Community Development & Planning

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To: San Juan County Council
Mr. Robert W. Jean, Interim County Manager

CC: Shireene Hale, CD & P Planning Coordinator
Ed Hale, Public Works Utility Manager

From: Linda Kuller, CD & P, Planner IV

Date: May 31, 2013

Re: June 17, 2013, Stormwater Regulation Briefing

See Attachment 6 for common stormwater management definitions

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Issue

Update of the stormwater management regulations.

Update Objectives

Updating the County's stormwater regulations and incorporating low impact development provisions were priorities for previous County Councils. To help advance this effort, the County applied for and received a grant from the Environmental Protection Agency and began working with stakeholders. The Stormwater Advisory Committee, Planning Commission, Hart Pacific Engineering, the Permit Center, and CD & P and Public Works staff provided feedback on the scope of this project. A summary of preliminary stakeholder feedback is provided in Attachment 2.

Proposed objectives for this update include:

- Integrating low impact development incentives, techniques and practices into code;
- Replacing confusing and outdated code with clear and concise clearing, grading and stormwater management regulations;
- Establishing standards for managing stormwater from driveways and discharges to county managed ditches and drainage infrastructure;
- Establishing rural stormwater standards to minimize engineering requirements and costs in low risk areas;
- Simplifying regulations and processes; and

- Maintaining consistency with the goals and policies of the Comprehensive Plan.

Recommendation

If Council agrees with the proposed strategy in this report, we recommend that you direct staff to finalize the technical and procedural aspects of the draft proposals in preparation for broader public participation. Staff also recommends that the Planning Commission and County Council be provided with several general stormwater management briefings to set the foundation for the review of draft regulations and decision-making. Additional policy briefings could be scheduled as needed.

The proposed update strategy is based on identified needs, preliminary stakeholder feedback, discussions with the Washington State Department of Ecology, and consideration of several re-occurring themes in the Comp Plan. These themes encourage protection of water quality and quantity, on-site infiltration (soaking or percolation of surface water into the ground) and treatment of run-off, and preservation of the surface and ground water balance. In addition, they promote low impact development/on-site stormwater management, the use of the most current stormwater management science, and user friendly requirements that provide flexibility for rural low risk development sites.

Staff recommends that the updated codes:

- Establish stormwater review thresholds, minimum requirements and plan review and inspection processes in code;
- Provide flexibility in project thresholds and minimum requirements for projects on rural low risk sites where stormwater can be managed on-site;
- Require the use of the 2012 Stormwater Management Manual for Western Washington (2012 Manual) project thresholds and minimum requirements for other projects;
- For all projects, require the use of the best management practices in the 2012 Manual to implement the stormwater management requirements;
- Establish basic stormwater regulations for all driveway development;
- Establish regulations for stormwater discharges to publicly maintained ditches;
- Establish low impact development (on-site management) incentives;
- Establish new land disturbing activity (clearing and grading) requirements consistent with the updated drainage regulations; and
- Establish clear stormwater and land disturbing activity definitions.

A brief explanation of these bulleted strategies is provided below.

Stormwater Review Thresholds and Minimum Requirements

Staff recommends making the stormwater code easy to understand by including the project thresholds and minimum stormwater management requirements in the code. The minimum requirements are triggered by the amount of land disturbed or the amount of hard surface developed. Under current regulations, the stormwater manual must be consulted to determine minimum code requirements. In addition, clear plan review and inspection processes need to be identified in the code.

Threshold Flexibility for Rural Development

Attachment 1 provides a table depicting the preliminary draft of proposed thresholds and minimum requirements development. The thresholds for rural low risk sites are proposed to be modified from the thresholds and minimum requirements found in Ecology's 2012 Manual (see Attachment 5). The draft proposal would have developments on rural sites that have less than 10,000 square feet of impervious surface and one acre of disturbed areas infiltrate or disperse run-off using a prescriptive list of best management practices such as:

- ✓ Soil amendments
- ✓ Dispersion of runoff
- ✓ Downspout infiltration
- ✓ Rain gardens and bioretention swales
- ✓ Perforated stub-out connections

Thresholds for Other Projects

Staff proposes to require the use of the 2012 Manual project thresholds and minimum requirements in more developed areas and other rural developments including:

- ✓ Urban Growth Areas;
- ✓ Activity Centers;
- ✓ Island Centers and Master Planned Resorts;
- ✓ Development with greater than 10,000 square feet of impervious surface and less than one acre of land disturbance.

Best Management Practices

Staff recommends adopting and requiring the use of the best management practices in the 2012 Manual to implement the stormwater management requirements. User friendly handbooks can be developed by staff for the most commonly used best management practices.

Controlling Stormwater from Driveways

It is recommended that the County require best management practices to manage stormwater runoff from driveways. An example of a best management practice would be to fully disperse runoff whenever feasible. Many of gravel and dirt driveways in the County have not been graded to properly direct runoff. Fine grained soils from these driveways tend to contribute pollution and sediment to runoff which can enter county maintained drainage ditches and eventually reach wetlands, streams and the marine shoreline.

Managing stormwater from driveways is needed to preserve and maintain County resources and facilities.

