

MEMORANDUM

To: Betty Sue Morris, Commissioner
Marc Boldt, Commissioner
Steve Stuart, Commissioner
Bill Barron, County Administrator

From: Kevin Gray, Deputy Public Works Director

Date: March 7, 2008

Subject: Stormwater Ordinance Update – Work Session – March 12, 2008

Please find attached the agenda and materials that we hope to cover at the stormwater work session on March 12, 2008.

As I will be on vacation until Wednesday morning, March 12, please contact Pete Capell at extension 4071 or Robin Krause at extension 4911, if you have any questions before the work session.

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Agenda

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March 12, 2008 Work Session

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Draft Large Lot Manual

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Introduction

The Department of Ecology issued the NPDES phase I municipal stormwater permit (the permit) to Clark County on January 17, 2007, effective February 16, 2007.

Appeal

Phase I permittees, including Clark, King, Pierce and Snohomish Counties appealed Conditions S4.A, S4.B, S4.E, S7 and S8 on February 15, 2007.

S4.A and S4.B can be read to require discharges of stormwater to comply with any water quality standard. *These conditions are vague, unreasonable, impracticable, and/or inappropriate for Municipal Storm Sewer Systems.*

S4.E states that compliance with all permit conditions is necessary to meet the goals of the Clean Water Act. *This condition is inconsistent with other provisions of the Permit that state that certain requirements are premised on state law rather than the Clean water Act and misconstrues the requirements of the Permit and Clean Water Act.*

S7 requires that all permittees shall be in compliance with the requirements of applicable TMDLs. *These requirements are inconsistent with applicable laws and regulations, are vague, unreasonable, impracticable, and/or inappropriate for municipal stormwater.*

S8 imposes a prescriptive (and expensive) monitoring program that precludes Clark County from developing a program that is better adapted to the unique circumstances of Clark County. *S8 contains provisions that are inconsistent with applicable laws, unreasonable, impracticable, unjust, and/or inappropriate for municipal stormwater. Furthermore, S8 contains numerous flaws and uncertainties that prevent Permittees from complying with or comprehending the required procedures.*

The Pollution Control Hearings Board has scheduled a hearing on S4 for April 16 – 25, 2008. A hearing on S8 is scheduled for April 28 – May 9. Rulings on the appeal are anticipated within six to eight months after the hearings.

Stormwater Code Revisions

Condition S5 requires Clark County to revise its Municipal Code to adopt the Ecology 2005 Stormwater Management Manual for Western Washington for regulating stormwater and erosion on development and construction sites and to allow stormwater low impact development (LID) by August 16, 2008.

To that end, Clark County staff and consultants have been working hard to draft a revised stormwater and erosion control ordinance that will meet the permit requirements and address local concerns. Staff convened a Stakeholders Advisory Committee (SAC) and a Technical Advisory Committee (TAC) to guide the update. Together, SAC and TAC held 22 public meetings. In addition, the Clean Water Commission held an Open House, and staff gave updates at a total of five public meetings of various bodies. The County has made significant progress to date.

Clark County is committed to further public outreach and comprehensive review of the far reaching impacts of the ordinance before submitting a draft to Ecology for review. The following issue papers summarize the challenges, background, and Board direction to date.

Clark County Stormwater Ordinance Update

Issue Paper: Flow Control Standards

March 5, 2008

The Challenge

Clark County must effectively manage stormwater flows from developing or redeveloping areas to better protect streams from further degradation and to minimize flooding. The challenge is meeting these objectives in a manner that supports successful implementation of our Comprehensive Growth Plan, and avoids placing unreasonable requirements upon property owners.

Background

Currently, 40.380.040(C)(2)(b) of the Clark County Code requires developments to model existing conditions as “the use over the last thirty (30) years which results in the least amount of site runoff.” Re-development projects less than 10,000 square feet can calculate the runoff based on the existing site conditions. Calculations are based upon a single-event hydrologic model.

Flow Modeling

The NPDES phase I municipal stormwater permit includes provisions for improved stormwater flow modeling that requires continuous flow modeling, using 50 years of rainfall data to analyze flows, rather than the single event modeling prescribed in the current County Code. In a typical “end of pipe” stormwater approach, this new standard generally requires larger ponds.

