

### TRINITY COUNTY PLANNING DEPARTMENT

P.O. BOX 2819 – 61 AIRPORT ROAD WEAVERVILLE, CALIFORNIA 96093 PHONE (530) 623-1351 FAX (530) 623-1353 Email: canderson@trinitycounty.org

#### STAFF REPORT

September 8, 2016

From:

Carson Anderson, Senior Planner

To:

Planning Commission

Re:

Final Recommendations to the Board of Supervisors – Countywide Water

Resource Policy Changes per Northwest California Resource Conservation and

**Development Council Input** 

#### Requested Action

Staff's recommendation is that the Planning Commission recommend that the Board of Supervisors amend Subdivision Ordinance Sections 16.08 and 16.08.195 (adding a definition of "Surface Water"), and 16.48.123 (adding a definition of "Public Water Supply") and 16.48.124 ("Individual or On-Site Water Availability"), as proposed in Attachment A to this staff report.

In doing so, the Commission finds that on the basis of the whole record before it, including previous Trinity River Watershed planning and environmental studies, such as the North Coast Integrated Regional Management Plan, further assessment guidance conducted by the Northwest California Resource Conservation and Development Council/Five Counties Salmonid Conservation Program (5C), and comments received, that the policy changes proposed (project) will not have a significant effect on the environment.

#### **Background**

At its meeting of August 11, 2016, The Planning Commission reviewed proposed recommendations for changes to Zoning Ordinance Section 29.2 ("Critical Water Resource Overlay Zone") and Section 30 – Sub-sections D.7 and H ("General Provisions and Exceptions" - inserting new language pertaining to "Critical Water Resources" and "Waterbody Protection Setbacks" standards); as well as new water resources protection goals and policy changes to the Conservation and Open Space Element of the County's General Plan. Upon holding a public hearing, with input from Mark Lancaster of the Northwest California Resource Conservation and Development Council/Five Counties Salmonoid Conservation Program (5C), it voted to make the following six recommendations to the Board of Supervisors (numbering reflects the sequencing found in the August 11 staff report):

- 1. Amend Zoning Ordinance Section 29.2 ("Critical Water Resource [CWR] Overlay Zone") as proposed in the August 11 staff report, inserting the wording "to be implemented where practical and feasible;"
- 2. Amend Zoning Ordinance Section 30 D.7 and Section 30 H, as proposed in the August 11 staff report, inserting the wording "to be implemented where practical and feasible;"

- 4. Revise the overall watershed-related objective on page 56 of the Open Space Element and page 31 of the Conservation Element of the County General Plan, inserting a new recommendation (Recommendation #5) as follows: "... Protect streams and surrounding habitats to maintain and improve all beneficial uses of water for present and future generations, as well as a new set of related Policies numbered 5.1 through 5.4 (as described in the August 11 staff report);
- 5. Revise Page 56 of the Open Space Element and Page 32 of the Conservation Element to read as follows: Assist water districts, mutual water companies and other water purveyors in developing capital improvement plans that are realistic and based on sound planning and development patterns, and that will ensure reliable water supplies for present and future generations. Add Policies 2.1 through 2.3 related to Recommendation 2 as updated (as described in the August 11 staff report).

#### Follow-up Action

Due to missing back-up documenting the exact strikeout text amendments being proposed to one portion of the Subdivision Ordinance, the Commission continued its vote on the following staff recommendation to the September 8 meeting:

3. Amend Subdivision Ordinance Sections 16.08 and 16.08.195 (adding a definition of "Surface Water "), and 16.48.123 ("Public Water Supply") and 16.48.124 ("Individual or On-Site Water Availability"), as proposed in the August 11 staff report (Attachment A)

**Discussion:** There are a small number of specific changes proposed revisions to the County's Subdivision Ordinance recommended for adoption – some of which carry forward water supply/water availability policy changes referenced in the Zoning Ordinance discussion of CWR. A definition of "Surface Water" would be added to the definitions in Section 16.08. Sections 16.48.123 and 16.48.124 would be modified "...for clarity and protection of water resources to prevent unsafe division of land..." that might otherwise occur because of the inadequate water supply (Attachment B). The time extension allowance for dry weather period testing also would be eliminated to assure all beneficial uses can adequately be protected. Consistent with amended wording adopted on August 11 as part of motion #2 (page 1) the Commission may consider inserting the wording "to be implemented where practical and feasible."

After considering the policies proposed as part of Board Resolution Number 2002-022, the Commission also voted not to advance staff recommendation 6, which reads as follows:

6. Take action amending Part III (Open Space Considerations) Section G, page 28 of the Open Space Element of The General Plan by deleting the assertion "... Water supply is more than adequate to take care of both agriculture and domestic requirements for the foreseeable future.."

In the Commission's judgment, the language contained in Resolution No. 2002-022 would make the above-proposed text change moot.

In reference to growing concerns regarding groundwater supply, the Commission took the following action on staff recommendation 7:

7. Recommend that the County take priority action to implement Board Resolution No. 2002-022 "Resolution Approving Amendments to the Open Space and Conservation Elements of the Trinity County General Plan." The policies define beneficial uses associated with groundwater in our County and call for sustainable groundwater management practices, carrying capacity analysis, and establishing well water quality and quantity testing protocols, consistent with 5C guidance.



The previously-referenced actions were taken in response to direction from the Board of Supervisors, which tasked the Planning Commission with reviewing the proposals for water resource policy changes presented at the Commission's December 10, 2015, April 14, July 14 and August 11, 2016 meetings. As part of its discussion of possible changes to countywide water resource policy, the Commission, at the April 14 meeting, provided direction to staff, recommending that updates to the Zoning and Subdivision Ordinances, per 5C input, become the current focus, with a more thorough-going effort on water resources policy to come at a later date. Back-up detail, including the relevant meeting minutes can be found in the Commission's July 14 and August 11 packets.

#### For Future Action

#### Groundwater Policy

Publically released on June 30, 2016, the Grand Jury Report still needs to be taken under consideration by the Board of Supervisors as appropriate, and that the resources and priorities required to address the recommendations are still to be determined. Discussion at the Board of Supervisors level have highlighted the need to monitor developments at the state level and identify opportunities to shape state policy. In addition, the Board has now established a task force chaired by a Board representative. Staff from Planning, Building Department, Environmental Health, water service districts, among others, have been invited to participate as part of that task force. Planning staff also will continue to study policy proposals at the state and regional levels to gauge applicability and implementation challenges as part of future efforts to revamp the County's groundwater policies.

The July 14 and August 11 staff reports discuss the key Grand Jury findings, including the noted marked increase in the number of well permits issued by the County during the course of the last 10 years (64 in 2005 versus 300 during 2015) and the marked decline of water availability and quality in some of the county's streams during the recent drought; the growth in businesses that transport and sell water (a significant amount of this for illegal cannabis cultivation) - and the corollary potential for adverse impacts to water quality as a result of surface runoff; recent changes to State Water Code (broadly, Sections 10720 et seq.) that require sustainable groundwater management and enforcement (viz., carrying capacity analysis, potential establishment of local Groundwater Sustainability Agencies (GSAs); tightened policies on the regulation of wells - including the testing of well water quality and quantity; establishment of goals based on a carrying capacity model; and adoption of a grading ordinance.

5Cs recommendations summarized in the April 14 and July 14 staff reports are intended to reduce current impacts on groundwater, but also point to the need for new County policies to address the full range of groundwater impacts. Enactment of the policies recommended by the Grand Jury (referenced above), are ways to gather the information needed to assess the degree of impact and would provide a basis for more detailed policy recommendations.

Voluntary efforts at conserving water (water cachement and greywater use - now permitted per the standards in California Administrative Code Title 24, Part 5 "...wherever practical and feasible"...per 5C) would also reduce demands on groundwater and have been recommended as part of the larger, overall strategy for addressing groundwater impacts and were discussed at the August 11 meeting. Educating the public and encouraging voluntary landowner participation would be a key part of the promotion strategy undertaken by the County and 5C (Examples of this are shown as part of Attachment C).

#### Surface Water Buffer Standards

The Commission was asked to recommend adoption of the Cal Fire water course buffer standards (which reflect statutory requirements per the Forest Practice Act). It was also noted that Cal Fire has regulatory authority to enforce buffer zone compliance. Having a standard enforceable by Cal Fire would bolster the County's limited code enforcement capabilities at present and remove some of the additional burden on planning staff for performing CEQA review and related enforcement actions. The buffers are variable based on the classification of the adjoining surface water (based, in part, on whether it supports prime habitat, is round-year, seasonal or ephemeral). These details, along with the relevant sections of the Forest Practice Act, will be provided the Commission for future consideration.

#### Detailed CEQA Analysis

The project purpose of the 5C "Trinity County Water Resources Planning Proposal to Supplement the NCIRWMP" is stated as that of minimizing adverse effects on water resources, including significant risks to drinking water and fishery needs, while still accommodating appropriate development consistent with thresholds for significant impacts and cumulatively significant impacts found by consulting the "Basin Plan" (i.e., Water Quality Control Plan of the North Coast Regional Water Control Board) and Fish & Wildlife findings of effect. The policy recommendations made in this staff report and recited as part of the BOS August 4, 2015 backup contained in the prior July 14 Commission packet reflect a conscientious, well-researched effort vetted with regional water resource experts to promote conservation of water and to reduce water resource impacts consistent with the NCIRWMP. This includes an evaluation of historic stream/river flows, watershed elevations and floodplains, community water system intakes and available well data, soil water holding capacity, development data, erosion hazard ratings, soil surveys, and wildlife and habitat consideration, as well as extensive environmental analysis and planning for the Trinity River Watershed found in the Trinity River Flow Evaluation Final Report and NEPA Record of Decision (2001), as refined by subsequent modeling studies and assessment guidance.

