

Cedar Grove Composting Stormwater Treatment Options

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Facility Design Aspects

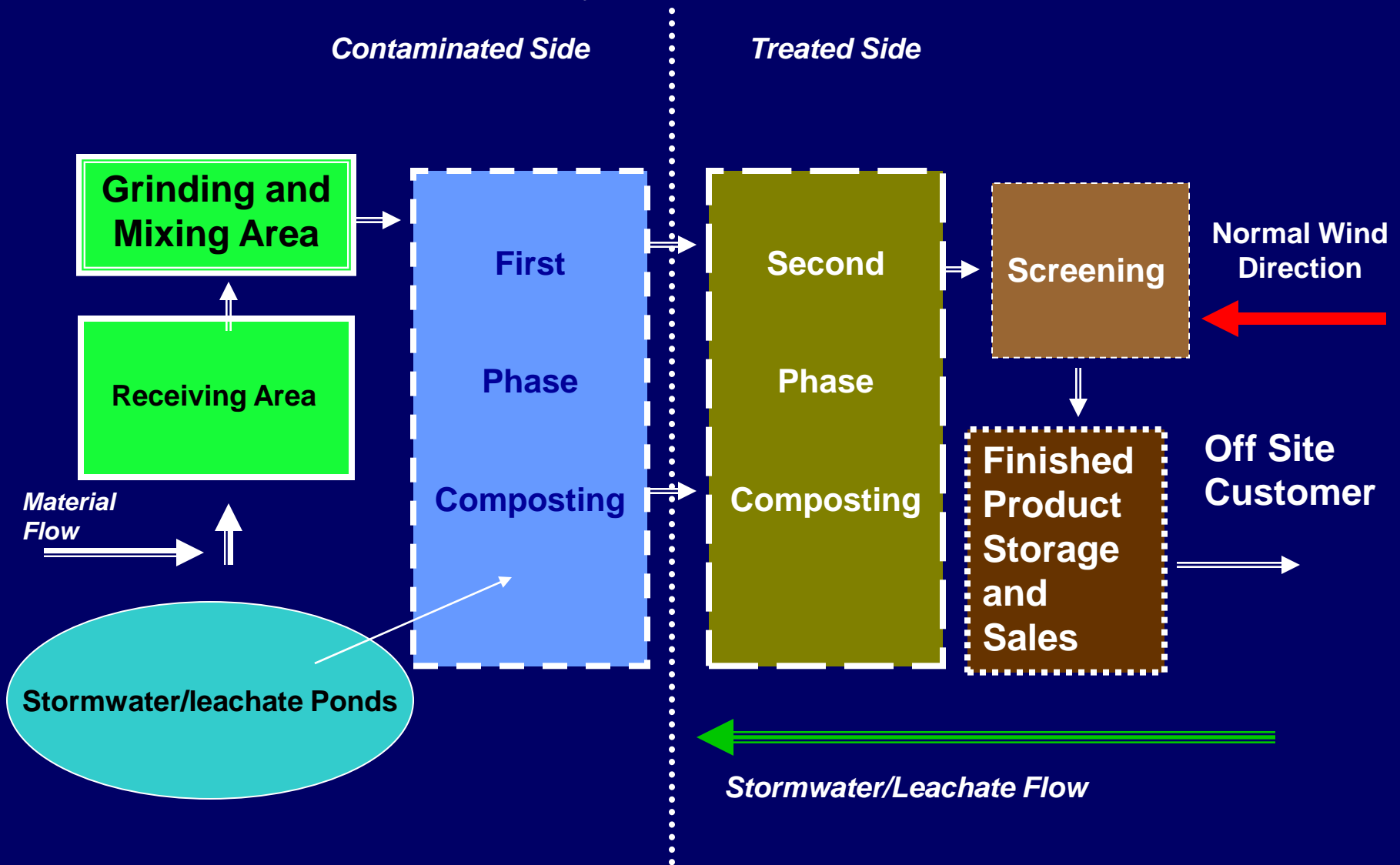
- **High Contact Area
Drain to Separate
Location**
- **High Traffic Drain to
Oil/Water Separator**
- **Fresh Material Down
Stream From Finished**

Best Management Practice (BMP)

