succeeds. The Hearing Examiner's decision can be accessed via the City's webpage and Snohomish County's webpage.

UNFINISHED BUSINESS

There was no unfinished business.

NEW BUSINESS

There was no new business.

REPORTS OF COMMITTEES AND COMMISSIONERS/ANNOUNCEMENTS

There were no reports or announcements.

AGENDA FOR NEXT MEETING

Mr. Szafran advised that the July 19th agenda will include study sessions on two more Comprehensive Plan Docket items: Point Wells Subarea Plan Update and Transportation Policy T-44 Update. Both of these amendments were citizen initiated.

ADJOURNMENT

The meeting was adjourned at 8:02 p.m.

_____	_____
Laura Mork	Carla Hoekzema
Vice Chair, Planning Commission	Clerk, Planning Commission

DRAFT

CITY OF SHORELINE

SHORELINE PLANNING COMMISSION
MINUTES OF REGULAR MEETING

July 19, 2018 Shoreline City Hall
7:00 P.M. Council Chamber

Commissioners Present
Chair Montero
Vice Chair Mork
Commissioner Davis
Commissioner Lin
Commissioner Maul

Staff Present
Rachael Markle, Director, Planning and Community Development
Steve Szafran, Senior Planner, Planning and Community Development
Julie Ainsworth-Taylor, Assistant City Attorney
Kendra Dedinsky, City Traffic Engineer

Commissioners Absent
Commissioner Craft
Commissioner Malek

CALL TO ORDER

Chair Montero called the regular meeting of the Shoreline Planning Commission to order at 7:00 p.m.

ROLL CALL

Upon roll call by Mr. Szafran the following Commissioners were present: Chair Montero, Vice Chair Mork and Commissioners Lin and Maul. Commissioner Davis arrived at 7:09 p.m. and Commissioners Craft and Malek were absent.

APPROVAL OF AGENDA

The agenda was accepted as presented.

APPROVAL OF MINUTES

There were no minutes available for approval.

GENERAL PUBLIC COMMENT

There were no general public comments.

STUDY ITEM: 2018 COMPREHENSIVE PLAN AMENDMENT – TRANSPORTATION ELEMENT T-44

Staff Presentation

Mr. Szafran presented the Staff Report, noting that these are citizen-initiated amendments to Transportation Policy T-44, which describes how the City evaluates traffic concurrency and Level of Service (LOS). He described each of the three proposed amendments as follows:

1. **Add "AM or PM peak" when describing Level of Service (LOS).** This amendment would add "for the peak AM or peak PM" after "LOS D" in the second sentence. It would also add "peak AM and peak PM one-directional" in the last sentence before "volume to capacity."

2. **Describe a leg of an intersection.** This proposed amendment would add the following language: "A leg of a signalized arterial intersection refers to that portion of the arterial that is between the signalized intersection and the next nearest intersecting arterial or no-arterial street." Staff has evaluated this proposal and determined that the methodology appears to be inconsistent with the existing Forecasting and Growth Analysis Methodology.

3. **Describe an alternative LOS for certain arterial streets.** The language proposed by the applicant appears to be inconsistent with existing methodology. When the City did traffic modeling in 2011 for the Transportation Master Plan (TMP), the two arterial streets described in the amendment (Dayton Avenue N from N 175th to N 185th and 15th Avenue NE from N 150th Street to N 175th Street) were not exceeding the Volume to Capacity (V/C) ratio. Therefore, staff does not consider the streets to be grandfathered as described.

Mr. Szafran summarized that staff is recommending denial of the applicant's proposed amendments to Policy T-44 as outlined in Attachment B of the Staff Report.

Chair Montero asked if the applicant submitted documentation to support the proposed amendments, and Mr. Szafran answered that the applications for each of the amendments were attached to the Staff Report. Vice Chair Mork asked if the applicant shared his rationale for the proposed amendments with staff, and Mr. Szafran answered no. He explained that in reading the application (Attachment B), the applicant believes the proposed amendments would provide clarification. However, the Traffic Engineer does not agree with the applicant's rationale.

Chair Montero summarized that that Amendment 3 would nullify the grandfathering and add another amendment for Dayton Avenue N and 15th Avenue NE. Mr. Szafran clarified that the two streets were always described in Policy T-44, and the applicant is proposing to reorganize the last section of the policy.

Public Comments

There was no public comment.

STUDY ITEM: 2018 COMPREHENSIVE PLAN AMENDMENT – POINT WELLS SUBAREA PLAN UPDATE

Staff Presentation

Mr. Szafran presented the Staff Report for proposed amendments to update the Point Wells Subarea Plan, which are citizen-initiated. The applicant believes the plan should be updated given the many changing conditions at Point Wells over the past eight years. Mr. Szafran reviewed that the Point Wells Subarea Plan was adopted by the City Council in 2010 as a component of the City's Comprehensive Plan. The subarea plan articulates the City's concerns, interests and aspirations regarding urban service delivery, governance, traffic and impacts on adjacent neighborhoods and infrastructure in Shoreline. He explained that, generally, the proposed updates are related to acreages and mapping, access, views and traffic. He described the proposed amendments and the Commission discussed each one as follows:

1. Staff is proposing that the subarea be renamed from Subarea Plan 2 – Point Wells to Point Wells Subarea Plan. When the plan was adopted in 2010, the City had three planned areas. Since that time, the planning areas have been changed or deleted, and the City no longer attaches numbers to the subarea titles.

2. Some of the maps would be amended to update acreages throughout the plan. The maps would also be updated to recognize that the upper bluff area was recently annexed into the Town of Woodway. The language in the plan that describes the upper bluff area is no longer needed and should be deleted. Staff supports this amendment.

   Chair Montero asked for clarification about the map changes, and Mr. Szafran advised that the acreage details that are currently shown on the map for each platted parcel within the subarea would be deleted and replaced with a combined acreage number. Chair Montero asked if the current property owner could sell the platted parcels individually. Mr. Szafran answered that he would assume so.

3. The applicant is proposing that the 1st paragraph in the "Geographic and Historical Context" Section be amended to replace "100" with "50." In addition, the last sentence would be deleted. Staff supports this amendment. Since Woodway has annexed the upper bluff area, the unincorporated area should not be 50 acres, not 100 acres. As a result of the annexation, the Burlington Northern Santa Fe Railroad no longer bisects the unincorporated portion, so the last sentence can be eliminated.

4. The language relative to access would be updated to read, *"Although there is potential easterly access to Point Wells through the Town of Woodway connecting to 116th Avenue W, presently Point Wells is connected to the regional road network only via Richmond Beach Drive and Richmond Beach Road in the City of Shoreline. Therefore, future re-development of Point Wells would be most efficiently, effectively and equitably provided by the City of Shoreline and its public safety partners, the Shoreline Fire Department and Shoreline Police Department."* Staff supports this amendment as it recognizes there is no longer a need to refer to a "lowland portion" because the "upland portion" is no longer part of the unincorporated island.

5. The language under Figure 1 would be modified to read, *"The only vehicular access to Point Wells is via Richmond Beach Road and the regional road network via the City of Shoreline. However, there is potential easterly access through the Town of Woodway connecting to 116th Avenue W."* Staff recommends that, in addition to deleting the 1st sentence in the paragraph, Figure 2 and its associated language should all be deleted as there is no longer a need to identify the upland area versus the lowland area. The plan should also recognize that a second access road is likely to be required by Snohomish County.

6. Concerning views, the amendment would identify the public view corridor in Figure 2 and Policy PW-5 would be updated to read, *"New structures in the NW subarea should rise no higher than elevation 150 or be no taller than 90 feet, whichever is less."* Staff supports this proposed amendment, which recognizes the 90-foot building height limit contained in the County's Planned Community Business zoning regulations. However, the Commission should recognize that in certain areas in the lowlands it might be better to have taller buildings with less footprint if they are clustered away from the view corridor.

   Chair Montero asked if the upland area is developable, and Mr. Szafran responded that there is currently an application for a 36-lot subdivision. Chair Montero asked about the view corridor and height restrictions associated with the upland area. Mr. Szafran answered that he does not have that information. Chair Montero asked if 90-foot tall buildings on the lower portion would impact views from the upland area, and Mr. Szafran answered no, noting that the upland area is much higher.

   Vice Chair Mork asked if staff believes this amendment would be helpful. Mr. Szafran answered that staff is not opposed to the amendment. Director Markle said it doesn't ultimately matter if the property is all within Snohomish County's jurisdiction. But the idea of the tradeoff is that if density of a certain high volume is going to be permitted, it needs to be out of the view corridor and in a location on the site that does not impact the City. If a greater density is not allowed, staff supports the idea of limiting building height to 90 feet or no higher than elevation 150. She further explained that if the regulations stay as they are, a significant amount of density would be allowed, and the City suspects that once all the studies have been completed, some areas might be found unsuitable for development. This will further limit the footprint. Rather than allowing tall buildings throughout the site, it might be better to have taller buildings in the northwest corridor to allow for shorter buildings towards the City's view corridor. The amendment may not have a negative impact on the City unless there is a need to cluster height away from its view corridor. Mr. Szafran pointed out that Policy PW-6 limits structures in the SE subarea, which is the City's view corridor, to six stories.

   Commissioner Lin asked if the City has the ability to place height restrictions on development within the public view corridor. Mr. Szafran said he is not aware of any City-imposed view regulations. Assistant City Attorney Ainsworth-Taylor agreed that there are no view covenants in Shoreline, with the exception of private covenants in Innis Arden. If the City is successful in annexing Point Wells, the view corridor would be artificially put over that portion of Point Wells

to keep the buildings within the corridor lower. However, the City does not have any ability to influence Snohomish County to do the same.

Vice Chair Mork said she supports allowing the most flexibility possible for development at Point Wells, but she appreciates that development within the view corridor could impact surrounding properties, but that would not be the case for development in the northwest portion of the subarea. Director Markle agreed that the northwest portion is not part of the City's view corridor, and she does not believe development in this location would impact property owners on the bluff unless it exceeds a certain elevation. This amendment and others seem to indicate that if you go over 200 elevation and go up 90 or 120 feet, you will begin to impact the view from the upland portion. The proposed amendment will limit the height of buildings in the northwest portion, which is potentially advantageous to efforts to preserve views. Vice Chair Mork summarized that if the City wants the most flexibility but also try to protect views, staff would recommend approval of the amendment. Director Markle concurred.

Chair Montero observed that the amendment could complicate the process of annexing Point Wells via an owner initiative if Snohomish County's code is more flexible. The amendment might slow down the annexation process rather than encourage it.

7. An additional sentence would be added to the section titled, "Snohomish County's designation of Point Wells as an Urban Center." The new sentence would read, "*Despite the City's opposition, in 2009 Snohomish County rezoned Point Wells as an Urban Center, and in 2010 adopted an Urban Center Development Code that applies to all Urban Centers in Snohomish County.*" The new sentence confirms that the area was, in fact, designated as an Urban Center in the Snohomish County Comprehensive Plan. However, in light of the Hearing Examiner's June 29th decision to deny the building permit application, the Point Wells site is zoned Planned Community Business and the future land use is Urban Village. Staff recommends that this section remain as is.

   Commissioner Maul questioned if it would be appropriate for the Point Wells Subarea Plan to identify the zoning the City wants for the property. Assistant City Attorney Ainsworth-Taylor answered that the Comprehensive Plan only identifies land-use designations, and the zoning is contained in the Development Code. The Point Wells Subarea Plan could identify the appropriate land use designations, and the applicable zoning would be attached via development regulations. She reminded the Commission that the City does not currently have jurisdiction over the area, so it cannot assign a land-use designation at this time. However, the plan could identify the land-use designation the City believes is appropriate for its vision of the site.

   Commissioner Maul pointed out that the City doesn't have any control over it and when Point Wells is annexed unless the land owner requests it. Assistant City Attorney Ainsworth-Taylor agreed that is the case. Currently, the property is under single-ownership and the City does not have any authority to initiate annexation. Annexation depends on residents, which there are none, or the owner self-initiating an annexation proposal.

Commissioner Maul concurred with staff's recommendation. He did not believe it would be appropriate to list Snohomish County's land uses and zones in the Subarea Plan. The remainder of the Commission concurred.

8. The existing paragraph in the "Designation of a Future Service and Annexation Area at Point Wells" would be replaced with a new paragraph that was taken from the "Geographic and Historical Context" section. The 2nd paragraph would no longer be needed since Woodway has annexed the upland portion. Staff supports this proposed amendment.