As noted in the July 14 and August 11 staff reports, staff's preliminary review of the proposed policies, utilizing the CEQA Initial Study Checklist screening topics, did not reveal the potential for significant impacts.

#### Motion

It is staff's recommendation that Planning Commission take the following action, continued from its August 11, 2016 meeting, and recommend that the Board of Supervisors:

Amend Subdivision Ordinance Sections 16.08 and 16.08.195 (adding a definition of "Surface Water"), and 16.48.123 (adding a definition of "Public Water Supply") and 16.48.124 ("Individual or On-Site Water Availability"), as proposed in Attachment A to this staff report.

In making its recommendation, the Commission finds that on the basis of the whole record before the Commission, including previous Trinity River Watershed planning and environmental studies, such as the North Coast Integrated Regional Management Plan, further assessment guidance conducted by the Northwest California Resource Conservation and Development Council/Five Counties Salmonid Conservation Program (5C), and comments received, that the policy changes proposed (project) will not have a significant effect on the environment.

# ATTACHMENT A

#### TRINITY COUNTY SUBDIVISION ORDINANCE

#### TITLE 16

#### CONTENTS Revised 8/25/95

Cnapter	<u>Pa</u>	ge
16.04	GENERAL PROVISIONS	1
16.08	DEFINITIONS	4
16.09	ADVISORY AGENCY	11
16.10	SUBDIVISION REVIEW COMMITTEE	12
16.12	TENTATIVE MAP	13
16.16	PARCEL MAP	22
16.24	FINAL MAP	32
16.28	QUARTER-QUARTER DIVISION	12
16.29	RECORDING AND CORRECTIONS OF MAPS	44
16.32	LOT LINE ADJUSTMENTS AND MERGERS	47
16.36	DEDICATIONS	50
16.40	SECURITY	52
16.44	REVERSION TO ACREAGE	54
16.48	SUBDIVISON IMPROVEMENTS	56
16.49	SUBDIVISON DESIGN STANDARDS	88
16.50	SUBDIVISION MODIFICATIONS	96
16.52	APPEALS	99
16.56	ADMINISTRATION AND ENFORCEMENT	00

#### Chapter 16.04

#### **GENERAL PROVISONS**

Section	
16.04.10	Citation and Adoption
16.04.20	Designation as a Specific Plan
16.04.21	Intent and Purpose
16.04.30	Authority
16.04.31	Conformance with other Ordinances Required

#### Sec. 16.04.010 Citation and Adoption

- A. This title may be referred to as the "Land Division Ordinance of the County of Trinity".
- B. The Board of Supervisors of the County, in conformance with the provision of the Subdivision Map Act, does hereby adopt the Ordinance codified in this title.
- C. The Subdivision Map Act, as amended, is adopted and becomes a part of this title.

#### Sec. 16.04.020 Designation As a Specific Plan

These regulations are hereby designated as a Specific Plan of the County to assist in the systematic implementation of the General Plan and to provide for the needs, convenience, and general welfare of County residents and property owners.

#### Sec. 16.04.021 Intent and Purpose

The purpose of these regulations, and the intent of the County in their adoption, is as follows:

- A. To provide policies, standards, requirements, and procedures to regulate the control and control the design and improvement of all subdivisions within the County.
- B. To assist in implementing the objectives, policies, and programs of the General Plan by ensuring that all proposed subdivisions, together with the provisions for their design and improvement, are consistent with the General Plan and all applicable Specific Plans of the County.
- C. To preserve and protect, to the maximum extent possible, the unique and valuable natural resources and amenities of the County's environment, including, but not limited to, topographic and geologic features, open space

lands, river-front recreational areas, fish and wildlife habitats, <u>water</u> <u>resources</u>, historical and cultural places, and scenic vistas and attractions; and, to maximize the public's access to an enjoyment of such resources and amenities through the dedication or continuance of applicable easements hereto.

- D. To relate land use intensity and population density to existing development, street capacity and traffic access, the slope of the natural terrain, and the availability of public facilities and utilities and open space.
- E. To provide lots of sufficient size and appropriate design for the purposes for which they are to be used.
- F. To provide streets of adequate capacity and design for the traffic that will utilize them and to ensure maximum safety for pedestrians and vehicles.
- G. To ensure adequate access to each building site.
- H. To provide pedestrianways, biking paths, and equestrian and hiking trails, where needed for the safety, convenience, and enjoyment of the residence of new developments.
- I. To provide adequate systems of water supply, sanitary sewage disposal, storm drainage, and other utilities needed for the public health, safety and convenience.
- J. To provide adequate sites for public facilities needed to serve the residents of new developments.
- K. To ensure that the costs of providing land for streets, alleys, pedestrianways, easements, and other rights-of-way, and for the improvements therein needed to serve new developments, are the responsibility of the subdividers.
- L. To prevent division of land which is actually or potentially dangerous by reason of flood hazard, inundation, proximity to excessive noise, inadequate access, inadequate water supply or fire protection, insufficient sewerage facilities, hazardous geological conditions, unless such land is for open space purposes only.
- M. To prevent division of land which would actually or potentially be harmful to the critical habitat of fisheries or wildlife, especially endangered species.
- N. To ensure that, insofar as possible, land is subdivided in a manner that will promote the public health, safety, convenience, and general welfare in conformance with the General Plan.

O. To encourage well-planned subdivision of land while preventing land division with high future costs to those who will occupy the land, their neighbors and the County as a whole.

#### Sec. 16.04.030 Authority

These regulations are adopted pursuant to the Subdivision Map Act (Title 7, Division 2, Government Code) as a "local ordinance" as said term is used in said Act and are supplemental to the provisions thereof. All provisions of the Subdivision Map Act and future amendments thereto not incorporated in these...regulations shall, nevertheless, apply to all subdivisions, subdivision maps and proceedings under these regulations

#### Sec. 16.04.031 Conformance with other Ordinances Required

Neither the approval nor conditional approval of the subdivision map shall constitute or waive compliance with any other application provisions of the County Code or other applicable ordinances or regulations adopted by the County, nor shall any such approval authorize or be deemed to authorize a violation or failure to comply with other applicable ordinances or regulations adopted by the County. Nothing in these regulations shall be construed to permit the premature or haphazard subdivision of lands in derogation of the Zoning Regulations and the General Plan as they relate to open space.

#### Chapter 16.08

#### **DEFINITIONS**

#### Section

16.08.010	Advisory Agency
16.08.020	Approved Access
16.08.030	Certificate of Compliance
16.08.040	Complete
16.08.050	Consistent with the General Plan and Specific Plans
16.08.060	Design
16.08.070	Improvements
16.08.080	Land Project
16.08.090	Latest Equalized Roll
16.08.100	Lot Line Adjustment
16.08.101	Lot Line Adjustment, Major
16.08.102	Lot Line Adjustment, Minor
16.08.110	Lot Line Merger
16.08.111	Preliminary Map
16.08.112	Tentative Subdivision Map
16.08.113	Final Map
16.08.114	Parcel Map
16.08.115	Reversion to Acreage Map
16.08.130	Public Waterway
16.08.140	Quarter-Quarter Division
16.08.150	Reasonable Public Access
16.08.155	Reasonable Public Access Easements
16.08.160	Subdivider
16.08.170	Subdivision
16.08.180	Subdivision Improvement Standards
16.08.190	Subdivision Map Act
	Surface Water
16.08.200	Deleted per Ordinance No. 1094
16.08.210	Vesting Tentative Maps
16.08.220	Flag Lot

All terms used in this Ordinance which are defined in the Subdivision Map Act are used in this title as so defined. For the purpose of these regulations, the following words and phrases shall be construed as defined in this Chapter.

Sec. 16.08.010 Advisory Agency

# Non-Relevant Pages of Text have been omitted here

A Parcel Map is a formal map which divides or redivides the land into the lots shown on the map. This map must meet exacting requirements before it is recorded with the Trinity County Recorder. A Parcel Map is required for all subdivisions that do not require a Final Map, unless it is waived as provided in Section 16.16.16 of this Ordinance.

#### Sec. 16.08.115 Reversion to Acreage Map

A Reversion to Acreage Map is a formal map which, when recorded, eliminates all lot lines and easements shown on the map, except for those easements which are required to be retained.

#### Sec. 16.08.130 Public Waterway

Public Waterway [sp1]Means any of the following watercourses:

- A. Trinity River below Lewiston Dam
- B. North Fork of the Trinity
- C. New River
- D. South Fork of the Trinity
- E. Main trunk of the Eel River
- F. North Fork of the Eel River up to Shannon Butte
- G. Middle Fork of the Eel River
- H. Mad River up to Ruth Reservoir
- I. Trinity Lake
- J. Lewiston Lake
- K. Ruth Reservoir
- L. Ewing Reservoir

#### Sec 16.08.140 Quarter-Quarter Division

Quarter-quarter Division means a subdivision where every parcel created by the subdivision has a gross area of forty (40) or more acres or is a quarter-quarter section or larger. (Ord. 352, Sec. 3(A) (12), 1975)

#### Sec. 16.08.150 Reasonable Public Access

Reasonable Public Access means access by highway, foot trail, bike trail, horse trail, or other means to or along a river or stream or reservoir. In determining what is "reasonable" access, the Planning Commission and Board of Supervisors are required by the Subdivision Map Act to consider: (a) the size of the subdivision, (b) the type of riverbank and the various appropriate recreational, educational, and scientific uses possible there, (c) the likelihood of trespass on private property and reasonable means of avoiding such trespass, and (d) public safety and other such information as set forth in the State Map Act. (Ord. 352, Sec 3(A) (12), 1975)

#### Sec. 16.08.155 Reasonable Public Access Easements

Such easements are as defined in the State Map Act. Such easements also pertain to rivers, streams, and reservoirs. When read in context, "access" is used to describe a route from a road to a riverbank in or on the border of a subdivision (Para. 66478.4). This route need not cross the subdivision (Para. 66478.8). "Easement," as used in paragraph 66478.5, is a right to use part of the same riverbank for recreational, educational, and scientific pursuits. The right to use the bank and the right to a useable route to get there are distinguishable rights.