Typical Site Plan

Contaminated Side

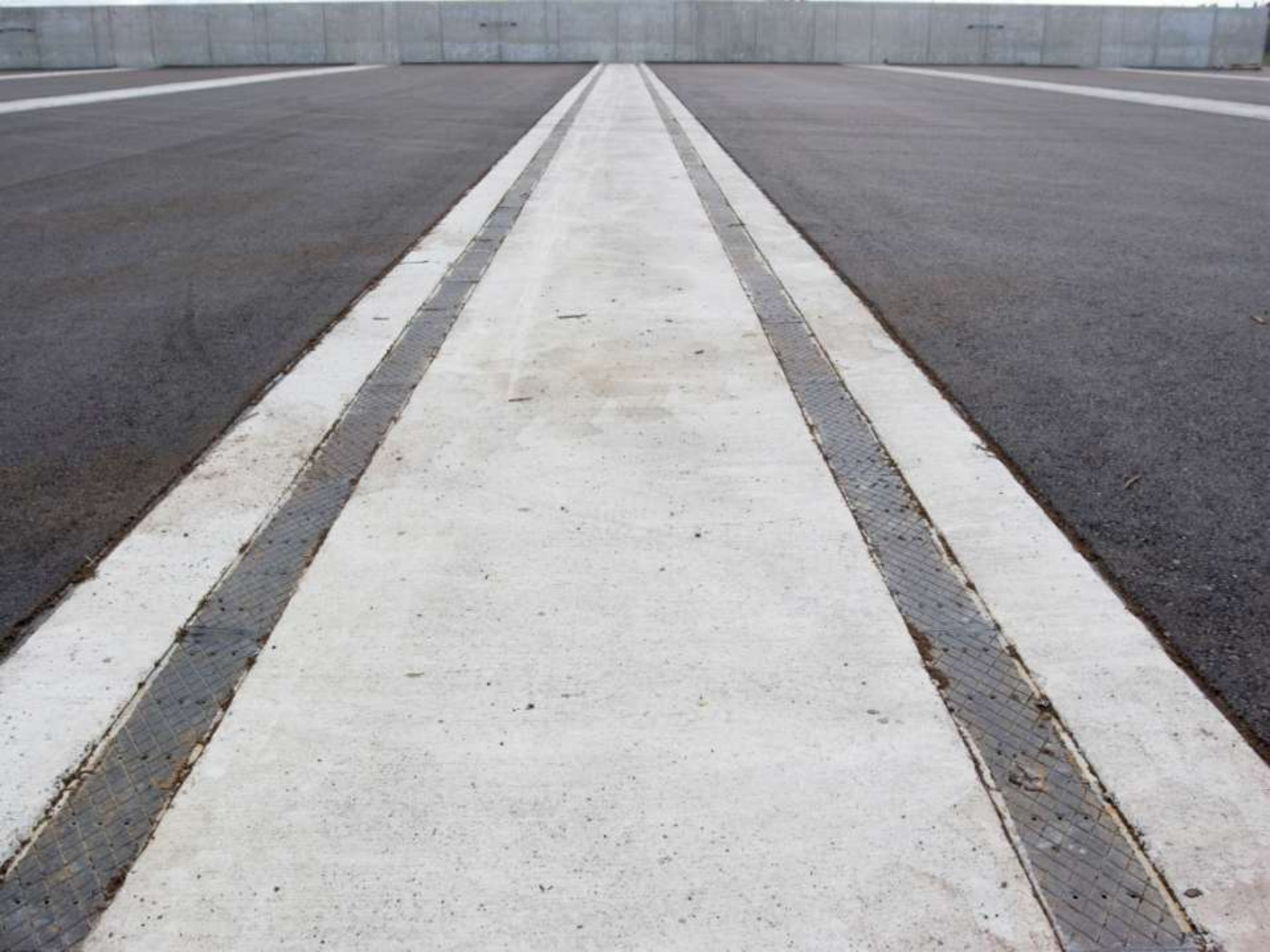
Treated Side





Receiving Building

























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Facility with Stormwater and Leachate Combined (Source controlled)

	pH	Copper	Lead	Zinc	Ammonia	BOD	TDS	Phos	E.Coli	Oil
Proposed Standard	5.5-9.0	.18	.05	1.2	3.0	30	1000	.7	126	15
Pond 1, Lined, Highly Aerated	7.5	.069	.05	.28	33	442	1210	ND	5000	ND
Pond 2, Lined Highly Aerated	7.5	.036	.028	.15	9	121	852	ND	3000	ND
Pond 3, Lined Slightly Aerated	8	.048	ND	.17	.12	13	592	ND	30	ND

Pre-elements

Oil Water Separator in High Traffic Area

Solid Separators

Facility with Stormwater Separated From Leachate (source controlled)

