Towne Center at Shelter Ridge

March 15, 2018 for Inland Wetlands Commission Application #17-14
Bridgeport Avenue, Mill Street, Old Kings Highway, and Buddington Road

Report by the City of Shelton Natural Resources Manager, Teresa Gallagher, prepared for the Shelton Conservation Commission**.** This report is limited to potential impacts on wetlands and watercourses. See previous reports submitted to the Planning and Zoning Commission, including "Natural Resources of Shelter Ridge" (February 2016) and "Natural Resources Impacts (April 2016) for general discussions of the site characteristics and impacts of the proposed development.

Version reviewed: Plan set date stamped 'received' December 21, 2017 by Inland Wetlands; Stormwater Management Calculations dated December 22, 2017.

General Site Characteristics: The 121-acre site contains relatively few wetland areas for an undeveloped property of this size in Shelton. Site constraints are considerable, however, including substantial topographic relief, a major utility corridor that bisects the property, and wetlands and watercourses.

The forested property rises as much as 250 feet from Bridgeport Avenue to a ridgeline that bisects the property roughly north to south. Stormwater east of the ridge flows towards Bridgeport Avenue/ Wells Hollow Brook, then into the Far Mill River. Although there is a channel that drains the hillside, water flow in the channel is minor and it would appear that most drainage is in the form of underground seepage (groundwater). Water on the west side of the ridge along Mill Street seeps underground towards the Far Mill River, with some groundwater breaking out from the hillside and flowing across the road near #56 Mill Street, where it causes chronic icing. Further north, stormwater flows into a vernal pool complex which empties into a brook that flows across the Old Kings Highway Open Space. From there, the brook runs through several residential properties located off of Mill Street before discharging into the Far Mill River.

(Note: In a letter dated February 16, 2018, the City Engineer disagreed with the drainage basins delineated in the stormwater report submitted by the applicant, stating that the vernal pool complex west of the ridgeline flowed east into a channel that drains towards Bridgeport Avenue. I have walked the site and agree with the applicant's report. The pools of Watersheds A1, A2, and A3 do not drain towards Bridgeport Avenue, although they may have at one time).

The relatively small percentage of onsite wetlands is due in part to the well-drained Charlton-Chatfield soils, which are sandy loams.

Very steep slopes occur above Mill Street and an area above Bridgeport Avenue north of Long Hill Cross Road, about 320 feet from the Avenue.

Value of Site Wetlands and Watercourses:

The vernal pool on the northwest edge of the site, the unnamed brook that drains from it (here referred to as “Old Kings Highway Brook”), and the Far Mill River just off-site should be prioritized for conservation purposes.



Vernal pool near Old Kings Highway

1. Vernal Pool Complex. The vernal pool complex (partially on-site) is presumed to be a breeding ground for amphibians such as wood frogs and spotted salamanders. These species require vernal pools to reproduce, but do not live in these pools. Although I have not observed or sampled these pools during amphibian breeding season, nearby Buddington Road in the vicinity of Old Town Road and Buck HIll Road has a highly active migratory amphibian crossing. Over the years, I have observed hundreds of wood frogs and spotted salamanders crossing the road in this location during mating season.

Spotted turtles, a CT Species of Special Concern, are locally common in an area bounded roughly by Oak Valley Road, Nells Rock Road, Buddington Road, and the Far Mill River. The species may also be present in the vernal pools south of Buddington Road at the site. This species may be confused with common pond turtles, but it does not live in lakes or ponds. This species travels between vernal pools and swamps, where it eats frog and salamander eggs, worms, and tadpoles. It is active in early spring and goes dormant in summer. Although locally abundant in scattered hotspots across the state, spotted turtles have been completely eradicated from most areas due to habitat fragmentation and the pet trade.



2. "Old Kings Highway Brook": The vernal pool complex begins in the Buddington Road area near the utility line crossing and extends through open space and a corner of the Shelter Ridge site before discharging into an unnamed brook that will be referred to as "Old Kings Highway Brook" in this report because it roughly parallels that colonial road. The brook crosses Old Kings Highway (unimproved, closed to traffic) and enters a 17-acre open space property known as the Old Kings Highway Open Space. The brook drops down a steep hill in a series of scenic cascade, then continues through the open space and several residential properties before crossing Mill Street, turning east through State of Connecticut conservation property, and passing about twenty feet from the home at #56 Mill Street, where it empties into the Far Mill River.



The “Old Kings Highway Brook” is the primary scenic feature of the Old King’s Highway Open Space, especially where it first enters the site and cascades down the steep hillside.



