

MEMORANDUM

To: Henry A. Koch, Director
Solid Waste Department
County of La Crosse, Wisconsin

From: Steve Apfelbaum, John Larson
Applied Ecological Services

Date: June 3, 2010

RE: Preliminary Review, Conceptual Ecological Values and Future Vision for the
350-acre La Crosse Country Landfill and Potential Adjacent Properties

Thank you so much for the informative tour of your facility. Needless to say, we have been inspired by the diverse landscape of the closed landfill, forested ridges, drainage-ways and the nearby La Crosse River. We are also impressed that there are significant potential conservation values that could be realized for the citizens of La Crosse County with very modest investments associated with the eventual closure and beneficial re-use of the landfill itself and the conservation lands.

We appreciate the following about this extraordinary site:

1. The land is stunningly beautiful and has extraordinary character associated with its diversity – from the high quality forests on the ridge tops, primarily dominated by native plant communities, to the vistas over the larger landscape from the site and from nearby roads.
2. The property is a conservation and open space *hub*, and will increase in conservation value as it is closed and reclaimed/restored to native plant communities. We also see it as a *connector* that, once restored, could become a vital link in the County's open space preservation and park and recreation programs. By "hub", we mean the property could very well serve as a large conservation center from which radiating "spokes" link the forested ridgetops, roadways with restored native landscapes, the La Crosse River corridor, and perhaps restored open spaces and habitats in adjacent private properties such as the proposed International business park and/or the agricultural lands along the northeast property line. By linking conservation areas, the property has potential to significantly increase in conservation and recreational values.
3. Whether it is viewed as hub or connector, the property can certainly be viewed as a conservation *seed*, able to inspire and leverage the growth of relationships with adjacent private properties, corporate lands and other public lands, thus increasing

the publicly available open space and protected conservation areas in La Crosse County.

4. We acknowledge that landfills have an unfortunate stigma as nearly worthless “dumps” in the U.S., but this is not the case in most other countries where the open space become vital to the parks and recreation systems. In many areas, closed, restored landfills are providing some of the most valuable wildlife habitat within urban areas and even in agricultural landscapes. The value of such properties for these purposes has dramatically increased in recent years as such vital habitats decline due to increasing urbanization and land development. For this reason, the La Cross landfill should be considered a valued future public trust investment. It should be guarded with unrelenting tenacity to ensure it is not bartered or sold for development without significant recompense. We believe that any adjacent proposed development that even thinks about asking the city for some of the land should come in with overcompensating offers to provide comparable land of high aesthetic values, adjacency and connectivity with other public conservation areas and passive recreation lands. We have seen in other areas of the county that, without careful and visionary foresight, deals can be cut and future long-term public recreation and conservation values can be easily traded away without fair compensation. Fair compensation for long-term value is not the equivalent of trading land for jobs or an increased tax base.

Visioning the Future

Nearly 100 Years of Commitment

We understand that La Cross County is making plans in 2010-2011 to benefit its citizens by operating the landfill for the next 20 years. Assuming certain decisions, we understand that expansion of an additional landfill cell can result in an additional expansion of 20-30 years. Add to that a required 40 years of long-term care and it's clear that the County vision must look nearly 100 years into the future.

During this same period, it is likely that urban growth and industrial development adjacent to the landfill property will consume surrounding land. Because of this very real likelihood, planning now must be visionary to re-couple ecosystems and to assure the protection, restoration and maintenance of the land for habitat and recreational uses both within and adjacent to the landfill. Making this commitment now is the only way to ensure these lands remain vitally accessible and become part of the fabric of the community as time goes on.

Start Today, Build Upon Strengths

Planning for habitat restoration can begin quickly, progressively and sequentially. Building upon the strengths of the site, restoration can start at the perimeter of the property and move inward on land that is not planned for expansion of cells. Eventually restoration can progress through each closed cell until the whole area is restored.

Reasonably good quality natural areas such as the forested slopes and ridges, drainage-ways and open, grassed lands can be converted to native prairie, savanna, forests, and wetland ecosystem types that represent an example of the strengths of the site. These areas, largely occurring around the north, northeast and west perimeters of the site, can easily be restored to improved ecological health. And they can be opened promptly for public passive recreational uses such as hiking and bird watching.