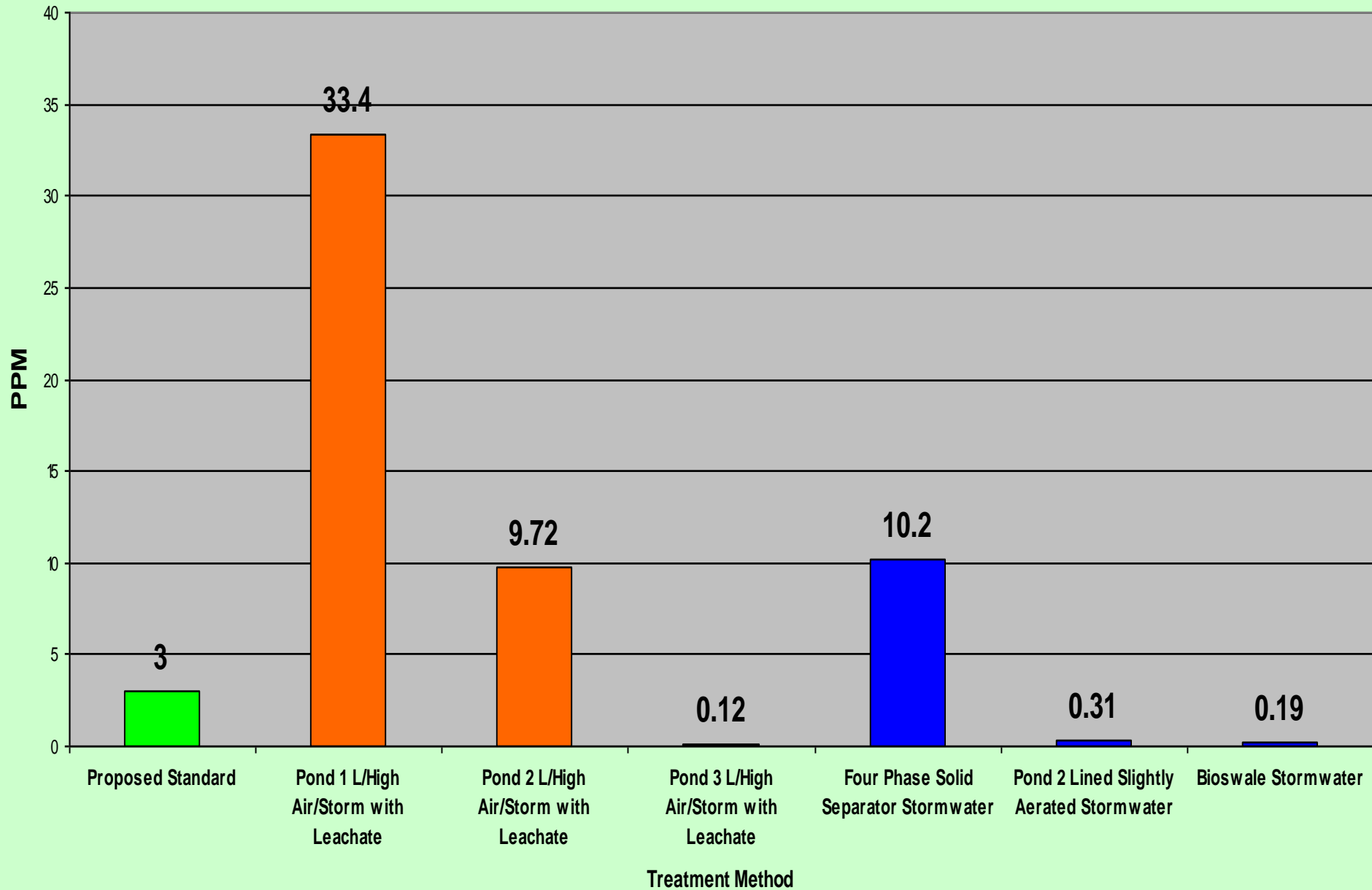
	pH	Copper	Lead	Zinc	Ammonia	BOD	TDS	Phos	E.Coli	Oil
Proposed Standard	5.5-9.0	.18	.05	1.2	3.0	30	1000	.7	126	15
4 Phase Solid Separator	6.54	.06	.05	.3	10	97	462	ND	1600	ND
Pond 1, Lined Lightly Aerated	7.8	ND	ND	ND	.3	14	NT	ND	ND	ND
Bioswale	7.6	ND	ND	ND	.19	13	NT	ND	ND	ND