9. The applicant is proposing that the 2nd paragraph under Policy PW-2 be changed by adding the following language at the end, *"and that generated traffic after mitigation does not exceed adopted city-wide level of service standards and does not exceed the traffic limit for Richmond Beach Drive that is specified in this subarea plan."* Staff believes the proposed language is an overreach and is not necessarily what the City anticipates into the future. It would further restrict traffic on this roadway more heavily than other comparable roadways within the City. Staff is recommending denial of this amendment. However, if the Commission wants to amend Policy PW-2, staff recommends that it be changed to read, *"and that any transportation level of service failures, in accordance with Shoreline Municipal Code, are mitigated to maintain the adopted standard."*

10. The last sentence in the paragraph under Policy PW-4 would be amended by deleting the last sentence to recognize that the slope will see some tree removal to accommodate recently approved development.

11. The 6th sentence in the 2nd paragraph under Policy PW-10 would be changed to read, *"The City's traffic study completed in 2009, assuming a 4-lane Richmond Beach Road, shows that if more than 8,250 vehicles trips a day enter the City's road network from Point Wells, it would result in a level of service "F" or worse at a number of City intersections.* In addition, the following language would be added at the end of the 2nd paragraph to "read, *"The City's Transportation Improvement Plan has scheduled Richmond Beach Road from 24th Ave NW to Dayton Ave N to be rechanneled from 4 lanes to 3 lanes in 2018. The rechannelization will reduce the capacity of this road segment so that current excess capacity is about 4,000 vehicle trips per day. If more than this number of vehicles enter Richmond Beach Road from Points Wells, it will result in a volume-to-capacity (V/C) ration of over .90 on several City road segments and a level of service "F" or worse at a number of City intersections. This would be an unacceptable impact incapable of being mitigated with Richmond Beach Road remaining at three lanes."*

Mr. Szafran said staff does not support this proposed amendment because previous traffic studies did not consider the amount of traffic that a 3-lane configuration of Richmond Beach Road could handle. Staff does not recommend that the specific number of daily vehicle trips be included in the amended language, as background volumes will change over time and the daily trips are not what the City uses for concurrency. Staff is recommending alternative language that would read, *"In 2018, the City rechannelized the Richmond Beach Road corridor from 24th Avenue NW to Dayton Avenue N from four (4) lanes to three (3) lanes. This rechannelization further reduced existing capacity along the corridor. Any changes proposed to land use within the subarea should*

be carefully studied to ensure that the trips generated do not exceed the adopted volume-to-capacity (V/C) ratio standard of 0.90."

Commissioner Lin asked about the advantage of using V/C ratio. Ms. Dedinsky explained that V/C is a LOS standard that responds to whatever the condition is at the time that it is measured. If you set a specific limit at this point in time, it will not be representative in the future as background volumes change. Setting any limit to the trips coming out of the site is not going to take into account future changes on and to the roadway. The V/C is the tool used to measure the feel of the roadway as opposed to establishing a set limit of trips coming from the site, which could be completely irrelevant based on the number of trips that are added or subtracted from the system in the future.

12. Policy PW-12 would be amended by striking the entire last sentence. At this time, the City does not have LOS standard based on daily trips, and it is not consistent with the citywide standards. Staff does not support this proposed amendment and recommends the City consider deleting the entire policy to be consistent with citywide standards.

13. A new Policy PW-13 would further limit the City's adopted LOS standard for Richmond Beach Road by saying that no segment could exceed 0.90 V/C. City code says that one segment may exceed the 0.90 V/C as long as the intersection meets LOS. Staff does not support limiting Richmond Beach Road beyond what the rest of the City is limited to from a concurrency perspective.

14. This amendment would delete the last sentence in the 1st paragraph in the "Interjurisdictional Coordination" section. With the likelihood of a second access road through Woodway, this sentence is no longer accurate. Vice Chair Mork asked if the words "and Edmonds" should also be included at the end of the 1st sentence, and Mr. Szafran agreed to consider this and report back.

15. Existing Policy PW-13 would be amended to delete the last two sentences, which talks about the City working with Woodway and Snohomish County to address future environmental impacts associated with development at Point Wells. Staff believes this joint effort could be helpful in the future and recommends leaving the language as is.

Mr. Szafran summarized that staff is recommending approval of a majority of the applicant's proposed amendments with some minor modifications proposed by staff.

Commissioner Maul asked about the goal of Comprehensive Plan amendments for property that is outside of the City's jurisdiction. He observed that nothing in the Point Wells Subarea Plan is binding. Director Markle explained that the subarea plan is the start to the City's vision to annex the property in the future and shows the City's intent. Its current designation is a future service and annexation area, and the subarea plan sets the stage for future planning for annexation. Commissioner Davis commented that the property owner could decide at any point to seek annexation into Shoreline, and the subarea plan allows the City to be ready if that happens.

Public Comments

There were no public comments.

DIRECTOR'S REPORT

There was no Director's Report.

UNFINISHED BUSINESS

There was no unfinished business.

NEW BUSINESS

There was no new business.

REPORTS OF COMMITTEES AND COMMISSIONERS/ANNOUNCEMENTS

Vice Chair Mork reported that the subcommittee that was formed to review the Commission's bylaws have decided to wait until fall to start its work.

AGENDA FOR NEXT MEETING

Mr. Szafran advised that the August 2nd meeting will include a discussion about Green Belt Commercial Development Code Regulations.

ADJOURNMENT

The meeting was adjourned at 7:57 p.m.

_____	_____
William Montero	Carla Hoekzema
Chair, Planning Commission	Clerk, Planning Commission

Planning Commission Meeting Date: August 2, 2018 **Agenda Item: 6a.**

PLANNING COMMISSION AGENDA ITEM

CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	**Potential Expansion of Green Building Mandate to Commercial Zoning**
DEPARTMENT:	**Planning & Community Development**
PRESENTED BY:	**Miranda Redinger, AICP, Senior Planner**

☐ **Public Hearing** ☒ **Study Session** ☐ **Recommendation Only**
☐ **Discussion** ☐ **Update** ☐ **Other**

INTRODUCTION AND BACKGROUND

In September 2013, Council adopted the Climate Action Plan (CAP), which committed Shoreline to reducing greenhouse gas (GHG) emissions 25% by 2020, 50% by 2030, and 80% by 2050 (below 2007 levels).

In September 2015, Council discussed Priority Recommendations to implement the CAP and determined that Staff should pursue the following initiatives during the 2016-2019 timeframe:

- Adopt a Living Building Challenge Ordinance and other incentives for "net zero" development (this became the Deep Green Incentive Program, SMC 20.50.630);
- Examine feasibility of District Energy in areas that are likely to undergo redevelopment, focusing on the 185th Street Station Subarea as the case study (this became a Climate Action Analysis for the subarea); and
- Conduct a Solarize campaign.

By the end of 2017, staff had fully or substantially completed each of the 2016-2019 Priority Recommendations, including an update to the Sustainable Shoreline website that tracks indicators of sustainability. Therefore, Council needed to select a new set of recommendations to prioritize for implementation over the next few years.

On October 30, 2017, Council identified the following 2018-2020 Priority Recommendations:

- Achieve citywide Salmon-Safe certification (2018);
- Explore expanding green building regulations to commercial zoning (2018);

Approved By: Project Manager MR **Planning Director** PM

- Encourage retrofits of existing buildings to use water and energy more efficiently, and to fuel-switch from heating oil and natural gas to electric heat pump or other less carbon-intensive technologies (2019); and
- Implement recommendations from the Climate Action Analysis for the 185th Street Station Subarea (2020).

The Staff Report for this meeting can be reviewed at the following link: http://cosweb.ci.shoreline.wa.us/uploads/attachments/cck/council/staffreports/2017/staffreport103017-8c.pdf

At its 2018 Strategic Planning Retreat on March 16 and 17, the City Council amended Goal #2, Action Step #4 to account for these new priorities (emphasis added):

Goal #2- Improve Shoreline's infrastructure to continue the delivery of highly-valued public services:

- *Action Step #4- Implement the 2018-2020 Priority Environmental Strategies, including achievement of citywide Salmon-Safe certification,* ***consideration of expanding green building mandates****, and appointment of a stakeholder committee to evaluate and develop a recommendation on the implementation of recommendations from the Climate Action Analysis for the 185th Street Station Subarea.*

This staff report will focus on the second priority of ***Expanding Green Building Regulations to Commercial Zoning.***

DISCUSSION

What is the mandate?

Adoption of the 185th Street Station Subarea Plan in 2015 codified regulations requiring any new buildings in the Mixed-Use Residential (MUR) zones be constructed at the Built-Green 4-Star level. See, SMC 20.40.046(D). These regulations also apply to the 145th Street Station Subarea.

Why consider expanding the mandate?

The concept of expanding green building mandates from the MUR zoning districts to commercial zoning districts throughout the city stemmed primarily from two separate City Council conversations: adoption of the Deep Green Incentive Program (DGIP) and lifting the moratorium on self-storage facilities. The City Council and Planning Commission also briefly discussed this option at a joint session during the annual Council retreat on March 3, 2017.

Deep Green Incentive Program

Council adopted the Deep Green Incentive Program in April 2017 with the adoption of Ordinance 760. The intent of the program was to provide meaningful incentives to encourage developers to attain certification for levels of green building beyond that required in the MUR zones. This tiered system of available certification options reflects the stringency of each protocol, as follows:

- Tier 1 (most stringent) – Living Building Challenge or Living Community Challenge Certification: achieve all of the imperatives of these International Living Future Institute (ILFI) programs;
- Tier 2 – Emerald Star or Petal Certification: satisfy requirements of Built Green program or three or more ILFI Petals, including at least one of the following: water, energy, or materials; or
- Tier 3 – Leadership in Energy and Environmental Design (LEED) Platinum, Five-Star, or Net Zero Energy Building plus Salmon Safe: satisfy requirements of the respective US Green Building Council, Built Green, or ILFI/Salmon Safe programs.

When the Deep Green Incentive Program was being discussed with the City Council, Councilmember Scully commented that while he appreciated that the City was offering incentives for the most stringent certification systems available, given the pace and scale at which Shoreline's building stock needs to become more energy efficient in order to meet GHG emission reduction commitments, he hoped that the City could also support protocols that may be more easily attainable.

A video of the meeting is available here:
http://shoreline.granicus.com/MediaPlayer.php?view_id=4&clip_id=763

Self-Storage

On December 12, 2016, with adoption of Ordinance 765, the City Council lifted the moratorium on accepting applications to construct self-storage facilities. At this same time, the City Council adopted new regulations requiring these projects be LEED certified. See SMC 20.50.504(C)(11). Council discussion cited the City's carbon reduction goals as the reason for the requirement and proposed that all buildings in the city should potentially achieve LEED certification. Staff said that additional research and cost analysis would need to be completed. There was support for adding an analysis of green building requirements for new buildings to the City's Work Plan.

A video of the meeting is available here:
http://shoreline.granicus.com/MediaPlayer.php?view_id=4&clip_id=740

What would the expansion entail?

Rather than having buildings in MUR zones be required to attain one standard (Built Green 4-Star), and self-storage facilities required to attain another standard (LEED certified), it would be better to create a consistent mandate that could be applied across

appropriate zoning designations. Since Built Green 4-Star only certifies *residential* construction, it would make sense to provide options that also certify commercial structures.

In addition to deciding whether and which commercial zones should be considered for mandatory green building requirements, the Planning Commission should also make a recommendation on which protocols would be eligible to fulfill the requirement.

One certification protocol that was considered during development of the Deep Green Incentive Program, but not included in the final incentive package, was Passive House. Zack Semke, an architect and Passive House Institute U.S. (PHIUS) Board member, gave a presentation to the Planning Commission at their March 16, 2017 meeting (http://shoreline.granicus.com/MediaPlayer.php?view_id=9&clip_id=758). While the Planning Commission was very interested in this option, it determined that it was not as "deep green" as the other certification protocols being considered under the incentive package.

Another option that may be appropriate for an expanded mandate is LEED Gold. Shoreline's City Hall is certified to this standard. Including this classification, alongside Passive House and Built Green 4-Star, would provide consistency with the tiered structure of the Deep Green Incentive Program in that it is a step below the LEED Platinum certification that would be required to be eligible for Tier 3 of the incentive program.

Questions for the Planning Commission to consider include:

- Should the green building mandate be extended to commercial zoning?
    - If so, in which commercial zoning categories should the mandate apply?
        - Mixed Business (MB); and/or
        - Town Center (TC); and/or
        - Community Business (CB); and/or
        - Neighborhood Business (NB)
    - If so, which certification protocols are appropriate to fulfill the requirement?
        - Built Green 4-Star; and/or
        - Passive House; and/or
        - LEED Gold; and/or
        - Others

Attachment A is a Comparative Analysis of Built Green 4-Star, Passive House, and LEED Gold that will inform the discussion with regard to added project cost and environmental benefits of each protocol.

