MINUTES
KELLOGG GOOD
NEIGHBOR COMMITTEE
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REGULAR MEETING
NOVEMBER 10, 2014
WES Treatment Plant

Vice-chair Power called the meeting of the Kellogg Good Neighbor Committee to order at 5:35 p.m. in the WES Treatment Plant Conference Room.

Committee Members Present: Gamba, Power, Hankerson, Klein, Geist, and Bird (via Skype)

Staff Present: Mitch Nieman, City Liaison

Guests Present: Michelle Burkhart, PE, CH2MHill
Milo Denham, Island Station NDA Secretary

1. **Approval of Minutes**

   Vice-chair Power made a motion to approve October minutes provided minute meeting date was changed from September to October.

   Committee Member Hankerson seconded.

   Motion passed 5-0. Committee Member Bird voted via Skype.

2. **Informational Items**

   Next RiverHealth Advisory Board Meeting to be held on November 24.

   Request was made for additional funding from the City Council for the landscape project and to have WES manage the landscape project.

3. **Communications Plan for Landscape Project**

   FAQs approved by the communications sub-committee (see Attached)

   Communication sub-committee reported about:

FAQ distribution-

- Kellogg Creek WPCP display
- City of Milwaukie kiosk outside of City Hall
- Electronic and print copies for NDAs
- Post on COM and RiverHealth websites

Signage-

- WES representatives to coordinate design and development of rendered art and exterior sign. Sign to be installed in early December.

- WES & KGNC to make decisions about how much signage, WES to fund fabrication of signs, locations and permits through the City.

- Use co-branding and joint messaging as agreeable and possible, e.g. "partnership between City of Milwaukie and Clackamas County Water Environment Services"

- Communications sub-committee to approve design of signage and route to KGNC for final approval

- City to develop two (2) press releases:
  1. Announcement of Landscaping Project bid award
  2. Landscaping Project launch

4. **ODOR STUDY**

Michelle Burkhart of CH2MHill presented their Odor Study.
(Key slides from Michelle's presentation are included at the end of these minutes, with map graphs showing dispersion of odors before and after different proposed odor reduction projects)

First Michelle gave an overview of her report

a) Background and objectives
b) Sampling results
c) CH2MHill modeling results (map charts)
d) Findings and observations

Michelle walked the group through the basics of odors and the testing

Contributors to offsite odor impacts are:
a) Odor Sources
   i) Frequency
   ii) Magnitude (D/T = Dilution to Threshold)
      (1) Measure of the quantity of odor
      (2) Not a measure of the offensiveness of an odor

b) Site Specific Conditions
   i) Airflow (production) rates
   ii) Meteorological conditions
   iii) Site topography
   iv) Location of receptors
   v) Odor characteristics

Michelle walked the group through the map graphs which showed how the odors range out from the plant, and where they concentrate (see attached examples of maps at end of the minutes).

The end result of the CH2MHill modeling and map graphs provided the following conclusions:

a) Dewatering project will not dramatically change odor emissions
b) Odor control of Scum Pit provides little odor control
c) Biofilter improvements provide only a localized benefit
d) Secondary Process offers the biggest potential for odor reduction
   i) Odors from the Aeration Basins are most objectionable and we should focus on this area first
   ii) Secondary Clarifier odors are not as objectionable (still stink) and should be the secondary area of focus

Finally, Michelle reviewed a "cost/benefit" graph that shows the following.

a) Odor control projects should focus on the Aeration Basins
   i) This is the source of the most offensive of the odors coming from the plant
   ii) After the first odor control project is complete, do another study to review where in the plant the next project should focus
      (1) Focus next study on secondary clarifiers
b) Continue to rely on updating operational strategies to minimize odors from operational and maintenance sources

KEY POINT: Most of the potential odor reduction from the aeration basins occurs with just covering the inlet end.

Conclusion: Do project D4, Cover and treat just inlet portion of Aeration Basins, and then reassess.

ADJOURNMENT

Vice-chair Power moved to adjourn the meeting

Respectfully submitted,

Mitch Nieman and Milo Denham

Exhibit 1 — FAQs - Approved by communications subcommittee

Kellogg Good Neighbor Committee
Frequently Asked Questions

What is the Kellogg Good Neighbor Committee and Good Neighbor Fund?