Pre-developed Condition

The permit states that stormwater discharges from development and redevelopment projects must “match developed discharge durations to pre-developed durations.” Pre-developed condition is defined as: “The native vegetation and soils that existed at a site prior to Euro-American settlement. The pre-developed condition shall be assumed to be a forested land condition unless reasonable, historic information is provided that indicates the site was prairie prior to settlement.” Depending on actual site conditions, using a typical “end of pipe” stormwater management approach under this standard can require much larger ponds.

Urban Growth Boundary

Increased surface area requirements for stormwater management could reduce net developable land within the urban growth boundary by up to 3,600 acres, depending on development practices. Furthermore, restoring historic flows to pre-settlement conditions may require project proponents to mitigate for historic impacts that are not a direct result of a proposed development or redevelopment.

What other jurisdictions are doing

All other Phase I jurisdictions are adopting the duration standard to our knowledge.

No other Phase I jurisdiction has altered the forested condition requirement. Phase II jurisdictions have appealed the forested condition. King County has required the forested condition since 2005 and flow duration modeling since the late 1990s. Prior to 2005, King County required runoff calculations using pre-developed conditions based on 1979 aerial photos.

Pierce County formerly permitted existing conditions as the pre-development land use, but has recently adopted forested as the pre-development condition. They also plan to adopt the duration standard.

Clark County Options

Flow Modeling

The flow duration standard now required by Ecology was supported by both the Stakeholder Advisory Committee (SAC) and the Technical Advisory Committee (TAC). Both groups felt that the continuous model and duration standard represents best available science for stormwater modeling in our area and will result in better protection for stream habitat and address downstream flood concerns. The Board has also supported the duration standard.

Pre-developed Condition

SAC and the Board expressed concerns that the Ecology standard may be impractical, resulting in unreasonable requirements and precluding the implementation of the Comprehensive Growth Plan. The following options were presented at the Board Work Session on December 18, 2007:

Option 1: Retain the current code (30-year standard)

Option 2: Develop a tiered approach with standards dependent on individual basins

Option 3: Adopt a forested standard per Ecology manual

Advantages and Disadvantages of the Options

	Advantages	Disadvantages
Option 1 Retain the current code (30-year standard)	<ul style="list-style-type: none"> • Smaller and less expensive flow control facilities • More area for lots 	<ul style="list-style-type: none"> • Likely not permit compliant • Potential for fines and/or lawsuits • Increased stream erosion • Decreased groundwater recharge • SEPA EIS
Option 2 Develop a tiered approach with standards dependent on individual basins	<ul style="list-style-type: none"> • Less stringent standards in some basins • Preservation of vision in environmentally significant basins 	<ul style="list-style-type: none"> • Need basin studies • Increased ordinance complexity • May not comply with permit
Option 3 Adopt a forested standard per Ecology manual	<ul style="list-style-type: none"> • NPDES compliant • Reduced stream erosion • Maximize groundwater recharge 	<ul style="list-style-type: none"> • Larger ponds • Time and cost to complete basin studies • Economically challenging

Board Direction

In regard to flow control standards, the Board has supported:

- Adopt the duration standard and continuous flow modeling (December 5, 2007 Work Session).

- Develop a Pre-developed Condition option, falling somewhere between options 2 and 3, above. The Board was clear in directing staff to exclude the forested condition as a default in the urban area (December 18, 2007 Work Session).
- Apply consistent standards to rural and urban areas (January 30, 2008 Work Session).

Urban Growth Boundary Impacts

Some options may limit surface area required for stormwater facilities, minimizing the net loss of developable land within the urban growth boundary.

Option A: Pursue comprehensive watershed planning and regional facilities.

Option B: Require low impact development practices on all projects.

Option C: Review and update other codes to reduce impervious area requirements - e.g. transportation codes.

Advantages and Disadvantages of the Options

	Advantages	Disadvantages
Option A Pursue comprehensive watershed planning and regional facilities	<ul style="list-style-type: none"> • Economies of scale in construction and long term maintenance • Reduces developable land lost to storm facilities 	<ul style="list-style-type: none"> • Lessens the benefit of onsite low impact development (LID) • Considerable design, real property, and capital construction, costs
Option B Require low impact development practices on all projects	<ul style="list-style-type: none"> • Minimized pond sizes • Maximizes ground water recharge. • Minimizes offsite runoff from projects • Can be used in conjunction with watershed planning to minimize regional facilities needs 	<ul style="list-style-type: none"> • Can increase project cost
Option C Review and update other codes to reduce impervious area requirements	<ul style="list-style-type: none"> • Minimizes pond sizes • Could promotes LID use • Reduced stormwater runoff • Reduced capital costs 	<ul style="list-style-type: none"> • Costs to review and revise codes

Board Direction

In regard to the minimizing impacts to the Urban Growth Boundary, the Board supported Options A and C, within existing budget constraints. The Board also advocated allowing and encouraging, but not requiring, LID.