Regulating Stormwater Discharges to Publicly Maintained Ditches

Public Works recommends the adoption of local standards to regulate the amount of runoff that can be discharged into a county maintained drainage ditch. The absence of discharge standards and continued residential growth increases pressure on the County drainage facilities and the County budget. Many residential impervious surfaces including driveways, and curtain and foundation drains commonly discharge run-off to roadside ditches, sometimes without permission from Public Works. Some of these drainage ditches are barely adequate and many County roads have poorly maintained culverts that cause runoff to overtop roads causing erosion and other maintenance and repair problems.

Establishing Low Impact Development Incentives

Where possible, it would be beneficial to include other low impact development incentives in the code. For example, incentives might include the flexibility to modifying landscaping requirements if necessary to establish low impact development site features such as a rain garden.

Updating Grading Code to Address all Land Disturbing Activity (Clearing and Grading)

Staff recommends updating the grading code to be consistent with the 2012 Manual that requires stormwater management for both clearing and grading activities.

Definitions

For clarity, the definitions in code and stormwater manuals must be reconciled. Current contradictions in definitions, such as the definition of development, require a code interpretation to resolve conflicts.

Alternatives

Alternatives to the proposed strategy could include:

- Do nothing. This alternative is not recommended because the current regulations include incorrect references to the 2005 Manual, are difficult to understand and low impact development is not addressed. Also, this option would not comply with the grant scope of work.

- Continue to use the 2005 Manual. This alternative is not recommended because this out dated Manual does not contain the most current stormwater management information or best management practices. In addition, the updated 2012 Manual focuses on on-site management/low impact development practices which are consistent with the goals and policies of the Comp Plan.

- Alternative strategies for regulating development in rural areas could be based on the percentage of development to lot size. This strategy is more complicated than the proposed strategy and could be more difficult to implement.

Background

Comprehensive Plan Analysis

The project purpose is consistent with the Water Resource Goals and Policies in Section B, Element 4 the San Juan Comprehensive Plan that guide the development of stormwater regulations. See Attachment 3 for an analysis of the Comp Plan goals and policies pertaining to this proposal and the proposed use of the 2012 Manual.

Stormwater Impacts

Stormwater runoff is a significant cause of water quality problems that can harm human health, drinking water, and fish habitat. Stormwater is rain and snow melt that runs off of hard surfaces such as roofs, paved roads, driveways and parking lots, and other surfaces like lawns and playfields. Often it flows to ditches, water bodies and marine environments far from its origin. For a detailed explanation of stormwater impacts to water quality and quantity, please *see Chapter 7 of the San Juan County 2011 Best Available Science Synthesis.*

The primary stormwater challenge is that future development will result in increased cumulative impacts to water resources as undisturbed land is converted to impervious and less pervious surfaces. Controlling flows from small projects including driveways is important because the cumulative effect of uncontrolled flows from many small developments can be as damaging as those from a single large development.

State and Federal Stormwater Regulations

See Attachment 4.

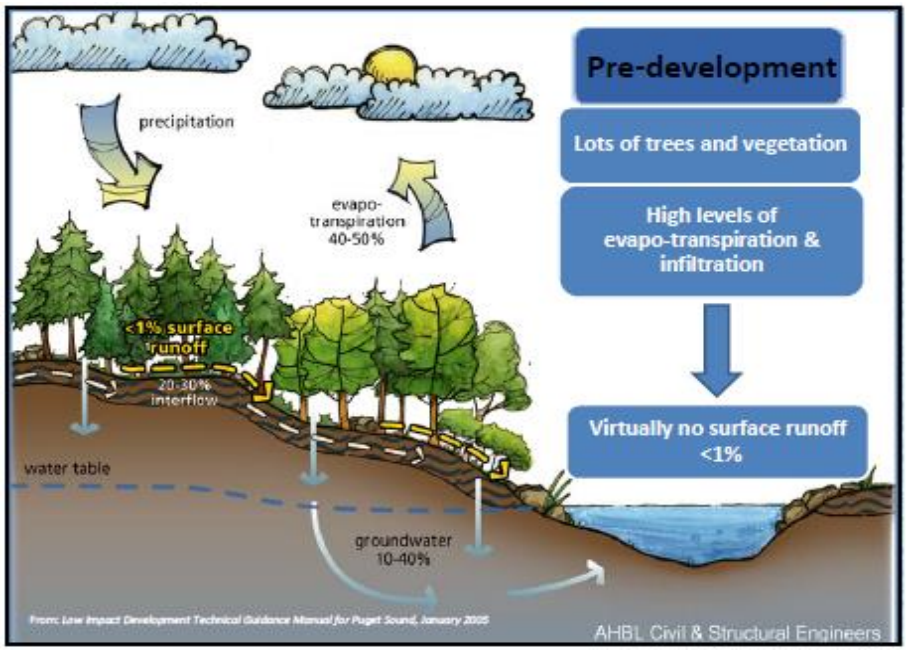
Stormwater Management Manual

Staff proposes that the County begin using Ecology's 2012 Stormwater Management Manual for Western Washington (2012 Manual) instead of the 2005 Manual currently adopted by the County. The 2012 Manual provides the most current information in stormwater management practices, techniques and materials needed to meet state and federal water quality standards. It also significantly changes the direction of stormwater management by focusing on the retention of more natural hydrologic processes. This focus is implemented through the use of on-site stormwater management practices/low impact development that helps keep runoff on the development site through dispersion or infiltration and the 2012 Manual includes new information about how low impact development best management practices should be used.