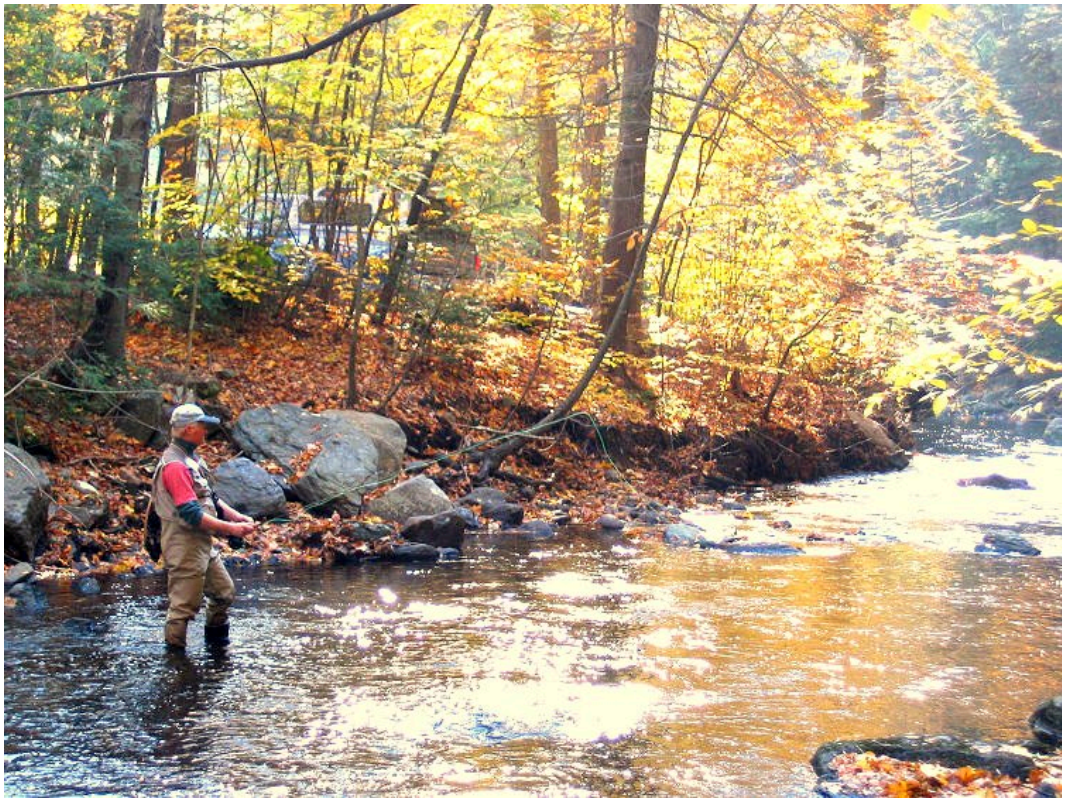
“Old Kings Highway Brook” on Shelton Open Space



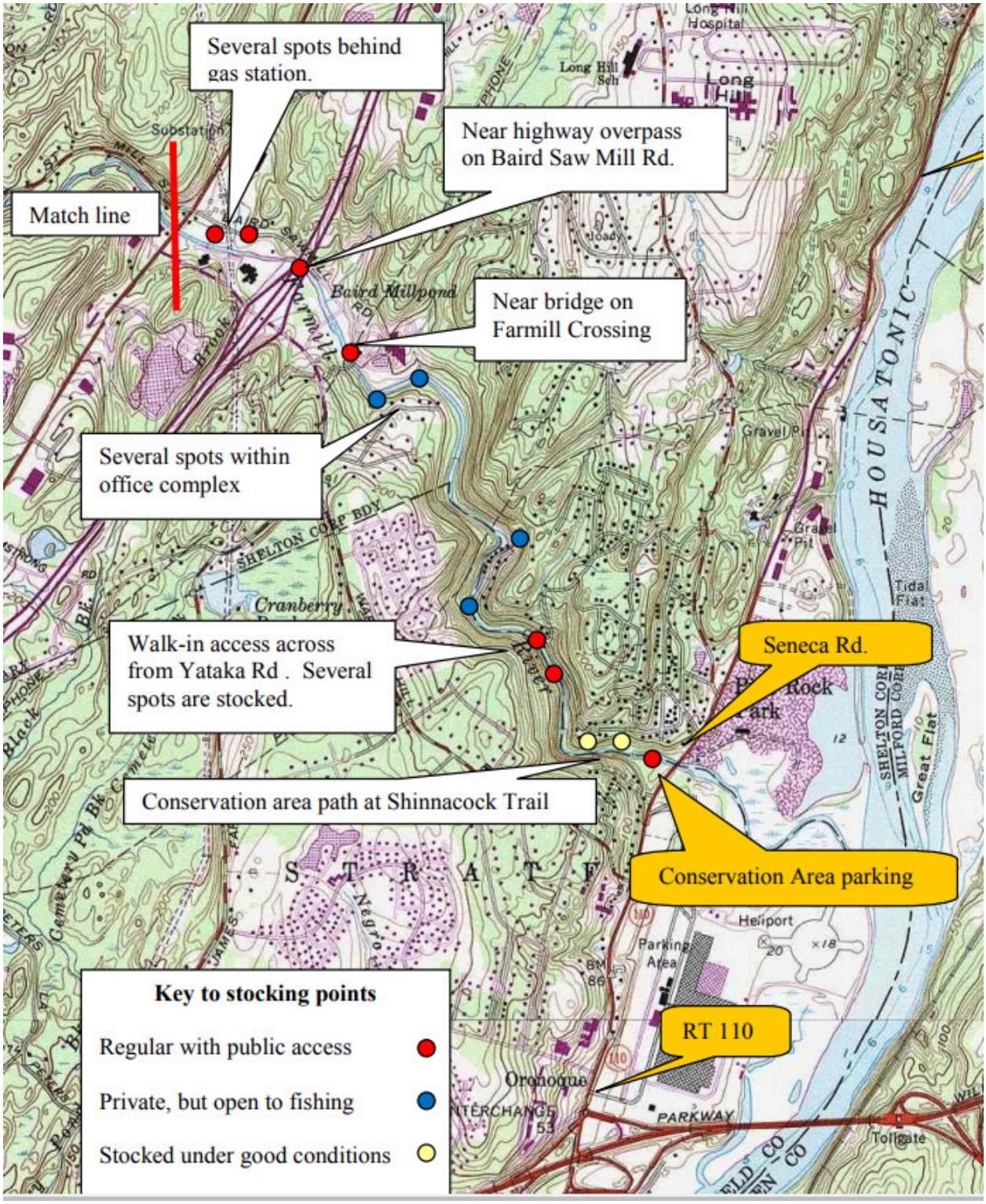
3. Far Mill River: The Far Mill River runs next to the Shelter Ridge property. It is stocked with trout by the CT DEEP and is a regional attraction for advanced kayakers. Water temperature, especially in the summer, is critical for trout because cooler water holds more oxygen.

