MONTEREY COUNTY
RESOURCE MANAGEMENT AGENCY

WORKING DOCUMENT
Proposed Well Ordinance – Analysis
Revised August 8, 2013

A. INTRODUCTION

Monterey County Codes need to be updated to implement policies adopted in the 2010 General Plan for the non-coastal unincorporated areas of the County. Existing County well regulations need clarification and updating to address on-going policy matters, update language to reflect changes in State regulations (State Bulletins), and resolve some recurring problems.

The General Plan (GP) and Certified Local Coastal Plan (LCP) include policies, technical criteria, and land use regulations relative to wells. Chapter 15.08 of the County Code establishes technical regulations for developing new wells. Titles 20 and 21 establish land use regulations (Coastal and Non-Coastal Zoning Ordinances). In order to address unique conditions due to the diversity of Monterey County and various scenarios that could arise relative to wells, and to increase transparency of the well permitting process, staff introduced an idea to develop an Administrative Manual with guidelines and procedures for implementing County Codes relative to wells.

Monterey County Resource Management Agency (RMA), in collaboration with the Environmental Health Bureau and the County Water Resources Agency, has been working on a new Well Ordinance and associated Administrative Manual for the past year or so. A number of issues have been raised with implementing General Plan policies and development of a draft well ordinance and related administrative manual. Staff framed what we understand to be the issues and provided a range of alternatives (options) for consideration intended to facilitate discussion for developing a new draft ordinance.

Many of the issues are inter-related and there are many different implementation scenarios. Therefore, this working document established an illustrative range of options for discussion purposes. . There may also be other options that could be considered. Policy makers may wish to combine options or direct staff on a completely different option.

The Board of Supervisors designated the Agricultural Advisory Committee (AAC) as the primary advisory group to work with staff on this assignment. The AAC created a subcommittee to address the issues and make recommendations to the full committee. Following is a summary of what has occurred to date:

- 2/11/13 AAC Subcommittee Meeting. Conducted a round-table discussion on all 10 issues in the "Working Document – Proposed Well Ordinance Analysis" dated January 9, 2013 (Subcommittee minutes, **Exhibit A**). Memo from the Refinement Group was submitted to the Subcommittee (**Exhibit B**).
- 4/8/13 AAC Subcommittee Meeting. Discussed and formulated recommendations for issues 1-5 contained in the Working Document (Subcommittee minutes, **Exhibit C**). A letter from

Peter Pyle (PG, CHG) from PGH Consulting Hydrology was submitted to the Subcommittee (**Exhibit D**).

- 4/25/13 AAC Meeting. Subcommittee recommendations on the Issues 1-5, along with staff comments, were presented to the full AAC for discussion (AAC memo and minutes, **Exhibits E** and **F**).
- 5/13/13 AAC Subcommittee Meeting. Discussed and formulated recommendations for issues 6-10 contained in the Working Document (Subcommittee minutes, **Exhibit G**).
- 6/27/13 AAC Meeting. Reviewed all issues related to agricultural and provided formal recommendations to the Planning Commission and Board of Supervisors (AAC memo, **Exhibits H**).
- 7/18/13 Refinement Group. Considered three issues from the Working Document related to domestic wells where the AAC had no recommendation discussion (A summary of the discussion and recommendations are included in **Exhibit I,** RG memo, **Exhibit J**).

B. APPLICABLE POLICIES

State Bulletins 74-81 and 74-90 (State Department of Water Resources):
Monterey County has an adopted Well Ordinance as required by Section 13801 of the California Water Code that references standards in Bulletins 74-81 and 74-90 set forth by the State Department of Water Resources (DWR). The County's Well Ordinance is codified at Chapter 15.08 of the Monterey County Code. Some of the standards set forth are setbacks from potential contaminant sources, construction standards that take into consideration geological and hydrogeological conditions, reporting, definitions, and different types of wells. The Bulletin indicates these standards are minimum statewide standards and may not be sufficient for local conditions. Monterey County has supplemented the State standards to address specific local conditions such as seawater intrusion, contaminant plumes, and source capacity tests in fractured rock geology to protect public health.

Local Coastal Program:
North County Land Use Policies

2.5.2: Phase new development within safe long term yields

2.5.3: Regulate construction of new wells or intensification of use of existing water supplies by permit. Restrictions on lot divisions in Granite Ridge until water supply issues are resolved.

4.3.5: Ag is priority land use over residential where there are limited public facilities. New subdivision and development dependant on groundwater shall be limited and phased until an adequate long-term supply is assured.

Big Sur Coast Land Use Policies

3.3.3.A: Prohibit land use development activities that will have the effect of diminishing surface flows in coastal streams to levels that will result in loss of plant or wildlife habitat.