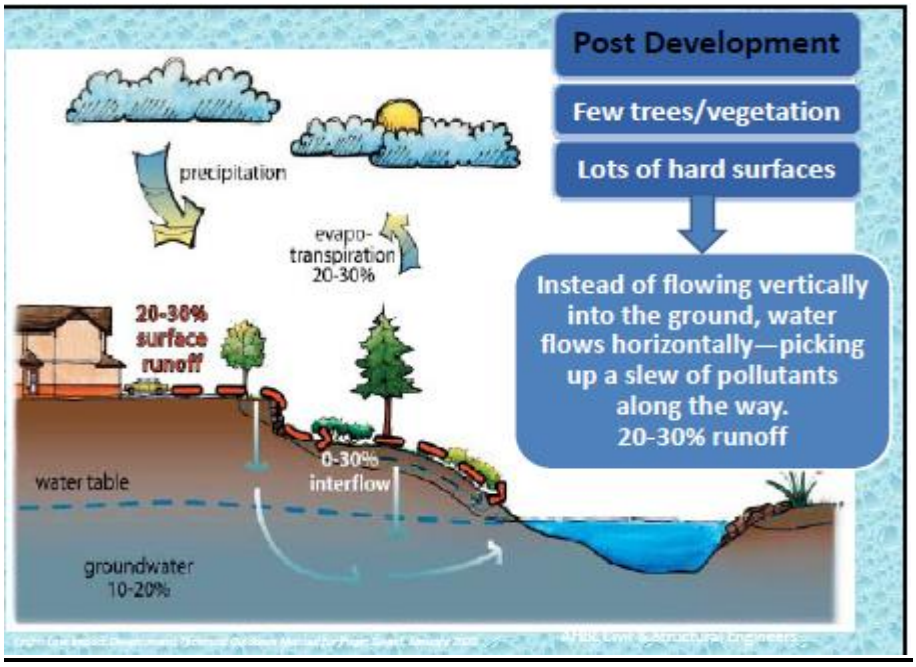
Use of the 2012 Manual is consistent with the County's Comp Plan goals and policies to protect water resources and to infiltrate water on-site as close to the impervious areas and sources of pollution as possible. Its use is also consistent with several other re-occurring Comp Plan themes that aim to protect water quality and quantity, preserve the surface and groundwater balance, encourage on-site infiltration and treatment, and promote low impact development incentives and the use of best science.

Stormwater Management Manual and Trends – What's Old (and Natural) is New Again

Prior to the development of large amounts of impervious surfaces, rainfall that was not intercepted by vegetation infiltrated into the ground, moved slower, had its pollutants removed by soils, recharged aquifers and maintained a natural water balance.



As the graphic below shows, after clearing and removal of vegetation, stormwater runoff increases carrying pollutants, causes erosion and changes the water balance.



Although contrary to natural processes, the conventional approach to stormwater management has been to route stormwater quickly and efficiently to engineered flow control and treatment systems. Under this scenario, little consideration is given to minimizing the amount of runoff, protecting natural hydrological processes, or minimizing costs for installation and long-term maintenance of drainage facilities.

The more natural processes of on-site management which can better mimic the pre-development runoff cycle are now viewed as the preferred method of stormwater management. The 2012 Manual includes the newest technology and guidance on stormwater management best management practices. It makes on-site management (low impact development) the most commonly-used approach by including guidance to:

- Use on-site stormwater management when feasible through either the use of low impact development best management practices such as soil amendments, downspout full infiltration, downspout dispersion, or perforated stubout connections, flow dispersion, or

- In urban areas to achieve a low impact development performance standard that requires mathmatical modeling of pre- and post-development runoff.

It is helpful to understand the basic organization of 2012 Manual. Volume I identifies project thresholds that trigger application of the minimum stormwater management requirements and best management practices needed to implement them. Local governments usually adopt these provisions in their regulations and tailor them to local concerns. The minimum requirements are satisfied through the use of best management practices (BMPs) contained in Volumes II through V:

- Volume II: BMPs for short-term stormwater management at construction sites.
- Volume III: Hydrologic analysis & BMPs to control flow volumes.
- Volume IV: BMPs to minimize pollution generated from sources.
- Volume V: BMPs to treat runoff containing sediment or other pollutants.

As a practical manner, the most common best management practices for single-family and other developments can be presented in easily understandable information bulletins and development handbooks.

Another benefit of using the 2012 Manual is that it relies on an updated Western Washington Hydrology Model for the design of certain stormwater systems. This model has low impact development modeling capability and also is used to model compliance with wetland protection requirements. The 2012 WWHM is provided free to the public. The 2005 Manual model cannot model low impact development features and it is costly to purchase.

Additional information about the use of Ecology's stormwater manuals is found in Attachment 5.

Intended Project Result

- Clear, concise stormwater regulations that can be easily understood and implemented;

- Standards that protect water resources and county drainage infrastructure;

- Flexibility on low risk rural sites including reduced engineering costs;

- Development of user friendly applications and assistance bulletins, and

- Improved permitting efficiency.