How would it be enforced?

An expansion of the green building mandate to commercial zoning would require an amendment to the development code, specifically SMC 20.40.040(E) Nonresidential Zones could be amended depending on which commercial zoning categories would be subject to the requirement and which protocols would be eligible to fulfill it. Potential language could read as follows:

Construction in Mixed Business, Community Business, Neighborhood Business, and Town Center zones must achieve green building certification through one of the following protocols: Built Green 4-Star, Passive House US, or Leadership in Energy and Environmental Design (LEED) Gold.

If green building was required in commercial zones where self-storage facilities are a permitted use (CB and MB), it would be appropriate to delete 20.40.504(C)(11):

Self-storage facilities are required to be Leadership in Energy and Environmental Design (LEED) certified.

SMC 20.40.046(D) Mixed-Use Residential Zones states that "4-Star Built Green construction is required in all MUR zones." If the Commission recommends and Council adopts an expansion of protocols that could fulfill this requirement, the code language could be amended to state:

Construction in MUR zones must achieve green building certification through one of the following protocols: Built Green 4-Star, Passive House US, or Leadership in Energy and Environmental Design (LEED) Gold.

How do the different protocols compare with regard to cost and benefit?

In order to understand the effect of expanding the green building mandate from the MUR zoning districts to commercial zoning districts and provide for different certification options, the City contracted with Rushing Co. to perform an analysis comparing the three (3) green building protocols mentioned above against a code-compliant baseline project.

The baseline project is the Shoreline Apartments building currently under construction at the corner of N 175th Street and 15th Avenue NE (the site of the former Post Office). This project was chosen because it is a mixed-use structure, similar to what could be built in MB or CB zoning throughout the city, and because it utilizes the 2015 WA State Energy Code. Comparative descriptions of each of the protocols are included in Attachment A.

Part of the evaluation includes side-by-side paths for compliance for each of four (4) building protocols (three green building and one code-compliant baseline). These include:

a. A list of strategies for compliance, i.e. a LEED checklist (Attachment A, Appendix 2), Built Green checklist (Attachment A, Appendix 3), and Passive House strategy list (Attachment A, Appendix 4);
b. Evaluation of comparable levels of certification;
c. Rough order of magnitude (ROM) costs of each path;
d. Design and construction impacts of each path; and
e. Environmental performance benefits of each path.

The purpose is to utilize information in the report to determine a recommendation for which protocols to include in a potential expansion of the green building mandate.

What are neighboring jurisdictions doing?
Attachment E is a table describing green building incentives in other Puget Sound jurisdictions.

The King County Cities Climate Collaboration (K4C), which is comprised by 13 cities within the County (including Shoreline), is also working with Rushing Co. to develop tools to make it easier for jurisdictions to administer the permit review process for different green building protocols. The scope of services for the K4C Rushing contract is to develop intake forms and guidance documents for successful delivery of high performance green building. The project will develop the necessary tools for permit reviewers on the commonly used rating systems in King County.

To build permit and inspection staff capacity, King County GreenTools and the K4C will also provide a training for permitting and inspection staff on the rating systems and their differences. This training will be held on Wednesday, October 24th, 2018 and will be open to building inspectors, site inspectors, plans examiners, permit reviewers, and planners in jurisdictions in King County.

NEXT STEPS

September 6- Planning Commission Public Hearing
**If the Planning Commission would like more information or time to discuss prior to making a recommendation, this meeting could be a second Study Session*.

Following recommendation from the Planning Commission, the City Council will consider the expansion of the green building mandate.

RECOMMENDATION

The Commission does not need to take any action at this time, but should discuss the following questions so that staff may further develop a recommendation for future consideration:

- Should the green building mandate be extended to commercial zoning?

- If so, in which commercial zoning categories should the mandate apply?
  - Mixed Business (MB); and/or
  - Town Center (TC); and/or
  - Community Business (CB); and/or
  - Neighborhood Business (NB)
- If so, which certification protocols are appropriate to fulfill the requirement?
  - Built Green 4-Star; and/or
  - Passive House; and/or
  - LEED Gold; and/or
  - Others

ATTACHMENTS

Attachment A- Comparative Analysis of LEED, Built Green, & Passive House

Appendix 1- Glossary of Terms

Appendix 2- LEED for Homes Scorecard

Appendix 3- Built Green Scorecard

Appendix 4- Passive House Strategies List

Attachment B- Green Building Incentives in Neighboring Jurisdictions

Comparative Analysis of LEED, Built Green, & Passive House

DRAFT – July 26th, 2018

Shoreline Apartments

Image courtesy of VIA Architecture

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Table of Contents

Introduction

When the Shoreline City Council adopted the Climate Action Plan in 2013, they joined King County and other cities in the region by committing to reduce community greenhouse gas emissions 80% by 2050, with an interim target of 50% by 2030. To reduce emissions from new buildings, the City adopted mandatory green building standards in the Mixed-Use Residential (MUR) zoning surrounding two future light rail stations, and a Deep Green Incentive Program to encourage the highest standard for green building citywide.

The Shoreline City Council has directed staff to consider an expansion of the current green building mandate for MUR zoning to also include commercial zoning within the city. This analysis provides a comparison of one code compliant baseline development project against three green building protocols– Built Green 4-Star, Leadership in Energy and Environmental Design (LEED) for Homes Gold, and Passive House Certification. The analysis includes Rough Order of Magnitude (ROM) costs to better understand implications for design and construction, in addition to quantifying environmental performance benefits of the various protocols.

See ***Appendix 1*** *Glossary of Terms* for definitions. A Term included in the Glossary is identified by an underline.

Goals of Study

- Establish a protocol comparison based on a sample project, the **Shoreline Apartments** project at 17233 15th Ave NE, Shoreline, WA.
- Using the sample project, evaluate the following levels of sustainability compliance using the following tools and metrics:
  - **Code Compliance**: 2015 Washington State Energy Code (WSEC) & 2015 Uniform Plumbing Code (UPC) with Washington State Amendments
  - **Prescriptive, point-based green building protocols:**
    - **LEED for Homes Multi-Family Midrise,** Gold: must achieve a minimum **60 points** with a recommended 5-point buffer. See the *LEED for Homes Scorecard* (Appendix 2)
    - **Built Green Multi-Family,** 4-Star: must achieve a minimum **400 points** (**60 points** from Sections 2-5 with a recommended 7 point buffer in each Section). See the *Built Green Scorecard* (Appendix 3).
  - **Performance-based green building protocol:**
    - **Passive House:** not tracked using a scorecard. Compliance approved through on-site verification and building performance. See the *Passive House Strategies List* (Appendix 4).
  - Soft Costs & Hard Costs ROM (Rough Order of Magnitude)
  - Design & Construction Impacts

Executive Summary

This evaluation indicates the following high-level comparison metrics for the pursuit of a code compliant building, LEED for Homes Midrise Gold, Built Green 4-Star and Passive House certification.

Protocol/Approach	Environmental Benefits	ROM Costs to achieve compliance	Significant Design Features & Impacts
Code Compliance	**Baseline:** varies by project	**Sample Building:** **$34.24 million** (construction costs) unknown at this time (soft costs)	*Energy Baseline (code minimum):* Includes two C406 Measures *Water Baseline (code minimum):* Water closets (toilets): **1.6 gpf** (gallons per flush) Showerheads: **2.5 gpm** (gallons per minute) Private lavatory faucets: **2.2 gpm** Kitchen lavatory faucets: **2.2 gpm**

Protocol/Approach	Environmental Benefits	ROM Costs to achieve compliance	Significant Design Features & Impacts
LEED for Homes Multi-Family Midrise Target: Gold	**Energy:** 0-10% ↓ CO_2 emissions annually[1] **Water:** 1.55 million gallons ↓ annually **Health/Materials:** "Building green using LEED… enables us all to live, learn, work and play in environments that enhance human health both indoors and outdoors."[2]	**$275,000-325,000** **0.8 – 0.9%** additional cost[3]	Miscellaneous design and construction adjustments, e.g. design charrette, General Contractor LEED training, 3rd party energy modeling, commissioning, duct leakage testing, blower door testing between each unit.
Built Green Multi-Family Target: 4-Star	**Energy:** 75-85% ↓ CO_2 emissions annually[1] **Water:** 2.08 million gallons ↓ annually **Health/Materials:** "Built Green believes the market can act as a powerful force to improve environmental and health outcomes."[4]	**$600,000-$2,200,000** **1.7 – 6.4%** additional cost[3]	Substantial energy saving design strategies/systems to meet 4-Star prerequisite: 20% better than WA State Energy Code (WSEC). Miscellaneous design and construction adjustments, e.g. 3rd party energy modeling and commissioning.
Passive House	**Energy:** 85-95% ↓ CO_2 emissions annually[1] **Water:** N/A **Health/Materials:** Similarly to their high comfort standards, Passive House buildings also provide a healthy and quiet indoor environment.[5]	**$960,000-1,700,000** **2.8 – 4.9%** additional cost[3]	Enhanced insulation, triple pane glazing, continuous air barrier, air infiltration. Five times better than the 2015 Washington State Energy Code (WSEC), ERVs (Energy Recovery Ventilators).

[1] Estimates based on the 2015 Washington State Energy Code and transition to all electric systems. Based on 2016 data, Seattle City Light is powered by 92% renewable energy (hydro and wind). Seattle City Light is the City of Shoreline's electricity service provider. seattle.gov/light/Fuel Mix.

[2] Benjamin, Heather. *LEED Enhances Human Health*. 17 Aug 2017. usgbc.org/articles/leed-enhances-human-health.

[3] Rough order of magnitude calculation based on baseline building valuation of $34.24 million for average construction costs. Protocol increased costs based on both hard costs and soft costs.

[4] Built Green Values, Market Focus: builtgreen.net

[5] International Passive House Association. *What are the benefits of Passive House buildings?* 01 Feb 2017. blog.passivehouse-international.org/benefits-passive-house-buildings

Analysis Assumptions

- **Location:** Project is in the City of Shoreline, density is similar to the sample project (i.e. projects which do not have density, access to transit, and community resources nearby would need to be evaluated differently).
- **Unit Size:** All residential units are below 1200 square feet**.**
- **Combustion Uses:** Gas fireplace is EPA Certified and installed with doors. Gas hot water heaters are designed and installed with closed combustion.
- **This study has been conducted by selecting credits in each rating system which are:**
    1. **In reference project (sample building)** given the information provided in the 09.20.2017 Permit Submittal Plan Set, as provided by the City of Shoreline. Given the scope of this study and broad applicability to typical project typologies, the baseline building project team was not consulted to verify extrapolations.
    2. **Typical** to design and construction for buildings of this type and within the jurisdiction of the City of Shoreline
    3. **Lowest cost and minimal time impact** to the design, design team, and contractor

Sample Project Data

Basic Information	Systems	Fixtures & Appliances	Cost
Location: Shoreline, WA **Type:** 2 buildings, 5 stories, wood framed construction/post-tension slab **Total gross combined building area:** 200,000 sf **Units:** 243 units | **Lot size:** 1.85 acres **Parking:** 270 spaces, 2 levels below grade parking **WSEC & UPC:** 2015	**Common areas:** Variable Refrigerant Flow (VRF) **Units:** Cove heaters, trickle vents, whole house fans **Domestic hot water:** Gas condensing water heaters	**Toilets:** 1.28 gpf (gallons per flush) **Showers:** 2 gpm (gallons per minute) **Lavatories:** 1.5 gpm **Refrigerators / Dishwashers / Clothes Washers**: ENERGY STAR	**Construction Valuation:** $34.24 M **Soft Costs:** unknown at this time

Green Building Protocol Overview

This section provides a high-level overview of each protocol. (■ - sustainable solutions available in this category, ☐ - sustainable solutions **not** available in this category)

LEED for Homes Multi-Family Midrise v4

Administered by: US Green Building Council (USGBC) & Green Business Certification Institute (GBCI)

About:

- The most widely used green building rating system in the world.
- Applies to midrise multi-family (four to six stories). LEED for Homes is also applicable to single family homes, low-rise multi-family (one to three stories), and high rise (above 6 stories, with LEED Provider's permission).

Most significant shift from "typical" / WA State Energy Code (WSEC):

- Blower door testing between units
- Energy Prerequisite - 5% improvement over the baseline building performance rating based on ASHRAE Standard 90.1-2010, Appendix G (with errata).