The **Kellogg Good Neighbor Committee** was created by the City of Milwaukie's city council resolution on February 5, 2013. The committee's purpose is to recommend to the Milwaukie city council how the "Good Neighbor Fund" should be prioritized and spent.

This Good Neighbor Fund was established through the Intergovernmental Agreement dated July 1, 2012 between the City of Milwaukie and Clackamas County Service District # 1 for the provision of wastewater treatment services.

This fund is to be used to help mitigate the impact that the Kellogg Creek Water Pollution Control Plant (WPCP) has on the surrounding neighborhoods. The district deposits $1.00 per month for each of the city's connections (*approximately $11,000*). These funds are to be used for Good Neighbor-related projects at and around the Kellogg Creek WPCP. The district also contributed $1 million as "seed" funding to the Good Neighbor Fund for odor control and reduction projects at the Kellogg Creek WPCP.

What are the current priorities of the Kellogg Good Neighbor Committee?

The Kellogg Good Neighbor Committee's current priorities include:

- **Odor Control and Reduction**
- **Landscaping Project** – screening and air flow control (*approximately $200k + $40k in design fees)*
- **Path Lighting**

What is the status of the Landscaping Project?

In June 2014, more than 30 residents attended an open house event to review and provide input on the landscaping project, which calls for species of trees and shrubs that will provide visual screening of the Kellogg Creek WPCP, control and reduce odor, and thrive in the environment.

In early 2015, approximately 180 trees and literally thousands of new shrubs will be planted in and around Kellogg Creek WPCP.

To make way for the new plantings, approximately 60 trees, the vast majority of which are in poor health or dying, will be removed, and many of the shrubs that line the McLoughlin Boulevard-facing fence will be pulled. While the new plants take root and

grow, a fabric lining will be installed on the fence to block the newly exposed views of the plant.

What is the wastewater agreement between the City of Milwaukie and Clackamas County Service District #1?

On July 1, 2012, the Clackamas County Board of County Commissioners, governing board for Clackamas County Service District # 1, signed a 25-year wastewater treatment agreement with the City of Milwaukie.

The agreement settles long-standing issues between the city and the district—among its provisions:

- "Good Neighbor" policy to represent the interests of businesses and residents near the Kellogg Creek WPCP
- Ensure district and city customers are paying the same rate for wastewater treatment
- Settles a 7-year land use dispute
- Requires the district to put $1 million towards odor control
- Establishes that new development within Milwaukie will contribute a wastewater treatment system development charge

How is the district spending the $1 million regarding odor control?

The district has used approximately $90,000 of the $1M seed fund to conduct an evaluation of the sources of odors and solicit recommendations for odor control options that will be most effective and cost efficient.

The Kellogg Good Neighbor Committee will review the options and make recommendations to the Milwaukie City council, who may then request that the district pursue various odor control projects at the Kellogg plant.

With the assistance of outside experts, the committee and the district expect to identify a handful of key options for infrastructure upgrades by the end of 2014 that will measurably reduce odor from the Kellogg plant. These will be funded as the district resources allow.

NEW Kellogg Odor Hotline: 503-557-6367

Call the Odor Control Hotline, 503-557-6367, to report odor that you believe may be related to wastewater treatment at the Kellogg Creek WPCP. District staff will promptly investigate concerns.

What phone number should I call in an emergency?

If you have a concern about a sewage spill, flooding, or pollution of any stream or

ground water, you should call **503-742-4567** Monday - Thursday, 7:30 a.m. to 5:30 p.m. For calls after hours that are non-life threatening, please call **503-655-8211**.

About Kellogg Creek Water Pollution Control Plant

The Kellogg Creek WPCP serves much of the North Clackamas area, and is located along the Willamette River in Milwaukie, Oregon.

Location: 11525 SE McLoughlin Blvd., Milwaukie, Oregon
Service area: Unincorporated North Clackamas County, Happy Valley, portions of Damascus and the City of Milwaukie and Johnson City
Population served: 77,800
Start up: August 1974
Design capacity: 10.0 million gallons per day (*dry weather flow*)
Average flow: 8.02 million gallons per day (*dry weather flow*)
Major Processes: Activated sludge, secondary treatment, anaerobic digestion, and ultraviolet disinfection