Water quality has been assessed at various times by using macroinvertebrate surveys (macroinvertebrates are mostly aquatic insects). Some species, such as stoneflies, require very good water quality (cool water, high oxygen), while other species are associated with degraded waters. Determining which macroinvertebrates are present provides a good measure of the water quality.

In 1996, macroinvertebrate samples collected from the river by the CT DEEP near Rt 110 and Farmill Crossing consisted largely of caddisfly, mayfly, and stoneflies, favored species indicative of high water quality. Later surveys by volunteers with the Housatonic Valley Association found many more “least desirable” species and few, if any, stoneflies. Although these changes may have been due in part to natural variation and differences in sampling techniques, the data suggests that water quality may have been degraded over the past few decades.



Trout fishing downstream from the Shelter Ridge site.



CT DEEP Map showing trout stocking locations

4. Intermittent stream to Bridgeport Avenue: A small stream flows east across the site to Bridgeport Avenue. I've walked the site several times, and this stream had significantly lower flow volume than "Old Kings Highway Brook" during each site walk. Normally, a stream corridor such as this would provide good passage for wildlife species. This stream, however, leads to Bridgeport Avenue, where any species would likely be struck by a vehicle. Wildlife would be better directed to the Old Kings Highway corridor, which connects to the Far Mill River corridor with a relatively easy crossing of Mill Street.



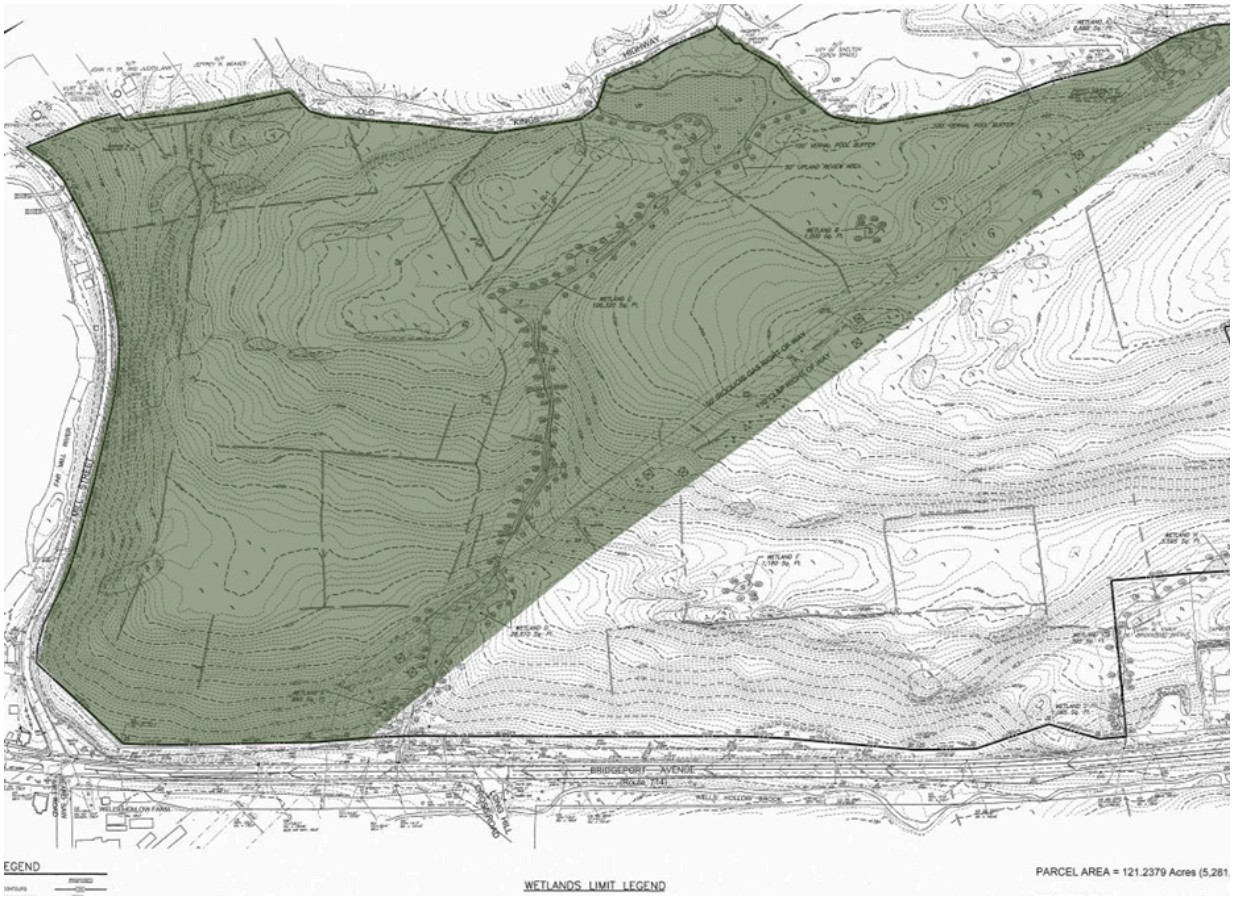
Unnamed brook draining towards Bridgeport Avenue, during a time of high flow.

Site Sensitivity Documented in City Plans - Greenway System

The Shelton Open Space Plans of 1993 and 2009 delineated two greenway corridors which connect at the Shelter Ridge site: the Far Mill River Greenway and the Shelton Lakes Greenway. The Shelton Lakes Greenway includes most of the Shelter Ridge site west of the powerlines, while the Far Mill River Greenway encompasses the steep slope above Mill Street.

These open space plans, and the greenways defined within, were formally adopted by the Planning and Zoning Commission as supplements to the Plan of Conservation and Development.