What makes it green? This rating system provides sustainable solutions to address:

■ Land Management	■ Energy	■ Water	■ Transportation
■ Habitat	■ Building Materials	☐ Equity & Inclusion	■ Health & Wellness
☐ Food Access	■ Operations & Maintenance	☐ Emergency & Disaster Prep	☐ Aesthetic

Built Green Multi-Family v2017

Administered by: Master Builders Association (MBA) of King and Snohomish Counties

About:

- Local Green Building Program: Developed in partnership with King County, Snohomish County, and other government agencies in Washington State.
- It was originally founded in 1999. Since then, over 32,000 projects have been certified.
- 52% of new homes in Seattle & 32% of new homes in King County were Built Green in 2016.

Most significant shift from "typical" / WA State Energy Code (WSEC):

- Built Green 3-Star requires the building energy model to show 10% better performance than WSEC OR two additional R406/C406 measures.
- Built Green 4-Star requires the building energy model to show 20% better performance than WSEC.

What makes it green? This rating system provides sustainable solutions to address:

■ Land Management	■ Energy	■ Water	■ Transportation
☐ Habitat	■ Building Materials	☐ Equity & Inclusion	■ Health & Wellness
☐ Food Access	■ Operations & Maintenance	☐ Emergency & Disaster Prep	☐ Aesthetic

PHIUS+ 2015

Administered by: Passive House Institute United States (PHIUS), peer-reviewed by U.S. Department of Energy (DOE)
Note: PHIUS+ 2018 gets published Sept-Oct 2018.

About:

- Projects that pursue this standard have airtight envelopes, continuous insulation, often triple-paned windows, minimal space conditioning, and optimize natural heating/cooling techniques (e.g. passive solar).
- Given that this protocol is not just for homes, the term 'passive building' is becoming more commonplace.

Most significant shift from "typical" / WA State Energy Code (WSEC):

- **Air tightness requirement** is five times greater than WSEC. Requires continuous air barriers and a rigorous threshold for the ASTM E779 fan pressure test.
- **Source energy limit** per person – enhanced insulation and windows [e.g. roof assembly target R-81 (WSEC requires R-49). Wall assembly above-grade target R-39 (WSEC stipulates R-21 for wood frame construction), triple paned windows]
- **Strict space conditioning criteria** (newer heating and ventilation systems are typically required to comply (e.g. Energy Recovery Ventilation [ERV]).

What makes it green? This rating system provides sustainable solutions to address:

☐ Land Management	■ Energy	☐ Water	☐ Transportation
☐ Habitat	■ Building Materials	☐ Equity & Inclusion	☐ Health & Wellness
☐ Food Access	☐ Operations & Maintenance	☐ Emergency & Disaster Prep	☐ Aesthetic

Protocol Comparison: Climate, Ecology & Health

One Star (★) if protocol does not go beyond code requirements. Maximum five stars (★★★★★) awarded if protocol provides <u>opportunity</u> to greatly exceed code or typical practices. *Note: The sample building used in this study may not take advantage of all opportunities to incorporate these comprehensive environmental benefits, based on credits selected to achieve certification threshold.*

Benefit	Code Compliance	LEED for Homes | Gold	Built Green | 4-Star	Passive House
Land Management (Preservation of land)	★	★★	★★★	★
Energy (CO_2 emissions reduction)	★	★ **0-10% CO_2 emissions** reduced / year	★★★ **75-85% CO_2 emissions** reduced / year	★★★★★ **85-95% CO_2 emissions** reduced / year
Water (Potable water reduction)	★	★★ **1.55 million gallons** reduced / year	★★ **2.08 million gallons** reduced / year	★
Transportation (CO_2 reduction)	★	★★	★★★	★
Habitat (Developing sites that support ecosystems)	★	★	★	★
Building Materials (Improve indoor air quality & reduce exposure to toxins)	★	★★★	★★★	★★
Building Materials (Local & recycled)	★	★★★★	★★★	★
Equity & Inclusion (Ensure all are welcome & have a voice)	★	★★	★★	★
Health & Wellness (Physical & mental health)	★	★★	★★★	★★
Food Access (Access to healthy food)	-	-	-	-
Operations & Maintenance (Education & stewardship)	★	★★	★★	★
Emergency & Disaster Preparation (Resilience)	★	★	★	★
Aesthetic (Beauty)	★	★	★	★

Protocol Comparison: Costs

Impact	Code Compliance	LEED for Homes | Gold	Built Green | 4-Star	Passive House
Soft Costs	**Baseline:** varies by project *Code does **not** require:* • Facilitate an integrated design process (e.g. all disciplines coordinate efforts at the concept/schematic phase) • Conduct preliminary energy modelling • Ensure the durability of the project (e.g. additional moisture and pest control measures & inspections) • Conduct additional systems inspections • Provide homeowner education	**SUB-TOTAL: $170,000-200,000** • **Registration & Certification**: $10,000 • **LEED On-Site Verification**: $40,000 • IPc1 - Integrated Project Planning: Trades Training: $4,000 • IPc1 - Integrated Project Planning: Design charrette: $6,000 • EAp1 - Energy Modeling: $30,000 • EAp1 - Fundamental Commissioning: $35,000 • EAp1 – Duct leakage, ventilation & exhaust testing: $15,000-$30,000 • EAp3 - O&M + Homeowner Education: $5,000 • MRc1 – Durability Verification: $4,000 • EQp7 - Blower Door Testing & Thermal Enclosure Verification: $15,000 • EQc6 – Garage pressure testing: $5,000	**SUB-TOTAL: $120,000 - $200,000** • **Registration & Certification** ~ $10,000 • Built Green Consulting & Verification: $40,000 • 3.2 – Commissioning: $35,000 • 3.10 – Energy Modeling: $35,000	**SUB-TOTAL: $160,000 - $200,000** • **Registration & Certification**: $30,000 • Passive House Consultant: $50,000 • Commissioning: $35,000 • Passive House Modeling: $45,000
Hard Costs	**Baseline:** varies by project	**SUB-TOTAL: $105,000-125,000** • EQp7 - Potential additional sealing/caulking to meet blower door test threshold: $20,000-40,000 • EQc7 – No Added Urea Formaldehyde (NAUF): $40,000 • IDc4 – 6 EV charging stations: $45,000	**SUB-TOTAL: $360,000-$860,000** • 3.10 – Advanced hot water heat recovery: e.g. Sewer thermal heat recovery or heat pumps: $300,000-$800,000 • 5.52 – RECs (Renewable Energy Credits): $10,000 • 2.70 – 1 EV charging station: $8,000	**SUB-TOTAL: $770,000-$1,800,000** • **Air tightness requirement** of 0.05 CFM50 and 0.08 CFM75 per square foot of gross envelope (WSEC requires 0.40 CFM75). Requires continuous air barriers and a rigorous threshold for the ASTM E779 fan pressure test. Advanced sealing measures: costs currently unknown. • **Source energy limit:** 6200 kWh per person per year

Impact	Code Compliance	LEED for Homes | Gold	Built Green | 4-Star	Passive House
Hard Costs *Continued*			• 4.18, 4.19 – No Added Urea Formaldehyde (NAUF): $40,000	• Roof Assembly target R-81 (WSEC stipulates R-49 for in-roof insulation; R-38 for above-deck insulation) • Wall Assembly above-grade target R-39 (WSEC stipulates R-21 for wood frame construction). Requires either deeper studs and/or adding exterior, continuous insulation. • Triple paned windows: $70,000 - $150,000 ($3 - $5/SF) • **Space Conditioning:** Non-standard mechanical systems are typically required to comply (e.g. Energy Recovery Ventilation [ERV], possible heat-pump heating): $700,000-$1,400,000
TOTAL ROM COSTS	Baseline	**TOTAL: $275,000-325,000**	**TOTAL: $480,000-$1,060,000**	**TOTAL: $930,000-2,000,000**
Notable* Design/ Construction Impacts (*not all inclusive)	Baseline (Two 2015 WSEC C406 Measures)	• Design charrette • Trades Training – GC LEED training • Highly reflective roof surface (e.g. TPO) and/or green roof • All plantings 18" from exterior walls • WaterSense certified and low-flow plumbing fixtures –1.75gpm showerheads, 1.5gpm lavatory faucets • ENERGY STAR appliances – dishwasher, clothes washer, refrigerators • Sub-metered irrigation • ENERGY STAR Portfolio Manager utility tracking	• **Advanced energy efficiency measures to comply with 20% better than WSEC** • Highly reflective roof surface (e.g. TPO) and/or green roof • TPO or built up bitumen roof to reduce water pollutants • WaterSense certified and Low-flow plumbing fixtures –1.75gpm showerheads, 1.5gpm lavatory faucets, 1.28gpf toilets • ENERGY STAR appliances – dishwasher, clothes washer, refrigerators • No added urea formaldehyde – NAUF	• Attention to building geometry – less complicated perimeter (e.g. rectangle or L-shape) will be more efficient for thicker insulation & infiltration mitigation • Enhanced R-value walls and roof • Triple Pane Glazing • Continuous air barrier - reduced air infiltration allowance • Decreased rentable square footage, with thicker envelope if on a zero-lot line project • Mechanical systems sizing will go down compared to typical practice

Impact	Code Compliance	LEED for Homes | Gold	Built Green | 4-Star	Passive House
Notable* Design/ Construction Impacts (*not all inclusive) *Continued*		• Clothes washers: Steel hose + ¼ turn shut off • Shower/bath: greenboard • All tropical wood – FSC • Aggregate within 100 miles, insulation with 25% recycled content • CO sensors in all spaces adjacent to garage / ductwork outside fire rated envelope of garage (or soffit'ed) • ENERGY STAR plus occupancy sensors, humidistat or timers on all bath fans • Walk-off mats at main entries and all walk-up units • Garage pressure testing • No added urea formaldehyde - NAUF • 14 preferred parking spaces (hybrids) • 6 EV charging stations	• ENERGY STAR Portfolio Manager utility tracking – energy & water use • 1 EV charging station • Exterior lighting design – meet light pollution requirements	
Number of Projects in Shoreline	Baseline	11	5	0-1

Appendix

1. **Glossary of Terms**
2. **LEED for Homes Scorecard**
3. **Built Green Scorecard**
4. **Passive House Strategies List**

Appendix A Glossary of Terms

Comparative Analysis of LEED, Built Green, & Passive House

Commissioning - the process of verifying, in new construction, all (or some, depending on scope) of the subsystems for mechanical (HVAC), plumbing, electrical, fire/life safety, building envelopes, interior systems, co-generation, utility plants, sustainable systems, lighting, wastewater, controls, and building security to achieve the owner's project requirements as intended by the building owner and as designed by the building architects and engineers.

Energy Recovery Ventilators - the energy recovery process of exchanging the energy contained in normally exhausted building or space air and using it to treat (precondition) the incoming outdoor ventilation air in residential and commercial HVAC systems.

Hard Costs - include expenses *directly* related to the physical construction a building, including tangible assets that you need to acquire to complete your construction project. These costs cover the materials that go into buildings, including cement, drywall, carpet, sod grass; and labor for grading, site excavation, landscaping, and carpentry.

No Added Urea Formaldehyde (NAUF) – refers to products and materials that do not include the permanent adhesive created by the resin of urea and formaldehyde.

Occupancy Sensors - an indoor motion detecting devices used to detect the presence of a person to automatically control lights or temperature or ventilation systems.

Rough Order of Magnitude (ROM) - an estimation of a project's level of effort and cost to complete. A ROM estimate takes place very early in a project's life cycle — during the project selection and approval period and prior to project initiation in most cases.

Soft Costs - include expenses *indirectly* related to construction of a building. Soft costs include architectural, engineering, financing, and legal fees, and other pre- and post-construction expenses.

Thermoplastic Polyolefin (TPO) - refers to polymer/filler blends usually consisting of some fraction of a thermoplastic, an elastomer or rubber, and usually a filler. Outdoor applications such as roofing frequently contain TPO because it does not degrade under solar UV radiation, a common problem with nylons.

Walk-off Mats - used to describe an entire category of commercial floor mats that either scrape or wipe debris from the under soles of shoes.