Status

Stakeholders and staff have developed the following language for the Board’s consideration, which is very similar to the current code requirement for pre-development conditions:

40.380.020(C)

2. Pre-development Land Cover Requirements

a. The pre-developed condition to be matched shall be a forested land cover unless:

- (1) Reasonable, historic information is available that indicates the site was prairie prior to settlement (modeled as "pasture" in the Western Washington Hydrology Model); or
- (2) The drainage area of the immediate stream and all subsequent downstream basins have had at least forty percent (40%) total impervious area since 1985. In this case, the pre-developed condition to be matched shall be the existing land cover condition; or
- (3) The drainage area of the immediate stream and all subsequent downstream basins have had less than forty percent (40%) forested cover since 1955. In this case, the pre-developed condition shall be the site land cover as of 1955, as determined through Clark County aerial photographs.

b. Where basin-specific studies determine a stream channel to be unstable, even though the above criterion is met, the pre-developed condition assumption shall be the "historic" land cover condition, or a land cover condition commensurate with achieving a target flow regime identified by an approved basin study.

c. This standard requirement is waived for sites that will reliably infiltrate all the runoff from impervious surfaces and converted pervious surfaces.

Clark County Stormwater Ordinance Update Issue Paper: Redevelopment

March 7, 2008

The Challenge

The county strongly supports redevelopment. The challenge is creating an ordinance that adequately manages stormwater runoff while avoiding regulations that inhibit revitalization and reuse of existing properties.

Background

The SAC discussed redevelopment thresholds and requirements at length. The common concern that all SAC members shared was to ensure that the code is reasonable in the requirements for redevelopment. The SAC members were concerned that the code would prevent redevelopment and thereby preclude gaining even some benefits from partial treatment of existing untreated surfaces.

The Ecology regulation for managing stormwater from replaced impervious surfaces in redevelopment has two aspects. A threshold determines if the requirements apply and, if so, a stop-loss provision caps the costs to meet the requirements.

Threshold

Ecology provides options for triggering water quality and flow control on *replaced* impervious surfaces:

- Exceeding 50% of the assessed value of the existing improvements
- Exceeding a dollar value of improvements
- Exceeding a certain ratio of new impervious to the total of replaced plus new impervious surfaces.

The SAC supported using 50% of the assessed value in the absence of a better option. They realized that estimates would vary on the proposed work, but at least the assessed value is a set amount.

For road projects, Ecology's area threshold was straightforward and supported by SAC. Replaced impervious surfaces must be managed when a road project increases existing impervious surface by more than 50%.

Stop-loss

Ecology allows the local agency to set a maximum financial liability for addressing stormwater from replaced impervious surfaces. This can be based on a percent of total project cost or it can be set dollar amount.

SAC did not recommended using a financial stop-loss. Instead, they recommended that staff develop a lesser flow control standard that would apply to all redevelopment projects regardless of cost. SAC also recommended that the County develop stormwater plans for specific redevelopment areas such as Highway 99.

What other jurisdictions are doing

King County has proposed to cap the cost of stormwater management in redevelopment at one-third the overall project budget. Ecology has agreed to this concept. The SAC

felt that one-third was too high a cost in our area. They also questioned what benefit a sub par management system would provide.

Clark County Options

Option 1: Develop a dollar threshold for redevelopment stop-loss provision

Option 2: Develop an alternative flow control standard for redevelopment

Advantages and Disadvantages of the Options

	Advantages	Disadvantages
Option 1 Develop a dollar threshold for redevelopment stop-loss provision	<ul style="list-style-type: none"> • Follows same logic as other building code related upgrades for redevelopment projects 	<ul style="list-style-type: none"> • Does not ensure a measurable benefit to streams • Increased administrative costs to review cost estimates • Could cause piece-meal development to avoid triggering the standards
Option 2 Develop an alternative flow control standard for redevelopment	<ul style="list-style-type: none"> • Simple to apply and administer • Predictable for developers • Avoids time consuming arguments over project estimates • Measurable results from all projects • Incentive to redevelop 	<ul style="list-style-type: none"> • Requires up front expenditure to determine the standard

Board Direction

The commissioners supported the SAC recommendation to set a single flow control standard for replaced impervious surfaces rather than a financial stop-loss point. This will provide a measurable improvement for all projects and sets a standard that all projects must meet.