#### Sec. 16.08.160 Subdivider

Subdivider means a person, firm, corporation, partnership or association who proposes to divide, divides, or causes to be divided real property into a subdivision for himself or others, except that employees and consultants of such persons or entities acting in such capacity, are not "subdividers." (Ord. 352-2, Sec. 2, 1977; Ord. 352, Sec. 3(A) (14), 1975)

#### Sec. 16.08.170 Subdivision

Subdivision means the division, by any subdivider, of any unit or units of improved or unimproved land, or any portion thereof, shown on the latest equalized County assessment roll as a unit or as contiguous units, for the purpose of sale, lease or financing, whether immediate or future, except for leases of agricultural land for agricultural purposes. Property shall be considered as contiguous units, even if it is separated by roads, streets, utility easement or railroad rights-of way. "Subdivision" includes a condominium project, as defined in Section 1350 of the Civil Code, or the conversion of five (5) or more existing dwelling units to a stock cooperative, as defined in Section 11003.2 of the Business and Professions Code. As used in this Chapter, "agricultural purposes" means the cultivation of food or fiber or the grazing or pasturing of livestock.

#### Sec. 16.08.190 Subdivision Map Act

Subdivision Map Act refers to Division 2, commencing with Section 66410, of Title 7 of the Government Code of the State, and all amendments thereto. (Ord. 352-5, Sec. 1, 1979; Ord 352, Sec. 3(A) (17), 1975)

#### Sec. 16.08.195 Surface Water

Surface water refers to any river, stream, creek, wetland, pond, or source of water that collects and is usually accessed from the surface of the ground.

#### Chapter 16.48

#### **SUBDIVISION IMPROVEMENTS**

Section	
16.48.010	Applicability
16.48.020	General
16.48.030	Improvements Required
16.48.040	Improvement Plans and Permits Required
16.48.050	Preparation and Form of Improvement Plans
16.48.060	Commencement of Improvement Work
16.48.070	Construction and Installation Standards
16.48.080	Temporary Improvements
16.48.090	Inspection of Improvement Work
16.48.100	Coordination of Improvement Work
16.48.110	Improvements Waived
16.48.120	Specific Improvement Requirements
16.48.121	Public Sewage Disposal
16.48.122	Individual or On-site Sewage Disposal
16.48.123	Public Water Supply
16.48.124	Individual or On-site Water Availability
16.48.125	Solid Waste Disposal
16.48.126	Road Improvements
16.48.127	Fire Protection Improvements
16.48.130	Oversizing Improvements - Reimbursement
16.48.140	Improvement Agreement
16.48.150	Form, Filing and Term of Improvement Agreement
16.48.180	Liability for Alterations or Changes
16.48.190	Release of Improvement Security - Completion of Work
16.48.200	Withholding of Building Permits

#### Sec. 16.48.010 Applicability

All divisions of land, and the lots and parcels resulting therefrom, shall be subject to the provisions of this Chapter.

#### Sec. 16.48.020 General

The size, design, character, grade, location and orientation, and configuration of lots within a proposed subdivision and improvements required in connection therewith, shall be consistent with the density and uses authorized for the are by the General Plan or the applicable Specific Plan, whichever is more restrictive.

The density, timing or sequence of development may be restricted by considerations of safety, traffic access or circulation, the slope of the natural terrain, the physical suitability of the site (including soil conditions), the nature or extent of existing development, the availability of public services, or other provisions of the regulations.

#### Sec. 16.48.030 Improvements Required

The subdivider shall construct or install all improvements in streets, pedestrian ways, biking paths, channels, easements and other rights-of-way as are necessary for the general use of residents of the subdivision and to meet local traffic, utility, water supply, and drainage needs in accordance with the provisions of this Chapter.

#### Sec. 16.48.040 Improvement Plans and Permits Required

Improvement plans shall be completed by the subdivider prior to the acceptance of the final map or parcel map for filing by the Public Works Director.

Improvements plans shall be prepared by a registered civil engineer of the State of California, or under his direction, at the subdivider's cost. Plans shall conform to improvement standards adopted by the Board of Supervisors pursuant to this Chapter and shall be submitted to the Public Works Director for review and approval.

The final map shall not be deemed to be submitted for approval until the preparation of said plans is completed and said plans have been accepted by the Public Works Director.

Standard engineering fees to be charged by the County for review of such plans and inspection of construction work by the Public Works Director shall be determined by resolution of the Board.

#### Sec. 16.48.050 Preparation and Form of Improvement Plans

Improvement plans shall show full details of all improvements required to be installed by the provision of these regulations, and of all other improvements proposed to be installed by the subdivider within any street, pedestrian way, easement or other public area or right-of-way. Full details shall include cross sections, profiles, estimated costs and specifications.

The form, layout, scale and other particulars of the plans, and number of copies to be provided, shall be in accordance with the requirements of the Public Works Director.

#### Sec. 16.48.060 Commencement of Improvement Work

Prior to the commencement of construction or installation of any improvements within any street, pedestrian way, easement or other public area or right-of-way, improvement plans shall have been approved by the Public Works Director and other affected

departments, or divisions. All other necessary permits to facilitate improvement work shall also be obtained prior to commencement.

#### Sec. 16.48.070 Construction and Installation Standards.

Improvements shall be constructed and installed in accordance with the approved plans and in accordance with the applicable standards, specifications and permit procedures established by these regulations, the County Code, State or Federal laws and resolutions of the Board of Supervisors.

Improvements shall be constructed and installed to permanent line and grade satisfactory to the Public Works Director.

#### Sec. 16.48.080 Temporary Improvements

In addition to permanent improvements, temporary improvements may be required to be made prior to or concurrent with permanent improvements.

#### Sec. 16.48.090 Inspection of Improvement Work

All improvements shall be constructed under the inspection of the Public Works Director and the subdivider shall cause all such improvement work to be inspected at such times as are established and required by him. Subdivider shall pay County a fee to defray County's costs in making such inspection, the rate of which shall be determined by resolution of the Board.

#### Sec. 16.48.100 Conditions of Improvement Work

All work and improvements contemplated by and performed under the provisions of these regulations shall be accomplished so as to minimize interference with and coordinate with other construction activities or developments of or on behalf of the County and nearby private development.

#### Sec. 16.48.110 Improvements Waived

If it is determined by the Public Works Director that the subdivision has been submitted only for the purpose of clarifying records by consolidating existing lots and metes and bounds parcels, or for the purpose of absorbing vacated streets or alleys by reversion to acreage, or both, the Board of Supervisors may, upon recommendation of the Public Works Director, waive all or a portion of the improvements which otherwise would be required.

#### Sec. 16.48.120 Specific Improvement Requirements

The improvements required by this Chapter shall be in accordance with Subsections 16.48.121 through 16.48.129.





#### Sec. 16.48.121 Public Sewage Disposal

- A. When any part of a subdivision is located within 1,000 feet of an available public sanitary sewer to which the subdivision may legally be connected, said subdivision shall be required to be sewered and be connected thereto.
- B. Construction of the system, or assurance of completion satisfactory to the County Board of Supervisors, and any necessary district formation, or formation of other legal entities must be completed prior to he request for final subdivision approval.
- C. In the case of subdivisions included in an existing and operating district, the subdivider shall design and install the sewage system and appurtenances in conformance with the standards established by the district. The subdivider shall furnish a letter from the district certifying that the improvement design is to their standards prior to submission of the final map.
- D. In the case of a subdivision not in an existing and operating district, the subdivider shall have construction plans prepared by an engineer licensed in the State of California submitted for review to the County Health Officer, Sanitary Engineering Branch and the North Coast Water Quality Control Board (NCRWQCB) at least thirty (30) days prior to consideration of the final map by the Board of Supervisors.
- E. Treatment and disposal facilities shall be designated in conformance with standards approved by the County Health Officer, Sanitary Engineering Branch and NCRWQCB.
- F. A competent inspector, approved by the County Board of Supervisors, shall be hired to inspect the installations for compliance with approved plans. The cost, hourly rate, mileage and expense of the inspector, shall be paid by the subdivider.
- G. The subdivider shall be responsible for compliance with all local, County and State standards and for the stability of all improvements and shall replace any portions which have become displaced due to carelessness or negligence on his part or to damages resulting from natural causes until 50% buildout or two (2) years from final approval, whichever comes first.
- H. When the required improvements have been installed, the subdivider shall request the inspector, in writing, for a final inspection of said improvements. The subdivider shall be advised in writing of the status of the improvements, including deficiencies. The subdivider shall correct any deficiencies so reported and shall again request a final inspection. The final inspection shall

- satisfy the inspector that the improvements fully comply with local, County and State specifications.
- I. Sewer systems and appurtenances located upstream of a domestic water reservoir must be located at an elevation of at least ten (10) feet above and over 200 feet horizontal distance from the high water line. In addition, any sewage treatment facilities constructed or located in the watershed must be located at least 500 feet (horizontally) from the high water line of the reservoir.

#### Sec. 16.48.122 Individual or On-site Sewage Disposal (Ref: Ordinance No. 1168)

A. If a subdivision of less than five (5) parcels is proposed for development on the basis of on-site sewage disposal systems, it is the responsibility of the subdivider to provide proof of the protection of water quality and the prevention of health hazards and nuisance conditions arising from the on-site discharge of wastes.