Shelton's greenways are treated as *"areas of special interest... For planning purposes, Shelton greenways are the equivalent of 'designated open space' under State Statute Sec. 7-131b… The land will receive a higher rank for open space acquisition, and the Conservation Commission would have an interest in reviewing applications for any site developments, variances, and wetland activities that might impact the open space corridor. (Open Space Plan of 2009 pages 16-17).*

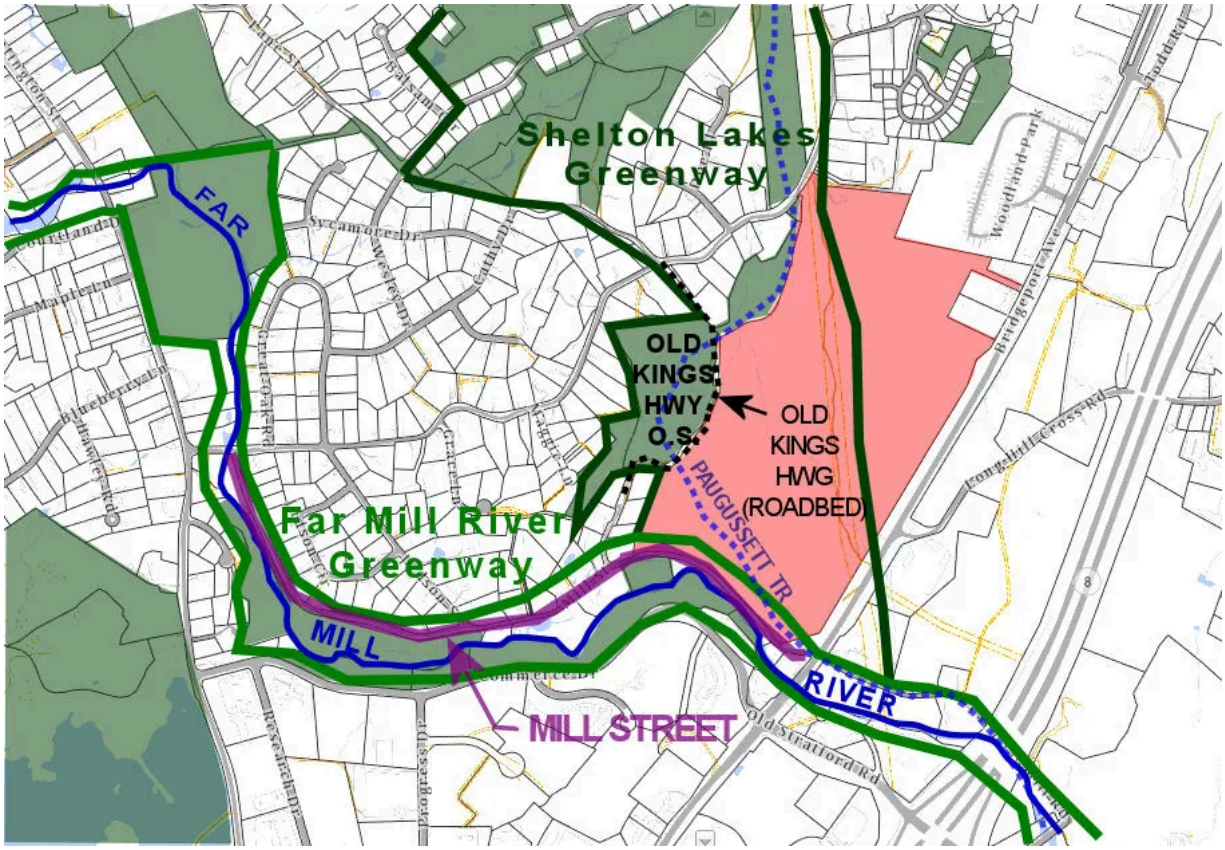


Portion of Shelter Ridge site included within the Far Mill River Greenway and Shelton Lakes Greenway as proposed open space in City planning documents

The delineated greenways are anchored on Shelton's major water features with the goal of protecting water quality and providing linkage for both wildlife habitat and passive recreation. The Far Mill River Greenway follows the Far Mill River from the Monroe border to the Housatonic River. The Shelton Lakes Greenway encompasses the three

reservoirs knowns as “Shelton Lakes” as well as a complex of vernal pools, swamps and streams that comprise the Basil Brook and “Old Kings Highway Brook” watersheds.

The location where two designated greenways meet is of critical importance. At Shelter Ridge, it is the location where wildlife species traveling along the Far Mill River can enter into the Shelton Lakes Greenway and vice versa. Without this connection, the value of both greenways decreases.



Designated Greenways outlined in heavy green lines
(the Paugussett Trail as shown was proposed only)

Old Kings Highway Purchase: The importance of connecting the Far Mill and Shelton Lakes Greenways was demonstrated with the purchase of the Old Kings Highway Open Space in the 1990s in response to a proposed high-density residential development.

- **1993: The Open Space Committee** voted to recommend the purchase of the Old Kings Highway property “*for the purpose of ensuring continuity between the Shelton Lakes and Far Mill Greenways as proposed by the city’s Open Space Plan.”*

- **1994 Report: "The Old Kings Highway Proposed Open Space Area: Assessment Report"** prepared by the Open Space Committee for the Board of Aldermen and Planning and Zoning Commission. "*The property offers numerous passive recreational opportunities including hiking trails as well as cultural and historical resources. It will also provide critical linkage between the Far Mill River and the Shelton Lakes Greenways and will permit the planned extension of the Blue Dot Trail through this section of the City."* (see document)

- **The Planning and Zoning Commission endorsed the open space acquisition** by referencing the Open Space Committee's reports (see letter).

Site Plan Review:

The proposed development would add fifty acres of impervious surfaces, creating significant point discharges into sensitive wetlands and watercourses including the Far Mill River and its tributaries, including: the "Old Kings Highway Brook"/vernal pool complex, an unnamed stream draining towards Bridgeport Avenue, and Wells Hollow Brook. The development would also result in the introduction into these waterways of the typical pollutants of any commercial or high-density residential facility: salts, fertilizer (nitrogen and phosphorus), litter, and automotive drippings such as oil.