Status

Staff has identified several redevelopment projects in order to develop historic costs for stormwater in relation to overall project budgets. With that baseline, staff will begin to determine a flow control standard that when applied to all redevelopment projects would have the same benefit as the development standard applied to only those projects that fall under what would otherwise be the stop-loss limit.

Clark County Stormwater Ordinance Update

Issue Paper: Rural Single Family and Agricultural Exemptions

March 7, 2008

The Challenge

The County seeks to protect streams from rural development impacts while avoiding unreasonable regulatory demands on rural land owners.

Background

Under the existing County Code, agricultural practices and single family home construction in the rural area are exempt from the requirements to provide stormwater treatment and quantity control.

40.380.030 (A) (1) Commercial agricultural, and Forest practices regulated under Title 222 WAC, except for Class IV General Forest Practices that are conversions from timber land to other uses are exempt from the provisions of the Minimum Requirements. All other new development is subject to the minimum requirements;

40.380.030 (A) (6) The construction of single-family homes, and their normal appurtenances and accessory structures, on an existing lot within the rural area shall be exempt from Sections 40.380.040(B) and (C).

The rural single family lot exemption sought to reduce the cost of stormwater control for existing rural single family lots. An unintended consequence is that once new lots are platted, they become “existing” lots and therefore are exempt. As a result, rural subdivisions typically only address the stormwater from the main access roads while extensive driveways, buildings, lawns, and other stormwater impacts go unaddressed.

The NPDES phase I municipal stormwater permit (the permit) retains the exemption for agriculture practices. However, it does not exempt the creation of over: 10,000 square feet of impervious surface; $\frac{3}{4}$ acre of lawn or landscaping; 2.5 acres of pasture; or 0.1 cubic feet per second (cfs) additional flow leaving the site.

The Stakeholder Advisory Committee (SAC) agreed that the current code does not provide adequate control of stormwater in the rural area and recommended that the County provide simple tools to achieve improved stormwater control for the least cost and inconvenience possible.

What other jurisdictions are doing

King County has developed a Small Project Drainage Requirements appendix to its stormwater manual. The intent is to provide a means for non-engineers to apply measures that meet the stormwater mitigation requirements.

Clark County Options

The SAC and staff reviewed the following options with the BOCC:

Option 1: Retain the current code exemptions.

Option 2: Revise the exemptions per the permit.

Option 3: Revise the exemptions per the permit and publish a Large Lot Manual.

Advantages and Disadvantages of the Options

	Advantages	Disadvantages
Option 1 Retain the current code exemptions	<ul style="list-style-type: none"> • Simple and least expensive option for project proponents • Least administrative cost 	<ul style="list-style-type: none"> • Does not maintain equitable treatment between urban and rural land • Depending on interpretation, it provides an incentive to build homes in the rural area versus the urban areas • Does not address the impacts to the rural watersheds • Not compliant with the permit
Option 2 Revise the exemptions per the NPDES permit	<ul style="list-style-type: none"> • Readily compliant with the permit • Provides a means to address the watershed impacts in the rural areas • Provides for equitable treatment of the rural and urban areas • Continues to exempt agricultural practices 	<ul style="list-style-type: none"> • Depending on interpretation, it will cost more to develop rural single family lots • Creating impervious surfaces in the agricultural zones (new building, driveways, parking areas) will no longer be exempt
Option 3 Revise the exemptions per the NPDES permit with Large Lot Manual	Same as Option 2 plus: <ul style="list-style-type: none"> • Reduces the cost by providing a prescriptive requirement that non-engineers can apply • Provides clear requirements specific to large lot development 	<ul style="list-style-type: none"> • Same as Option 2 with the exception that costs to provide stormwater controls will be reduced • Greater implementation costs to develop the manual

Board Direction

The Board supported Option 3 and supported a SAC recommendation to develop a manual providing the tools to address stormwater without complex design or review process.

Status

The draft code removes the rural single family lot exemption and no longer exempts the creation of impervious surfaces in agriculture uses. Staff has begun work on a large lot manual to provide the tools needed to meet the stormwater management requirements for the least cost.