Shoreline Apartments

City of Shoreline

LEED for Homes V4 Midrise Project Checklist | 07.12.2018 | Project Goal: Gold

- Known additional cost from baseline

RUSHING

Yes	Likely	Unlikely	No	
65	7	31	12	PROJECT TOTALS | pre-certification estimates

Certification Thresholds: Certified 40 points Silver 50 points Gold 60 points Platinum 80+

Yes	Likely	Unlikely	No			Max. Points
2	0	0	0	**Integrated Design**		2
2				Credit 1	Integrated Project Planning	2
14	0.5	0.5	0	**Location and Transportation**		15
Y				Prereq 1	Floodplain Avoidance	Req'd
8			-	Credit 1	Site Selection	8
3				Credit 2	Compact Development	3
1.5	0.5			Credit 3	Community Resources	2
1.5		0.5		Credit 4	Access to Transit	2
4	0	3	0	**Sustainable Sites**		7
Y				Prereq 1	Construction Activity Pollution Prevention	Req'd
Y				Prereq 2	No Invasive Plants	Req'd
2				Credit 1	Heat Island Reduction	2
		3		Credit 2	Rainwater Management	3
2				Credit 3	Non-Toxic Pest Control	2
7	1	2	0	**Water Efficiency**		10
Y				Prereq 1	Water Metering	Req'd
3	1	2		Credit 1	Indoor Water Use	6
4				Credit 2	Outdoor Water Use	4
19	2	15	4	**Energy and Atmosphere**		37
Y				Prereq 1	Minimum Energy Performance	Req'd
Y				Prereq 2	Energy Metering	Req'd
Y				Prereq 3	Education of the Homeowner, Tenant or Bldg Manager	Req'd
17	2	8	4	Credit 1	Annual Energy Use	30
		7		Credit 2	Efficient Hot Water Distribution	5
2				Credit 3	Advanced Utility Tracking	2
4	0	1	6	**Materials and Resources**		9
Y				Prereq 1	Certified Tropical Wood	Req'd
Y				Prereq 2	Durability Management	Req'd
1				Credit 1	Durability Management Verification	1
1		1	5	Credit 2	Environmentally Preferable Products	5
2			1	Credit 3	Construction Waste Management	3

Yes	Likely	Unlikely	No			Max. Points
10.0	0	7.5	1.5	**Indoor Environmental Quality**		18
Y				Prereq 1	Ventilation	Req'd
Y				Prereq 2	Combustion Venting	Req'd
Y				Prereq 3	Garage Pollutant Protection	Req'd
Y				Prereq 4	Radon-Resistant Construction	Req'd
Y				Prereq 5	Air Filtering	Req'd
Y				Prereq 6	Environmental Tobacco Smoke	Req'd
Y				Prereq 7	Compartmentalization	Req'd
1		2		Credit 1	Enhanced Ventilation	3
1		0.5	1.5	Credit 2	Contaminant Control	2
1		2		Credit 3	Balancing of Heating and Cooling Distribution Systems	3
		3		Credit 4	Enhanced Compartmentalization	3
2				Credit 5	Enhanced Combustion Venting	2
1				Credit 6	Enhanced Garage Pollutant Protection	1
3				Credit 7	Low Emitting Products	3
1				Credit 8	No Environmental Tobacco Smoke	1
3	3	0	0	**Innovation**		6
Y				Prereq 1	Preliminary Rating	Req'd
1				Credit 1	Exemp Perf - LTc2.5 Bike Storage & Network	1
1				Credit 1	Exemp Perf - Design Charrette or Trades Training	1
	1			Credit 1	Pilot Credit - Food Production (3800sf on roof)	1
1				Credit 1	Innovation Credit - Green Vehicles or alternative	1
	1			Credit 1	Green Power and Carbon Offsets	1
	1			Credit 2	LEED AP Homes	1
2	0	2	0	**Regional Priority**		4
		1		Credit 1	SSc3 Nontoxic Pest Control	1
1				Credit 2	WEc2 Outdoor Water Use	1
1				Credit 3	EAc1 Annual Energy Use	1
	-			Credit 4	MRc3 Construction Waste Management	1
		1		Credit 5	EQc1 Enhanced Ventilation	1

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Appendix 3

Please indicate:

☒ **Preliminary checklist** (for own or verifier's use)

☐ **Final checklist** (for certification review)

Multi-Family Residential New Construction Certification Checklist

Company Name	City of Shoreline Apartments - analysis of the potential for Built Green 4-Star Certification
Project Address	Baseline Building - 17233 15th Ave NE, Shoreline, WA
Number of Units	243

Last updated March 13, 2018

REQUIRED CREDITS

Action Item No.	Possible Points	Credit	Total Points	Comments
THREE-STAR REQUIREMENTS (300 points minimum)				
	required	Built Green assumes building meets local code regulations	★	*GOOD*
	required	Third-party verification	★	Sustainability consultant fulfills requirements
	required	Achieve a minimum of 50 points from sections 2-5	★	*IN PROGRESS*
Energy	*required*	All spot exhaust fans must be ENERGY STAR (See Action Item 3-50)	★	*GOOD - LIKELY IN BASELINE BLDG*
Energy	*required*	Install ENERGY STAR refrigerators, dishwashers and clothes washers (if provided by builder) (See Action Items 3-42, 3-47, 3-48)	★	*GOOD - IN BASELINE BLDG*
Energy	*required*	Ventilation system flow rates are tested and within 20% of design flows. Controls and settings are consistent with design	★	IN PROGRESS
Energy	*required*	Building modeled to have 10% better performance than the Washington State Energy Code cycle under which the project is permitted OR achieves additional credits in Section R406 (two credits) or C406 (two options) (above the WSEC requirements) (See Action Items 3-1 and 3-2)	★	IN PROGRESS
IAQ	*required*	Use only low-VOC/low-toxic interior paints, primers, and finishes for ALL surface areas (See Action Item 4-15)	★	*GOOD - LIKELY IN BASELINE BLDG*
IAQ	*required*	Do not install a wood-burning fireplace inside unit or building	★	*GOOD*
Materials	*required*	Post jobsite recycling plan on site and maintain at least two bins (one for waste, one for recyclables)	★	*GOOD - LIKELY IN BASELINE BLDG*
Materials	*required*	Recycle all clean wood, cardboard, new gypsum scrap, metal, asphalt paving/brick/concrete, electronics, and batteries (See Action Item 5-6, 5-25)	★	*GOOD - LIKELY IN BASELINE BLDG*
Materials	*required*	Use no endangered species or old growth wood (See Action Item 5-36)	★	*GOOD - LIKELY IN BASELINE BLDG*
FOUR-STAR REQUIREMENTS (400 points minimum)				
	required	Meet 3-Star requirements	★	IN PROGRESS
	required	Achieve a minimum of 60 points from sections 2-5	★	IN PROGRESS
Site & Water	*required*	Amend disturbed soil with compost to a depth of min. 10 inches to restore soil environmental functions (See Action Item 2-16)	★	*GOOD - LIKELY IN BASELINE BLDG*
Site & Water	*required*	Landscape with plants appropriate for site topography and soil types, emphasizing use of plants with low watering requirements (drought tolerant) (See Action Item 2-41)	★	*GOOD - LIKELY IN BASELINE BLDG*
Site & Water	*required*	Install ALL bathroom faucets with gpm 1.5 or less, must be WasterSense labelled	★	*NOT IN BASELINE PROJECT*
Site & Water	*required*	Install ALL showerheads with 1.75 gpm or less, must be WaterSense labelled (See Action Item 2-50)	★	*NOT IN BASELINE PROJECT*
Site & Water	*required*	Install ALL toilets with 1.28 gpf or less average flush rate, must be WasterSense labelled (See Action Item 2-54)	★	*NOT IN BASELINE PROJECT*
Energy	*required*	Building modeled to have 20% better performance than the Washington State Energy Code cycle under which the project is permitted (See Action Item 3-1)	★	IN PROGRESS
Energy	*required*	Set up automatic energy benchmarking in Portfolio Manager and share data with Built Green	★	*GOOD - LIKELY IN BASELINE BLDG*
Energy	*required*	Design for solar readiness (See handbook for details)	★	*GOOD - LIKELY IN BASELINE BLDG*
Energy	*required*	80% of installed lighting shall be high efficacy AND listed on an approved "Qualified Products List" (See Action Item 3-40)	★	*NOT IN BASELINE PROJECT*
IAQ	*required*	Provide track-off mats, carpets, and/or shoe grates at principle entryways to building (See Action Item 4-69)	★	*NOT IN BASELINE PROJECT*
IAQ	*required*	Use CARB II and/or NAUF composite wood products for indoor applications	★	*NOT IN BASELINE PROJECT*
IAQ	*required*	Provide range exhaust hood directly over cooking appliance. Exhaust hood shall vent directly to the exterior of the building. General kitchen exhaust or recirculating hoods shall not meet this requirement.	★	*GOOD - LIKELY IN BASELINE BLDG*
Materials	*required*	Achieve minimum recycling rate of 50% by weight (See Action Items 5-13 through 5-29)	★	*GOOD - LIKELY IN BASELINE BLDG*

FIVE-STAR REQUIREMENTS (600 points minimum)				
	required	Meet 4-Star requirements	★	
	required	Achieve a minimum of 90 points from sections 2-5	★	
Site & Water	*required*	Install ALL bathroom faucets with gpm 1.0 or less, must be WaterSense labelled (See Action Item 2-48)	★	
Site & Water	*required*	Install ALL showerheads with gpm 1.5 or less, must be WasterSense labelled (See Action Item 2-50)	★	
Site & Water	*required*	Install ALL toilets with 1.1 gpf or less average flush rate, must be WaterSense labelled (See Action Item 2-54)	★	
Site & Water	*required*	Manage 50% of stormwater on site	★	
Energy	*required*	Building modeled to have 30% better performance than the Washington State Energy Code cycle under which the project is permitted (See Action Item 3-1)	★	
Energy	*required*	Install solar PV producing 150 kWh for every 1000 sq ft OR install solar hot water producing 500 kBtu for every 1000 sq ft (See Action Items 3-54 and 3-55)	★	
IAQ	*required*	All hard surface flooring must contain no orthophthalates (See Action Item 4-22)	★	
IAQ	*required*	All carpet must contain no fly ash (See Action Item 4-26)	★	
Materials	*required*	Achieve a minimum recycling rate of 90% of waste by weight	★	

NET ZERO ENERGY LABEL (OPTIONAL)				
	required	Meet any star-level requirements plus point minimum	★	
Energy	*required*	Demonstrate net zero energy performance over the course of a year	★	
Energy	*required*	Provide an energy performance disclosure waiver	★	

Check items included this project to qualify for a BUILT GREEN star rating. **2017 version**

QUALIFYING CREDITS

Action Item No.	Possible Points	Credits	Total Points	Comments
SECTION 1: BUILT GREEN TEAM				
1-1	1-10	Use Built Green member subcontractors, vendors, service providers, and real estate agents		
1-2	5	a) Incorporate Built Green early in the design by conducting an eco-charrette with the development team and owner to determine Built Green features to be included in the project b) Identify team member roles and how they relate to various phases of green lot design, prep and development c) Create a mission statement that includes the project's goals and objectives		
1-3	1	Provide all documentation/copies to third-party verifier electronically	1	
		BUILT GREEN TEAM SECTION TOTALS	**1**	
SECTION 2: SITE & WATER				
SITE PROTECTION				
Overall				
2-1	10	Build on an infill lot to take advantage of existing infrastructure and reduce development of virgin sites	10	
2-2	10	Build in a planned Built Green development or certified Built Green Community		
2-3	20	Build on a greyfield or brownfield site	20	
2-4	30	Create a Low Impact Development as defined in handbook		
2-5	5-25	Meet or exceed City of Seattle's Green Factor standards (point tiers in handbook)		NA for projects outside of Seattle
2-6	1-5	Bonus points: Use of Green Factor where it is not part of the project's jurisdictional development requirements	3	LIKELY, LA to do calc
2-7	20	For each acre of development, set aside an equal amount of land as a conservation easement or transfer of development rights		
		Subtotal	**33**	
Protect Site's Natural Features				
2-8	3	Avoid soil compaction by limiting heavy equipment use to building footprint and construction entrance		
2-9	3	Preserve existing native vegetation as landscaping (min. 25% preserved)		
2-10	1-5	Retain trees on site (1 pt per 20% preserved)		
2-11	10 or 12 or 15	Restore percentage of site outside the footprint for the life of the building (10%, 20%, 30%)		
		Subtotal	**0**	
Protect Natural Processes On-Site				
2-12	2	Install and maintain temporary erosion control devices that significantly reduce sediment discharge from the site beyond code requirements		
2-13	3	Use compost to stabilize disturbed slopes during construction		
2-14	2 or 5	Retain all native topsoil in-situ, or stockpile and protect from erosion	2	
2-15	3	Balance cut and fill, while minimizing change to original topography		
2-16	4	Amend disturbed soil with compost to a depth of min. 10 inches to restore soil environmental functions	4	
2-17	2	Replant or donate removed vegetation for immediate reuse		
2-18	2	Use plants salvaged from another site		
2-19	3	Grind land clearing wood and stumps for reuse on site		
2-20	10 or 20 or 30	Manage specified percentage of stormwater from roof and site on site by 60%, 80%, or 100%		
		Subtotal	**6**	