1. Paugussett "Blue Dot" Trail: The site plans depict a trail labeled the "Paugussett Blue Dot Trail." This should be removed from the current site plans, since the route shown is not in any way realistic, as was made clear during the Planning and Zoning Commission public hearing. Extension of the Paugussett Trail to the Stratford border has been part of Shelton's Plan of Conservation and Development and Open Space Plan since 1993. The trail was to specifically cross Buddington Road, pass through the Old Kings Highway Open Space, then follow the top of the hill parallel to Mill Street to arrive at Bridgeport Avenue.

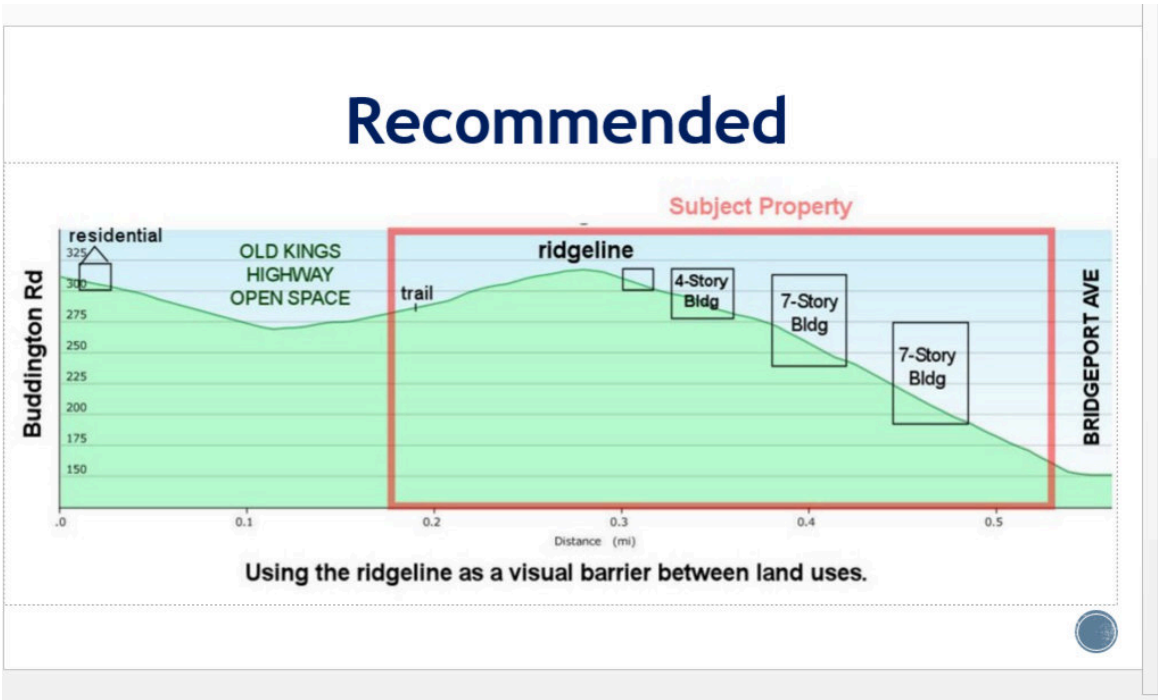
This route, however, assumes that the ridgetop crossing the Shelter Ridge property is not developed, serving to shelter the open space areas from the Bridgeport Avenue corridor. The site plan under review does not meet these criteria, but instead shows an untenable hiking trail routed along the base of commercial buildings, parking areas, and apartment towers. The State of Connecticut has designated all CT Blue-Blazed Hiking Trails the "primary hiking trails" of Connecticut. These hiking trails do not pass through extensively developed areas, but require a natural corridor and at least the illusion of wilderness. New trail sections must consist of scenic routes. The Connecticut Forest and Park Association (CFPA) manages the 825-mile Blue-Blazed Trail system and

approves all new sections. In a 2016 communication with Clare Cain, the Trail Stewardship Director at CFPA, Ms. Cain said it was highly unlikely that CFPA would approve the route as shown if the development is approved.

It is frustrating to see the applicant continue to misrepresent this trail to our land-use boards after the Conservation Commission and Trails Commission have repeatedly clarified that the trail route is not workable, as in the July 27, 2016 letter from the Trails Committee to the Planning and Zoning Commission:

> Further, the Trails Committee asks that the applicant for Shelter Ridge stop referring to a line on their plan as the proposed "Paugussett Trail." This is a misrepresentation to the Planning and Zoning Commission, as well as the general public. Only the Connecticut Forest and Park Association (CFPA) can designate a "Connecticut Blue-Blazed Trail," and based on our experience, CFPA would not accept a trail in this location if the ridgetop is developed. Previous reports and communications have clearly stated that construction along the ridgetop would preclude extension of the Paugussett Trail to Bridgeport Avenue and the Far Mill River as the City has been planned for some twenty-five years.

2. Project Scale. The scale of the proposed development is excessive considering the topography, site constraints, documented site sensitivity within the City greenway system, and the proximity to the Far Mill River. It appears that 80 percent or more of the site will be cleared and extensive site grading will be needed. The primary wetland/watercourse impacts will be in the form of new point discharges created by 50 acres of new impervious surfaces.