Clark County Stormwater Ordinance Update Issue Paper: Outreach

March 7, 2008

The Challenge

How can Clark County inform stakeholders and provide the public the opportunity to provide meaningful input to the code revisions? In particular, how can the County inform those stakeholders who may be affected by the code revisions but do not realize it?

Background

The County has conducted a targeted public outreach campaign since August 2007 to engage development industry professionals, environmental advocates, affected county departments, interested citizens from neighborhood associations, and the Clean Water Commission.

Clark County convened a Stakeholders Advisory Committee (SAC) and a Technical Advisory Committee (TAC) to guide the necessary ordinance update. Staff conducted numerous public meetings, including nine SAC meetings, 13 TAC meetings, three Clean Water Commission updates, one Open House hosted by the Clean Water Commission, two Planning Commission updates, and three Work Sessions with the Board of County Commissioners.

Staff had difficulty attracting rural landowners and environmental advocates to sit on the Stakeholder Advisory Committee (SAC). Several organizations such as the Clark Farm Forest Association, Sierra Club, Watershed Stewards and Fish First were each asked to appoint a representative to SAC. Fish First and Watershed Stewards were represented.

Other outreach has included:

Clark County Conservation District

- Staff provided an update at the November 1, 2007 meeting

Development Engineering Advisory Board

- Staff provided updates at the October 18, November 29 and December 13, 2007, and February 21, 2008 meetings
- Staff attended the DEAB Stormwater Work Session on November 1, 2007
- Staff attended the DEAB Stormwater Workshop on January 17, 2008

American Society of Civil Engineers

- Staff and SAC Member Eric Golemo provided an update at the ASCE lunch meeting on January 17, 2008

Stormwater Program Public Involvement and Outreach

- Extensive information has been available on the Web since September 2007
- The county sent a four-page mailer to interested parties and distributed it to neighborhood associations throughout the county in October 2007

Publicity and News

- "County storm management update underway, committee appointed", *Daily Insider*, August 10, 2007

- “Committee will tackle stormwater rule changes”, *The Columbian*, August 13, 2007
- “A flood of problems”, *Vancouver Business Journal*, November 23, 2007
- “Stormwater rules have builders warning of costs”, *The Columbian*, December 6, 2007
- “County lawn care plan: Use wastewater”, *The Columbian*, December 20, 2007
- “Crossroads await in '08 for county”, *The Columbian*, January 1, 2008
- “Stormwater Code Update”, *BIA Newsletter*, February 2008
- “County misses deadline to craft stormwater rules”, *The Columbian*, March 5, 2008

Clark County Options

Option 1: Increase outreach to rural residents prior to submitting draft code to Ecology.

Option 2: Increase outreach to rural residents after submitting draft code to Ecology.

Advantages and Disadvantages of the Options

	Advantages	Disadvantages
Option 1 Outreach prior to submitting draft code	<ul style="list-style-type: none"> • Public opinion will be incorporated as much as possible in the draft submitted to Ecology 	<ul style="list-style-type: none"> • Additional time needed prior to submitting code to Ecology
Option 2 Outreach after submitting draft code	<ul style="list-style-type: none"> • More time will be available to engage rural residents 	<ul style="list-style-type: none"> • Public comment may be difficult to incorporate after receiving Ecology’s conditioned approval

Board Direction

Provide additional outreach to rural residents (January 20, 2008 Work Session).

Status

Staff is planning an open house targeted to rural residents as early April, 2008. A news release and targeted announcements will be distributed by April 10, 2008. Staff has identified the following groups to invite and/or to attend their meetings:

- Clark County Farm Bureau
- Clark Farm Forestry Association
- 4-H Members
- Backcountry Horseman
- Clark County Executive Horse Council

Staff will update the Planning Commission again in April, 2008, as well as respond to questions and concerns raised at the previous Work Session.

The Clean Water Commission plans to host a second Open House in spring 2008.

Additional SAC and TAC meetings and Board Work Sessions are anticipated this spring to consider comments from Ecology.

Clark County Stormwater Ordinance Update Issue Paper: Low Impact Development

March 6, 2008

The Challenge

The NPDES phase I municipal stormwater permit (the permit) requires the County to allow low impact development (LID). The challenge is to determine what level of support the County will give to LID and how to include it in code.

Background

LID is a suite of stormwater management and land use planning techniques that reduces the impact from impervious areas by using natural processes to address stormwater runoff. The overall goal of LID is to handle stormwater as close as possible to its point of contact. There are two fundamental reasons for this. First, it breaks the pattern of stormwater runoff flowing directly into our streams and lakes, picking up pollutants as it goes. Second, it means that stormwater has the chance to soak into the soil and recharge our groundwater.