Hardscapes				
2-21	5 or 10 or 15	Design to achieve 50%, 75%, or 90% effective pervious surface outside of building footprint		
2-22	10 or 15 or 25	Install vegetated roof system (e.g. green roof) to reduce impervious surface on 25%, 50%, or 90%+ of total roof surface		
2-23	1	Integrate landscaping with parking area beyond code		
		Subtotal	**0**	
Reduce Urban Heat Island Effect				
2-24	5	Install an ENERGY STAR Qualified roof	5	
2-25	5	Provide shading for 30% of hardscapes by using landscape, landscape features, or overhangs		
2-26	5	For all exterior hardscape, including surface parking, use only light-colored pavement for 90% of project area (Solar Reflective Index of .28 or better)		
		Subtotal	**5**	
Eliminate Water Pollutants				
2-27	1	Wash out concrete trucks in slab or pavement subbase areas, or use washout boxes		
2-28	3	Establish and post clean up procedures for spills to prevent illegal discharges	3	
2-29	1	Reduce hazardous waste through good jobsite housekeeping	1	
2-30	2	Construct tire wash, establish and post clean up protocol for use		
2-31	2	Use slow release organic fertilizers to establish vegetation	2	LIKELY
2-32	2	Use less toxic form release agent	2	LIKELY
2-33	8-10	Use non-toxic (10 pts) or low-toxic (8 pts) outdoor materials for all landscaping	8	LIKELY
2-34	5	Use only “Low Hazard” pesticides and herbicides for landscape installation and in Operations & Maintenance Plan		
2-35	5	Do not use galvanized metal, EPDM, or PVC roofing materials		
2-36	2	Use a modified bitumen built-up or TPO membrane roof	2	
2-37	5	No clearing or grading during wet weather periods (November - April)		
2-38	40 or 50	On-site wastewater treatment for greywater only (40 pts) or for blackwater and greywater (50 pts), min. 50% captured		
		Subtotal	**18**	
WATER CONSERVATION				
Outdoor Conservation				
2-39	2	Mulch landscape beds with 4 inches of organic mulch	2	
2-40	3-12	Limit use of turf grass, or use no turf grass (3 pts per 25%)	9	
2-41	5	Landscape with plants appropriate for site topography and soil types, emphasizing use of plants with low watering requirements (drought tolerant)	5	
2-42	2	Install sub-surface or drip systems for irrigation with controls for each zone, including weather or soil moisture-based modulation	2	
2-43	5	Install a WaterSense irrigation system		
2-44	3	Irrigation system commissioned by a professional to ensure no leaks, efficient system		
2-45	10	Install landscaping that requires no potable water for irrigation whatsoever after initial establishment period (approximately 2 years)		
2-46	5-20	Install rainwater collection system (cistern) that reduces water consumption for irrigation (5 pts for each 25% of irrigation needs met by cistern)		
2-47	50	Provide 100% of building and landscaping water use with captured precipitation or reused water purified without the use of chemicals		
		Subtotal	**18**	
Indoor Conservation				
2-48	1-3	Install ALL bathroom faucets with 1.0 gpm (1 pt), 0.5 gpm or less (3 pts), must be WaterSense labelled		
2-49	3	Install ALL kitchen faucets with 1.8 gpm or less	3	
2-50	5-7	Install ALL showerheads with 1.75 gpm (5 pts), 1.5 gpm or less (7 pts), must be WaterSense labelled	5	1.75 gpm showerheads & WaterSense- NOT IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
2-51	10	Stub-in plumbing to use greywater for toilet flushing (must test for leaks)		
2-52	20	Use greywater or rainwater for toilet flushing		
2-53	3	Provide water sub-metering for each unit	3	
2-54	4-12	Install WaterSense labelled toilets (1.28 gpf = 4 pts, 1.1 gpf = 8 pts, 0.8 gpf = 12 pts. All toilets must comply.)	4	1.28 gpf toilets & WaterSense - NOT IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
2-55	4	Install no-cartridge waterless urinals or 1/8 gallon urinals and 1.28 gpf maximum (WaterSense if not flushometer) toilets in all common areas		
2-56	3-5	Limit pipe volume between water heat source and furthest fixture. Pipe run should store no more than than 0.5 gallons (3 pts) or 0.3 gallons (5 pts)		
		Subtotal	**15**	
Eliminate Water Pollutants				
2-57	1	Do not install garbage disposal		
		Subtotal	**0**	
DESIGN ALTERNATIVES				
2-58	10	Follow comprehensive integrated design plan for site and structure (as described in the handbook)		
2-59	5	Provide community common areas accessible to all building occupants	5	
2-60	2	Take advantage of parking reduction credits that are available in your jurisdiction		
2-61	5 or 10	Provide structured parking within the proposed building footprint at a 50% minimum or 100%	10	
		Subtotal	**15**	

TRANSPORTATION				
2-62	15	Create a Transit-Oriented Development		
2-63	4	Build within ¼ miles of a transit stop or Park and Ride	4	
2-64	15	Create a mixed-use building	15	NOT IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
2-65	6-10	Provide subsidized bus passes (25% or 50% subsidized)		
2-66	2	Provide bicycle lockers or bicycle storage beyond code		
2-67	2	Provide bus shelters		
2-68	6-12	Provide dedicated parking spots for carpool or car-share vehicles (6 pts for first stall above code, 2 pts for each additional)		
2-69	2	Provide a link to community trails		
2-70	5-20	Provide EV charging station (5 pts for one station, 3 pts for each additional)	5	
		Subtotal	**24**	
BENCHMARKING				
2-71	5	Commit to annual benchmarking of building water consumption using ENERGY STAR Portfolio Manager and to sharing this information with Built Green	5	
2-72	7	Install a prominent water use display in high traffic common area		
		Subtotal	**5**	
EXTRA CREDIT/INNOVATION for Site and Water				
2-73	1-10	Extra credit / innovation for Site and Water		
		Subtotal	**0**	
		SITE & WATER TOTAL	**139**	

SECTION 3: ENERGY				
ENERGY IMPROVEMENT				
3-1	1-70	Document energy improvements beyond code using approved energy modeling software (1 pt per % improvement above code)	20	HOLD FOR NOW - 20 pt automatically w 4-star 20% better perforamance modelled req'd
3-2	1-20	Document building improvements beyond code using a prescriptive approach (see handbook for how to calculate points)		HOLD FOR NOW
3-3	50	Bonus points: build a net zero energy building that draws zero outside power or fuel on a net annual basis		
		Subtotal	**20**	
SYSTEMS COMMISSIONING				
3-4	5 or 10 or 15	Provide Fundamental Commissioning of building systems (see handbook for point tiers)	10	
		Subtotal	**10**	
AIR SEALING				
3-5	3	Airtight drywall approach for framed structures		
3-6	10	Use airtight building method, such as SIP or ICF for all walls		
3-7	3	Eliminate or airtight seal all air pathways between floors and units		
3-8	5	Use a dense packed blown-in wall insulation system		
3-9	5 or 10 or 15	Conduct blower door test for the whole building with results better than base code requirement (see handbook for point tiers)		
		Subtotal	**0**	
PASSIVE DESIGN FEATURES				
3-10	6 or 12	Passive solar: three of the below strategies (6 pts), or five (12 pts)		
3-10a		East/west orientation		
3-10b		Optimal glazing - majority within 22 degrees of due south		
3-10c		Proper overhang sizing		
3-10d		Glazing with Solar Heat Gain Coefficient of less than .40		
3-10e		Natural shading on south side (trees)		
3-11	7	Model solar design features using approved modeling software		
3-12	2	Operable window area greater than code		
		Subtotal	**0**	
HEATING/COOLING				
Distribution				
3-13	3	Install ENERGY STAR ceiling fans in all units - minimum one per unit	3	
3-14	5 or 10	Third-party total duct leakage performance test (see handbook for point tiers)		
3-15	2	All ducts are in conditioned space	2	
3-16	3	Locate heating/cooling equipment inside the conditioned space		
		Subtotal	**5**	
Controls				
3-17	2	Install programmable thermostats for all individual heating zones	2	
3-18	1	Provide separate switching for bathrooms fan/heat lamp and fan/light combination fixtures	1	*GOOD - LIKELY IN BASELINE BLDG*
3-19	3	Provide electricity and/or natural gas direct metering for each unit	3	
3-20	5	Install heat systems with separate zones for sleeping and living areas (not including electric resistance heating)		
3-21	3	Black or smart switches in all units for turning off associated outlets		
		Subtotal	**6**	
Heat Recovery				
3-22	5 or 10	Install a heat recovery ventilator (HRV) or an energy recovery ventilator (ERV)		
3-23	10	If HRV or ERV installed, commission and make sure system is balanced, includes fan power		
		Subtotal	**0**	

Space Heating/Cooling Equipment				
3-24	3 or 5 or 8	Select heat pumps with performance better than ENERGY STAR (see handbook for point tiers)		
3-25	2-4	Select heating system efficiency (natural gas): 96% AFUE (2 pts) or 96% AFUE + Variable Speed/ECM blower motor (4 pts)	2	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
3-26	3	Select ENERGY STAR heating/cooling equipment		
3-27	2	No gas fireplaces, or use direct vent gas or propane hearth product (AFUE rating)	2	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
3-28	5	Do not install infrastructure for temporary/portable air conditioners	5	
		Subtotal	**9**	
WATER HEATING				
Overall				
3-29	5	Install drainwater heat recovery system (DHR)		
3-30	2	Install whole building "smart" variable-speed recirculation pump		
3-31	2 or 4	Install ultra-high efficiency central (gas) water heater with 92% (2 pts) or 96% (4 pts) thermal efficiency	2	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
3-32	2	Install the water heater inside the heated space (electric, direct vent, or sealed venting only)	2	
3-33	8	Install one or more Heat Pump Water Heaters with EF 2.0 or greater		
3-34	25	Install a centralized Heat Pump or Reverse Cycle Chiller to heat the domestic hot water		
		Subtotal	**4**	
Distribution				
3-35	10	Insulate all hot water recirculation lines		
3-36	1	Install heat traps on cold inlet pipes at hot water storage tank		
		Subtotal	**0**	
LIGHTING				
Natural Light				
3-37	1	Light-colored interior finishes	1	
		Subtotal	**1**	
Efficient Lighting				
3-38	1-2	Install lighting dimmer, photo cells, timers, and/or motion detectors for high efficiency fixtures - common areas and in-unit lighting		
3-39	2	Install motion detectors for minimum 90% of exterior fixtures		
3-40	2 or 5 or 7	Install high efficacy lighting that is listed on an approved "Qualified Products List" (see handbook for point tiers)		
3-41	5	Avoid excessive outdoor light levels while maintaining adequate light for security and safe access, meet IESNA Levels	5	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
		Subtotal	**5**	
APPLIANCES				
3-42	2	Install ENERGY STAR clothes washers in all units	2	IN BASELINE PROJECT
3-43	3	Install ENERGY STAR clothes washers in common laundry facilities instead of in each unit		
3-44	1	Install ENERGY STAR clothes dryers in all units		
3-45	2	Install ENERGY STAR clothes dryers in common laundry facilities instead of in each unit		
3-46	5	Provide clotheslines to each tenant and "wet room" or outside space in unit or common area for hang drying clothes		
3-47	1	Install an ENERGY STAR dishwasher in all units	1	IN BASELINE PROJECT
3-48	2 or 4	Install ENERGY STAR, or better, refrigerator in all units	2	IN BASELINE PROJECT
3-49	2	Install induction cooktop in all units	2	IN BASELINE PROJECT
3-50	2	Install ENERGY STAR exhaust fans in all units, with fan sone rating of 0.3 or less at or above the design CFM		
		Subtotal	**7**	
ALTERNATIVE ENERGY				
3-51	7	Participate in the local utility's electricity program for renewable electricity sources (covers minimum 25% of energy used)		
3-52	4	Develop incentive program for tenants to purchase Green-e certified RECs		
3-53	1	Solar-powered or low-voltage walkway or outdoor area lighting		
3-54	5-25	Install photovoltaic system (excluding solar hot water): 5 pts for 300 W/1000 sq ft and 5 pts for each additional 150 W/1000 sq ft.		
3-55	5-25	Install solar thermal for space heating or hot water: 5 pts for 1000 kBtu/1000 sq ft and 5 pts for each additional 500 kBtu/1000 sq ft		
		Subtotal	**0**	
BENCHMARKING				
3-56	5	Include provisions in tenant leases releasing utility consumption and billing data to building owner and authorized agents		
3-57	10	Commit to performing a post-occupancy comparison of modeled vs. actual energy performance and to sharing with Built Green		
		Subtotal	**0**	
EXTRA CREDIT/INNOVATION for Energy				
3-58	1--10	Extra credit / innovation for Energy		
		Subtotal	**0**	
		ENERGY TOTAL	**67**	