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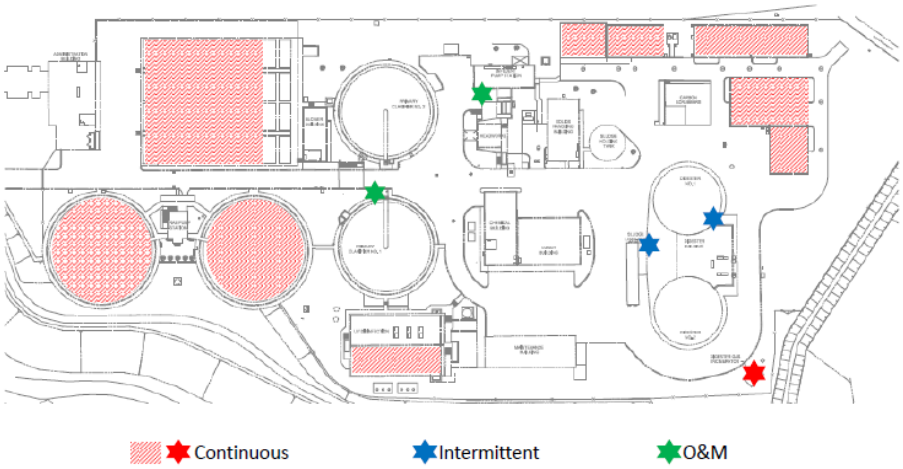
Exhibit 2 — Excerpts from CH2MHill Report - with Michelle Burkhart's Notes

Odor Sources/Challenges



Characterization of Odor Sources

Emission Source	D/T	Source Type
Aeration Basins – aerated section	340	Continuous
Secondary Clarifiers	300*	Continuous
Primary Scum Pit	4,600	O&M
Headworks Truck loadout	760	O&M
Chlorine contact channel	290	Continuous
Digester #1 vacuum valves	2,300	Intermittent
Digester #2 vacuum valves	2,300	Intermittent
Digester gas incinerator flare	30	Continuous
Biofilter surface	280	Continuous

*Assumed value

- Small D/T Score = Less Odor
- Large D/T Score = More Odor
- Does not address offensiveness of the odor

Michelle grouped the projects for controlling odors by their source

Alternative Development

Alternative		Capital Cost, $	NPV, $
A	Sludge loadout interlock	10,000	10,000
C	Enclose liquid biosolids loadout facility and add odor control	1,430,000	1,892,000
F	Dewater biosolids and reduce trucking	4,300,000	(3,925,000)
B	Scum box ventilation improvements	242,000	254,000
D1	Cover and Treat Aeration Basins	2,200,000	2,783,000
D2	Cover and Treat Secondary Clarifiers	3,400,000	3,584,000
D3	Cover and Treat Aeration Basins & Secondary Clarifiers	5,400,000	5,663,000
E	Cover biofilters and add stack to improve dispersion	1,900,000	1,982,000

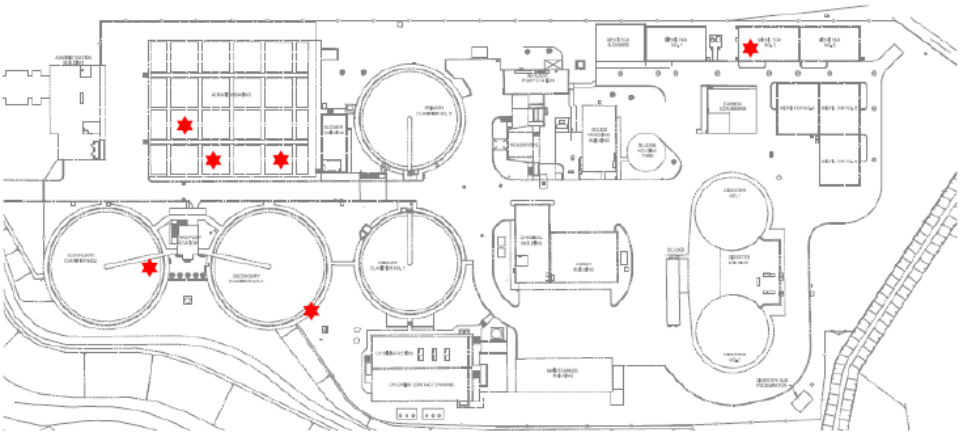
- A, C & F relate to solids loaded and shipped out of facility
- D1, D2 and D3 relate to secondary process
- Note that a new alternative D4 was added to the list of projects during CH2MHill's research
  - Cover and treat just inlet portion of Aeration Basins for approximately $1,400,000