The current stormwater code does not allow LID practices such as porous pavement and rain gardens.

The Stakeholder Advisory Committee (SAC) considered LID extensively. SAC recommended:

- Publishing a LID design manual
- Educating the public about preserving LIDs through outreach efforts
- Private ownership for facilities on commercial and industrial properties
- Adding rain barrels and green roofs to the LID list

Key ways in which LID may differ from traditional development include:

- Site planning
- Construction sequencing
- Distribution of stormwater facilities throughout a site

Key ways in which LIDs may alter the County's responses to stormwater management:

- Ownership of stormwater facilities
- Maintenance responsibility for dispersed facilities
- Providing ongoing education to property owners on maintaining LID facilities
- Providing incentives for LID

What other jurisdictions are doing

Jurisdictions that allow LID typically have an ordinance and a technical design manual to provide basic standards and procedures for the use of LID.

Jurisdictions vary on facility ownership and maintenance responsibility. Some only allow LID facilities to be privately owned while others only allow public. Some require private maintenance, even for a public facility, and some jurisdictions maintain all LID facilities themselves.

The most common incentive offered is a reduction or exemption from stormwater utility fees. For developers, the primary motivation to incorporate LID facilities is to reduce the

size of traditional stormwater facilities such as detention ponds, which can increase developable land and lower stormwater mitigation costs.

Clark County Options

Option 1: Ensure that LID is not prohibited in the County (minimum compliance).

Option 2: Encourage LID by publishing a design manual and offering incentives.

Advantages and Disadvantages of the Options

	Advantages	Disadvantages
Option 1 Minimum LID requirement	<ul style="list-style-type: none"> • No additional programs to manage • Least administrative cost 	<ul style="list-style-type: none"> • Inability to regulate LID facilities • Treatment and flow control credits from the 2005 Stormwater Management Manual for Western Washington will be difficult to evaluate and approve, potentially preventing developers from benefiting from LID • Higher level of risk for project proponents • No support for LID projects
Option 2 Encourage LID	<ul style="list-style-type: none"> • Supports LID projects • Ability to regulate LID facilities • Provides least risk for project proponents • Provides clear project review and approval criteria • Helps to minimize land lost to storm facilities 	<ul style="list-style-type: none"> • Cost to develop a design manual • Increased program management and code enforcement costs

Board Direction

Publish a LID design manual (December 19, 2007 Work Session).

Status

A draft LID manual has been distributed on the Web and to the Technical Advisory Committee (TAC), SAC, the Development Engineering Advisory Board (DEAB), and some members of the American Society of Civil Engineers (ASCE). Staff will begin to incorporate comments in the following weeks.

Clark County Stormwater Ordinance Update Issue Paper: Using the County Right-of-way

March 6, 2008

The Challenge

Allowing the use of right-of-way for underground stormwater facilities presents a challenge in balancing legal liability, ease of maintenance, future improvements, and minimizing area lost to storm facilities.

Background

Currently, 40.380.040(D)(7) of the Clark County Code requires locating publicly owned and maintained stormwater facilities on separate tracts of land. Privately owned and maintained facilities must be located within an inspection easement to the County.

The County's current code and practice prohibits placing a storm facility within existing or proposed dedicated rights-of-way due to potential legal liability and perceived maintenance preferences.

For this discussion, an underground facility is a drywell, underground infiltration system, or vault used to manage stormwater. Existing right-of-way is already in the County's custody while proposed dedicated rights-of-way will be dedicated to the county at the completion of the associated development project.

Legal Liability

The use of existing rights-of-way may carry some liability. In King County, the county allowed a developer to install a flow spreader in the existing right-of-way to handle stormwater coming from private property. The flow spreader subsequently failed and caused downstream property damage. The county was seen as partnering with the developer in allowing the use of their right-of-way and was held jointly liable with the developer.

Clark County legal staff agrees that the liability found in the King County case does not exist when right-of-way is dedicated with the project. While the use of existing right-of-way may carry some liability, it is staffs' belief that the reasonable use and long term maintenance easily outweigh that potential liability.