SECTION 4: HEALTH & INDOOR AIR QUALITY				
OVERALL				
4-1	5	Builder or architect certified to have taken a minimum 8 hour IAQ training approved by Program Manager		
4-2	15	Certify building under an IAQ program approved by Program Manager		
4-3	1	Building is designated non-smoking	1	
		Subtotal	**1**	

JOBSITE OPERATIONS				
4-4	1	Use less-toxic cleaners	1	
4-5	1	Require workers to use VOC-safe masks when applying VOC containing wet products and N-95 dust masks when generating dust	1	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-6	1-5	Take measures during construction operations to avoid moisture problems later (see handbook for examples; 1 pt per action)	5	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-7	2-4	Take measures to avoid problems due to construction dust (see handbook for point tiers)	2	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-8	3	Ventilate during all new wet finish applications	3	
4-9	2	No use of unvented combustion heaters during construction	2	
4-10	3	Clean duct, furnace, and filter thoroughly before occupancy	3	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-11	3	Institute a jobsite anti-idling program for construction vehicles	3	
4-12	3-12	Use non-diesel alternative fuels in construction equipment: electricity, propane, or natural gas (3 pts per 25% of equipment using alternative fuels)		
4-13	4	Require healthy jobsite plan for workers' compliance	4	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-14	4	Implement construction management plan to ensure healthy jobsite plan is implemented optimally and adhered to	4	
		Subtotal	**28**	
LAYOUT AND MATERIAL SELECTION				
4-15		Inside the building envelope use only low-VOC products for various applications when wet-applied on site:		
4-15a	2	Tiling	2	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-15b	2	Framing	2	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-15c	4	Flooring	4	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-15d	4	Plumbing	4	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-15e	2	HVAC	2	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-15f	2	Insulating	2	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-15g	2	Drywalling	2	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-16	3	Use urea formaldehyde-free insulation or Greenguard Gold certified insulation product	3	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-17	1	Do not install insulation or carpet padding that contains brominated flame retardant (BFR)		
4-18	3	Use plywood and composites of exterior grade that is NAF, NAUF, or ULEF (for interior use)	3	
4-19	5	Use only shelving, window trim, door trim, base molding, etc., that is NAF, NAUF, or ULEF	5	
4-20	5	Install cabinets made with board that is NAF, NAUF, or ULEF and has low-toxic finish		
4-21	1	Use pre-finished flooring		
4-22	5	Use hard surface flooring without orthophthalate plasticizers		
4-23	10	No carpet in units		
4-24	2	Limit use of carpet to one-third of unit's square footage	2	
4-25	1	If installing carpet system (carpet, pad, and adhesive), specify and use CRI Green Label Plus or Greenguard certified products	1	
4-26	5	If installing carpet system (carpet, pad, and adhesive), specify and use carpet that does not contain fly ash filler in backing		
4-27	1	If using carpet, install by dry method		
4-28	1	Install low pile or less allergen-attracting carpet and pad	1	
4-29	2	Install untreated natural fiber carpet		
4-30	1	Avoid carpet in environments where it can get wet (kitchen, bathroom, near entries)	1	
4-31	50	Select materials such that the building is free from all of the materials and chemicals listed in the handbook. Please discuss with Program Manager before claiming this point		
		Subtotal	**34**	
MOISTURE CONTROL				
Overall				
4-32	5	Use Building Envelope Consultant during design		
4-33	5	Envelope inspection at various stages of envelope installation by a qualified professional		
4-34	1	Grade to drain away from buildings	1	
		Subtotal	**1**	
Roof				
4-35	6 or 10	Provide 2:12 (9.5 degree) pitch sloped roof surface -for at least 50% of roof (6 pts), or 100% (10 pts)		
		Subtotal	**0**	

Walls - Above Grade				
4-36	3	Provide continuous air- and weather resistive barrier installed to manufacturer's requirements		
4-37	3	Use prefabricated, liquid applied, or self-adhering flashing at siding transitions and penetrations		
4-38	6	Install rainscreen siding		
4-39	3	In wood-framed structures, use low-toxic mold-inhibitor product		
		Subtotal	**0**	
Below Grade				
4-40	3	For slab on grade, use 10 mil polyethylene vapor barrier or equivalent performance, directly under slab	3	
4-41	2	Perform moisture test for any slab on grade prior to installing any finish to manufacturer's specifications		
4-42	2	Install mechanical ventilation system to control moisture in crawl space		
4-43	1	Install a rigid perforated footing drain at foundation perimeter, not connected to roof drain system	1	
4-44	3	Install moisture management system for below grade walls beyond code, i.e., drainage mat	3	
		Subtotal	**7**	
Openings				
4-45	1	Properly seal building openings and penetrations against moisture and air leaks	1	
4-46		Install additional moisture control measures:		
4-46a	5	sill pans with back dams or slope at windows	5	
4-46b	3	door pans with back dams at doors	3	
4-46c	5	sill flashing extending up sides of windows	5	
4-46d	3	threshold protection at doors	3	
4-46e	1	metal head flashing at windows	1	
4-46f	1	metal head flashing at doors	1	
4-46g	1	min. 18" overhangs at entryways	1	
4-47	3	Provide hose testing or negative pressurization testing to pre-installed sample of each window type to test assembly for moisture control protection - ASTM E1105 or equal		
		Subtotal	**20**	
AIR DISTRIBUTION AND FILTRATION				
4-48	2	No stud or joist cavities used for air conveyance	2	
4-49	2	Do not install electronic, metal mesh, horse hair, or non-pleated fiberglass filters		
4-50	1	Make sure air intakes are placed to avoid intake from air pollutant sources (beyond code)		
4-51	1	No parking within 40 feet of building air intakes	1	
4-52	2 or 5	Use effective media air filter, ensuring the HVAC system is designed for the static pressure drop of the filter: MERV 8 (2 pts) or MERV 12+ (5 pts)	2	
4-53	2	Install operable windows in all occupied spaces, minimum 4% of floor area		
4-54	2	Install CO_2 detectors in community rooms		
4-55	2	Demand controlled ventilation in all rooms designed for high occupancy		
4-56	10	Utilize a balanced ventilation approach (supply + exhaust/return) in residential units		
		Subtotal	**5**	
HVAC EQUIPMENT				
4-57	1	Design to ensure accessibility of all system components	1	
4-58	1	Design to prevent standing water in ducted HVAC systems	1	
4-59	3	Commission all spot ventilation fans in all units		
4-60	1	Use heating system controls that are free of mercury	1	
4-61	1	Range exhaust hoods shall be ENERGY STAR rated and have a maximum flow rate less than or equal to 300 cfm		
4-62	2	Install an automatic fan control with 20-minute delay timer, motion sensor, or humidistat for bath exhaust fans	2	
4-63	2	Install quiet bath exhaust fan with smooth ducting, minimum 4 inch, with a fan sone rating of .3 or less at or above the design CFM		
4-64	1	No sound insulation or other fibrous materials installed inside ducting		
4-65	3	Install sealed combustion heating and hot water equipment	3	
4-66	3 or 5	Compartmentalization testing of sampling of units (see handbook for point tiers)		
		Subtotal	**8**	
HEALTH AND INDOOR AIR QUALITY				
4-67	1	Install biodegradable carbon filter at sink		
4-68	1	Install showerhead filter in all units, include information in the tenant handbook		
4-69	3	Provide track-off mats, carpets, and/or shoe grates at principle entryways to building	3	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
4-70	2	Provide a shoe removal and storage area at the entrance to each unit		
4-71	1	Do not install gas-burning appliances inside unit or building		
4-72	1	Install floor drain or catch basin with drain under washing machines (and condensing/heat pump dryers if applicable)		
4-73	1-2	Use radon resistant construction using EPA standards (passive) (1 pt) or test for radon and install active system after building is complete (2 pts)	1	
		Subtotal	**4**	
EXTRA CREDIT / INNOVATION for Health and Indoor Air Quality				
4-74	1-10	Extra credit / innovation for Health and Indoor Air Quality		
		Subtotal	**0**	
		HEALTH & INDOOR AIR QUALITY TOTAL	**108**	

SECTION 5: MATERIALS EFFICIENCY				
OVERALL				
5-1	10 or 15 or 20	Design and build for deconstruction concept - 50% (10 pts), 75% (15 pts), or 90% (20 pts)		
5-2	1-5	Eliminate materials and systems that require finishes or finish materials on a minimum of 100 square feet in common areas (1 pt per 100 sqft)		
		Subtotal	**0**	
JOBSITE OPERATIONS				
5-3	1	Provide weather protection for stored and installed materials	1	
5-4	15	Purchase a one-time carbon offset to account for carbon footprint of materials, minimum of 50% of project footprint		
5-5	2	Use suppliers who offer reusable or recyclable packaging		
		Subtotal	**1**	
REDUCE				
5-6	5	Implement comprehensive construction waste reduction and management plan	5	
5-7	5-20	Reduce total waste generated on site (see handbook for point tiers)		
		Subtotal	**5**	
REUSE				
5-8	15-30	Use deconstruction to dismantle and reuse existing building components on site (see handbook for point tiers)		
5-9	1	Sell, give away, or reuse wood scraps, lumber and land clearing debris		
5-10	1	Donate, sell, or give away reusable finish items		
5-11	1-20	Reuse salvaged materials (1 pt per material, examples listed in handbook)		
5-12	1-20	Use salvaged lumber, 1 pt per 100 board feet		
		Subtotal	**0**	
RECYCLE				
Source Separation Recycling - if points are claimed here, none may be claimed under Commingle Recycling				
5-13	1	Recycle cardboard by source separation, 90% minimum recycling rate		
5-14	2	Recycle metal scraps by source separation, 90% minimum recycling rate		
5-15	5	Recycle clean scrap wood and broken pallets by source separation, 90% minimum recycling rate		
5-16	2	Recycle package wrap and pallet wrap by source separation, 90% minimum recycling rate		
5-17	3	Recycle drywall by source separation, 90% minimum recycling rate		
5-18	2	Recycle concrete/asphalt rubble, masonry materials, or porcelain by source separation, 90% minimum recycling rate		
5-19	1	Recycle paint by source separation, 90% minimum recycling rate		
5-20	4	Recycle asphalt roofing by source separation, 90% minimum recycling rate		
5-21	2	Recycle carpet padding by source separation, 90% minimum recycling rate		
5-22	2	Recycle carpet by source separation, 90% minimum recycling rate		
5-23	1	Recycle glass by source separation, 90% minimum recycling rate		
5-24	3	Recycle land clearing and yard waste, food waste, soil and sod by source separation, 90% minimum recycling rate		
5-25	3	Recycle electronics and batteries		
5-26	1	Provide bin for miscellaneous household waste	1	
		Subtotal	**1**	
Commingle Recycling - if points are claimed here, none may be claimed under Source Separation Recycling				
5-27	10	Send at least 90% of jobsite recyclables (by weight excluding concrete) to an approved commingled recycling facility with 50% recycling rate	10	
5-28	18	Send at least 90% of jobsite recyclables (by weight excluding concrete) to an approved commingled recycling facility with 75% recycling rate	18	***MAY NOT BE IN BASELINE PROJECT, BUT COULD BE FOR OTHERS WITHIN JURISDICTION***
5-29	24	Send at least 90% of jobsite recyclables (by weight excluding concrete) to an approved commingled recycling facility with 90% recycling rate		
		Subtotal	**28**	
DESIGN AND MATERIAL SELECTION				
Overall				
5-30	1	Use standard dimensions in design of structure	1	
5-31	10	Design and install recycling stations on each floor, including a maintenance service plan	10	
5-32	8	Design and install food waste management system on each floor, including a maintenance service plan	8	
5-33	1-3	Install materials with longer life cycles		
5-34	1-10	Install locally/regionally produced materials (1 pt per material)	5	
5-35	2-6	Use rapidly renewable building materials and products made from plants harvested within a ten-year cycle or shorter (2 pts per material)		
5-36	3	Use no endangered species or old growth wood	3	
5-37	3	Use no PVC, CPVC, or ABS piping for plumbing or sprinklers within the building envelope		
		Subtotal	**27**	