3.4.3.A: Development of water supplies or intensification of use of existing supplies from springs, streams, well shall be regulated by permit. Prohibit transport of water out of a watershed. Water systems after 12/31/76 without a permit shall not be considered "existing." Conform to State and County Health Codes and Guidelines.

3.4.3.B: Priority for wells over surface water diversions. No substantial water use intensification without specific verification of adequate water supplies.

3.4.3.C: Permits for new wells shall require measuring of water extraction.

Carmel Area Land Use Policies

2.4.4.A: New development requires proof of adequate water supply, and demonstrate no adverse effect on environment during driest year.

3.2.3: Wells or other measures for monitoring salt-water intrusion are permitted.

5.3.3: Accessways should be located an adequate distance from wells.

Del Monte Forest Land Use Policies

111: Demonstrate adequate, long-term, public water supply.

1982 General Plan (applicable to the Coastal Zone):

21.1.6; Property owners shall repair or destroy wells that contribute to groundwater degradation.

53.1.2; The County shall assure adequate monitoring of wells in those areas experiencing rapid growth.

53.1.5; Proliferation of wells serving residential, commercial and industrial uses into common water tables shall be discouraged.

2010 General Plan (applicable to the Non-Coastal areas):

PS-2.4: Regulations for wells in hard rock areas.

PS-2.5: Regulations for water quality testing new individual domestic wells on a single lot of record. Ag wells exempt.

PS-3.3: Criteria for all new domestic wells. Replacement wells exempt.

PS-3.4: Criteria for high capacity wells. Replacement wells exempt.

PS-3.5: Addresses new wells in known areas of saltwater intrusion. Policy does not apply to deepening or replacement of existing wells, or wells used in conjunction with a desalinization project.

PS-3.9: Requires long-term sustainable supply in terms of water quality and yield for all lots created through subdivision

CV-3.20: Discretionary permit for new wells in Carmel Valley alluvial aquifer. Offset requirement.

NC-3.8: Discretionary permit for all new wells in fractured rock or hard rock areas in North County.

NC-5.4: Discretionary permit all new wells in North County planning area. Replacement wells exempt.

Glossary:

High Capacity Well; defined as a well with a flow over 1,000 gallons per minute (gpm).

Based on the 2010 General Plan and Local Coastal Program (LCP) policies, well applications may require a ministerial permit, discretionary permit or both. The following table generally summarizes Staff's current interpretation of GP and LCP requirements for various types of well permits.

Well – Entitlements Required		Ministerial Permit	Discretionary Permit
Ag Wells (under 1,000 gpm)	New	✓	
	Replacement	✓	
High Capacity Wells PS-3.4	New [2]	✓	
	Replacement	✓	
Fractured Rock	New [1]	✓	✓[3]

Well PS-2.4 NC-3.8	Replacement[1]	✓	
Domestic Wells (New) PS-2.5 PS-3.3 CV-3.20 NC-5.4	Inland – General, unless otherwise noted [1]	✓	
	Carmel Valley WITHIN Carmel River Alluvial Aquifer [1]		✓
	Carmel Valley OUTSIDE Carmel River Alluvial Aquifer [1]	✓	
	North County [1]		✓
Domestic Wells (Replacement) PS-3.3 CV-3.20 NC-5.4	Inland – General, unless otherwise noted	✓	
	Carmel Valley WITHIN Carmel River alluvial Aquifer	✓	
	Carmel Valley OUTSIDE Carmel River alluvial Aquifer	✓	
	North County	✓	
Wells in Coastal Zone	New		✓
	Replacement		✓

1- Criteria in PS-3.3 apply
2- Criteria in PS-3.4 apply
3- Discretionary permit required in North County only

The 2010 General Plan does not define "replacement" well or "new" well. GP policy language implies that a "replacement" well is not considered a "new" well by granting exceptions for replacement wells. The base GP well policies are PS-3.3 and PS-3.4, and both exempt replacement wells. There is no explicit exception for replacement wells in Area Plan policies (Carmel Valley, North County), but these policies were generated as mitigation for the base PS policies, so staff refers to that exemption when applying the AP policies.

Discretionary permits for wells are processed by RMA-Planning as an Administrative Permit. When a discretionary permit is required, appeals are governed by the permit process set out in Title 21. A ministerial permit is required for construction, destruction, or repair of any well. Ministerial well permits are processed by the Monterey County Environmental Health Bureau (EHB), including in cases where a discretionary permit from Planning is required. A decision by the Director of Health to deny, conditionally grant, suspend, or revoke a well permit is appealable to the Board of Supervisors (BOS) under current section 15.08.160. An applicant needs to obtain the discretionary permit from Planning first if a discretionary permit is required; once the discretionary permit is issued, the ministerial well permit is then issued by EHB.