Maintenance

County staff erroneously believed that Maintenance and Operations staff preferred underground facilities to be located outside the right-of-way. In fact, Maintenance staff prefers underground infrastructure to be placed within the roadway prism when possible. Locating underground facilities on small tracts of land has posed several challenges, including:

- Limited access
- Root intrusion
- Overhead restrictions
- Property owner coordination

The Stakeholder Advisory Committee (SAC) and Technical Advisory Committee (TAC) each supported reasonable use of rights-of-way to manage stormwater from roads and contributing residential lots.

What other jurisdictions are doing

The City of Vancouver does not restrict the use of right-of-way for underground facilities that manage stormwater from public roads or residential lots.

Clark County Options

Option 1: Continue to restrict the use of rights-of-way.

Option 2: Allow reasonable use of existing and proposed dedicated rights-of-way for underground facilities.

Advantages and Disadvantages of the Options

	Advantages	Disadvantages
Option 1 Continue to restrict the use of right-of-way	<ul style="list-style-type: none"> Limits liability 	<ul style="list-style-type: none"> More land lost to storm facilities Increased project costs Conflicts with low impact development (LID) goal to distribute stormwater treatment
Option 2 Allow reasonable use of right-of-way for underground facilities	<ul style="list-style-type: none"> Ease of maintenance Flexibility in design Less land lost to storm facilities 	<ul style="list-style-type: none"> Potential liability when allowing use of existing right-of-way

Board Direction

The Board supported Option 2 in the January 30, 2008 Work Session.

Status

The draft stormwater and erosion control code incorporates Option 2. Staff anticipates making additional revisions regarding vaults, coordination with the capital improvement program, and location of private facilities on residential lots.

40.380.020(D) Location of Stormwater Facilities

5. ~~7. Publicly owned and maintained~~ Stormwater treatment and control facilities other than underground closed systems in urban residential subdivisions and short plats shall be located on separate tracts which are recommended, but not required, to meet minimum zoning lot size requirements. The plat or other dedication instrument shall indicate tract disposition in the event of county abandonment or vacation. ~~Privately owned and maintained facilities may be within easements. In addition, easements shall be provided to the county for access and inspection of the facilities.~~

Clark County Stormwater Ordinance Update Issue Paper: Fencing Stormwater Facilities

March 7, 2008

The Challenge

The challenge is providing a code that balances flexibility and aesthetic considerations with the need to limit access to a potentially hazardous facilities and maintenance concerns.

Background

Currently, 40.380.040(F) of the Clark County Code requires “stormwater facilities located in or adjoining residential areas to be fenced unless these facilities are constructed as part of a development amenity such as a park or the responsible official waives the fencing requirement due to special circumstances.”

Current county practice requires fences for all public facilities. Therefore, developers who want unfenced facilities have been choosing to keep them private. The county requires a hold-harmless agreement if private facilities are not fenced.

Both developers and the County would like to see more stormwater facilities serve as amenities to a site. Benefits to this approach include aesthetic value, positive visibility of stormwater management, and the potential for multiple uses during the dry season.

The Stakeholder Advisory Committee (SAC) and the Technical Advisory Committee (TAC) recommended that stormwater facilities within subdivisions be public to prevent water quality problems caused by poorly maintained storm facilities. Both groups also supported more flexibility in regard to the fencing requirements.

TAC discussed possible alternatives to fencing. These include:

- Location (designed and located as an amenity to the development)
- Alternate barriers (boulders, 4' black vinyl fencing, split rail fence, and landscaping (standards to be determined))
- Bolt down all grates and manhole covers
- Gradual side slopes (3:1 with a 5' bench or 4:1 or flatter without a bench)
- Maintenance access via bollards or gate
- Sign the facility (similar to wetland ordinance standard)
- No internal walls greater than two feet exposed height
- Grates on all pipes greater than 12" diameter
- Limited peak outlet flow

What other jurisdiction are doing

The City of Vancouver typically requires public facilities to be fenced for safety and vandalism concerns.

Clark County Options

Option 1: Continue to require fencing of all public facilities.

Option 2: Develop options to fencing that allow more flexibility in the design of public facilities.

Advantages and Disadvantages of the Options

	Advantages	Disadvantages
Option 1 Continue to require fencing of all public facilities	<ul style="list-style-type: none"> • Minimizes liability • Minimizes vandalism • Maximizes safety 	<ul style="list-style-type: none"> • May result in more private facilities in residential areas • Unable to achieve multi-use public facilities • Could conflict with LID practices (e.g. rain gardens)
Option 2 Develop options to fencing	<ul style="list-style-type: none"> • Flexibility for public facilities • Compatible with LID • Esthetics/Amenity • Positive visibility • Encourages multiple use 	<ul style="list-style-type: none"> • Potential for additional vandalism and maintenance costs • Increased safety issues

Board Direction

The Board generally supports providing flexibility in the code.

