



Southern Willamette Valley Groundwater Management Area

Commercial & Industrial
Draft Action Plan
January 26, 2006



What types of Facilities or Activities are included in the Commercial & Industrial “pot”?

- Fertilizers and Fertilization Practices
- Wastewater Treatment
 - Individual Large On-site Systems
 - Public Wastewater Treatment Lagoons
- Land Application of Selected Wastes, Wastewater & Biosolids



Members of the Commercial – Industrial Working Group

- Mike Warner
- Judy Volta
- Dennis Boeger
- Roger Haffner
- Frank Wright
- Gordon Kurtz
- Thomas Mendes
- and others have been asked to assist at times



Fertilizers – Bulk Facilities

- 3 Bulk Fertilizer Facilities in the GWMA
 - 1 in Monroe
 - 2 in Harrisburg
- Bulk fertilizer facilities offer commercial quantities of custom-blended fertilizers, herbicides and pesticides for the agricultural community



Fertilizers – Bulk Facilities

- DEQ has completed assessments of several bulk fertilizers outside of the GWMA.
- Historical releases of nitrate have been documented
- Current management and handling practices have greatly improved the situation

Fertilizer Practices

- It was recognized that individuals, businesses, cities and counties all may use fertilizers from time to time.
- The actual use of a fertilizer is not necessarily a practice that will contribute nitrate to the groundwater.
- Rather, it is the amount, frequency and type of fertilizer, as well as the timing of irrigation, that can cause nitrate to be flushed beyond the root zone.



Fertilizers – Public Sector

- Cities and Counties – generally either conducting minimal fertilizing of green spaces (schools, public lands, etc) using a slow release fertilizer, or are not conducting any fertilizing. (budgetary concerns)
- Slow-release fertilizers are releasing the nutrients at a slower rate throughout the season.

–Plants can then uptake most of the nutrients without wasting some of the fertilizer to leaching. As slow-release fertilizers are more convenient, less frequent applications are required.



Fertilizers – Private Sector

- Businesses, use landscaping companies or in-house staff to fertilize their lawns and grounds. Some not employing any fertilizer practices.
- Committee should be aware, that goals of those fertilizing can sometime compete with the goals for protecting the groundwater resource.

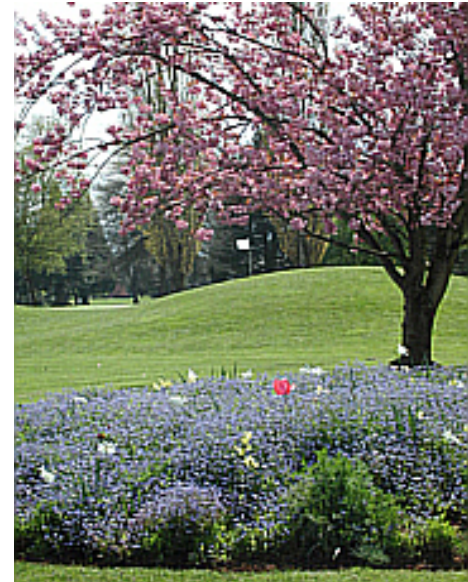


✓ For example, some landscaping companies may make a significant portion of their summer income by mowing grass. Well-fertilized grass using a quick-release fertilizer will grow quicker than grass that has received an either slow-release or a minimal amount of fertilizer.

Fertilizers, Cont.

One golf course completely inside of the GWMA (Shadow Hills Country Club)

One golf course adjacent to the GWMA (Diamond Woods)





Wastewater Management

There is a potential for nitrate to be released to the groundwater from certain types of wastewater management, such as:

- ✓ Individual Large On-site Systems & Treatment Facilities
- ✓ Public Wastewater Treatment Lagoons



Wastewater Management

Not included in our evaluation where those commercial and industrial facilities that are within the urban growth boundaries (UGB) of Monroe, Junction City and Harrisburg, as they generally rely on the local (public) wastewater system.



Wastewater Management

There are three major industrial facilities in the GWMA and outside of their respective UGB. One of these facilities uses a lagoon for their sewerage, the other two treat all their liquid waste and then discharge this to the Willamette River.



Wastewater Management Individual Large On-site or Treatment Systems

Businesses outside of the UBG for a city or town must manage their wastewater on an individual basis. Usually this is by use of their individual large on-site system, or with a wastewater treatment lagoon.



Wastewater Management Individual Large On-site or Treatment Systems



These facilities are permitted by DEQ, and are required not to have an impact to groundwater above the drinking water standard of 10 parts per million for nitrate

Wastewater Management - Public Wastewater Treatment Systems

There are several public wastewater treatment systems with the potential for some impact from a portion of their treatment facilities. These are located in Monroe, Junction City and Harrisburg.



Wastewater Management – Public Wastewater Treatment Systems

Although not inside the GWMA, but located adjacent to and upgradient of the GWMA, is the Eugene/Springfield Wastewater Treatment system,



This facility processes the wastewater from these cities via the use of four 6.25-acre sludge lagoons and 24-acres of drying beds. In addition, there is a newly planted poplar tree section, which will be used as secondary treatment system for a portion of the effluent treated by the lagoons.

Wastewater Management – Public Wastewater Treatment Systems



At the City of Eugene treatment facility, there are nineteen groundwater monitoring wells that are sampled regularly to determine if the groundwater has been impacted from the management of wastewater and biosolids materials at the site.

In 2004, all downgradient wells showed less than 5.5 mg/L nitrate-nitrogen. Upgradient wells had very similar nitrate values.

Land Application of Selected Wastes, Reclaimed Water and Biosolids



What are these materials?

- Food waste
- Septic tank pumpings
- Water that has received at least secondary treatment and is reused after flowing out of a wastewater treatment facility (reclaimed water.)
- Processed municipal sewage sludge that meets specific quality controls standards (biosolids.)

All can be high in nitrate or nitrogen

Land Application of Selected Wastes, Reclaimed Water and Biosolids

DEQ is currently cataloging the land application sites in the SWV. Although this information was not available before drafting the Action Plan, this does not affected the recommended strategies for preventing contamination





So, those are the potential sources

What we didn't know is precisely how much of a concern these facilities actually present to the groundwater. Although they all add nitrate to the environment, additional data would be needed to determine the various levels of impact.

Dennis will now present the following Goals and Strategies, which outline how SWV Commercial and Industrial Facilities will help in decreasing ground water nitrate levels and protect the water that our communities rely on for drinking and production uses.