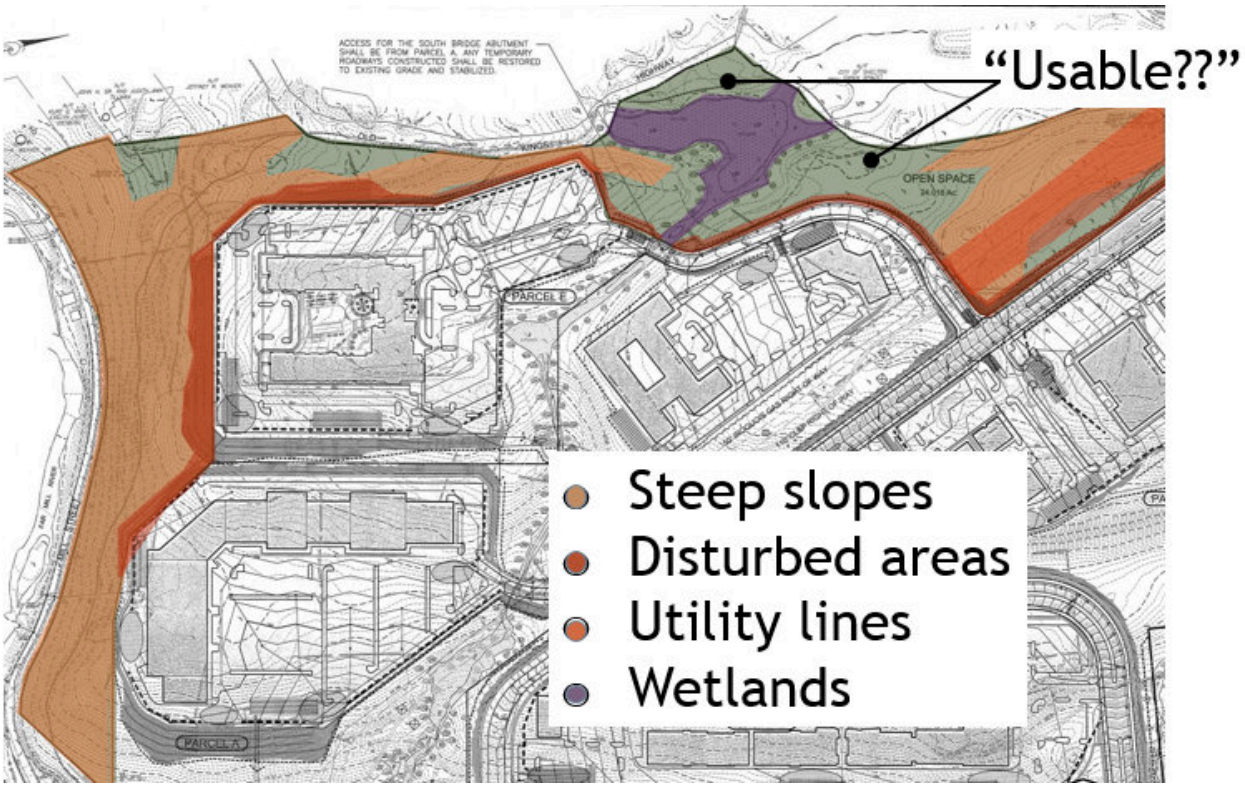
In its presentation during the Planning and Zoning public hearing, the Conservation Commission argued for a reduce site footprint and conservation of the site west of the ridgeline in order to preserve the integrity of the City's greenway system and future Paugussett Trail. Construction west of the ridgeline was deemed "high impact" development while development east of that ridgeline along Bridgeport Avenue was deemed low impact development.

Stormwater discharges west of the ridgeline are likewise more problematic than discharges to the east. Discharges to the west would be directed into the high-value vernal pool complex and the "Old Kings Highway Brook" which crosses city open space in the form of a series of cascades. Another discharge west of the ridgeline would be piped directly across Mill Street, a designated Scenic Road, and into the Far Mill River. In contrast, discharges east of the ridge will be directed to Wells Hollow Brook prior to discharge in the Far Mill River. Wells Hollow Brook drains the Bridgeport Avenue economic corridor and is presumably impacted as such.

The overall site footprint can be reduce by scaling back the project and/or increasing the height of those buildings located near Bridgeport Avenue, along with the use of parking garages.



3. Proposed Open Space. Twenty-four acres are proposed as open space. The open space set-aside is “implied mitigation” for the proposed impacts to wetlands and watercourses. These proposed open spaces are not meaningful open space and may present a liability to the city.



Proposed open space

These include:

- The steep slope above Mill Street, with commercial and high density residential development perched directly above and overlooking the steep slope. With the development overlooking the hillside, there is little recreational opportunity (there is no public desire for a hiking trail next to intensive development). The proximity to intensely developed areas suggested portions of this open space will be impacted by construction activities, future dying trees due to impacted root systems, and invasive plant species. Litter from the development is likely to blow down the steep hill where it will be highly visible from Mill Street (the City’s first designated Scenic Road) and where it will be left as a City problem to address. Shelton’s Anti-Litter Committee has noted problems with landscaping crews at commercial establishments using leaf blowers to blow litter off of parking and landscaped areas down into the nearest steep drop off. Note that the hillside

could have value as open space if the development were pushed back away from the top of the slope hillside to eliminate the issues stated above.

- West border of the site: This open space does provide a very minimal buffer to the Old Kings Highway historic colonial roadbed and vernal pool, but that buffer in insufficient considering the sensitivity of the site location within the Shelton Lakes Greenway. The proposed open space includes many areas that will be directly impacted by site grading, the 60-ft. wide gas pipeline, 110-ft wide CL&P corridor, emergency access road to Buddington Road, and new stormwater drainage features. The applicant would apparently deed these areas, which have little or no public recreational value, to the City to manage. While utility corridors may be appropriate to include when combined with other meaningful open space, graded and disturbed areas generally are not. These latter areas tend to develop chronic problems including encroachments, invasive species, litter, and dying trees that need to be addressed by city staff. Moreover, such areas tend not to be scenic or have any recreational value.