C. ISSUE ANALYSIS

1. Limitations on New Domestic Wells

Existing subdivisions that created smaller lots (clustering) were approved based on the expectation that the development would be served by a water purveyor or system, not with individual wells. Due to water restrictions such as State Water Board Order 95-10 (and subsequent Cease and Desist Order on Cal Am), property owners and developers have looked to drilling wells where the subdivision was not designed to accommodate wells in order to move forward with development.

Allowing individual wells after-the-fact because of water restrictions creates a number of issues:

- Not all properties have equal ability to install a well (first come-first served). Potential impacts due to well density and set back requirements that restrict a lot from being allowed to drill a well if their neighbor already has a well.
- The ability for future development of sewer lines or onsite wastewater treatment systems (OWTS) (e.g. septic tanks, leach fields, etc) is impacted because State regulations require certain distances between wells and onsite sewage systems or sewer lines.
- Increases the potential of adversely affecting the water quality of the well(s) by increasing the density of wells to OWTS when sewage disposal is by OWTS. The minimum lot size is 2.5 acres when creating new lots that are to be served by an onsite individual well and by an OWTS.
- Creates potential policy conflicts when well setback regulations force subsequent development on neighboring lots into areas protected by policy (e.g. oak woodland).

Wells create potential impacts on neighboring properties due to restrictions of uses within certain proximity of a well (e.g. septic, sewer laterals, animal confinement, etc). Due to these restrictions on future uses near wells, placement of wells also requires consideration of existing infrastructure such as sewer main lines and proposed land use that may require planning for future infrastructure (e.g. annexation). The intent of adopting regulations to address this issue is to minimize impacts of wells on adjacent properties, and address wells proposed in areas with lot design/density that is more of an urban-level type of development. General Plan policies also require evaluating the effect on other domestic wells in the vicinity.

Wells in infill urban lots have been an issue of concern in the coastal zone and inland areas resulting in interim urgency ordinances (temporary moratorium) while the County develops regulations to address these issues. Setbacks for domestic wells were initially raised as part of appeals to the Board on well applications on small lots in the Coastal Zone. Issues raised included effect of the well on neighboring lots and potential effect on current and future placement of onsite wastewater treatment systems or sewer laterals. The greatest potential conflict occurs on smaller lots. Installing wells on smaller parcels ahead of development requires careful consideration of land use limitations to consider where a future home may be built.

AAC Discussion Summary:
This issue pertains to domestic wells. The AAC recommendations focus on Ag wells, thus no recommendations on requirements for domestic wells were discussed.

Options:
Based on issues raised through project appeal hearings, staff developed options for consideration:

I. Lot Size:

a. Restrict minimum lot size to 2.5 acres (in all cases)
b. Restrict minimum lot size to 2.5 acres if:
    1 an onsite wastewater treatment system (OWTS) exists, or development will be served by an OWTS; AND

2A an existing water system, or water system to be constructed, is intended to serve the lot but cannot provide a connection due to certain specified circumstances; OR

2B there is no public water system

c. Allow wells on lots less than 2.5 acres if it meets performance based criteria such as:
   1) Setbacks. See II below.
   2) Fractured Rock Geology. See Issue #3 (Fractured Rock) below.
   3) Well Replacement Sites. There must be adequate initial and future sites established.
   4) Water Availability:
      i. There is no water system
      ii. A water system is unable to provide water service

II. Set Backs:

a. Require that required set backs to be met within property lines
b. Address on a case-by-case basis with established performance standards which allow the well only if it does not substantially burden neighboring lots
c. Allow wells to affect neighboring property if the owner has written permission from the neighbor (agreement, easement)

AAC Recommendation:
No recommendation.

2. Setbacks for new Ag wells.

Monterey County does not have a policy that would regulate Agricultural (Ag) wells with a production capacity at or below 1,000 gallons per minute (gpm). Wells on Ag lands located near urban areas have the potential to impact adjacent domestic wells and/or existing/future infrastructure needs. Ag wells are typically located near roads for easy access. This could impact a road planned for future urban expansion because a sewer line cannot be located within 50-feet of the existing well. Larger Ag properties have space to drill wells, but the well location can impact Ag operations. The intent of the regulations would be to allow for efficient Ag operations while protecting the water supply and minimizing impact on adjacent properties, including existing and future infrastructure.

The primary purpose of requiring a setback is to address potential contamination between an Ag well and wastewater facilities. Locating a well near a property line could restrict or prohibit development on a neighboring lot (e.g. septic system). Also, good community planning requires consideration of infrastructure that would need to be located in a County road in the future that would pose a potential contamination issue to wells located near the roadway. However, this situation would not apply to all County roads, only to those areas that are planned to develop in urban uses in the future.