Objective

- Perform additional sampling to get more information and capture changed conditions
  - Odor profile across aeration basin
  - Secondary clarifiers
  - Biofilter media changeout
  - New diffusers in aeration basins
- Understand relative benefit associated with different odor control alternatives
- Prioritize odor control improvements

Sampling that by CH2MHill occurred three weeks ago

Sampling Locations



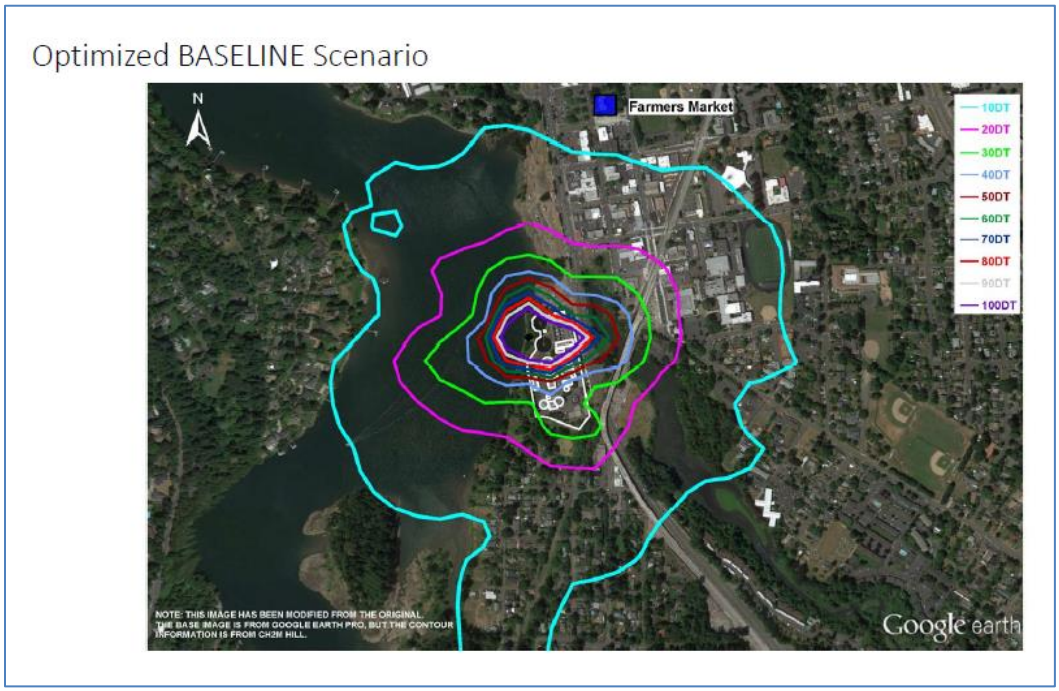
CH2MHill results below are raw values, but have been adjusted in the model to correlate with 2011 test weather (increased 2014 data by 10%)

Sampling Results

Emission Source	Original Sampling (D/T) (2011)	New Sampling (D/T) (2014)	Source Type
Aeration Basin – just downstream of Anoxic zone	ns	1,300	Continuous
Aeration Basins – aerated section	340	290 / 310	Continuous
Secondary Clarifiers	300*	760	Continuous
Secondary Clarifier Launders	ns	330	Continuous
Primary Scum Pit	4,600	ns	O&M
Headworks Truck loadout	760	ns	O&M
Chlorine contact channel	290	ns	Continuous
Digester #1 vacuum valves	2,300	ns	Intermittent
Digester #2 vacuum valves	2,300	ns	Intermittent
Digester gas incinerator flare	30	ns	Continuous
Biofilter surface	280	100**	Continuous

