Hot time- summer in the city: Potentials for biosolids in urban areas

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Traditional dichotomy

Agronomic crops traditional home for biosolids
- Large-scale sites
- Easier
- Appropriate for Class B

Urban areas - biosolids desert
- Harder
- Perceived small customer base
- Urban ignorance of agriculture and wastewater treatment

Use of biosolids in urban areas
- Offers a large customer base
- Cost savings for multiple municipal agencies
- Familiarity and with that - public acceptance
Basic requirements

Class B cake has no place in an urban biosolids program

Class A cake is a starting point for an urban biosolids program

Soil products created from Class A cake are the foundation for an urban program
Don’t tell me that the people in the NW are special...
First matter of business

- Use biosolids for landscaping/demonstration gardens at your own plant
- If you don't like your product, how can you expect anyone else to?
Potential uses/customers for biosolids in urban areas

- Urban agriculture - community gardens
- LID - sustainable infrastructure
  - Green roofs
  - Rain gardens
  - Bioswales
- DOT - highway plantings, stormwater management
- Suburban development
Biosolids in Community Gardens

- From Kristen McIvor
  - PhD student, UW
  - Former Peace Corps Volunteer
  - Lead in Community gardens Development for the City of Tacoma
So what’s been happening in Tacoma?

• TAGRO has supported community gardens for years – but now it’s official

• Mayor announced that she wanted “the most community gardens per capita!”

• City of Tacoma Public works was told to “make it happen.”

• Also working with ACHIEVE for long-term sustainability of program
So how did it go?

Very well, thanks. 4 new gardens on City property - one already has a waiting list. 5 more on the way. And all use Tagro potting soil.
But what about Public Acceptance?

I admit – I was a wee bit skeptical. Yes, even me.

But that turned out to be silly. People love TAGRO.

Why?
- It works.
- It’s local.
- It works.
- It’s recycled.
- It works like nothing else I’ve ever seen.
- It’s sustainable.
- It works.
- It’s affordable.
- It works.
Biosolids + Urban Agriculture = 😊
(It isn’t about the biosolids)

Good for urban soil!

• Improves drainage
• Raises organic matter content
• Stores Carbon
• Plants in healthy soil do better – meaning fewer chemicals (and happy plants)

• Improving urban soil is a good thing, even if you don’t use it to grow food.
Biosolids + Urban Agriculture = 😊
(It isn’t about the biosolids)

Good for Gardeners!

• I estimate 80% of new community gardeners in Tacoma are new to food gardening

• Urban soil is neglected at best, degraded or contaminated at worst – it needs some extra help to support agriculture

• Biosolids allows new gardeners to have success – they are more likely to stick with it until they figure out the rest.

• This photo was taken in Nov. 2010.
Biosolids + Urban Agriculture = 🌻
(It isn’t about the biosolids)

Good for Tacoma!

It’s an incredible resource

Gives the garden a leg up –
they look fabulous!

Tangible way for the City to support urban gardens –
...which also support community building,
improved neighborhoods, and food security.
Biosolids + Urban Agriculture = 😊
(It isn’t about the biosolids)

Good for Hungry people!

• Even in small spaces, with biosolids urban gardeners can have substantial yields – making a significant contribution to food security and affordable, healthy vegetables.
Biosolids + Urban Agriculture = 😊

- But it is-

Good for biosolids!

• Reaches out to new potential fans
• Good to build public support in our backyards
• Allows people who wouldn’t seek it out to see how well it works
• Allows people to touch it and see how it is not scary. In fact, it’s quite nice.
Questions?

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Not just Tacoma

ALLEYCAT ACRES
URBAN FARMING COLLECTIVE

http://www.alleycatacres.com
That was for community-Municipal infrastructure: growing market for organics

- Low impact development (LID)
  - Taking advantage of a natural processes rather than engineered solutions to remedy environmental problems
  - All of these rely on compost or organic soil amendment
Biosolids compost

- Is likely superior (higher nutrient value) indistinguishable from other composts or commercial topsoil
- For example:

In this case the commercial topsoil also had fecal coliform and e. coli
Green roofs

- Reduce storm water flows
- Reduce urban heat island
- Limited ecological function
LEED building built from a former parking garage includes a green roof

“We tried to create a year-round aesthetic,” said landscape architect Chris Cain of the Seattle office of Valerian. The perimeter is dotted with sedum, and a meadow of wild flowers occupies the center band.

“Green roofs are complex animals,” Cain said, because of the multiple levels that go into the system. The Pacific Plaza roof uses Tagro, a product that the city of Tacoma makes from wastewater byproducts, sawdust and sand.
Stormwater Management

• Lower tolerance for combined sewer overflows
• Engineering solutions costly
• Reduce stormwater flows as solution
Seattle Sea streets program

- Reduced impervious surfaces by 11%
- Expanded use of swales, plantings and soil amendments
- Reduced stormwater flows by 99%
Specs for soil call for compost + sand

- Washington State University- Puyallup
  - LID test facility
  - Permeable pavement
  - Bioswales and rain gardens
    - Testing a mix of planting
    - Biosolids soil products
Meanwhile at UW - Phytoremediation capstone project

- Looking at the importance of soil amendments (biosolids compost and wood waste) to enhance storm water filtration by plants
And then there are highways – and will likely continue to be highways despite recent news.
WSDOT & Compost

How do we use it?
What do we want?
How do biosolids fit?

Paula Hammond
Secretary of Transportation

Dave Dye
Deputy Secretary

Steve Reinmuth
Chief of Staff

Presentation by Mark Maurer and Sandy Salisbury
NBMA Workshop
December 14th, 2010

Washington State Department of Transportation
WA DOT is the largest user of compost in WA State

WSDOT Compost Bids Awarded Since 2000
Applied at just over 1 inch depth – we ran out = Control Area
“Workability” & Erosion Control
WSDOT Compost Specifications include:

• Stable, mature result of aerobic decomposition of organic matter.
• pH between 6.0 and 8.5
• Soluble Salt content below 4 mmhos/cm (1:5 Slurry Method, Mass Basis)
• Minimum organic matter of 40%
• STA Certification of Lab and compost producer from US Composting Council
• Fine, Medium, & Coarse Compost
Proposed Compost Specification Changes

Compost products shall be the result of the biological degradation and transformation of **organic solid waste** under controlled conditions designed to promote aerobic decomposition at a solid waste facility in compliance with applicable State regulations. ...

The compost product shall originate from recycled plant waste as defined in WAC 173-350 as “Type 1 Feedstocks,” “Type 2 Feedstocks,” and/or “Type 3 Feedstocks.” *

Point here is that the specs for compost can be written to include biosolids composts and that biosolids composts can be made to meet the specs

*Excerpt from 9-14.4(8)*
To conclude:

- There are a wide range of markets for biosolids in urban areas.
- To enter these markets it is necessary to have a consumer friendly Class A product.
- The efficacy of the product will be what sells the product.
- There is no reason that the successes for biosolids marketing in the NW can't be replicated in CA.