Attachment 1
***ROUGH DRAFT* - Table XX Overview of minimum stormwater management requirements.**

TABLE X MINIMUM STORMWATER MANAGEMENT REQUIREMENTS AND REVIEW PROCESSES		
New Development and Redevelopment unless exempted in SJCC 18.60.070.XX*	**Minimum Stormwater Management Requirements (MRs)**	**Submittals and Plan Review**
Small project activities in all areas of the unincorporated County that: Do not require a building, or grading permit, **or** Result in less than 2,000 square feet, or greater, of new, replaced, or new plus replaced hard surface area, or Disturb less than 7,000 square feet or greater.	Comply with MR 2: Employ stormwater pollution prevention BMPs to control soil erosion and sedimentation, stabilize exposed soils and protect adjacent properties and water bodies from pollution during construction and when applicable, and • Disperse runoff to vegetated areas, downspout • Install infiltration splash blocks, gravel filled trenches or drywells as needed • Comply with driveway standards in SJCC 18.60.070.XX	If no permit is required, no submittal or plan review is required unless the activity requires a building or grading permit. When another permit is required, an abbreviated stormwater site plan details can be depicted on the permit site plan shall to show how soil erosion and sedimentation, and stormwater will be controlled. **Option: CD & P can attach standard BMPS as conditions to the application/permit.*
New development or redevelopment activities located in: • Urban Growth Areas; • Activity Centers; • Island Centers; Master Planned Resorts; AND Development in Rural, Rural Resource and Special Land designations that: • Results in more than 10,000 square feet of impervious surfaces and more than one acre of land disturbance.	Comply with the minimum requirements established for project thresholds in SJCC SJC (Ecology thresholds), and any applicable subarea plans and development regulations and any additional stormwater requirements: Driveway standards and BMPs	A stormwater application; A stormwater pollution prevention plan for compliance with MR 2; and A stormwater site plan that addresses all other applicable minimum requirements (MRs 1-5 - Targeted Stormwater Site Plan, or MRs 1-9 - Full Stormwater Site Plan) (see SJCC 18.XXX)
Development in Rural, Rural Resource and Special Land designations that: • Results in less than 10,000 square feet of impervious surfaces and less than one acre of land disturbance.	MR 2 and compliance with onsite-stormwater management BMPs found in: Table SJCC 18.60.070.X On-site Management LIST #1	An abbreviated SWPPP stormwater site plan that depicts BMPs for on-site management areas and compliance with driveway standards. The stormwater plans may be shown on the permit site plan. Use prescriptive BMPs.

*Note: Certain activities such as agricultural cultivation are exempt from all stormwater requirements.

Attachment 2
Summary of Stakeholder Input through May 2013

CD&P and PW staff, the Stormwater Advisory Committee, Planning Commission, and designers at Hart Pacific Engineering and the Permit Center identified some major issues with the County's existing regulations which are summarized below:

- The current code requires conformance to the 2005 Washington State Ecology Manual (2005 Manual) which is written as a guidance document, not a set of regulations. The minimum requirements for drainage and stormwater pollution control are not clearly set out in code users must go find them in the 2005 Manual. This makes project thresholds and stormwater standards difficult to find and understand.

- The code is confusing because it references the 2005 Manual; but cites volumes and sections of the 2001 Manual.

- Many SJC code and 2005 Manual definitions conflict including the term "development" which requires an interpretation for basic project thresholds

- Permit processes and procedures are unclear and are not user friendly. Better coordination is also needed to ensure on-site better design of stormwater plans, septic/drainfield designs and buffer retention.

- The code does not include adequate stormwater design and construction standards for the development of all driveways. Driveway permits issued by Public Works only consider access for driveways entering public roads. Both public and private road design standards lack drainage requirements.

- The regulations seem too onerous and expensive for residential projects proposed on large lots (to be defined, but some recommend large to be those lots that are one-half acre or larger) where stormwater can often be managed on-site.

The following primary improvements to the codes were suggested:

- Develop reasonable project thresholds and standards that are low impact or low risk in rural areas that can manage stormwater on-site.

- Design regulations so that an engineer is not required for low risk sites on large rural lots based upon the amount of impervious surface and infiltration capacity. Develop simple prescriptive standards for large parcels outside of priority basins.

- Use Ecology's Stormwater Manual for technical guidance and best management practices; the 2012 Manual is improved, there is no downside to its use and tailor threshold and permit requirements to address rural settings.

- Allow alternative best management practices designs for dispersion trenches from the Ecology Manual when proven to work (example: Dan Drahn had a local design).

- Encourage better site design. Keep driveways away from property lines and sited along contours. Incorporate incentives to reduce the creation of impervious surface.

- Provide a driveway plan template, integrate driveway and PW access review, minimize driveway width, and exempt driveway construction under 2000 square feet from CD & P stormwater review.
- Do not allow pond building to have adverse impacts on creeks and drainageways.
- Develop a drainage discharge factor for discharges to the County drainage system.

Stakeholder Suggestions for Drafting New Regulations

- Draft clear, concise and user friendly clearing, grading and drainage regulations and standards that comply with SJC Comprehensive Plan goals and policies and help applicants meet federal and state water quality regulations.
- Consider adopting all permit exemptions allowed by Ecology in NPDES permits.
- Provide regulations that easily allow users to determine the applicability of the grading and drainage regulations and identify applicable permit exemptions, thresholds, and minimum requirements.
- Include flexibility in project thresholds and minimum requirements for rural projects on large lots that are low risk or where stormwater can be managed on-site through infiltration and other on-site management best management practices.
- Provide simple code direction in how to use the selected stormwater management manual(s) to find the best management practices needed to design stormwater controls (and provide appropriate information bulletins, guides and application materials)
- Establish a clear permit review and site plan approval processes.
- Use cost simple prescriptive methods and other effective methods to meet requirements.
- Provide low impact development incentives when possible.
- Provide adequate design standards for driveways, roads, and drainage to the county stormwater system of ditches and culverts.
- Based upon new regulations, adjust drainage review fees to correspond to review of non-engineered best management practices and if only prescriptive requirements are needed provide review under building code fee.