ns = not sampled
*Assumed value
**Reflects biofilter media changeout

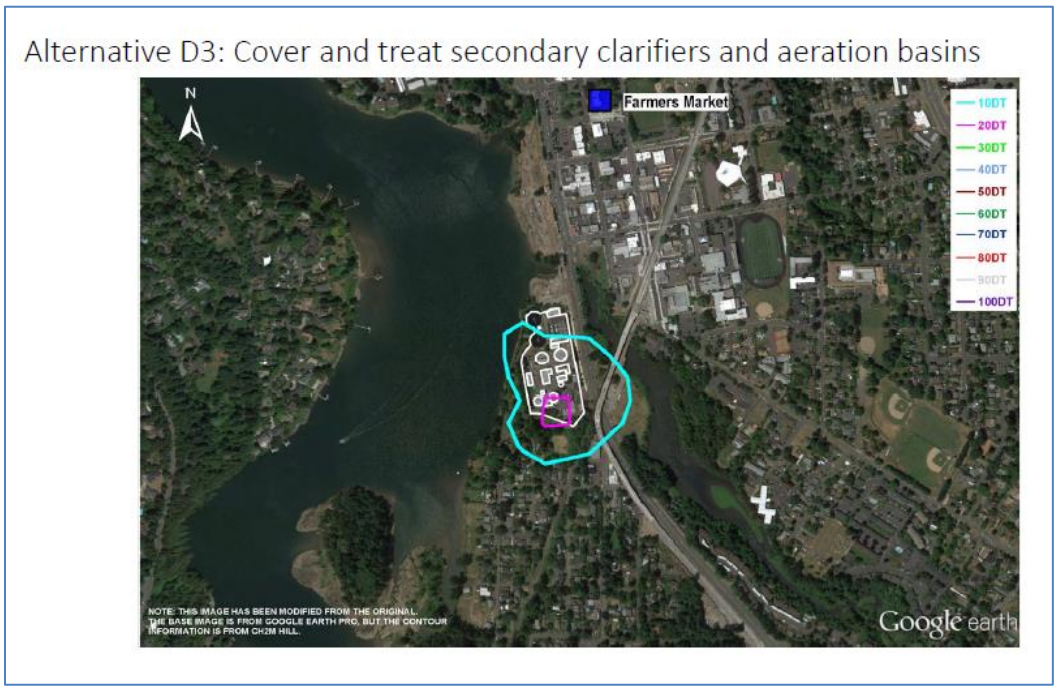
This is the baseline odor dispersion map



If WES covers and treats just the aeration basins, this is the result

If WES covers and treats just the secondary clarifiers, this is the result. While the ‘area’ included within the odor contours is roughly similar, the offensiveness of the odors associated with D2 is expected to be higher.

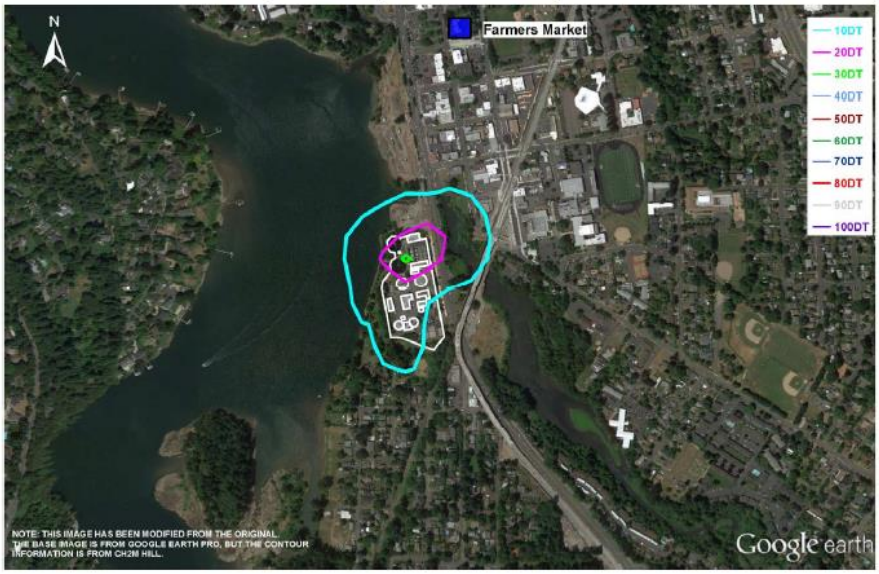
Covering and treating both aeration basins and clarifiers dramatically reduces odors.



Ignoring the secondary clarifiers, if just the inlet end of the aeration basins were covered produces this result, which is not very different from the previous slide.