4. Stormwater Pipe across Mill Street. The stormwater discharge pipe that would descend the steep slope to Mill Street and empty into the Far Mill River should be eliminated. This slope overlooks a designated Scenic Road, and installation of the pipe would create an unsightly scar down the steep hillside vulnerable to erosion. And any direct discharge to the river should be avoided.

Comparing Alternatives: "Avoid, Minimize, and Mitigate"

1. Avoidance: From *An Inland Wetland Commissioner's Guide to Site Plan Review:* "An inland wetlands agency is charged with responding to each application by taking action that will avoid, minimize or mitigate wetland impacts. While the analysis of alternatives will vary from project to project, it is expected that increasing rigor will be applied as the value of the subject wetlands or watercourses increases. In certain cases, the significance of the resource may dictate that impact avoidance is the only alternative acceptable to the agency."

In its planning documents, the City of Shelton has identified the western portion of the site as high value due to the desired linkage of the water-based greenways identified as the Far Mill River Greenway and the Shelton Lakes Greenway. In its comments and presentation to the Planning and Zoning Commission, the Conservation Commission identified the north-south ridgeline as a "do not touch" line and asked the Planning and Zoning Commission to deny development west of that line, where negative impacts

would be high. The wetlands and watercourses on the west side of this line are those of the highest value. Development in the area labeled “High Impact” on the image below should be avoided (this image was used in a Powerpoint presentation to the Planning and Zoning Commission). Impacts to the stream flowing towards Bridgeport Avenue and Wells Hollow Brook, although important, are of lesser concern than the high-value wetlands and watercourses west of the ridgeline. The project could be scaled back and pulled from the sensitive “High Impact” areas.



2. Minimize. The applicant proposes the installation of stormwater infiltration galleries to reduce direct runoff. This is an appropriate concept for the site. Infiltration galleries can reduce water temperatures and some pollutants.

However, while such infiltration galleries are an improvement over direct discharges, they do not match the efficacy of an intact forest for improving water quality. The galleries will not remove the added salts, nitrogen and phosphorus that are likely with any new development. And they can be sized for specific types of storms but not every type of rainfall event.

Engineered stormwater quality products must also be carefully designed, installed, and maintained properly, or they will not work as advertised. For example, infiltration galleries must be installed on a sufficient depth of well-drained sediment, not fill that has been compacted or areas of shallow bedrock.

3. Mitigate. Site plans depict a “Wetland Mitigation Basin” near Buddington Road, into which stormwater is discharged. This basin may improve water quality of the discharge into the vernal pool complex. The basin would not be necessary, however, if the project were scaled back and the discharge eliminated.

If the area west of the ridgeline were preserved as meaningful open space, allowing for full protection of the highest priority wetlands and watercourses, proposed Paugussett hiking trail, and viewshed above the existing Old Kings Highway Open Space and Mill Street Scenic Road, that preserved land could serve to mitigate the significant new stormwater point discharges generated east of the ridge towards Bridgeport Avenue.

Prudent and Feasible Alternatives



When there is a public hearing, a critical part of the wetland review process is the determination by the Board that there is no “feasible and prudent” alternative that allows the applicant to achieve their basic development goals with less impact to wetlands and watercourses. If there is a feasible and prudent alternative, then the Board cannot legally issue a permit. The development goal of the applicant must be stated broadly, not in terms of number of units desired or to maximize economic return. A project can be significantly scaled back as a reasonable and prudent alternative so long as it remains economically feasible.

For Shelter Ridge, the development goal is to created a mixed use development using the PDD mechanism (rather than using the underlying light industrial zone). The PDD regulations do allow for much greater flexibility than standard zoning and are therefore a useful tool for this sensitive site if used wisely. A scaled back PDD alternative is clearly physically feasible. Would it be “prudent” (economically feasible)? Since the scaled back alternative would be located closer to Bridgeport Avenue and have less need of

new access roads to climb to the top of the ridge, it would seem to be economically feasible. It can therefore be argued that the scaled back alternative concept requested by the Conservation Commission shown in the image below is both feasible and prudent in light of the documented sensitivity of the western portion of the site.

Suitability of the Activity to the Area for Which it is Proposed

Section 10.2f of Shelton's wetland regulations lists the "suitability of the activity to the area for which it is proposed" as one of the criteria for determining whether a proposed impact to Shelton's wetlands and watercourses will be allowed. The regulation goes on to say: "This requires a balancing of the need for the economic growth of the city and the use of its land, with the need to protect its environment and ecology for the people of the city and the benefit of generations yet unborn, taking into account whether the public benefit of the proposed activity justifies any possible degradation to the regulated area."

The Shelter Ridge site is located at the junction of the Bridgeport Avenue economic development corridor and the well-documented Far Mill River/Shelton Lakes Greenway corridors. The ridgeline that crosses the site presents a common sense division between these two contrasting land uses, as explained earlier. The west side of the ridge along Mill Street, Old Kings Highway, and Buddington Road is not well-suited for the economic development activity proposed, while the east side along Bridgeport Avenue is.

Potential Impact to City Property and Paugussett Trail

Section 10.2e of Shelton's wetland regulations identifies evaluation criteria relative to downstream property owners, including the "the destruction of the economic, esthetic, recreational, and other public and private uses and values of the wetlands and watercourses to the community." Section 10.3g lists "the changes in the suitability of the area for recreational and aesthetic enjoyment." And Section 10.3m lists, "the existing and potential use of the area for passive recreation purposes."