In general, the following site criteria for each parcel must be met:

1. Criteria for determining lot size shall include the following: (Ord. 1186)

Sewage Disposal	Water Supply	Required Minimum	Minimum Lot Size <sup>1</sup>
		Usable Area (must be	
		contiguous except as	
		noted below) <sup>2</sup>	

On-site	Community	10,000 sq. ft.	10,000 sq. ft.
Community	Individual	No minimum specified	10,000 sq. ft.
On-site	Individual	One-half acre <sup>2</sup>	One acre <sup>3</sup>
Community	Community Community		No minimum specified

<sup>&</sup>lt;sup>1</sup> Minimum lot size shown refers to health standards only. Applicants should also consult the County Zoning Ordinance.

<sup>&</sup>lt;sup>2</sup> Minimum usable area in this case can be located in areas no less than 10,000 sq. ft. each as long as such areas are not separated by topographical barriers such as streams,

<sup>&</sup>lt;sup>3</sup> The one acre minimum lot size may be reduced to not less than one-half (1/2) acre if recommended by the County Health Officer, but only if documented findings can be made that both the site and the general area contain deep groundwater and that concentration of nitrates will not result from reduced lot sizes in the area. The applicant will be responsible for providing background information which shall include a study and recommendation by a civil engineer, registered geologist or registered hydrologist with documented education and experience in conducting such studies.

#### Sec. 16.8.123 Public Water Supply

- A. Construction of the system, or assurance of completion satisfactory to the County Board of Supervisors, and any necessary district formation, or formation of other entities, must be completed prior to the request for final map subdivision approval.
- B. In the case of subdivisions included in the service area of an existing and operating district operated by a public agency, the subdivider shall provide a letter from the water provider agreeing to unconditionally and without exception provide domestic water to each lot in the proposed subdivision. The subdivider shall meet the following requirements:
  - 1. Where a subdivision is in an existing and operating district of 200 or more connections, the subdivider shall design and install the water system and appurtenances in conformance with the standards established by the district and Title 22 of the California Administrative Code. The water system must be in compliance with the California Safe Drinking Water Act and Title 22 of the California Administrative Code. The subdivider shall furnish a letter from the district certifying that the improvement design is to its standards prior to submission of the final map.
  - 3.2. In the case of Where a subdivision is included in an existing and operating water system of less than 200 connections the subdivider shall design and install the water system appurtenances in conformance with Title 22 of the California Administrative Code prior to submission of the final map.
- C. In the case of subdivisions included outside of the service area, but within the sphere of influence, of an existing and operating district operated by a public agency, the subdivider shall request that water provider to expand their service area to include the subdivision. If the water district has sufficient water supply and agrees to do so, then subdivider shall conform to the requirements of the previous subsection B of this Chapter section. If the water district is unable or unwilling to expand its service area to include the subdivision, the subdivider shall provide a letter from the water provider stating such.
- G.D. In the case of subdivisions that are not in an existing and operating water district, the subdivider shall have construction plans prepared by an engineer licensed in the State of California and submitted for review by: (a) the Sanitary Engineering Branch regional water board Division of Drinking Water for systems of 200 connections and more; or (b) the County Health Department, regional water board Division of Drinking Water Sanitary Engineering Branch and Department of Corporations Business Oversight for systems under 200 connections at least thirty (30) days prior to submission of the final map for approval.

- —The construction plans shall include at a minimum the following:
- A description of the nature of the proposed water source sufficient to demonstrate proof of water to the satisfaction of the County Planning and Environmental Health Departments, as required below:
  - a. Where well(s) are proposed as the water source, each well shall meet the following requirements:
    - i. Be located a minimum of one hundred (100) feet from any stream and have a minimum depth of fifty (50) feet;
    - ii. Produce not less than three (3) gpm for each proposed parcel based on flow testing during the dry season for a minimum of four (4) continuous hours; and
    - iii. Where an existing well occurs within one thousand (1,000) feet of the proposed well(s), the drawdown effects on the nearest existing well shall be monitored. Data collected on the drawdown effects shall be submitted with the description of the water source. Where the existing well is located on a different landownership, the applicant will provide proof in writing that the existing well's landowner was contacted and has been provided the opportunity to allow the applicant to assess drawdown rates/effects in their well.
  - b. Where a spring(s) is proposed as the water source, the spring(s) shall produce flows of not less than 1.5 gpm per proposed parcel based on flow testing during the dry season.
  - c. Use of surface water either from a stream diversion or from a well located within one hundred feet from any stream and/or a well fifty (50) feet deep or less shall not be used as proof of water except where:
    - i. A diversion directly from the main stem Trinity River, New River or Mad River is proposed as the water source and where a legal water right to divert has been issued by the State. Such a water right must be of enough volume to adequately serve all parcels within the proposed subdivision. Each proposed well shall produce not less than three (3) gpm for each proposed parcel based on flow testing during the dry season for a minimum of four (4) continuous hours.
    - ii. A well(s) located within one hundred feet of the main stem Trinity
      River, New River, or Mad River is proposed as the water source.

      Each proposed well shall produce not less than three (3) gpm for each proposed parcel based on flow testing during the dry season for a minimum of four (4) continuous hours.
    - iii. A hydrological study demonstrates that use of surface water during the dry season from a new legal water right would be of sufficient volume to meet needs of all proposed new parcels without negative impacts to downstream beneficial uses as defined in the North

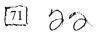
Coast Basin Plan as adopted by the North Coast Regional Water Quality Control Board. All hydrological studies shall satisfy the requirements listed below in this Chapter subsection and shall be approved by the Planning Department with the concurrence of the Environmental Health Department, and other specialists as needed, to assure compliance with beneficial use requirements.

- 1.2. Bacteriological and chemical water samples of source, as defined in Title 22 of the California Administrative Code, to be analyzed by a state certified laboratory. The nature and scope of the analysis report shall be at the discretion of the County Environmental Health Department.
- 2.3. General plan of the source (including well logs, pump tests and water rights, if needed), treatment distribution systems and storage works showing the location, function, and capacity of each component.
- 3.4. The parcels on which location of the proposed source, treatment and storage works on each parcel are proposed must be specifically delineated.
- D.E. Minimum fire flows as specified in Section 16.48.127 must be designed into all existing and proposed water systems.
- F. The subdivider shall provide a letter from the water provider agreeing to unconditionally with without exception provide domestic water to each lot in the proposed subdivision. A hydrological study is required to demonstrate that proposed use of surface water will sufficiently meet requirements of this Chapter. However, a hydrological study may be required for any subdivision, regardless of the type of water source proposed, within a Critical Water Resources (CWR) zoning overlay or for any subdivision for which water supply is of particular concern to the County Planning and/or Environmental Health Department. Anytime that a hydrological study is required, it shall meet all of the following requirements:
  - A description of the proposed water source(s), locations of the proposed source(s), location of existing wells that are not proposed as sources for the subdivision, distance of proposed water source(s) from any stream or spring that lies within two hundred (200) horizontal feet, and data on dry weather testing.
  - Calculation of aquifer characteristics, including safe yield, and compilation of the data into a report;
  - 3. Interpretation of the data in the study shall be made in a conservative way so as to protect existing uses and ensure sound water management. Qualified hydrological consultants, and if required by the Planning Department, a qualified hydrologist, shall:

- a. Certify that there is an adequate water supply during the dry summer months for the entire proposed development;
- b. Discuss the probable effects on surface flows and groundwater levels during below average rainfall years, including a worst case assessment of flows in years with only 50% of average rainfall for the nearest weather station that has a minimum 50 year rainfall record;
- c. Discuss the impact on water supply for hydrologically contiguous wells;
- d. An opinion about the cumulative impacts of the proposed water extraction on the aquifer; and
- E.e. Other findings specified by the Environmental Health and/or Planning Departments.
- G. Where the Planning Director in consultation with the Environmental Health
  Department and other appropriate agencies determines that cumulative
  and/or successive development proposals within a watershed or aquifer are
  likely to have impacts greater than can be analyzed in individual development
  projects, the Planning Director may require development proponents to
  coordinate with each other to accurately evaluate the impacts to the adjacent
  development. In its environmental compliance documents for such proposed
  discretionary development projects, the County shall consider the cumulative
  effects on beneficial uses of water (including but not limited to, human
  consumptive needs, instream flows, and wildlife habitat) for current and
  proposed development.
- F.H. A permit to construct a water system must be obtained as provided for in the California Health and Safety Code, Section 4011.
- G.I. All water systems shall be designed, installed and maintained in compliance with the California Safe Drinking water Act, Waterworks Standards and the Domestic Water Quality and Monitoring Requirements.
- H.J. The County Board of Supervisors may require a competent inspector be hired to inspect the installation for compliance with approval plans. If required, the cost, hourly rate, mileage and expenses of the inspector shall be paid by the subdivider.
- The subdivider shall be responsible for compliance with the foregoing standards and for the stability of all improvements and shall replace any portions which have become displaced due to carelessness or negligence on his/her part or to damages resulting from natural causes until 50% buildout or two (2) years from final approval, whichever comes first.