Status

The intent of the draft ordinance (40.380.020(F)) is to support flexibility by providing options to fencing. By using flatter side slopes, benching, and minimizing the water depth, a facility may qualify for options other than chain link fencing, such as landscaping or alternate fence types. Draft code for this section is being revised. More work is expected to better develop the conditions where fencing would or would not be required, and to respond to comments received.

Clark County Stormwater Ordinance Update Issue Paper: Fiscal Impacts

March 7, 2008

The Challenge

Changes to the Stormwater Ordinance can have significant economic impacts to this community. Developing a code that maximizes the water quality benefits from our investment in stormwater management is vital to protecting the beneficial uses of water resources such as drinking, recreation and habitat.

Background

Implementation of the current NPDES Phase I municipal stormwater permit (the permit), excluding requirements currently under appeal, is estimated to add \$1.6 million to the cost of compliance over the previous (1999) permit for the 2007-2008 biennium. See attached information from a May 16, 2007 work session with the Board of County Commissioners. Approximately \$500,000 is directly attributable to the Stormwater Ordinance Update, including \$383,000 for increased enforcement activities and training for development inspectors and review engineers. The remainder of the \$1.6 million funds additional operations, monitoring, infrastructure, and outreach and education expenses. Note: Clark County has expended approximately \$300,000 on the update process through January 2008.

The longer term fiscal impacts to the organization and community are far more difficult to predict. The scale of those fiscal impacts and the burden for bearing those costs depend upon how the ordinance is written. The most significant areas of concern are development and maintenance costs – both public and private.

Development

Strict adherence to the permit flow control standards, without adjustment of development patterns or stormwater management practices, will have a profound economic impact on development. In many cases it could double or triple the size of facilities and cause a related financial loss of land available for development.

However, incorporating comprehensive low impact development (LID) practices can lower those costs considerably. In many cases, total stormwater facility costs associated with LID can be significantly less than the costs of current practices (“Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices”, EPA Publication 841-F-07-006, 2007 and “The Practice of Low Impact Development”, NAHB Publication, 2003).

Stormwater management costs will vary greatly with location, site planning, soil characteristics, percent of impervious land cover, and the stormwater approach chosen.

Maintenance

Long term maintenance costs are also dependent upon the flexibility of the ordinance, types of facilities allowed, and ownership of those facilities. Strict adherence to the permit requirements, without adjusting current practices, would result in larger facilities and a subsequent increase in maintenance cost of 20 to 40% per facility. Savings in capital investment can lead to increases in maintenance costs.

The application of some LID techniques, like pervious pavement and concrete, would necessitate the purchase of new equipment (\$225,000 for a vacuum sweeper), training, and possibly new staff. In other words, maintenance costs could be significant. However, other LID practices like rain gardens, green roofs, or rain barrels could reduce the need for public facilities (and associated maintenance).

The addition of numerous filter vaults, which save land, can add significant maintenance costs. So, the balance between capital expenditures and maintenance and operations cost must be carefully considered.

The SAC and TAC have worked very hard to develop many options to contain both development and maintenance costs.

What other jurisdictions are doing

Other phase I jurisdictions are also in the process of updating their ordinances. King County has required similar regulations since 1999 for continuous storm modeling and recently adopted the forested pre-development condition, lessening the impact of this permit. Other jurisdictions that are still using peak flow methods today are in a similar situation as Clark County.

Clark County Options

Some of the options that stakeholders have recommended to support containing fiscal impacts and focus investment in appropriate areas include:

- Flow Control standards
- Increased infiltration
- LID techniques
- Use of Right-of-way for underground facilities
- Credits for retaining natural areas
- Review and update of other associated ordinances, e.g. Transportation
- Developing regional facilities
- Providing flexibility to develop stormwater facilities as amenities

Board Direction

The Board of County Commissioners has continually stressed the need for flexibility and careful consideration of financial impacts to the community to ensure the new code improves stormwater management without placing unreasonable economic demands on the organization or citizens.

Status

Following the Board's direction, the stakeholders and staff have included many options in the draft ordinance that provide flexibility and consideration. We expect the update (as proposed) will have manageable fiscal impacts.

**2007-08
Clean Water Program Old and Current NPDES Permit Work**