Pre-elements

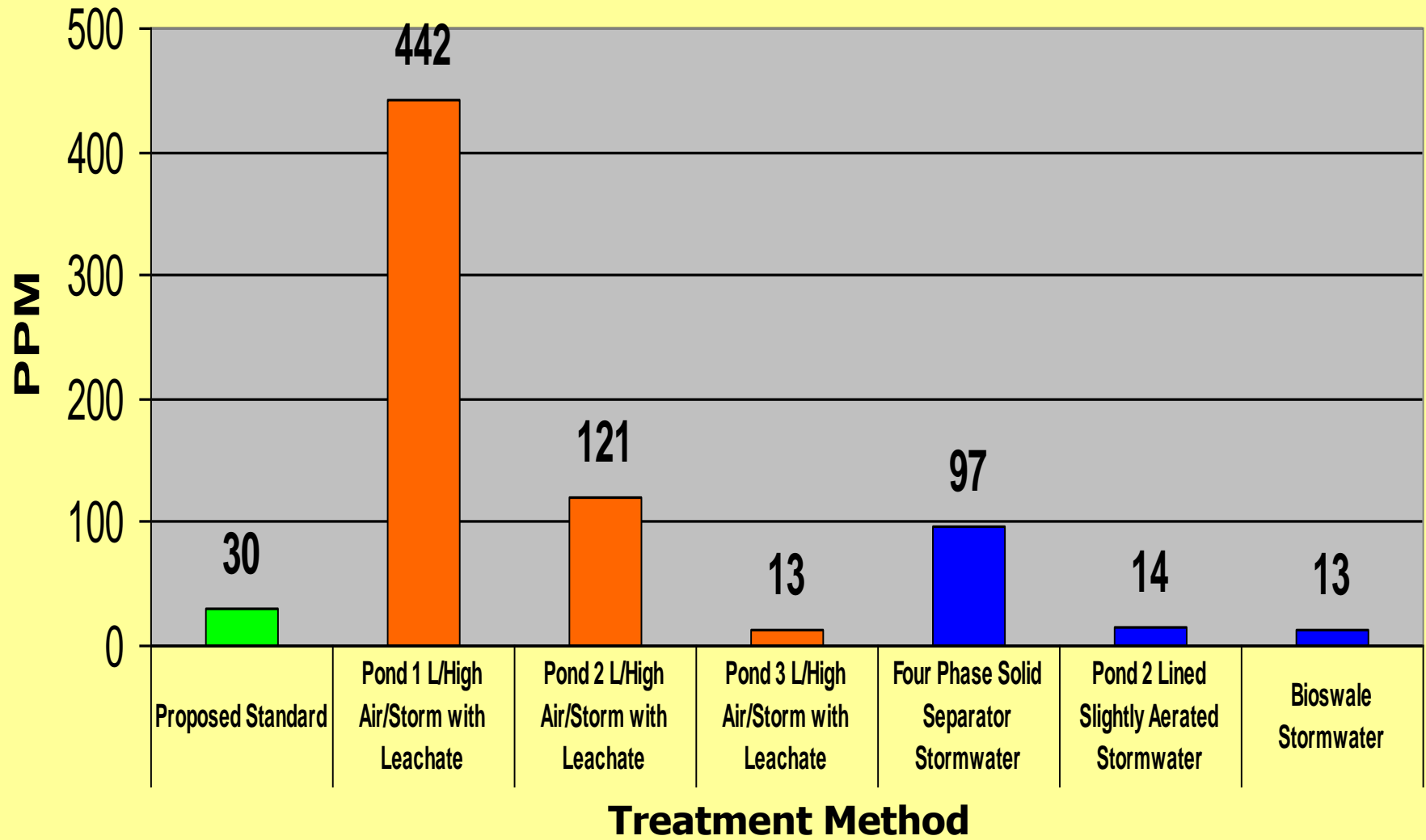
Oil Water Separator in High Traffic Area