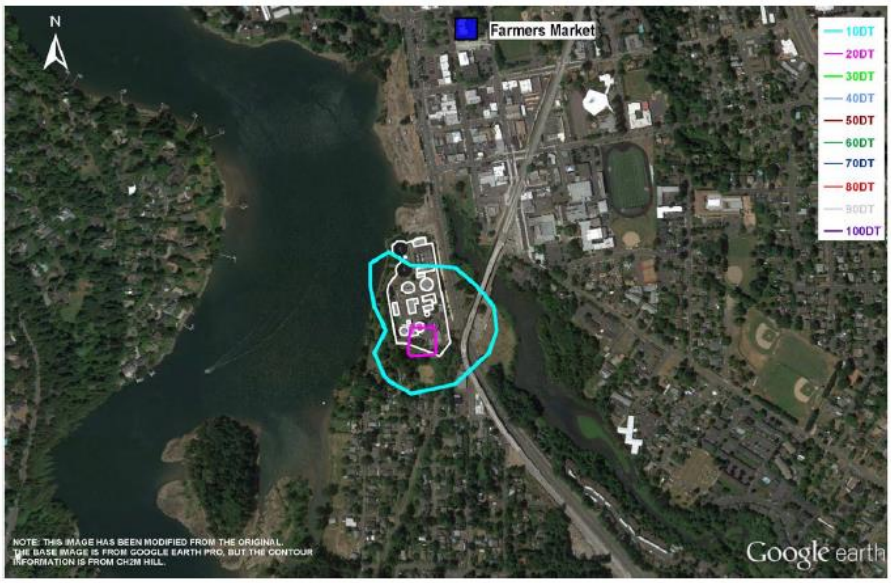
KEY POINT: Most of the potential odor reduction from the aeration basins occurs with just covering the inlet end.

Alternative D4: Cover and treat just inlet portion of ABs (Clarifier Source not shown)

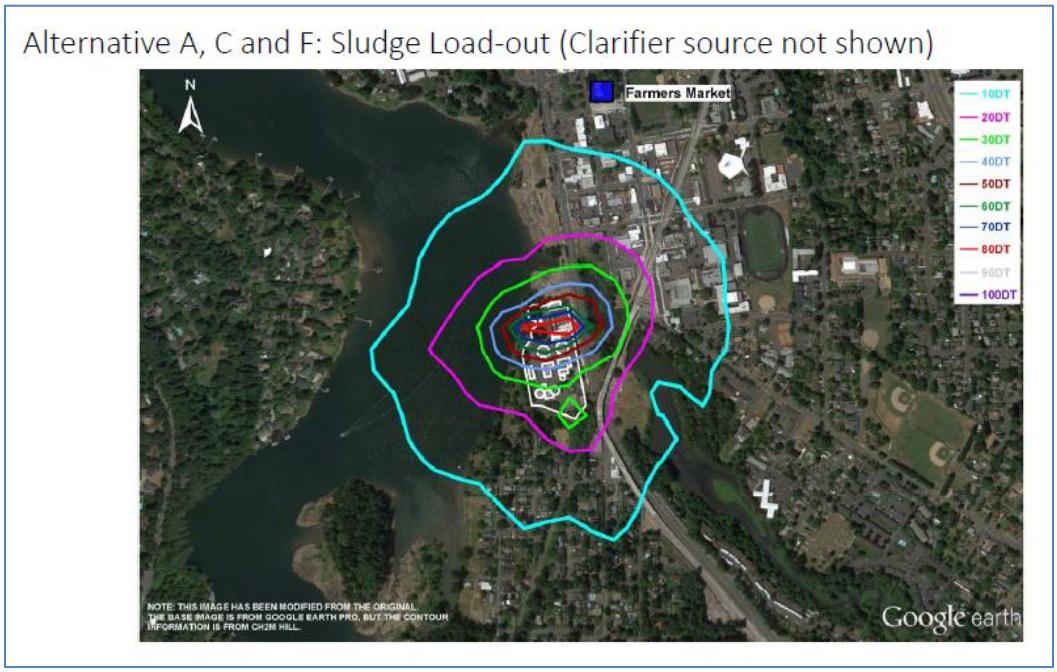


Also covering and treating the secondary clarifiers in addition to the aeration basins does not add much benefit