#### Sec. 16.48.124 Individual or On-site Water Availability

A. In the case of subdivisions of less than five (5) parcels For all subdivisions, water availability on each parcel must be proven to the satisfaction of the



<u>County Planning and Environmental Health Departments</u> by one or a combination of the following methods:

- 1. Where wells are proposed as the water source, one on-site well is required for each parcel. Each well shall meet the following requirements:
  - a. Be located a minimum of one hundred (100) feet from any stream and have a minimum depth of fifty (50) feet;
  - b. Produce not less than 1.5 gpm based on flow testing during the dry season for a minimum of 4 continuous hours; and
  - c. Where an existing well occurs within one thousand (1,000) feet of the proposed well, the drawdown effects on the nearest existing well shall be monitored. Data collected on the drawdown effects shall be submitted with the description of the water source. Where the existing well is located on a different landownership, the subdivider will provide proof in writing that the existing well's landowner was contacted and has been provided the opportunity to allow the applicant to assess drawdown rates/effects in their well.
  - d. The above well requirements shall be demonstrated to the satisfaction of the County Planning and Environmental Health Departments prior to the development of the final subdivision map without exception. However, earlier in the subdivision process at the tentative map stage, the subdivider may elect to demonstrate proof of water using reference wells that are located within 1,000 feet of each parcel. Specifically, each reference well shall be capable of producing a sustained yield of one and a half (1.5) gallons per minute for each proposed parcel for duration of not less than four (4) hours as determined by a pump test. The drawdown effects on the nearest existing well shall be monitored during pumping tests for the reference wells. The data for the reference well testing shall be provided to the County as preliminary evidence of sufficient water for the proposed subdivision and so that the County may begin to evaluate the likely impacts of water withdrawal on surrounding wells. The location of each reference well shall be indicated on the tentative map.
  - e. Prior to the recordation of the final map, a well that individually meets the requirements of this section shall be installed on each parcel.
- Where a spring(s) is proposed as the water source, one spring on each
  parcel shall produce flows of not less than 1.5 gpm based on flow testing
  during the dry season.
- 3. Use of surface water either from a stream diversion or from a well located within one hundred feet from any stream and/or a well fifty (50) feet deep or less shall not be used as proof of water except where:
  - a. A diversion directly from the main stem Trinity River, New River or Mad River is proposed as the water source and where a legal water right to divert has been issued by the State. Such a water right must be of enough volume to adequately serve all parcels within the proposed subdivision. Each proposed well shall produce not less than

- one and a half (1.5) gpm for each parcel based on flow testing during the dry season for a minimum of four (4) continuous hours.
- b. A well on each parcel located within one hundred feet of the main stem Trinity River, New River, or Mad River is proposed as the water source. Each proposed well shall produce not less than one and a half (1.5) gpm for each parcel based on flow testing during the dry season for a minimum of four (4) continuous hours.
- c. A hydrological study demonstrates that use of surface water from a new legal water right during the dry season would be of sufficient volume to meet needs of all proposed new parcels without negative impacts to downstream beneficial uses as defined in the North Coast Basin Plan as adopted by the North Coast Regional Water Quality Control Board. All hydrological studies shall satisfy the requirements listed in the previous "Public Water Supply" section and shall be approved by the Planning Department with the concurrence of the Environmental Health Department, and other specialists as needed, to assure compliance with beneficial use requirements.
  - Adequate water supply on each parcel capable of producing three (3) gallons per minute. The water must be legally obtained as defined in the Water Rights Law.
  - A well (as defined in the California Water Well Standards), located within 1500 feet of each proposed parcel of the property to be divided and capable of producing three (3) gallons per minute after a four (4) hour pump test.

All water availability must be proven during a time period of July 15 through September 30. This time period may be extended at the discretion of the County Health Officer.

- B. Where the Planning Director in consultation with the Environmental Health
  Department and other appropriate agencies determines that cumulative
  and/or successive development proposals within a watershed or aquifer are
  likely to have impacts greater than can be analyzed in individual development
  projects, the Planning Director may require development proponents to
  coordinate with each other to accurately evaluate the impacts to the adjacent
  development. In its environmental compliance documents for such proposed
  discretionary development projects, the County shall consider the cumulative
  effects on beneficial uses of water (including but not limited to, human
  consumptive needs, instream flows, and wildlife habitat) for current and
  proposed development.
- C. In the case of subdivisions of five (5) or more parcels, more additional proof of water availability is required, as follows:
  B.

- The County Health Officer shall be furnished all required information thirty (30) days prior to the final map being submitted for consideration by the Board of Supervisors.
- 2. The minimum of three (3) test wells shall be drilled. The minimum number of productive test wells shall be based on the ratio of one (1) per five (5) lots. The test wells must be located in areas least likely to produce a satisfactory well and must be in a pattern to represent the total area of the subdivision. The pattern and location of test wells must be approved by the Health Department prior to drilling.

Based on other water sources, the well requirement may be waived by the County Health Officer.

- 3. A complete chemical analysis (including heavy metals) of the water from every third test well. Each test well must have a bacteriologist test.
- Each test well shall be capable of producing a sustained yield of three (3) gallons per minute for duration of not less than four (4) hours as determined by a pump test.
- 5.2. All wells shall be drilled in compliance with the California Water Wells Standards. A Copy of the completed well driller's log which has been filed with the Department of Water Resources shall be submitted to the County Health Officer.
- The location of each test well must be indicated on a copy of the tentative map.
- 3. A statement from a registered geologist, or hydrologist as to a sufficient perennial recharge to supply as many wells as proposed for the subdivision and anticipated impact on water quantify for adjacent properties.

<del>7.</del>

- D. All wells shall be drilled in compliance with the California Water Wells Standards. A copy of the completed well driller's log which has been filed with the Department of Water Resources shall be submitted to the County Health Officer.
- E. A complete chemical analysis (including heavy metals) of the water from every third well as well as a bacteriologist test from each well.
- F. In order to protect the safety and welfare of residents, water storage facilities shall be installed on-site on each parcel prior to the approval of a final subdivision map. Minimum domestic water use requirements shall be 2,500

- gallons of storage per proposed parcel, which shall not include any required fire supply storage set forth in the Safety Element of the General Plan.
- G. All required information must be submitted to the County Health Officer thirty (30) days prior to the final map being submitted for consideration by the Board of Supervisors.

#### Sec. 16.48.125 Solid Waste Disposal

The subdivider shall indicate the nearest approved sol id waste disposal site available to lot owners. Solid waste disposal facilities, acceptable to the County Board of Supervisors, County Planning Commission and County Health Department, may be required to be provided for the subdivision. Plans, specifications, proposed locations, and maintenance plans, or information regarding other proposed means for disposal, shall be submitted prior to request for final subdivision approval.

#### Sec. 16.48.126 Road Improvement

- A. Basic Design Objective. It is the policy of Trinity County that roadway design will satisfy the following basic criteria. The roadway will be designed to move traffic efficiently and safely at prescribed service levels, consistent with the expected use of the roadway, under guidelines promulgated by AASHTO Policy on Geometric Design, and as follows:
  - 1. Legal requirements;
  - 2. Sound engineering principles and practices and engineering geological evaluation if necessary;
  - 3. Traffic safety considerations;
  - 4. Economy of design and maintenance;
  - 5. Allowance for the special nature of Trinity County roads and traffic conditions;
  - 6. Type of traffic; and
  - 7. Zoning.
- B. Design Standards for Roadway Categories. It is the policy of Trinity County that design will be based upon the following roadway classifications, use, and level of services:
  - 1. Roadway Category D: (Private Roadway)
    - One lane low speed, less than 20 mph.

## ATTACHMENT B



#### TRINITY COUNTY PLANNING DEPARTMENT

P.O. BOX 2819 - 61 AIRPORT ROAD WEAVERVILLE, CALIFORNIA 96093 PHONE (530) 623-1351 FAX (530) 623-1353

Email: canderson@trinitycounty.org

#### STAFF REPORT

August 11, 2016

From: Carson Anderson, Senior Planner

To: Planning Commission

Potential Recommendations to the Board of Supervisors – Countywide Water Re:

Resource Policy Changes per Northwest California Resource Conservation and

Development Council Input

#### **Requested Action**

The Board of Supervisors has tasked the Planning Commission with reviewing the proposals for water resource policy changes presented in this staff report. It is the prerogative of the Commission to decide what to recommend for adoption, whether it would be some of the recommendations or all of them. Those items the Commission chooses not recommended to the Board can be tabled for further discussion at a later date.

It is the recommendation of the Planning Commission recommend the following actions to the Board of Supervisors, finding that on the basis of the whole record before the Commission. including previous Trinity River Watershed planning and environmental studies, such as the North Coast Integrated Regional Management Plan, further assessment guidance conducted by the Northwest California Resource Conservation and Development Council/Five Counties Salmonid Conservation Program (5C), and comments received, that the policy changes proposed (project) will not have a significant effect on the environment:

- 1. Recommend amending Zoning Ordinance Section 29.2 ("Critical Water Resource Overlay Zone") as proposed in this staff report;
- 2. Recommend amending Zoning Ordinance Section 30 D.7 and Section 30 H, as proposed in this staff report:
- 3. Recommend amending Subdivision Ordinance Sections 16.08 and 16.08.195 (adding a definition of "Surface Water"), and 16.48.123 ("Public Water Supply") and 16.48.124 ("Individual or On-Site Water Availability"), as proposed in this staff report;
- 4. Recommend revising the overall watershed-related objective on page 56 of the Open Space Element and page 31 of the Conservation Element of the County General Plan, inserting a new recommendation (Recommendation #5) as follows: "... Protect streams and surrounding habitats to maintain and improve all beneficial uses of water for present and future generations, as well as a new set of related Policies numbered 5.1 through 5.4 (as proposed on page 4 of this staff report);
- 5. Recommend revising Recommendation 2 Page 56 of the Open Space Element and Page 32 of the Conservation Element to read as follows: Assist water districts, mutual water companies and other water purveyors in developing capital improvement plans that are realistic and based on sound planning and development patterns, and that will ensure reliable water

<u>supplies for present and future generations.</u> Add Policies 2.1 through 2.3 related to Recommendation 2 as updated, as proposed on page 4 of this staff report.