Attachment 3
Comprehensive Plan Analysis and Copy of Comp Plan Section 4.2.C Stormwater

The following introduction and goals from Comp Plan Section 4.2.C Stormwater are essential factors supporting the proposed update:

> *Stormwater poses a widespread risk to the health of our island watersheds. Forests produce the least runoff, the greatest amount of infiltration, and the best water quality. Soil compaction, altering drainage patterns, and replacing forest with pasture, lawn, driveways, and structures results in less infiltration, more surface runoff, and if not controlled, the discharge of warm, polluted water. As the amount of runoff increases, less water is available for beneficial uses including drinking water.*
>
> *Increasing surface runoff also increases the quantity of pollutants that are swept into the water during storms. The removal of riparian vegetation and over grazing by livestock destroys nature's filtration system, which can result in runoff, sediment, and nutrients flowing unimpeded into the water. Developing an area can also expose more pollutants to stormwater.*
>
> *GOALS:*
>
> 1. *Promote water conservation and the concept of stormwater as a usable resource.*
>
> 2. *When feasible, treat, manage and infiltrate stormwater on site, as close to impervious areas and sources of pollution as possible. Allow off site discharge only as a last resort with mitigation.*

The current stormwater regulations do not effectively implement the on-site management - low impact development guidance provided in these goals. Existing county regulations require conformance to the 2005 Western Washington Stormwater Management Manual (2005 Manual). The Washington Department of Ecology has replaced the 2005 Manual with a 2012 update that emphasizes on-site stormwater management and low impact development, a vital topic expressed throughout the County's water resources goals and policies. Adoption of this updated manual with some local tailoring to address rural issues is recommended.

Another Policy 4.f in in SJC CP *4.2.C Stormwater* guides the County to:

> *Develop or adopt a stormwater management manual suitable for rural counties.*

This update will address this policy with specific standards for development on rural low-risk sites. First, the concern should be considered. It's been stated that the Washington State Department of Ecology (Ecology) stormwater management manual are "urban" stormwater manuals. This sentiment may be partially based on a misunderstanding and a concern about its complexity. The Manual is sometimes misconstrued to be an "urban" solution to stormwater management because it must be used by large and medium sized jurisdictions that are subject to specific oversight and regulation under the Federal Clean Water Act (ACT) and are issued National Pollutant Control Elimination System (NPDES) permits to discharge stormwater to receiving waters of the State. The NPDES permit program is administered by Ecology.

However, Ecology recommends use of the Western Washington Manual for controlling stormwater on both urban and rural lands, and on single-family, commercial, industrial and

roadway developments. The best management practices for controlling stormwater runoff and preventing or minimizing soil sedimentation and erosion in the Ecology Manual are the same for urban or rural lands that have similar soils, slopes, and vegetative characteristics. Best management practices are schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices that prevent or reduce the release of water and pollutants. The primary types of best management practices are source control, treatment, and flow control.

Application of the minimum requirement thresholds, standards and best management practices contained the latest Ecology Manual are designed to result in compliance with state and federal water quality standards. For more information about these laws, *see Attachment X.* Use of the latest Manual provides project applicants with presumed compliance protection and potential avoidance of state and federal noncompliance penalties. Manual strategies are intended to help developers comply with federal laws to reduce pollutants to the maximum extent practicable and to satisfy state water quality requirements through the application of all known, available and reasonable methods of pollution control to stormwater. The result is protection of beneficial uses of receiving waters including public water supply, protection for fish, shellfish, and wildlife, and recreational, agricultural, industrial, and navigational uses and aesthetics.

Ecology requires Permittees and encourages non-NPDES communities to adopt the stormwater guidance as regulations and best management practices equivalent to those in the Manual because they provide the best available science needed to meet water quality standards.

Consistent with *SJC CP Section 4.2.AGeneral Goals and Policies and General Goal 18:*

> *In consideration of Best Available Science, protect & manage the quality and quantity of ground and surface water so as to preserve hydrologic systems, designated beneficial uses, and fish and wildlife habitat that rely on fresh water.*

San Juan County currently uses the 2005 Manual and previously had adopted the 2001 Manual. In this sense, SJC is not doing more than necessary to ensure that project applicants are complying with water quality regulations and the proposed update is in line with past and current practice.

An often articulated concern is that the Ecology Manual requires more stringent controls than are necessary for large rural development sites. This concern is reflected in SJC CP Policy 4.2.C.4.f that guides the County to:

> *Develop or adopt a stormwater management manual suitable for rural counties.*

In addition, some people believe that the cost of complying with the Manual is high, especially on rural low risk sites when engineered plans are required. This concern has been addressed by other non-NPDES Permittees by modifying project thresholds, adopting prescriptive stormwater controls and requiring abbreviated stormwater plans for certain rural developments. Some Permittees such as Skagit and Whatcom counties establish different project thresholds and standards outside of their NPDES-permit designated urban areas which drain to the municipal *separate stormwater system*. As a non-NPDES permittee, San Juan County has some options to make the project thresholds and review processes more cost effective on rural low risk sites without compromising stormwater control and water quality.