Along the south border is a closed area that contains berms of stockpiled topsoil and other materials. The removal of these stockpiles (and perhaps their sale which could generate revenues to support conservation initiatives and restoration closure strategies), would result in a larger area of the perimeter being available for restoration to colorful native prairie wildflowers and grasslands. Since this area is adjacent to the International business park and future development zones to the south and northeast, this restoration would serve as an example of natural landscaping that can be emulated in these off-site areas.

This would be the first perimeter ring, and coincidentally, this would also be the public face on the project. Working inward, the second ring where restoration could occur could be areas with stockpiles of topsoil, subsoils and sand. These stockpiles could be consolidated into singular areas on the top of several landfill cells to surcharge the cells and create more airspace and landfill cell life. These stockpiles could also be used to create sculpted landforms designed to emulate in character the shapes of the mounds and ridge tops so that the final form of the closed landfill fits the aesthetic character of the natural landforms.

A third ring can be the final closure of areas with long term monitoring wells, operating landfill cells, access roads and facility buildings and other infrastructure (e.g. gas flares, recycling center or composting operation, household hazardous materials facility, etc.). Once these are restored, with the exception of some strategic access restrictions (e.g., such as to injection wells, flare locations, leachate collection wells, etc.) the entire site can become available for public access, passive nature appreciation and recreation. Perhaps some areas can even become more formalized for an educational center or nature center, for example, and perhaps even for active recreational uses.

Creating Off-Site “Greenfingers”

Simultaneously, as you continue the inward progression of restoration and conservation toward the center of the landfill property, you can also work outward with neighbors to create “greenfingers” that extend the conservation lands outward crossing the landscape through abutting parcels.

Partnering with adjacent private landowners could help them protect and restore abutting back lots and even small swatches of existing open space (such as rights of ways, drainage-ways, stormwater management areas, utility easements, etc.). A variety of incentives have been developed for this kind of activity, including tax incentives,

development density bonuses and a range of private/public partnerships, for example. The landfill could also work with its neighbors to deploy alternative stormwater management designs (e.g., creating habitat restorations such as wetlands instead of expensive stormwater detention basins), and perhaps by creating their stormwater management needs on landfill property in exchange for tradeoffs of more open greenspace in their developments. These ideas would represent but a few of the creative ways the valuable landfill property can be leveraged to expand the net conservation acreage over time. Greenfingers can radiate like spokes from the hub of a bicycle wheel, with the La Crosse landfill as the conservation hub that could inspire neighbors to participate in a conservation vision for the land.

A New Educational Nature Center?

Once closed, landfills are increasingly becoming important regional nature centers and outdoor educational facilities. In this location, the story of the history of the community lies beneath the ground in the landfill wastes. The story of the landfill operation, closure, restoration and beneficial reuse – the stories of how nature comes back – could be told within the walls of a new Nature Center. These are invigorating stories that the community will appreciate and celebrate.

If such a facility has a modern conferencing center, it can become a profit center available for lease. The miles of trails for passive wildlife viewing, walking, jogging or biking can make such settings highly esteemed destinations.

One project we have been involved with has established a nature center, bird banding station, a raptor and wildlife rehabilitation center in association with a landfill closure. As a result the landfill is now a community center of culture, particularly conservation and science and is inspiring a new generation of connections between young persons and wildlife, through learning hands-on about conservation.

One of our projects has a new Audubon nature center adjacent to the landfill. This unique partnership also includes a greenhouse (heated by landfill gas and electrified by landfill gas powered turbine) where fish and hydroponic vegetables are produced and sold for public food.

Next Steps - Moving Forward

The following would be the typical steps to begin to accomplish some of the ideas expressed above. These tasks would typically be conducted in Year 1 of this long-term process:

1. Conduct a natural resource inventory
2. Prepare a closure and restoration plan with a conservation vision and linked recreational plan, with a phased timetable
3. Involve the public in hands-on design of the park and conservation outcomes.
4. Prepare budgets

5. Conduct fundraising and public education activities
6. Create relationships with neighbors to expand the Greenfingers concept and conservation outcomes.
7. Create several public conservation design planning sessions to begin the conversation about Greenfingers and linkages.
8. Create an overall park master plan linked to the conservation vision for the land.

