



# **CLARK COUNTY STORMWATER ORDINANCE UPDATE**

## **HOW CHANGES WILL EFFECT PROPOSED DEVELOPMENT**

**Presented By:**

**Eric Golemo, PE**

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### **Introduction**

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Currently Serve as a member of the Development Engineering Advisory Board (DEAB)

Served on the Stakeholders Advisory Committee for the Clark County stormwater ordinance update and participated in the Technical Advisory Committee

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### **AGENDA:**

- Background
- Differences between the proposed ordinance and the existing ordinance
- Key differences between the proposed ordinance and the ecology manual
- Impact on proposed development
- The process and the status

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### Significant Changes

- The previous ordinance was based on the 1992 Stormwater Management Manual for the Puget Sound Basin. The new ordinance is based on the 2005 Stormwater Management Manual for Western Washington.

- The previous ordinance and concept primarily looked at flood control and property damage through limiting peak flows from target storms like 10-year, & 100-year events. It also attempted to reduce downstream erosion by limited peak discharges to 1/2 the 2-year predeveloped rate but did not regulate the frequency of the discharges or volumes of runoff.

The proposed model aims to reduce stream erosion, it matches downstream flows and flow durations for all events between 1/2 of the 2-year to the 50-year frequencies.

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### Significant Changes

- A continuous simulation model is used instead of a single event model. *(This is a technical item relating to the method used to calculate stormwater runoff potentially leaving the site.)*

- Predevelopment ground cover will likely change. *A new DOE standard requires engineers to model the predeveloped condition as forested even if the existing use is different today in an attempt to match a prehabitation condition. (This item has been contested by the county)*

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### Significant Changes

- There will be fewer exemptions.
- Rural and agricultural uses will no longer be exempt and will be required to meet stormwater requirements.
- Lawns will be considered pollution generating
- Converting 3/4 acre or more of native vegetation to lawn or landscaped area, or converting 2.5 acres of native vegetation to pasture are now triggering events.

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### Other Notable Changes

Reorganized into Minimum Requirements 1-10

Thresholds

Infiltration testing and safety factors increasing

Wetland hydro period requirements added

Likely more flexibility in location and fencing

Water quality standards are not significantly changing with the ordinance. More guidance and options for treating runoff for pollutants are given. The requirements are similar to those used today. This will not significantly affect proposed developments. However, the requirements will apply to more projects as previously discussed.

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### Low Impact Development will be included

Rain Gardens

Pervious Pavements

Dispersion

Amended Site Soils

Reversed Sloped Sidewalks

Green Roofs

Rain Barrels

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### Differences between the Ecology mandated Western Washington Manual and the draft Clark County Code

- The ordinance primarily adds details to the Ecology Manual. It adds guidance and procedural details.
- Clark County is proposing a different flow control standard. The current proposal states that the predeveloped condition can vary from the forested condition if, *"The drainage area of the immediate stream and all subsequent downstream basins have had less than 40% forested cover since 1955. In this case, the predeveloped condition to be the site land cover in 1955, as determined through Clark County aerial photographs."*

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### Justification For Clark County's Alternative Flow Control Standard

- This proposal's justification is similar to, but less aggressive, than the "Proposed flow control standard for Highly Urbanized Drainage basins" (which says that if at least 40% of the basin was impervious for the last 20 yrs then they can use existing ground cover. ) This was previously approved by DOE. But, it has been adjusted for our historical development characteristics and ground cover. We developed later and have established Agg. uses. We developed more responsibly and have already done more to protect our streams. More open space is set aside.
- Clean Water act requires preservation of the beneficial uses that existed in 1975. This proposal goes above and beyond this requirement.
- Much of our county has been farmland and prairie for an extended period of time allowing streams to adjust, stabilize, and reach equilibrium with the post forested flow regime.
- This will likely be used in a tiered approach where source control, LID's, and infiltration BMPs are used first when practical. This will have the most significant impact on a limited number of sites where the preferred BMPs are not suitable due to conditions like high ground water, steep slopes, or industrial / commercial sites not allowed to infiltrate.
- We have significantly different soil characteristics here. It is likely that many of our sites will be able to completely retain all runoff onsite, which will free up capacity for other sites within the basin.

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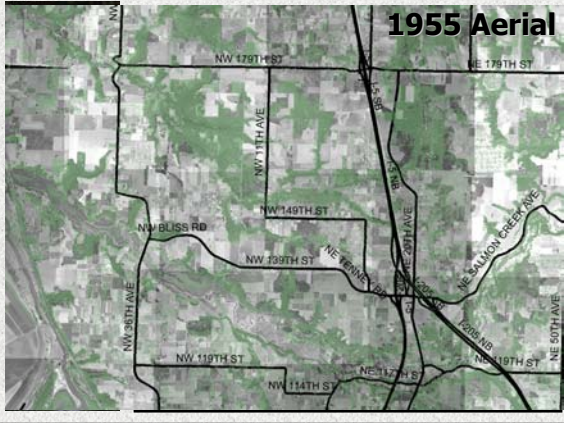
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1955 Aerial

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### Impact on proposed development

- The impacts will vary. If the site has soils that are well drained like in East Clark County, the storm facility size may not significantly increase and are more easily mitigated.
- If a detention pond is required the size will significantly increase.
- Using the continuous model and matching flow durations instead of peak flows will approximately double the size of a typical facility.
- Going back to a predeveloped forested condition (if this is adopted) for allowable release rates could increase the size of the facility by a factor of 4-5.