- 6. Recommend taking action, as proposed on page 3 of the staff report, to amend Part III (Open Space Considerations) Section G, page 28 of the Open Space Element of The General Plan by deleting the assertion "...Water supply is more than adequate to take care of both agriculture and domestic requirements for the foreseeable future.."
- 7. In reference to growing concerns regarding groundwater supply, recommend that the County take action consistent with Board Resolution No. 2002-022 "Resolution Approving Amendments to the Open Space and Conservation Elements of the Trinity County General Plan," which defined the beneficial uses associated with groundwater in our County and call for sustainable groundwater management practices, carrying capacity analysis, and establishing well water quality and quantity testing protocols, consistent with 5C guidance.

#### **Background**

The Commission has held three separate workshop sessions, all of which were advertised in order to receive public input. These meetings took place on December 10, 2015, April 14, 2016 and on July 14, 2016 (all dates occurred during 2016, unless noted). The Commission's July 14 staff report summarizes the discussion focus at each meeting and outlines emerging policy options for the Commission's consideration at a future time (Attachment A). The Board also held a public workshop and received a similar presentation from 5C on August 4, 2015, and based upon that discussion, directed Staff to seek the Commission's input on the recommendations put forth by the Northwest California Resource Conservation and Development Council (5C). Due to the size of the 5C Board backup document and the effort and cost involved in reproducing it a second time, please refer to the July 14 staff report Exhibit A ("BOS Backup Detail 08/04/15") provided as part of the July 14th packet.

As part of its discussion of possible changes to countywide water resource policy, the Commission, at the April 14 meeting, provided direction to staff, recommending that updates to the Zoning and Subdivision Ordinances, per 5C input, become the current focus, with a more thorough-going effort on water resources policy to come at a later date. Verbatim Minutes from the April 14, 2016 meeting provide the detail from that discussion and are attached for reference as part of Agenda Item # 3 - "Minutes."

#### Recommendation #1 - Proposed Policy / Text Changes to Zoning Ordinance

As referenced in the July 14 and April 14 staff reports the CWR overlay currently applies to isolated areas in the County, chiefly in Hayfork outside the water district service area, and also Douglas City, Browns Creek and Little Browns Creek, Democrat Gulch, and the lower, upper, and east branches of East Weaver Creek. 5C's recommendation is to extend the current CWR proof of water standards for all future subdivision actions to the entire county (as most residents living outside a community water systems district "...have more challenges meeting water needs in a dry year or drought"—particularly when multiple property owners draw from a common water source).

The existing standard would no longer be called CWR, but would be newly delineated as part of (Action #1) Zoning Code in Zoning Ordinance Section 29.2 – "Critical Water Resource Overlay Zone 'CWR'" and (Action #2) Section 30 – "General Provisions and Exceptions." Attachment B shows the existing text in the zoning code in strikeout format followed by the proposed rewritten section with the wording underlined to highlight the changes. The proposed standards would impose new development standards in regards to water. Criteria for documenting proof of water would be much stricter and would also require a greater level of evidence. More standards for water conservation would be enacted as well, including measures taken by staff in promoting conservation by encouraging voluntary compliance with best management practices already identified and presented on the 5C website (<a href="http://www.5counties.org/waterconservation.htm">http://www.5counties.org/waterconservation.htm</a>).

#### Recommendation #2 - Proposed Policy / Text Changes to Subdivision Ordinance

There are a small number of specific changes proposed revisions to the County's Subdivision Ordinance recommended for adoption – some of which carry forward water supply/water availability policy changes referenced in the Zoning Ordinance discussion of CWR. A definition of "Surface Water" would be added to the definitions in Section 16.08. Sections 16.48.123 and 16.48.124 would be modified "...for clarity and protection of water resources to prevent unsafe division of land..." that might otherwise occur because of the inadequate water supply. The time extension allowance for dry weather period testing also would be eliminated to assure all beneficial uses can adequately be protected (Action # 3). See Exhibit A (for the broader discussion provided the Board and Attachment C, which focuses only on the changes to the text/policies in the Subdivision Ordinance.

#### <u>Recommendation #3 – Selected Revisions to General Plan Open Space and Conservation</u> Elements

The Open Space and Conservation Elements (adopted in 1973 with minor text updates in 2002) needs to be made contemporary, but this update needs to be crafted as part of the much larger General Plan update, a County priority. For the interim, the best approach appears to be that of crafting a standalone water resources policy document. The rationale and general approach are presented in the July 14 staff report.

5C's recommended changes to existing General Plan Open Space and Conservation Element text are highlighted on the next page. The changes would be inserted into the text on page 56 of the Open Space Element and pages 31-32 of the Conservation Element (Action #4). In addition to those recommendations, an update to the current discussion of water supply in the Open Space Element of the County's General Plan is proposed. A new recommendation would be substituted for the existing wording of Recommendation 2 – Page 56 of the Open Space Element and Page 32 of the Conservation Element reading as follows: Assist water districts, mutual water companies and other water purveyors in developing capital improvement plans that are realistic and based on sound planning and development patterns, and that will ensure reliable water supplies for present and future generations. Policies related to the revised Recommendation 2 (Policies 2.1 through 2.3) would be added as described in the second text box on the next page (Action # 5 on page 1).

The statement that appears on page 28 of the Open Space Element "...Water supply is more than adequate to take care of both agriculture and domestic require-requirements for the foreseeable future..." is contradicted by the 2014 emergency drought declaration adopted by the County and by past actions taken by the Commission and Board as early as 2002 to address surface water and groundwater availability concerns (Resolution No. 2002-022 dated March 5, 2002), and accordingly, has been recommended for deletion. This action is reflected in proposed motion Action #6 on page 1.

Board Resolution No. 2002-022 "Resolution Approving Amendments to the Open Space and Conservation Elements of the Trinity County General Plan" (passed unanimously) clearly recognized the need, nearly 15 years ago, for a revamping of General Plan water policy in a manner that is in general alignment with current 5C recommendations. It called for specific text changes – deletions and insertions – within the Elements. This resolution with select changes of the Open Space and Conservation Elements were not incorporated, and came to Staff's attention this past week (Attachment D). This action will correct that deficiency, and it also defined the beneficial uses associated with groundwater in our County and called for improved groundwater management practices (e.g., potential curtailment of groundwater transfers; called for the pursuit of funding to assess the characteristics of groundwater basins within the county; and called for the adoption and implementation of a groundwater management ordinance based on the results of a groundwater basins characteristics analysis)(Action # 7).



#### Open Space and Conservation Element Policy / Text Updates

#### **Proposed**

Revise Objective as follows - Page 56 Open Space Element and Page 31 of the Conservation Element: To preserve the quantity and quality of existing water supply in Trinity County for future generations by careful planning of future development

Add Recommendation 5 – Page 56 Open Space Element and Page 32 of the Conservation Element: <u>Protect streams and surrounding habitats to maintain and improve all beneficial uses of water for present and future generations.</u>

Add the following Policies related to Recommendation 5:

<u>Policy 5.1: All future ministerial and discretionary activities should at a minimum maintain beneficial uses of water while protecting existing water rights.</u>

Policy 5.2: Adopt numeric and performance-based stream setback standards that are consistent with California Forest Practices Act stream zones and permitted management activities (provided, however, that legal and/or permitted activities approved by the County in the past are protected in perpetuity). In lieu setbacks may be utilized when incentive-based restoration results in an overall improvement in beneficial uses of water.

Policy 5.3: Develop incentives via a grant program or something similar to encourage existing water users to conserve water, restore stream habitat, reduce impermeable surfaces and/or restore stream habitats.

Policy 5.4: Establish effective incentives via a grant program or something similar to encourage conservation such as but not limited to reducing regulatory review of projects, transfer of density credits, in lieu stream buffer standards, reduction of development fees and costs. Incentivize water use calculation by providing credits to those providing such data.

#### **Proposed**

Substitute a New Recommendation for the existing Recommendation 2 – Page 56 of the Open Space Element and Page 32 of the Conservation Element: <u>Assist water districts</u>, <u>mutual water companies and other water purveyors in developing capital improvement plans that are realistic and based on sound planning and development patterns, and that will ensure reliable water supplies for present and future generations.</u>

Add the following Policies related to Recommendation 2.

<u>Policy 2.1: Direct future growth where sufficient water resources can be provided economically and sustainably.</u>

Policy 2.2: Support districts, as resources allow, in all efforts to improve water delivery efficiency, upgrade infrastructure, maximize the efficient use of water and reclaim or conserve water.

<u>Policy 2.3: Support expansion and/or consolidation of community and individual water</u> projects to the mainstem Trinity River where economically and environmentally practical.

31

<sup>\*\*</sup> It should be noted that a further overall goal contained in the 1973 Conservation Element is to develop a comprehensive program to sustain multiple uses of watershed lands.

#### Future Action – Selected Revisions to the Four Community Plans

Once the County has budgeted the resources for an update of the General Plan the task of updating the four community plans (Weaverville, Lewiston, Hayfork and Douglas City) should be undertaken as part of that effort. This will help ensure consistency across the various documents.

#### Future Action - Groundwater Policy

The July 14 staff report referenced the County Grand Jury Water Committee Report that was publically released on June 30, 2016 (also discussed in the July 27<sup>th</sup> *Trinity Journal*). Among the findings was the marked increase in the number of well permits issued by the County during the course of the last 10 years (64 in 2005 versus 300 during 2015) and the marked decline of water availability and quality in some of the county's streams during the recent drought; the growth in businesses that transport and sell water (a significant amount of this for illegal cannabis cultivation), and the significant potential for adverse impacts to water quality that are occurring as a result of surface runoff.

