20

Review and Update of the Silvicultural Management Plan

For the Outlet Bay Sewer District

I. Background

In 2002, the Outlet Bay Sewer District (OBSD) adopted a silvicultural management plan to guide management of the vegetation on the 120-acre parcel owned by the district. That plan identified a number of goals and objectives for the property and described activities that could be taken to help achieve them. As described in that document, the intent was to periodically review the management plan and monitor the vegetation to determine if modifications should be made. The following report documents a review that was conducted of that plan and of the vegetation on the site.

In the fall of December of 2016, the OBSD contacted me to determine if I would conduct the review. Because I wrote the original plan I am very knowledgeable of its contents. However, since it has been about 15 years, I did re-read the plan. In addition, I conducted a fairly comprehensive field review on November 11, 2016. I focused my field review on the condition of the vegetation in the spray field and immediate vicinity.

II. Findings

In reviewing the original management plan and evaluating the current condition of the vegetation, I conclude that most of that original plan is still very relevant and with three exceptions, I would not recommend any updates. The updates are as follows:

1) Sometime during the next 3 years, cut trees from the irrigation area that occur near sprinkler riser heads and that are beginning to impact the spray pattern.

The irrigation area is composed of numerous linear clearings (with only grass/shrub vegetation) that go through a forested stand of trees where the sprinkler risers are spaced out along those clearings. However, since those clearings were created and the sprinkler pipes buried in those clearings, the trees that occur immediately adjacent to those areas have grown larger in size and will begin to negatively affect the spray pattern of the effluent. In addition, because tree branches will naturally grow towards

openings to capture the sunlight, the trees immediately adjacent to those irrigation lines are beginning to expand their tree crowns into those previously cleared areas. This situation will prevent the sprayed effluent from being applied in an even, dispersed manner. Essentially, sprayed effluent will hit nearby tree limbs and tree boles to the degree that a fairly even spray pattern will no longer be achieved.

During my field visit in November of 2016, I noticed that tree crowns near some of the sprinkler heads are getting close enough to affect the spray and this will continue to become more pronounced in the coming years. Therefore, in the next few years I recommend that the OBSD begin the process of removing the trees near the sprinkler heads. IF no actions are taken to address this issue, I believe the spray pattern will continue to worsen as the trees continue to grow and prevent the spray from being evenly applied.

2) Conduct additional reforestation efforts in the old sewer lagoon/spray field area that now occurs in a portion of the new irrigation area.

When I wrote the original management plan I recommended that the area occupied by the old sewer lagoon and irrigation area be planted with trees because at the time it was dominated by grass and had few, if any, trees growing in that area. From what I understand after speaking with Fritz Broschet (manager) in November of 2016, a number of years ago the OBSD did plant some trees in this area but the effort wasn't very successful because most of the planted trees died.

There are a number of reasons that reforesting this site is challenging. First, as a result of the original lagoon construction and subsequent removal/restoration activities in this area, the soils have been heavily impacted. Rather than having a fertile, organic layer on top of the soil that is conducive to the survival of tree seedlings, the soil layers have been mixed and instead the sandy, gravelly subsoil layer is now on the surface in many areas. In addition, the bentonite clay that was used to line the old sewer lagoons was spread out in parts of this area. Therefore, some areas have clay that is preventing the water from draining properly, while other areas are dominated by sandy soil textures with poor moisture and nutrient holding and exchange capacity. In addition, the dense and fairly tall grasses (including canary reed grass in some location) in that area and the frosty nature of the microclimate in that open area can create challenges to tree survival for many tree species.

In the original management plan that I wrote, I recognized that this area would be challenging to reforest because of the heavily impacted soil so I recommended that a layer of topsoil be brought in to the site and placed over this area to help rehabilitate the soil before planting western larch and white pine seedlings. However, because the cost of importing that topsoil over the 7-9 acre area could be prohibitively expensive, I would recommend another option.

Lodgepole pine is a tree species that can tolerate poorly drained soils as well as coarse soils. In addition, it is fairly tolerant of frost pockets. While conducting my field review of the site I noted a few scattered lodgepole pine seedings had naturally regenerated in the area and seemed to be growing fairly well. Therefore, I would recommend for this specific area, that the OBSD plant this species. In addition, rather than using "bareroot" seedlings, I would recommend "container" seedlings (aka plug seedlings) be used. Not only are container seedlings more forgiving during the actual tree handling and planting process, because container seedlings come from the nursery with soil around their roots, they tend to easier to plan than bareroot seedlings, and I believe on this site one would have greater survival. Also, as I noted in the prior management plan, it is very important on this site with the heavy grass presence that the area around the seedling be "scalped" of grass sod.

If the OBSD is interested in pursuing this planting activity, I would be happy to put the district in touch with a reforestation specialist that could help them to order the appropriate tree seedlings and locate a contractor who could plant the trees.

3) Within the next 5-8 years, thin-out the dense trees that are growing in most of the area between the irrigation lines.

What I recommend is that the trees be thinned-out to an approximate spacing of 10-14' between the leave trees. By spacing the trees out, I believe two things would be accomplished. First, the effluent would not be "blocked" by the tree foliage as it is sprayed out, at least to the degree that it is now. The second benefit would be to allow the residual trees to expand in size without undergoing the heavy competition with neighboring trees that is occurring now. This would avoid trees dying from competitive causes (e.g. tree insects or diseases), and would avoid the situation where trees become tall and "spindly", and eventually blow over in wind or snowstorms.

As described in the original management plan, certain species of trees should be favored over others when doing the thinning activity and the healthiest trees should be favored for retention. Before doing this thinning activity, I would recommend that the OBSD meet with a forester to develop a specific plan for this activity. As noted in the 2001 management plan, it is very important to keep mechanized equipment from compacting the soils in the irrigation area.

If the OBSD or Idaho DEQ staff has any questions regarding this assessment or the original Silvicultural Management Plan, please do not hesitate to contact me.

David F. Cobb Date

Silviculturist