The following tasks are typically conducted in Years 2-10:

1. Create a strategic plan for partnering and fundraising to support inducement and incentives.
2. Design and implement demonstration projects with neighbors such as native plantings in idle space in adjacent business parks.
3. Design and implement shared stormwater infrastructure and conservation development designs with willing adjacent landowners to demonstrate cost savings of conservation development and to facilitate partnering around such items as shared stormwater management areas.
4. Begin and complete the cleanup and restoration of the outer perimeter lands.
5. Begin cleanup and restoration of the next inside perimeter ring.
6. Establish an on-site tree nursery for producing stock for plantings, including hiring locals to collect local native tree seeds for propagation through a partnership with local native plant nurseries.
7. Stake-out and provide on-site signage for future improvements such as trails, gathering locations, observation points, etc., to insure best placement and future implementation.
8. Create and disseminate communication collateral to inform media, community leaders and the public of the ongoing site efforts.
9. Establish a right-sized fund reserve dedicated to implementing the vision.

The following tasks are typically undertaken in Years 10-30:

1. Continually promote the landfill ecological restoration by establishing a program or event, and/or coordinating with an existing program or event, for the purpose of communicating the restoration vision for the landfill property.
2. Every 10 years revisit the vision to re-align implementation with the established vision.
3. Ensure a dedicated reserve fund is sufficient to carry out maintenance and capital projects.
4. Revisit opportunities to include ecological restoration of the landfill cap with restored buffer areas.

Miscellaneous Ideas To Consider

1. Restore landscapes for beauty, stormwater management benefits and wildlife habitat

Many areas in and around the landfill are currently infested with invasive weedy plants that present a significant need for high-cost maintenance. Large areas of parsnips, stinging nettles, European brome grass and Tartarian honeysuckle could all be converted to native grassland, wetland, savanna and forests, as could fencerows with garlic mustard and fencerows with deteriorating planted pine stands. Once restored, the maintenance needs would be minimized and costs would be reduced.

2. Disperse the management of stormwater in many small, scattered wetlands rather than large detention ponds

In nature, stormwater is “managed” (infiltrated and/or stored) close to where precipitation hits the ground. In contrast, man’s tendency is to concentrate it in pipes and ditches, and store it in steep-sloped, often unstable detention ponds which adds cost and creates risks and safety issues. We should strive to design stormwater management systems to emulate smaller, decentralized restored landscape features that can serve as wildlife habitat and park features.

3. Re-contour the landscape to create stable, natural looking grades

Frequently in earth-moving projects, stockpiles and berms have blocky angular looking features rather than the beauty and natural flow and form of the land found in a natural landscape. In conducting the final closure, we should work toward creating the gentle, stable landforms found in nature.

4. On the re-contoured final surface of the landfill, create defined drainage-way features that add to the aesthetic charm of the landforms

Most landfills have engineered drainage features that don’t make the land easily reusable or aesthetically appreciated when re-purposed for parks and habitat features. We could consider re-grading natural forms for drainage features over the landform slopes and plant these with pattern-distinguishing native trees and shrubs such as American hazelnut and bur oak that would typically be found growing on hills in the protection of the draws and drainageways.

10. Create secluded and quiet places with landforms and contours

We could design very beautiful locations that are quiet (e.g., can’t hear highway noise from I-90) and these could be planted to augment the calm and peace one feels (and that wildlife experience) in such settings.

11. Create safe overlooks, promontories and observation areas on ridge tops, linked with trails and walking paths

The promontories were important, spell-binding locations during our recent tour and these can become more important if they were to be intentionally integrated for the future.

12. Restore bedrock features and dry prairies in sand overburden materials

The closure has the opportunity to include some very unique habitat types including dry prairie and bedrock prairie plantings. These habitats are increasingly rare habitat types that can be easily restored on this landfill upon closure.

13. Restore tree cover for forest and savanna restoration by direct seeding rather than planting individual trees

Direct seeding creates thickets of dense woody vegetation that deters browsing deer and their damaging effects. This approach is far less expensive than planting thousands of trees and having to protect each in tree tubes. It also ensures the quick development of dense masses of trees.

14. “Re-grow” healthy soils on the site by constructing a soil mixing and creation staging area.

The landfill has a range of materials that are not being handled as efficiently as they could if an end use and streamlining process for fabrication (chipping, mixing, etc) could be made available. A full range of organic materials can be staged adjacent to each other, and appropriate mixes can be blended and used for re-building soils on the final landforms of the landfill during closure and restoration. Doing this will beneficially re-use some materials that would otherwise take up airspace, and also greatly increases the success of re-vegetation on the final landforms.

15. Design the site for public access in the near future and sequentially open newly restored areas

Public acceptance of, and support for, the conservation design of the landfill property is best achieved by giving the public access to some strategic areas early on in time. The value of this outcome can not be overstated and it should not be underappreciated.