Reference was made in the Grand Jury Report of recent changes to State Water Code (broadly, Sections 10720 *et seq.*), requiring sustainable groundwater management and enforcement (carrying capacity analysis, potential establishment of local Groundwater Sustainability Agencies (GSAs), tightened policies on the regulation of wells, including the testing of well water quality and quantity, establishment of goals based on a carrying capacity model. The prompt adoption of a grading ordinance was also recommended. While the Grand Jury Report is referenced, time is still needed for the Grand Jury report to be taken under consideration, and for Board direction be taken as appropriate as to the resources and priorities required to address the recommendations.

5Cs recommendations summarized in the July 14 and April 14 staff reports are intended to reduce current impacts on groundwater, but also point to the need for new County policies to address the full range of groundwater impacts. Enactment of the policies recommended by the Grand Jury (referenced above), are ways to gather the information needed to assess the degree of impact and would provide a basis for more detailed policy recommendations. Although many policies employed in other jurisdictions, particularly ones from the Central Valley, are not always feasible in Trinity County, additional options that could be studied include integrated water resource planning approaches, enactment of groundwater conservation and management ordinances (to address issues such as water transfers that could potentially adversely affect groundwater resources) (e.g., Butte County Water Resources Element), requiring discretionary projects to utilize a menu of best management practices (BMPs) provided by the County both to increase the pre-development absorption of run-off and to promote groundwater recharge (e.g., Humboldt County Policy WP-P24). Again, further evaluation will come after Board direction. In addition, staff continues to study policy proposals at the state and regional levels to gauge applicability and implementation challenges.

Encouraging water cachement and greywater use (now permitted per the standards in California Administrative Code Title 24, Part 5 "...wherever practical and feasible"...per 5C) would also reduce demands on groundwater and have been recommended as part of the larger, overall strategy for addressing groundwater impacts. Educating the public and encouraging voluntary landowner participation would be a key part of the promotion strategy.

#### **Future Action – Surface Water Buffer Standards**

The Commission was asked to recommend adoption of the Cal Fire water course buffer standards (which reflect statutory requirements per the Forest Practice Act). It was also noted that Cal Fire has regulatory authority to enforce buffer zone compliance. Having a standard enforceable by Cal Fire would bolster the County's limited code enforcement capabilities at present and remove some of the additional burden on planning staff for performing CEQA review and related enforcement actions. The buffers are variable based on the classification of the adjoining surface water (based, in part, on whether it supports prime habitat, is round-year, seasonal or ephemeral). These details, along with the relevant sections of the Forest Practice Act, will be provided the Commission for future consideration.

#### **Preliminary CEQA Analysis**

A framework for establishing thresholds for significant impacts and cumulatively significant impacts can be found by consulting the "Basin Plan" (i.e., Water Quality Control Plan of the North Coast Regional Water Control Board), Fish & Wildlife findings of effect—including thresholds for adverse effects on threatened fish species. 5C stated that we should assume that we are already at thresholds for impacts due to climate change and other human-induced factors and should work backwards from that assumption to draw conclusions concerning environmental impacts.

The project purpose of the 5C "Trinity County Water Resources Planning Proposal to Supplement the NCIRWMP" is stated as that of minimizing adverse effects on water resources, including significant risks to drinking water and fishery needs, while still accommodating appropriate development. The policy recommendations made in this staff report and recited as part of the BOS August 4, 2015 back-up contained in the prior July 14 Commission packet reflects a conscientious, well-researched effort vetted with regional water resource experts to promote conservation of water and to reduce water resource impacts consistent with the NCIRWMP. This includes an evaluation of historic stream/river flows, watershed elevations and floodplains, community water system intakes and available well data, soil water holding capacity, development data, erosion hazard ratings, soil surveys, and wildlife and habitat consideration, as well as extensive environmental analysis and planning for the Trinity River Watershed found in the Trinity River Flow Evaluation Final Report and NEPA Record of Decision (2001), as refined by subsequent modeling studies and assessment guidance.

As noted in the July 14 staff report a review of the CEQA Initial Study Checklist criteria for determining potential significant impacts to hydrology and water quality was performed by staff. The recommendations do not reach threshold levels for significant impacts. To the contrary, they reduce or avoid impacts to hydrology and water quality. Staff review of the proposed policies, utilizing the CEQA Initial Study Checklist screening topics, did not reveal the potential for significant impacts. The proposed policies would conform to regional and State water quality standards and waste discharge requirements, would improve rather than degrade water quality, and would promote the recharge rather than depletion of groundwater. No policies call for the alteration of the course of a stream or river, or a significant increase in surface runoff or other actions that adversely change surface water runoff absorption rates or drainage patterns; nor are changes in the course or direction of water movement in streams or rivers proposed. Updates to the Subdivision Ordinance do not call for new development to be located where impacts to existing water resources would be increased, and no policies call for development within known flood hazard areas.

It is staff's recommendation that Planning Commission recommend the following actions to the Board of Supervisors, finding that on the basis of the whole record before the Commission, including previous Trinity River Watershed planning and environmental studies, such as the North Coast Integrated Regional Management Plan, further assessment guidance conducted by the Northwest California Resource Conservation and Development Council/Five Counties Salmonid Conservation Program (5C), and comments received, that the policy changes proposed (project) will not have a significant effect on the environment:

- 1. Recommend amending Zoning Ordinance Section 29.2 ("Critical Water Resource Overlay Zone") as proposed in Attachment A to this staff report;
- 2. Recommend amending Zoning Ordinance Section 30 D.7 and Section 30 H, as proposed in Attachment A to this staff report;
- 3. Recommend amending Subdivision Ordinance Sections 16.08 and 16.08.195 (adding a definition of "Surface Water"), and 16.48.123 ("Public Water Supply") and 16.48.124 ("Individual or On-Site Water Availability"), as proposed in Attachment B to this staff report;
- 4. Recommend revising the overall watershed-related objective on page 56 of the Open Space Element and page 31 of the Conservation Element of the County General Plan, by revising the Objective as follows: To preserve the quantity and quality of existing water supply in Trinity County for future generations by careful planning of future development. In addition, a new recommendation (Recommendation # 5) would be inserted worded as follows: "... Protect streams and surrounding habitats to maintain and improve all beneficial uses of water for present and future generations, accompanied by a new set of related Policies numbered 5.1 through 5.4 (as proposed on page 4 of this staff report);
- 5. Recommend revising Recommendation 2 Page 56 of the Open Space Element and Page 32 of the Conservation Element to read as follows: <u>Assist water districts</u>, <u>mutual water companies and other water purveyors in developing capital improvement plans that are realistic and based on sound planning and development patterns</u>, and that will ensure reliable water <u>supplies for present and future generations</u>, accompanied by a new set of policies numbered 2.1 through 2.3 (as proposed on page 4 of this staff report);
- 6. Amend Part III (Open Space Considerations) Section G, page 28 of the Open Space Element of The General Plan by deleting the assertion "... Water supply is more than adequate to take care of both agriculture and domestic requirements for the foreseeable future.."
- 7. In reference to growing concerns regarding groundwater supply, recommend that the County take action consistent with Board Resolution No. 2002-022 "Resolution Approving Amendments to the Open Space and Conservation Elements of the Trinity County General Plan," which defined the beneficial uses associated with groundwater in our County and call for sustainable groundwater management practices, carrying capacity analysis, and establishing well water quality and quantity testing protocols, consistent with 5C guidance.

# ATTACHMENT C

#### **Landowner Support Network for Water Resources Stewardship**

#### Summary

As part of the effort to develop recommendations to improve water management within Trinity County, the creation of a support network between the County, water system providers, the development community, and local resource agencies and organizations was envisioned to assist landowners and the entire community to be better water stewards. Because water is such a critical resource, one of the best ways to insure that it is protected and judiciously used is to make it easy for landowners to obtain practical information and potential assistance from various sources (their real estate agent, construction contractor, County Building or Planning department, or community water provider). The primary purpose of the network is to provide the development community with the most current relevant information on water resources within the county so that landowners and prospective developers can quickly and easily obtain information prior to and during land development activities. Before this project, this information was scattered in multiple locations and required more effort to assemble than most landowners would want to expend. The information includes: the County's land use planning policies and ordinances including zoning maps; community water providers service area maps; information on local resource agencies that have the capacity to help landowners make their property water-wise (e.g., NRCS, local conservation groups), and water rights information from various agencies. The support network model created for Trinity County was built around the fact that land use authorities, water providers, and community organizations have limited staffing and resources. The County Planning Department and Environmental Health Division have had one employee and only parttime administrative staff for the last several years. Therefore a network that entailed regular meetings and maintenance of an email distribution list was not practical given current and anticipated County resources. The network relies on existing, fundamental participants of the development community and requires little effort to sustain once established. The following is an outline of the support network including participants, components, roles and responsibilities for assembling and maintaining pertinent information.

#### **Participants**

County of Trinity Planning Department

**County of Trinity Building Department** 

County of Trinity Environmental Health Division

**Water System Providers** 

Landowners & General Public

Realtors

Surveyors



#### Contractors

Five Counties Salmonid Conservation Program (5C Program) of the Northwest CA RC&D Council

Natural Resources Conservation Service (NRCS)

Trinity County Resource Conservation District (TCRCD)

Watershed Research & Training Center (WRTC)

#### **Network Components**

<u>Online Trinity County Water Resources web map</u>: displays pertinent water resources information and data for use by County staff, the development community, and the general public.

<u>Water Resources Information</u>: Collectively, an overview of the information available to landowners including the web map, water management policies, stormwater management guide, water conservation, and other online resources.

<u>Stormwater Management Guide</u>: A user-friendly, guide outlining best management practices for managing stormwater so that it has minimal impacts on watershed health and salmon populations. The guide includes background information, do-it-yourself instructions, calculators, and additional resources.

<u>Water Conservation Information</u>: Information on: the current drought conditions; ways that landowners can save water by changing their habits, upgrading home infrastructure, and more proactive activities such as converting lawns and other water intensive vegetation to drought tolerant landscaping; and water rights and regulatory information.