The Manual is said to be cumbersome and difficult for the average person to use. This concern is intensified because San Juan County has adopted Ecology's 2005 Manual including project

thresholds and minimum requirements with little variation and transfer of the Manuals "guidance" into code requirements and standards. The County's current regulations are difficult to understand, do not establish clear and transparent requirements. More confusion is caused because the code adopts the 2005 Manual; but cites volumes and sections of the 2001 Manual.

These issues can be addressed in updated regulations with the adoption of clear implementing regulations should contain project thresholds and minimum requirements, and establish how applicants should use best management practices in the manual to design, construct, operate and maintain stormwater systems. This may result in longer code sections; however, project requirements will be simple to understand.

The County could develop its own stormwater manual; however to provide protection under federal and state law, the Manual would need to contain equivalent practices to the Manual. This could take years. Obtaining an equivalency determination from Ecology would be an extremely long process. Tailoring local standards to address stormwater management development in the rural area and continued use of the best management practices in the Manual is a simpler process and will address concerns with the Manual.

As a non-NPDES permittee, the County has some flexibility to vary the stormwater management thresholds to address rural characteristics such as large lot development and low risk sites while still requiring stormwater management that works to protect water quality, flows and public and private properties from damage.

San Juan County Comprehensive Plan
Water Resource Goals and Policies

Under the Growth Management Act, the County's development regulations must be consistent with the goals and policies adopted in the San Juan County Comprehensive Plan. Certain Water Resource Goals and Policies in Section B, Element 4 provide guidance in the development of the County's stormwater regulations. The following goals and policies are the most relevant to water resource protection and the development of stormwater regulations:

4.2.A General Goals and Policies

General Goals:

1. In consideration of Best Available Science, protect & manage the quality and quantity of ground and surface water so as to preserve hydrologic systems, designated beneficial uses, and fish and wildlife habitat that rely on fresh water.

2. Coordinate water planning and protection efforts among San Juan County departments with authority over development, land use, drinking water, wastewater treatment, stormwater management, road construction and maintenance, solid waste management, and natural resource protection.

General Policies:

1. Encourage the retention of healthy native soils, vegetation and forest cover. Encourage preservation and increased infiltration of fresh water.

2. Support environmentally responsible, sustainable forestry and agricultural practices that protect water quality and enhance infiltration of runoff.

3. Ensure that future development will not harm surface and groundwater resources and the habitat dependent thereon.

4. Assess and manage cumulative impacts so that predevelopment water quality, quantity, infiltration and runoff rates can be protected.

5. Establish and support technical assistance programs to help property owners protect ground and surface water and associated habitat.

6. Practice adaptive management. Consider new information as it becomes available, and revise water resource protection programs as necessary.

7. In decision making, utilize locally adopted policies and water resource analysis meeting the Best Available Science Standard.

8. Encourage voluntary enhancement such as rain water catchment, stormwater retention & other technologies that will benefit water quality and quantity related to this element.

9. Manage water policy in accordance with the above listed existing and future amended plans.

4.2.C Stormwater Goals and Policies

Stormwater poses a widespread risk to the health of our island watersheds. Forests produce the least runoff, the greatest amount of infiltration, and the best water quality. Soil compaction, altering drainage patterns, and replacing forest with pasture, lawn, driveways, and structures results in less infiltration, more surface runoff, and if not controlled, the discharge of warm, polluted water. As the amount of runoff increases, less water is available for beneficial uses including drinking water.

Increasing surface runoff also increases the quantity of pollutants that are swept into the water during storms. The removal of riparian vegetation and over grazing by livestock destroys nature's filtration system, which can result in runoff, sediment, and nutrients flowing unimpeded into the water. Developing an area can also expose more pollutants to stormwater.

Goals:

1. Prevent flooding and property damage.
2. Promote groundwater recharge.
3. Protect the quality of ground and surface water.

Policies:

1. Promote water conservation and the concept of stormwater as a usable resource.

2. When feasible, treat, manage and infiltrate stormwater on site, as close to impervious areas and sources of pollution as possible. Allow off site discharge only as a last resort with mitigation.

3. When stormwater management ponds are necessary, ensure they are sited and designed to comply with the WA Dept. of Fish and Wildlife requirements, to maintain predevelopment runoff patterns, to protect water quality, and to prevent increases in water temperature.

4. Ensure that clearing, grading and stormwater management regulations and enforcement programs:

    a. Prevent flooding and property damage, protect fish and wildlife habitat, and protect the quality and quantity of surface and ground water in a cost effective manner.
    b. Establish criteria that identify sites and projects with a low risk to property, water resources and associated habitat.
    c. Ensure that property owners can prepare and implement their own stormwater management plans on low risk sites and low risk projects.
    d. Incentivize the use of Low Impact Development techniques.
    e. Guidance documents that may be used in the management of stormwater include but are not limited to the Low Impact Development Technical Guidance Manual for Puget Sound, 2005 and the Rain Garden Handbook for Western Washington Homeowners, and the Stormwater Management Manual for Western Washington, 2005.
    f. Develop or adopt a stormwater management manual suitable for rural counties.

5. Develop cost effective technical assistance programs for property owners.

6. Complete watershed based management plans that assess and provide mitigation options for the cumulative impacts of land use and development.

7. When necessary, identify and construct cost effective, publicly owned infrastructure designed to prevent harm to property, water resources and associated habitat.

8. Provide incentives and cost share programs for landowners willing to install community stormwater management systems that implement Best Management Practices (BMPs).