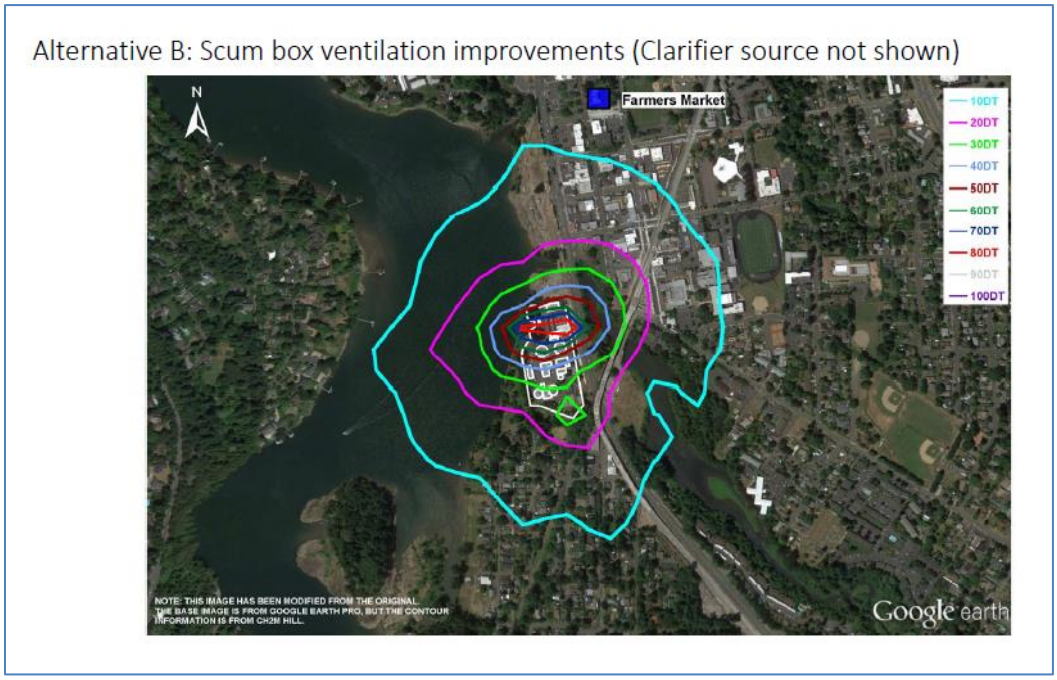
Alternative D3: Cover and treat secondary clarifiers and aeration basins



Projects A, C and F related to the Sludge Load-out only provides marginal containment of odors



Ventilating the scum box provides little containment of odors

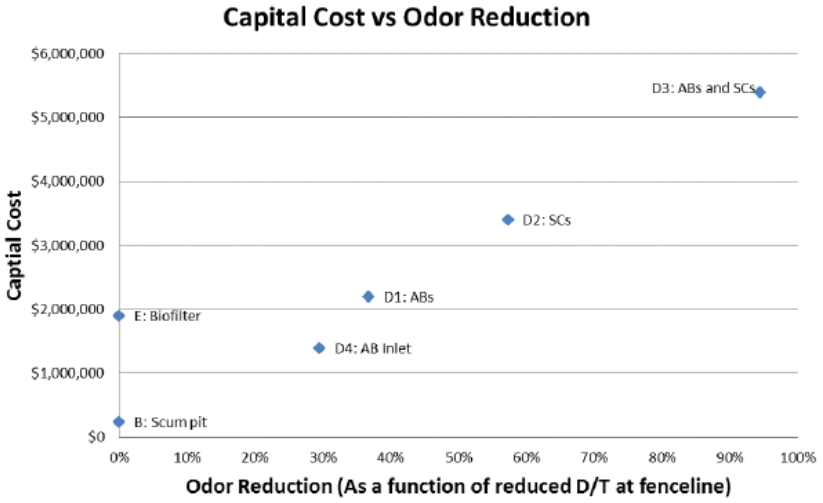


Findings/Observations

- Dewatering project will not dramatically change odor emissions
- Odor control of Scum Pit provides little value
- Biofilter improvements provide localized benefit
- Secondary Process offers the biggest potential for odor reduction
  - Stepwise approach provides value
  - Secondary Clarifier odors are not as objectionable as Aeration Basins

Conclusion: Do project D4, and then reassess

Cost Benefit Presentation



* D4 cost presented above represents order of magnitude; specific value is not vetted. Additional design effort is necessary to develop a number that can be used as the basis for budgeting.

Note - % odor reduction reflects only the quantity of odor, not the offensiveness of odor.

Code	Description	Capital Cost
D4	Cover and treat just the aeration basins inlet	$1,400,000
D1	Cover and treat aeration basins	$2,200,000
D2	Cover and treat secondary clarifiers	$3,400,000
D3	Cover and treat aeration basins & secondary clarifiers (D1+D2)	$5,400,000