Framing				
5-38	2	Create detailed take-off and provide as cut list to framer		
5-39	2	Use central cutting area or cut packs	2	***MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION***
5-40	6 or 10	Use dimensional lumber that is third-party certified sustainably harvested wood that meets the Tier 1 (10 pts) or Tier 2 (6 pts) requirements outlined in the handbook, 50% minimum		
5-41	4 or 7	Use sheathing that is third-party certified sustainably harvested wood that meets the Tier 1 (7 pts) or Tier 2 (4 pts) requirements outlined in the handbook, 50% minimum		
5-42	3 or 5	Use beams that are third-party certified sustainably harvested wood that meets the Tier 1 (5 pts) or Tier 2 (3 pts) requirements outlined in the handbook, 50% minimum		
5-43	6	Use factory framed wall panels (panelized wall construction)		
5-44	5	Use advanced wall framing - 24-inch OC, with double top plate		
5-45	3	Use engineered structural products and use no 2xs larger than 2x8, and no 4xs larger than 4x8		
5-46	4-8	Use structural insulated panels (SIPs) (see handbook for point tiers)		
5-47	5	Use insulated concrete forms (ICFs)		
5-48	1	Use finger-jointed framing material (e.g. studs)		
5-49	8	Use Cross Laminated Timber in place of steel or concrete		
		Subtotal	**2**	
Foundation				
5-50	6	Use fly ash or blast furnace slag for 25% by weight of cementitious materials for all concrete		
5-51	2	Use recycled concrete, asphalt, or glass cullet for base or fill		
		Subtotal	**0**	
Sub-Floor				
5-52	1	Use recycled content sub-floor		
		Subtotal	**0**	
Finish Floor				
5-53	2	If using vinyl flooring, use product with recycled content	2	
5-54	4	No vinyl flooring		
5-55	1	Use recycled content carpet pad	1	
5-56	2	Use recycled content carpet	2	
5-57	2 or 4	Use replaceable carpet tile for 50% of carpeted area (2 pts) or 100% of carpeted area (4 pts) (minimum of 50 sqft)		
5-58	5	If using tile, use hard surface tile that is 40% recycled content		
5-59	5	Use natural linoleum		
5-60	3 or 5	Use flooring that is third-party certified sustainably harvested wood for at least 50% of hard surface flooring (see handbook for point tiers)		
5-61	1	Use spot repairable floor finish		
		Subtotal	**5**	
Interior Walls				
5-62	2	Use drywall with a minimum of 95% recycled content synthetic gypsum or 10% if non-synthetic gypsum		
5-63	2 or 3	Use recycled or “reworked” paint and finishes on main surfaces or all surfaces		
		Subtotal	**0**	
Ceilings				
5-64	1	If installing acoustical ceiling tiles, select a recycled content product		
		Subtotal	**0**	
Windows				
5-65	8	Use all wood, composite, or fiberglass windows		
		Subtotal	**0**	
Trim				
5-66		If using wood trim:		
5-66a	2 or 3	Use trim that is third-party certified sustainably harvested wood, 50% minimum (see handbook for point tiers)		
5-66b	3	Use finger-jointed or MDF trim with no added urea formaldehyde, 90% minimum		
5-66c	1 or 2	Use wood veneers that are third-party certified sustainably harvested woods, 50% minimum (see handbook for point tiers)		
		Subtotal	**0**	
Cabinetry and Counters				
5-67		For cabinets:		
5-67a	1 or 2	Use third-party certified sustainably harvested wood for at least 75% of cabinet casework (see handbook for point tiers)		
5-67b	3	Use recycled-content cabinet casework for at least 75% of all casework		
5-67c	1	Use cabinet casework and shelving made with agricultural fiber that is NAUF, NAF, or ULEF for at least 75% of all cabinetry		
5-68	1 or 4	Use resource efficient countertop material in lobby/reception areas (1 pt) or in all areas (4 pts)		
		Subtotal	**0**	
Roof				
5-69	2	Use recycled content roofing material		
5-70	2	Use a modified bitumen built-up roof		
5-71	5	Protect at least 90% of built-up and membrane roofing with ballast, pavers, or vegetated roof systems		
		Subtotal	**0**	
Insulation				
5-72	4	All cavity insulation to have a minimum of 40% post-consumer recycled content		
5-73	5	Use environmentally friendly foam building products (CFC-, HFC-, HCFC-free)		
		Subtotal	**0**	

Exterior Walls				
5-74	2	Use recycled content sheathing (OSB does not apply)		
5-75	3	Use exterior cladding with reclaimed or recycled material on at least 20% of solid wall surface		
5-76	4	No vinyl siding or exterior trim	4	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
5-77	3	Use 50-year siding product (minimum 20% of solid wall surface)		
5-78	3 or 5	Use wood siding that is third-party certified sustainably harvested wood on at least 20% of solid wall surface (see handbook for point tiers)		
		Subtotal	**4**	
Other Exterior				
5-79	2 or 3	Use 100% recycled content HDPE or lumber that is third-party certified sustainably harvested wood for decking and porches (see handbook for point tiers)		
5-80	2	Use post-consumer recycled content plastic lumber for decking		
5-81	5	If lumber is used, use no pressure treated lumber		
		Subtotal	**0**	
BENCHMARKING				
5-82	5	Commit to annual tracking of building trash using ENERGY STAR Portfolio Manager and to sharing with Built Green		
		Subtotal	**0**	
EXTRA CREDIT / INNOVATION for Materials Efficiency				
5-83	1-10	Extra credit / innovation for Materials Efficiency		
		Subtotal	**0**	
		MATERIALS EFFICIENCY TOTAL	**73**	

SECTION 6: OPERATION, MAINTENANCE & TENANT EDUCATION				
6-1	7	Provide educational materials designed for the public that highlight the green building features and their performance that are included in the project	7	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
6-2	5	Prepare an environmentally friendly operations and maintenance plan for common area facilities	5	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
6-3	5	Prepare an environmentally friendly landscape operations and maintenance plan	5	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
6-4	6	Develop and provide a building-wide food waste disposal strategy		
6-5	7	Require tenants to sign an energy consumption data release form (if separately metered)		
6-6	5	Require tenants to sign a water consumption data release form (if separately metered)		
6-7	7	Conduct training sessions for maintenance staff and/or residents	7	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN
6-8	5	Give individual feedback to all tenants about their energy consumption in comparison to others and/or building average		
6-9		Provide tenants with materials including information on:		
6-9a	1	Where to dispose of food waste (compost)	1	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
6-9b	1	Where to dispose of recycleables	1	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
6-9c	1	General practices to conserve water and energy	1	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
6-9d	1	Transportation options and resources	1	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
6-9e	3	EVs, their benefits, and where to charge them	3	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
6-9f	2	Green features and benefits of the buildings	2	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
6-9g	3	Maintenance checklists for their unit	3	MAY NOT BE IN BASELINE PROJECT, BUT LIKELY FOR OTHERS WITHIN JURISDICTION
		OPERATION, MAINTENANCE & TENANT EDUCATION TOTAL	**36**	

PROJECT SUMMARIES	
SECTION 1: BUILT GREEN TEAM	**1**
SECTION 2: SITE & WATER	**139**
SECTION 3: ENERGY	**67**
SECTION 4: HEATH & INDOOR AIR QUALITY	**108**
SECTION 5: MATERIALS EFFICIENCY	**73**
SECTION 6: OPERATION, MAINTENANCE & TENANT EDUCATION	**36**
GRAND TOTAL	**424**

Appendix 4 - Passive House Strategies

Comparative Analysis of LEED, Built Green, & Passive House

- **Air Tightness Requirement**: 0.05 CFM50 and 0.08 CFM75 per square foot of gross envelope (WSEC requires 0.40 CFM75). Requires continuous air barriers and a rigorous threshold for the ASTM E779 fan pressure test. Advanced sealing measures: costs currently unknown.
- **Source Energy Limit:** 6200 kWh per person per year.
- **Roof Assembly**: target R-81 (WSEC stipulates R-49 for in-roof insulation; R-38 for above-deck insulation).
- **Wall Assembly**: above-grade target R-39 (WSEC stipulates R-21 for wood frame construction). Requires either deeper studs and/or adding exterior, continuous insulation.
- **Space Conditioning:** non-standard mechanical systems are typically required to comply (e.g. Energy Recovery Ventilation [ERV], possible heat-pump heating): Attention to building geometry – less complicated perimeter (e.g. rectangle or L-shape) will be more efficient for thicker insulation & infiltration mitigation.
- **Materials:** thicker/denser insulation, triple pane glazing, additional sealing and thermal bridging strategies, and additional shading strategies.
- Additional information will be provided in the final draft.
- **Resources:**
    - http://www.phius.org/phius-2015-new-passive-building-standard-summary
    - *PHIUS+ Certification for Multifamily Performance Requirements (v2.0)*
        - http://www.phius.org/PHIUSPlus2015docs/PHIUS-Plus_Multifamily-Certification-Standard-v2.1.pdf

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Green Building Incentives in Neighboring Jurisdictions

Jurisdiction	Incentive	Requirement
City of Seattle	• Priority Green Expedited: Available for all new construction projects. Gives you faster building permit review and processing for projects that meet green building standards. • Priority Green Facilitated: A streamlined permitting process for master use permits in exchange for meeting green building standards. • Innovation Advisory Committee: This group of experts will review energy-efficient proposals not covered in the technical codes. • Living Building Pilot: Allows you to request departures from the Seattle Land Use Code through Design Review and offers height and floor area incentives for projects attempting to meet the Living Building Challenge. • Residential Deconstruction: If you are removing housing, a residential deconstruction permit may allow you to begin the process before a new building permit for the site is issued. (Deconstruction is taking apart a building in order to save the maximum amount of reusable building materials.) • Zoning Incentives: the land use code provides greater floor area and/or height in certain zones in exchange for meeting green building standards. The	The requirements vary depending on the incentive. Expedited: Built Green 4-Star or higher, LEED Gold, PHIUS, LBC, petal or net zero, or SDCI Alternative Path and at least 15% less energy than SEC Facilitated: priority green building matrix, Architecture 2030 Challenge for Planning, or Built Green 5 star, LEED Platinum if energy target is met. Living Building Pilot: Living Building Challenge 3.1 Standard or Petal Recognition certification and Seattle energy and water requirements http://www.seattle.gov/dpd/permits/greenbuildingincentives/ Zoning Incentives: refer to Director's Rule 20-2017 Green Building Standard

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	standards are set by Director's Rule.	
City of Issaquah	Expedited permit review	Built Green 5-Star and LEED Gold http://www.ci.issaquah.wa.us/DocumentCenter/View/3096
City of Kirkland	Expedited permitting	Built Green 4-Star or higher LEED for Homes Silver or better http://www.kirklandwa.gov/Residents/Community/Kirkland_Green/Green_Building/Priority_Permit_Review.htm
City of Redmond	Priority review permitting; Unit Type Flexibility; Lot Size Reduction; Density Bonus	Built Green 4-Star or higher LEED for Homes Silver or better http://www.redmond.gov/development/ToolsResources/GreenBuildingIncentives
City of Shoreline	• Expedited permitting and fee waivers or reductions, which could include waiving pre-application and a certain percentage of application fees, based on tier, and possibly reducing transportation impact fees, based on project-specific analysis. • Departures from Development Code standards (like solar panels extending above the sidewalk right-of-way) so that projects can meet certification requirements for a specific program.	• Tier 1- International Living Future Institute's (ILFI) Living Building Challenge or Living Community Challenge; • Tier 2- ILFI's Petal Recognition or Built Green's Emerald Star; and • Tier 3- US Green Building Council's Leadership in Energy and Environmental Design (LEED) Platinum, Built Green's 5-StarTM, or ILFI's Net Zero Energy Building (NZEB) in combination with Salmon Safe where applicable. http://cityofshoreline.com/Home/ShowDocument?id=31411
Snohomish PUD	$1,200 for an eligible certified single family home and minimum 20% energy savings above WSEC OR $300 per certified multifamily unit 20% above WSEC	Built Green 4-Star or higher, Living Building Challenge, LEED, Net Zero Energy, Passive House Institute US
Seattle City Light	• Incentives for building components that exceed Seattle Energy Code – envelope,	• New construction multifamily buildings exceeding Seattle Energy Code

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Green Building Incentives in Neighboring Jurisdictions

	lighting, HVAC, in-unit appliances • Incentives for LEED-certified buildings based on LEED energy model	• LEED Certification with energy model showing electric savings (>14% beyond ASHRAE 90.1)
Cascade Water Alliance Territory (Cities of Bellevue, Issaquah, Kirkland, Redmond and Tukwila)	$1,000 per home	Built Green 3-Star or higher AND US EPA WaterSense labeling