4.2.D. Fish, Wildlife and Native Habitat - Goals and Policies

Policies:

1. Ensure that stream, shoreline and wetland buffers and other mitigation measures are adequate to remove contaminants and ensure good water quality and habitat.
2. Maintain or enhance the infiltration of runoff to ensure adequate recharge to streams and wetlands, and to preserve subsurface and stream flows to nearshore waters.
3. While man-made ponds can benefit people and the natural environment, if improperly sited and designed they can disrupt natural drainage patterns, increase water temperatures, increase evaporation of water, and negatively impact streams, wetlands and the fish and wildlife that depend on them. Ensure that regulations governing man-made ponds prevent negative impacts to fish and wildlife, consistent with State requirements (Note: The construction of ponds within drainage ways is prohibited by WAC 220-110-180).
4. Protect and enhance wetlands and eliminate the conversion of wetlands to other land uses.
5. Protect and restore instream flows for anadromous fish and facilitate native fish passage.
6. Promote agricultural land use practices that reduce or eliminate impacts on water resources.

Attachment 4
Federal and State Stormwater Regulations

Federal

The Clean Water Act (CWA) is the primary Federal law governing water pollution in waters of the United States (U.S.). Its intent is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters and it establishes water quality goals for the navigable (surface) waters of the U.S. These include lakes, rivers, ponds, streams, inland waters, saltwaters, wetlands and all other surface waters and water courses.

The CWA aims to eliminate releases of toxic substances into water to ensure that surface waters meet federal water quality standards and protect beneficial uses. It does not directly address groundwater resources which are protected by the Federal Safe Drinking Water Act, Resource Conservation and Recovery Act, and the Superfund Act.

One implementing measure of the CWA is the National Pollutant Discharge Elimination System (NPDES) program managed by the United States Environmental Protection Agency (EPA) in partnership with state environmental agencies. The EPA authorizes the Washington State Department of Ecology to issue stormwater permits for the discharge of pollutants to surface waters of the State. Originally designed to address point source discharges to navigable waters, NPDES permits now regulate nonpoint source pollutants such as sediments, nutrients, pesticides, herbicides, fertilizers, and animal wastes which account for more than 50 percent of pollution in U.S. waters.

Other primary Federal regulations that also implement the CWA include the Section 401 Water Quality Certifications and Endangered Species Act. These regulations are summarized below. Permits issued under these regulations may be conditioned to require application of the minimum requirements and best management practices in the 2012 Manual.

Section 401 Water Quality Certifications

When projects require a fill or dredge permit under Section 404 of the CWA, Ecology must certify that the proposed project will not violate water quality standards. In order to make such a determination, Ecology may complete a specific review of the potential impacts of a stormwater discharge from the construction phase of the project and completed project.

Endangered Species Act (ESA)

The requirements of the Endangered Species Act address stormwater management to ensure that potential adverse impacts to receiving waters from discharges of sediment, abnormal pH, or turbidity which can degrade habitats and harm aquatic life are avoided or minimized. ESA provisions that may require stormwater management include the Section 4(d) rules, Section 7 consultations, and Section 10 Habitat Conservation Plans (HCP).

State Regulations

The primary Washington Administrative Codes (WAC), and Revised Code of Washington (RCWs) related to the CWA and stormwater management are:

- Chapter 173-200 WAC, Water Quality Standards for Ground Waters
- Chapter 173-201A WAC, Water Quality Standards for Surface Waters
- Chapter 173-204 WAC, Sediment Management Standards
- Chapter 90.48, RCW Water Pollution Control

WAC 173-201A-500 Achievement considerations.

> "To fully achieve and maintain the foregoing water quality in the state of Washington, it is the intent of the department to apply the various implementation and enforcement authorities at its disposal, including participation in the programs of the federal Clean Water Act (33 U.S.C. 1251 et seq.) as appropriate. It is also the intent that cognizance will be taken of the need for participation in cooperative programs with other state agencies and private groups with respect to the management of related problems. The department's planned program for water pollution control will be defined and revised annually in accordance with section 106 of said federal act. Further, it shall be required that all activities which discharge wastes into waters within the state, or otherwise adversely affect the quality of said waters, be in compliance with the waste treatment and discharge provisions of state or federal law."

RCW 90.48.080 Discharge of polluting matter in waters prohibited.

> "It shall be unlawful for any person to throw, drain, run, or otherwise discharge into any of the waters of this state, or to cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise discharged into such waters any organic or inorganic matter that shall cause or tend to cause pollution of such waters according to the determination of the department, as provided for in this chapter."

Hydraulic Project Approvals (HPAs)

The Hydraulics Act established in Chapter 77.55 RCW authorizes the Washington State Department of Fish and Wildlife to regulate stormwater discharges from a project that would change the natural flow or bed of state waters through the issuance of a Hydraulics Project Approval (HPA) permit. Best management practices from the 2012 Manual may be required as permit conditions.

Administration of the Federal Clean Water Act and State Water Pollution Laws

Ecology administers the CWA and State water pollution laws for controlling municipal, commercial, and industrial waste discharges through the issuance of the following NPDES individual and general waste discharge permits:

- Municipal (Phase I (large to medium size cities and counties) and II (small cities);
- Construction Stormwater General Permit (CSWGP);
- Industrial Stormwater General Permit;
- WSDOT Municipal Stormwater General Permit;
- Sand and Gravel General Permit; and Boatyard General Permit.