<u>Educational Outreach Activities</u>: Informational displays for the general public at community events, presentations to members of the development community (e.g., realtors, surveyors), and presentations to decision makers such as the County Planning Commission and Board of Supervisors.

#### **Roles & Responsibilities**

Online Trinity County Water Resources web map: County of Trinity maintains this information via a contract with the Trinity County Resource Conservation District's GIS Manager. It is updated as often as the data changes, which varies greatly because of the many layers of information found within the map. The County has committed to keeping this map current. Changes to County code and policies are made via the County of Trinity website. Refer to the "Task7c\_WRwebmap..." attachment for an overview of the Water Resources web map content. Full content is accessed via the Count Planning Department website: http://www.trinitycounty.org/index.aspx?page=73.

<u>Water Resources Information</u>: Information largely maintained by the 5C Program on its website with links on the County Planning Department website. 5C webpage contains links to some Participant and other websites. County of Trinity policies and code are made available via the Planning Department website and through MuniCode. The County has an agreement with MuniCode to submit updated policy information as it happens, which will then be posted to MuniCode in a timely manner (within

37

about a month). Informational materials (including the Stormwater Management Guide, Water Conservation Information, and a Water Rights Brochure) have also been made available to the Water System Providers as part of their customer outreach efforts and to the County Planning and Building Departments as part of their office informational brochure kiosk.

<u>Stormwater Management Guide</u>: Developed by the 5C Program in coordination with GreenGirl Land Development Solutions and Dennis Slota of the Mendocino County Water Agency. Periodic updates to be made by the 5C Program. Refer to the "Task7c\_Stormwater..." attachment for an overview of the Stormwater Management Guide and specific content. Full content is accessed at: <a href="http://www.5counties.org/stormwater.htm">http://www.5counties.org/stormwater.htm</a>.

<u>Water Conservation Information</u>: Information largely maintained by the 5C Program on its website with links on the County Planning Department website. 5C webpage contains links to some Participant and other websites. Refer to the "Task7c\_WaterConservation..." attachment for an overview of the Water Conservation information and specific content. Full content is accessed at: <a href="http://www.5counties.org/waterconservation.htm">http://www.5counties.org/waterconservation.htm</a>.

Educational Outreach Activities: For the products developed under this project, the 5C Program is responsible for presentations to decision makers and the development community. However, for broader educational outreach is performed on an ongoing basis by the 5C Program, the NRCS, TCRCD, WRTC, and other groups at various venues including festivals, the County fair, and to specific audiences such as schools and community service organizations. Each organization will perform these activities as time and resources allow, but regularly enough to keep the community informed of critical developments in regards to water resources to the best of their abilities.

To summarize, the participants primary way to access the information developed for water resources is to visit the County of Trinity Planning Department website to access the Trinity County Water Resources web map and the 5C Program website. The 5C Program website hosts more comprehensive information including the Stormwater Management Guide, Water Conservation Information, and links to other online resources. Basic water conservation brochures will Educational outreach activities will be pursued on an ongoing basis by resource organizations.







Cont@ct

#### Intro to Low Impact Development

- σ What is Low Impact Development?
- Why Use Low Impact Development?
  Which BMPs Should I Use, and How?
- Download/View Handbook as PDF

#### What is Low Impact Development?

Low Impact Development (LID) is a collection of methods (aka Best Management Practices or BMPs) that preserve natural resources and collect and clean stormwater runoff to protect and improve water quality and availability. One of the main principles is to simulate natural drainage patterns and incorporate vegetation and natural materials into stormwater facilities. The Puget Sound Partnership defines LID as "a stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design." LID may also be referred to as Green Infrastructure, Green Development Practices, or Alternative Storm Water Management Systems.

There are over 200 best management practices (BMPs) that may be used to improve watershed health. BMPs may fall into two categories:

#### Non-structural BMPs

These are restoration and protection practices often employed during the early planning phase, but may also appear during other project phases. This includes choosing low impact techniques over conventional ones and also selecting natural approaches over ones that require more physical structures.

- Relative Effectiveness: High
- Relative Cost: Low



polluting ones (like this copper downspout)



highly effective at reducing sediment transport off-site and can be installed by hand or machine



Choose good materials and avoid This berm, made of compost instead of ordinary loose soil, is Compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restore compacted soils and can be used to reduce the compost amended soils restored to reduce the compo water demand in gardens or lawns.

#### Structural BMPs

These are mitigation strategies or facilities designed to reduce impact from either past or future development.

- Relative Effectiveness: Low to Moderate
- Relative Cost: High









Ecoroofs intercept & evaporate rainfall and greatly extend roof

Rain gardens are great alternative to mange runoff when it can't be prevented.

#### Why Use Low Impact Development?

In undeveloped areas, very little rainwater or snowmelt runs off the land like it does in urbanized towns and cities. Trees, plants, and soil capture much of the precipitation, and some of it evaporates back into the air. Most of the precipitation that doesn't evaporate or get captured by vegetation soaks into the ground where soil and microbes remove pollutants naturally. The water slowly recharges streams, wetlands and groundwater. Very little runs off, except in very large storms. The natural terrain acts like a sponge.

This natural hydrologic cycle is radically altered when land is developed and the way it has been for decades is changed. Typical development clears the land of vegetation and covers it with hard surfaces such as roads, parking lots, and rooftops. Construction and foot traffic compact soils, so that even landscaped areas can generate unnaturally high runoff volumes. Storm drains are installed to get water out of the way by sending it into local streams or injecting it underground without treatment. Development dramatically increases runoff volumes. Even when controlled by detention basins, this causes flooding, damages fish and wildlife habitat, and delivers pollutants such as oils and pesticides to local waterways. The decreased infiltration results in: less cool, clean groundwater to recharge streams in the dry summer months; and in a reduction in water availability



throughout the watershed. LID practices may be incorporated into existing as well as newly built developments in a community. They increase groundwater supplies and reduce the negative water quality impacts to streams and fish habitat, flooding, and in many cases, the cost of stormwater treatment and infrastructure. They are aesthetically pleasing and have been shown to increase real estate values.

#### Which BMPs Should I Use, and How?

The 5C Program offers technical guidance on a number of different practices. (See "Navigating the 5C Program's Stormwater Management Guidance".) The reason for a particular design element in this guidance may not be apparent immediately; but, it's "that way" because it supports long-term water quality and watershed restoration. In order for them to work properly, stormwater BMPs must be installed and maintained according to the design specifications. So to avoid unintended consequences, the project team, which might include the owner, designer(s), contractor(s)/construction crew, maintenance staff and others as appropriate, all need to do their part in properly implementing the practices you choose. The table below shows the types of practices that are generally applicable to different stormwater runoff sources. Each BMP has additional applicability criteria related to slopes, soils, setbacks, and geometry and is included in the guidance documents provided by the 5C Program.

For additional information on how changes to facility designs are likely to impact function, see pdfs under the column heading "Additional sustainability & design considerations for modifying details" under each set of facility detail design at http://extension.oregonstate.edu/stormwater/swamp-lid-details

#### Applicability

The following table illustrates which types of stormwater runoff thatseveral BMPs can manage:

	BMPs	Stormwater Runoff Surface Types			
		Rooftops	Roadways	Sidewalks	Compacted & Semi-pervious Landscape Areas
Structural BMP	Rain Gardens	X	X	X	X
	Vegetated Filter Strips	X	X	X	X
	Pervious Concrete		X	X	
	Rainwater Harvesting	i x			
	Convey Stormwater without a Pipe	X	X	X	
	Minimize Impervious Area	X	X	X	
	Runoff Area Disconnection		X	X	
	Tree Preservation & Planting		X	X	X
lon-structura	Restore Soil				X
BMP	Native Plants				X

#### **Combining Practices**

Numerous practices may be combined into endless combinations depending on natural conditions on-site, stakeholder and designer preferences, and budget. As you can see, some practices can be applied to runoff from an array of surfaces while others only manage one or two kinds of surfaces. So combining practices is probably the best and most cost-effective way to manage stormwater on your site.





A daylit stream, a rain garden, porous pavement, and native plants all work together to Even a single practice like this rain garden will need additional BMPs implemented (erosion protect water resources on and off site. control) to be really effective long-term.

#### Download/View the 5C Program Stormwater Management Handbook:

#### Download by Chapters:

- Navigating 5C Resources (PDF File 228 KB)
   Introduction to Low Impact Development (LID) (PDF File 941 KB)
   1 Minimize Impervious Areas (PDF File 501 KB)
   2 Disconnect Impervious Areas (PDF File 1,050 KB)
   3 Restore Disturbed Soils (PDF File 287 KB)

- 4 Build a Rain Garden (PDF File 2,220 KB)
- 4 Build a Rain Garden (PDF File 2,220 KB)
  5 Build a Rain Barrel (PDF File 214 KB)
  6 Harvest Rainwater with a Cistern (PDF File 477 KB)
  7 Test Your Soil (PDF File 386 KB)
  8 Site Bioretention for Infiltration (PDF File 550 KB)
  9 Find Native Plants in Your Area (PDF File 911 KB)
  10 Amend Soils for Bioretention (PDF File 244 KB)
  11 Company Water in Singley (PDF File 244 KB)

- a 11 Convey Water in Swales (PDF File 943 KB)

For more information, contact us

©2012. Five Counties Salmonid Conservation Program and Green Girl Land Development Solutions. The 5C Program Stormwater Management Handbook may be photocopied or reprinted in its entirety for noncommercial purposes.

Back to Land Use Planning page

Back to Programs Page

©Copyright 2013 Five Counties Salmonid Conservation Program All Rights Reserved For more information please Contact Us

Allwebco Design & Hosting ©Site Design 2011