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- Going back to the ground cover in 1955, as currently proposed, will result in facility sizes somewhere in between, assuming the ground cover was pasture. Approximately 2.5 - 3x.
- Low impact development techniques (LID's) may help reduce pond sizes in some cases.
- The larger facilities will reduce the developable area and the facilities will cost more to construct. (Significant economic impact)
- DOE also encourages regional basin studies to determine flow control standards appropriate for that basin. These could result in either more or less stringent requirements. (These could be costly and DOE needs to approve)

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### Current Code



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### Ecology Standard (Forested)



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Ecology Standard with LID



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Pond Under Current Storm Ordinance



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Pond Under Proposed Storm Ordinance  
(Predeveloped Pasture Condition)



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Pond Under DOE Requirements  
(Predeveloped Forested Condition)



STORM POND

This diagram shows a site plan for a residential development. A green-shaded area is labeled 'STORM POND'. The plan includes a road, several residential lots, and a stormwater management system.

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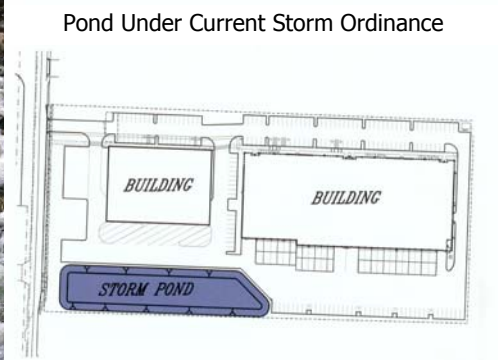
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Commercial Example  
Pond Under Current Storm Ordinance



BUILDING

BUILDING

STORM POND

This diagram shows a site plan for a commercial development. Two rectangular areas are labeled 'BUILDING'. A blue-shaded area is labeled 'STORM POND'. The plan includes a road and a stormwater management system.

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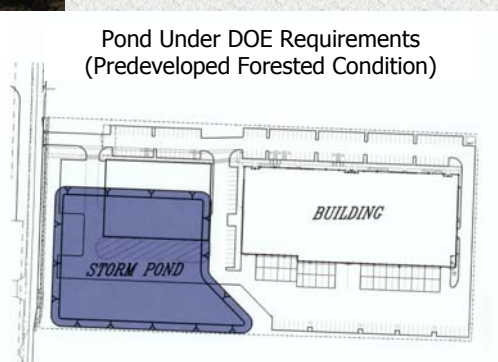
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Pond Under DOE Requirements  
(Predeveloped Forested Condition)



BUILDING

STORM POND

This diagram shows a site plan for a commercial development. A blue-shaded area is labeled 'STORM POND'. A rectangular area is labeled 'BUILDING'. The plan includes a road and a stormwater management system.

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## Special Situations

- High Ground Water or Perched Groundwater
- Steep slopes or rolling terrain
- Closed depressions or basins
- Industrial and commercial sites not allowed to infiltrate
- Wetlands and other sensitive areas
- Forested Areas
- Conflicting regulations (DOE, WDFW, Corps, Local)

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## Potential Adverse Impacts

- Increased pond sizes will require more land to fit same population. Faster sprawl, impact to more area.  
Increased traffic, emissions, etc.
- Disincentives redevelopment
- Affordable Housing / housing crises
- Jobs / Competition with OR job market
- Agricultural Impact – Local food costs (tough to compete with imports)
- Economic impacts
- Quality of life impacts

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## Concerns and Questions

Is the cost of the facilities proportional to the benefit?

Are these requirements the most efficient way to meet the environmental goals?

There are opinions on both sides?

Studies have shown that our streams continue to erode under the current regulations.

Many wonder why DOE is requesting that we go back to pre-western civilization ground cover. Is it practical?

Is it legal to apply retroactive conditions to a property?

What are we trying to achieve?

Are these proposed standards being welcomed with open arms by other agencies in Washington?

Why do a lot of counties and jurisdictions near Puget Sound have an exemption? Is this fair?

Is there a better solution?

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### What should we do now?

We need support from DOE and our local and state legislators!

In Clark County we are looking for a balance. We have proposed modifications that work to protect our streams but are functional and reasonable.



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### Questions

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### The Minimum Requirements

MR 1: Preparation of Stormwater Site Plans

MR 2: Construction Stormwater Pollution Prevention (SWPPP)

MR 3: Source Control of Pollution

MR 4: Preservation of Natural Drainage Systems and Outfalls

MR 5: On-site Stormwater Management

MR 6: Runoff Treatment

MR 7: Flow Control

MR 8: Wetlands Protection

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## The Minimum Requirements

MR 9: Basin/Watershed Planning

MR 10: Operation and Maintenance

OG 1: Financial Liability

OG 2: Off Site Analysis and Mitigation

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