Due to its population, San Juan County is not a designated municipal NPDES permittee. Although Ecology does not require San Juan County to obtain an NPDES stormwater discharge permit, development activities must still comply with federal state water pollution control laws.

Attachment 5
Use of Ecology's Stormwater Management Manuals

Cities and counties in Western Washington subject to a Municipal Stormwater General NPDES Permit must adopt stormwater regulations that make enforceable the thresholds and minimum requirements specified in their NPDES Permit. The thresholds and minimum requirements in these NPDES permits are almost verbatim duplicates of the "guidance" established in the latest Ecology Manual. NPDES permittees also must use the best management practices in the Ecology stormwater manual specified in their permit or another equivalent manual approved by Ecology to implement the regulations. Ecology encourages non-permittee communities to adopt stormwater regulations and best management practices equivalent to those adopted in the Manual because they provide the best science needed to meet water quality laws.

Use of an Ecology Manual provides protection of beneficial uses of receiving waters including public water supply, protection for fish, shellfish, and wildlife, and recreational, agricultural, industrial, and navigational uses and aesthetics. It helps developers to meet federal requirements to reduce pollutants to the maximum extent practicable and to satisfy state water quality requirements through the application of all known, available and reasonable methods of pollution control to stormwater. Although sometimes additional measures are needed, application of the standards contained in an Ecology Manual usually results in compliance with state and federal water quality standards and provides project applicants with protection against substantial noncompliance penalties.

<u>2012 Stormwater Management Manual for Western Washington</u>

To keep up with the newest stormwater management science, materials and technology, Ecology's periodically updates its stormwater management manuals and best management practices to provide the best available information on stormwater management practices, techniques and materials needed to meet water quality standards. Re-issuance of new stormwater manual generally coincides with NPDES permit re-issuance cycle (every five years). Last year, Ecology issued the 2012 Manual replacing the 2005 Manual currently adopted by San Juan County. Phase I communities must use the 2012 Manual by June 2015. Phase II Permittees will implement it by December 31, 2015, or later depending upon their GMA update deadline. Some communities including Whatcom and Skagit counties began using the newest manual upon issuance because it provides the best available information.

<u>New Development Thresholds Triggering the Minimum Requirements</u>

1. Applicants proposing the new development activities that trigger the following thresholds shall submit a targeted stormwater plan in compliance with Minimum Requirements #1 through #5 for the new and replaced hard surfaces and the land disturbed when the activity:
   a. Results in 2,000 square feet, or greater, of new plus replaced hard surface area, or
   b. Has land disturbing activity of 7,000 square feet or greater.

2. Applicants proposing new development activities that trigger the following thresholds shall submit a full stormwater plan in compliance with Minimum Requirements #1 through #9 for the new and replaced hard surfaces and the converted vegetation areas when the activity:

   a. Results in 5,000 square feet, or greater, of new plus replaced hard surface area, or
   b. Converts ¾ acres, or more, of vegetation to lawn or landscaped areas, or
   c. Converts 2.5 acres, or more, of native vegetation to pasture.

Minimum Requirements for New Development and Redevelopment

The minimum requirements established in the 2012 Manual are unchanged from those in the 2005 Manual; however, updated best management practices for implementing them are established in the 2012 Manual. The 2012 manual updates the best management practices for Minimum Requirement 5 On-site Management. The minimum requirements are:

Attachment 6
Definitions

Beneficial Uses means uses of waters of the states which include but are not limited to use for domestic, stock watering, industrial, commercial, agricultural, irrigation, mining, fish and wildlife maintenance and enhancement, recreation, generation of electric power and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state.

Best Management Practice means schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices, that when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State.

Dispersion means the release of surface and stormwater runoff such that the flow spreads over a wide area and is located so as not to allow flow to concentrate anywhere upstream of a drainage channel with erodible underlying granular soils.

Impervious surface means a non-vegetated surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. It is a non-vegetated surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or stormwater areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater.

Infiltration means the downward movement of water from the surface to the subsoil.

Low Impact Development (LID) means distributed stormwater management practices, integrated into a project design, that emphasize pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration. LID Best management practices include, but are not limited to, bioretention/rain gardens, permeable pavements, roof downspout controls, dispersion, soil quality and depth, minimal excavation foundations, vegetated roofs, and water re-use.

New development means land disturbing activities, including Class IV General Forest Practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of hard surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.

Pervious Surface means any surface material that allows stormwater to infiltrate into the ground. Examples include lawn, landscape, pasture, native vegetation areas, and permeable pavements.

Rain Garden means a non-engineered shallow landscaped depression, with compost-amended native soils and adapted plants. The depression is designed to pond and temporarily store stormwater runoff from adjacent areas, and to allow stormwater to pass through the amended soil profile. Refer to the Rain Garden Handbook for Western Washington Homeowners (WSU 2007 or as revised) for rain garden specifications and construction guidance.

Receiving waters means bodies of water or surface water systems to which surface runoff is discharged via a point source of stormwater or via sheet flow. Ground water to which surface runoff is directed by infiltration.

Redevelopment means, on a site that is already substantially developed (i.e., has 35% or more of existing hard surface coverage), the creation or addition of hard surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure; replacement of hard surface that is not part of a routine maintenance activity; and land disturbing activities.

Waters of the State includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the state" as defined in Chapter 90.48 RCW which includes lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and water courses within the jurisdiction of the State of Washington.