The City of Shelton owns the 17-acre "Old Kings Highway Open Space" as well as a right-of-way for the historic and scenic Old Kings Highway colonial roadbed. Both are adjacent to the Shelton Ridge property. The vernal pool complex referenced earlier drains into an unnamed stream referred to as Old Kings Highway Brook in this report. That brook crosses the old colonial roadbed and then flows through the city open space property, dropping down a hillside in a scenic series of cascades. The open space was

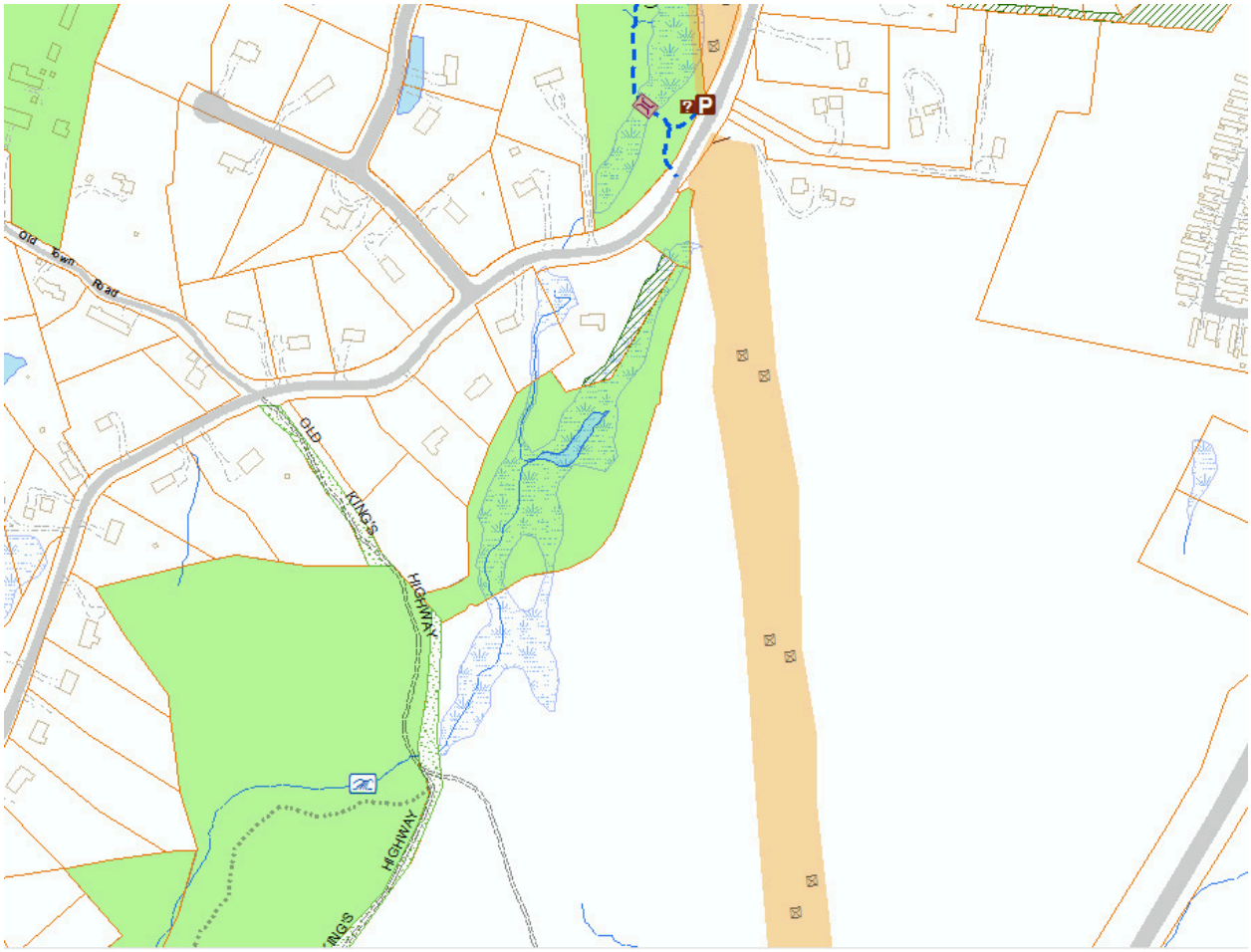
purchased for its scenic features and was meant to be a destination point for the future Paugussett Trail.

Sections of the proposed Shelter Ridge development located west of the ridge would overlook the City's scenic road, open space, and brook, and also drain into it. The stormwater discharges may have significant impacts to the brook and litter is likely to become a problem. The value of the Old Kings Highway Open Space to the public was due in large part to the future routing of the Paugussett Trail to this scenic location. The proposed buildings west of the ridgeline would severely reduce the scenic nature of the City's investment and preclude the extension of the Paugussett Trail through the property.

The Paugussett Trail was meant to also be routed above Mill Street near the existing stone wall that runs along the top of the steep slope. The proposed development would create an apartment tower on top of that wall and leave no room for a scenic trail.



Old Kings Highway. Open Space on left, Shelter Ridge site on right.



Map showing the existing Paugussett terminus, vernal pool complex and “Old Kings Highway Brook”, falls, and Old Kings Highway Open Space.

As stated previously, a feasible and prudent alternative would be to scale back the project and pull it away from the ridge that separates the Bridgeport Avenue from the Old Kings Highway/Mill Street/Buddington Road areas. This would eliminate any impacts to the City’s Old Kings Highway Open Space.



Stone wall near top of steep slope above Mill Street. Plans were to route the Paugussett Trail just below this wall. Site plans show extensive construction on top of the stone wall, resulting in a piped discharge down the hill, across Mill Street, and directly into the Far Mill River.

Recommendations

In order to be consistent with various Shelton planning documents and Inland Wetland regulations, a new site plan should be drafted that respects the public value of Shelton's greenway program and natural resources and which:

1. Significantly reduces the overall footprint of the development;
2. Is focused along the Bridgeport Avenue economic corridor with no development on the west side of the ridgetop along Mill Street, Old Kings Highway, or Buddington Road; and
3. Eliminates discharges to the west side of the ridgetop, including all discharges to the vernal pool complex and "Old Kings Highway Brook" as well as all direct discharges into the Far Mill River.