Solid Separators

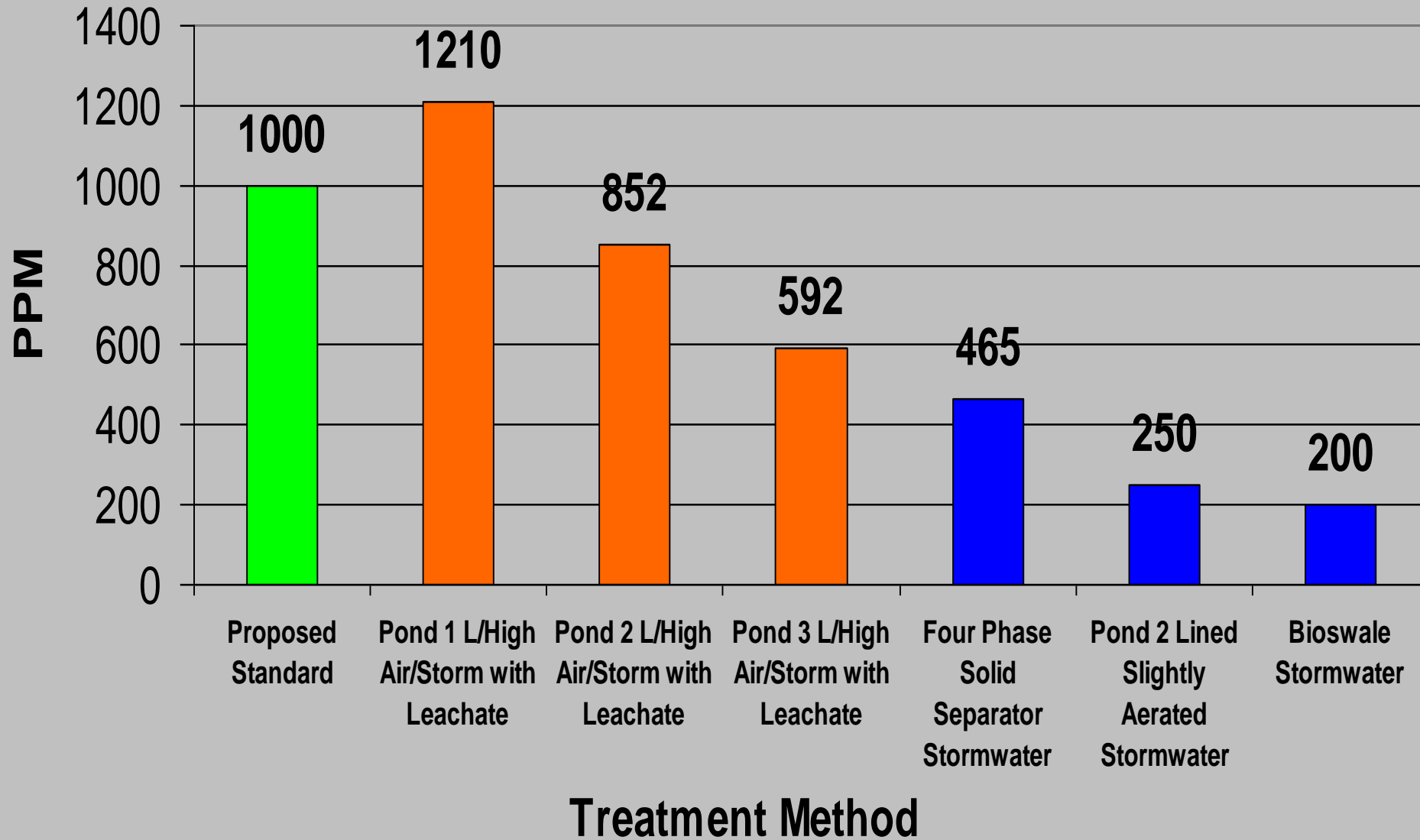
Ammonia



BOD



TDS





Functional Stormwater Treatment

Lower Cost

- Compost Berms
- Solid Separators
- Bioswales

Higher Cost

- Lined Ponds
- Pond Aeration
- Multiple Units or Treatment Trains

Stormwater Operational Practices

- Sweeper Truck *\$75 per hour*
4hr twice/wk =
\$600 per week
- Keep Solid Separators
and Catch Basins
Clean *\$75 per hour*
2 hr = \$150 per week

Cost of Each Treatment Unit

- Oil/Water Separator \$ 41,000
- Solid Separator \$ 58,500
- 46,000 Leachate Tank w/Secondary Containment, Cover, Pump and Line \$150,000
- 2-500,000 gal Lined Ponds \$ 83,000 100 mil liner
Double bottom, add \$40K for excavation \$ - 7,000 80 mil liner
\$ 40,000
- 3-Surface Aerator (stainless steel) \$ 20,000 7 hp
- 500,000 gal wet pond \$ 25,000
- 600 ft Bioswale (add \$2k for veg) \$ 7,000
- Leachate pump to re-hydrate and plumb line from tank \$ 9,000

Most Effective For the Least Cost

- Sweeper truck once per week
- Compost Berm 1" Screen Material
1 ft High by 3 ft Wide
- 4 Phase Solid Separator
- 1 Wet Pond
- 1 Bioswale

Cedar Grove Composting Everett Washington Facility