AAC Discussion Summary:
The AAC considered a standard setback from property lines where a new well would not require a well impact assessment. Certain cases might warrant a reasonable setback from the property line of a non-Ag property if the well setback has a significant impact to potential development. A setback of 20 feet from the property line to the new Ag well was thought to be appropriate.

The AAC recommended that Ag wells be exempt from setbacks for an adjacent Ag property (Option b). Ag wells should not have a required setback from a road that may, in the future (but does not currently), contain infrastructure (e.g. a sewer line) that could pose a contamination issue. Addressing future contamination potential should be the responsibility of the developers or County related to the new development, consistent with the Ag buffer setback policy.

The AAC suggested allowing an exception under certain circumstances (e.g. variance), but did not make specific recommendations for implementation. This issue was referred to subcommittee to develop criteria, appropriate authority, and noticing standards and make a recommendation to the full Committee.

Options:
The following options presented by staff address separate issues so can be considered as a package or individually:

a. Require a setback of up to 50 feet between a County road and a new Ag well if determined to be necessary by the Planning Director to accommodate future public infrastructure. The setback: 1) can be less than 50 feet if conditions allow; 2) is presumed not necessary unless determined to be required; 3) only applies to public infrastructure; and 4) setbacks as discussed in this context do not exempt high capacity wells from the requirements of General Plan Policy PS-3.4.
b. Exempt all new Ag wells that affect other Ag property
c. Establish a standard setback for Ag wells adjacent to non-Ag uses

AAC Recommendations:

a. Require no setback from the property line between a new Ag well and another Ag zoned property if the well is on land owned by the same person.
b. Require a 20-foot setback from the property line for a new Ag well on the property when the adjacent lot is a non-Ag zoned lot of record, or is on an Ag-zoned property owned by a different land owner.
c. Require no setback from a property line to the new well when the lot is adjacent to a roadway unless there is a defined easement or an approved development project (intent).
d. A well may be placed anywhere within an established well lot.
e. Setbacks should only apply to new Ag wells, not to replacement wells.

3. Wells in Consolidated Materials (Fractured Rock)

Monterey County Environmental Health Bureau is aware of the general areas of consolidated materials (fractured rock) within the County based on experience and historical studies. However, it is not possible to precisely identify all fractured rock areas on a map.

Allowing individual wells after-the-fact on small lots intended to be served by a municipal sewage system and water system because of water restrictions creates a number of issues, such as those noted in Issue #1 (Limitation on new Domestic Wells) above. In addition, wells in fractured rock may have unpredictable production due to recharge area or instances where seismic events could close off fractures in the rock that previously provided water to the well. This creates uncertainty for a long-term water supply. Changing the water supply from a water system to on-site individual wells increases the potential to create competition between wells (i.e. groundwater gradient changes resulting in loss of well production), especially as the number of wells increases over time. Also, small lots are constrained in

their ability to move the well location to find water if the existing well can no longer meet the owner's production needs.

Fire agencies require connection to a water system or a storage tank. As such, lots that are too small for an adequately sized fire tank are permitted to connect to the water system for fire suppression even if connections are not available for domestic use.

The Board adopted an Interim Ordinance (now expired) for wells in fractured rock, generated by issues with wells in the coastal zone and nearby inland wells while the County was developing regulations to address wells in fractured rock. The Regional Water Quality Control Board (RWQCB) has expressed concern with installing wells in consolidated materials/fractured rock (coastal and non-coastal) where there is no public sewer available because the density creates a greater potential to contaminate the public water supply. GP Policies PS-2.4 and NC-3.8 provide direction to create regulations for domestic wells in consolidated materials (e.g. fractured rock). In cases where an alluvial formation is located below hard/fractured rock and the well is drilled through the rock formation to the water source, staff does not consider that to be a fractured rock well.

AAC Discussion Summary:
There was discussion related to conditions where water can be extracted from formations above or below fractured rock that do not have the same characteristics as extracting water within hard/fractured rock formations. Ag wells are not generally drilled to extract water from fractured rock material because the wells cannot produce the amount of water needed to support the Ag operation. Therefore, this issue is more related to domestic wells.

Options:
Staff identified several options which appear available to address these issues:

a. Allow new wells based on outcome-based performance standards (e.g.; 50% permeable area post-development, Alternative OWTS (i.e. enhanced treatment) where soil < 20', enhance recharge of groundwater with a rainwater recharge system, higher production capability, require two well sites, etc.)
b. Allow new wells based on defined standards (e.g.; min. lot size; 100-foot sanitary seal, etc.)
c. Prohibit wells in fractured rock where there is an alternative water source (e.g.; water system is available – regardless if a connection is available at this time).

AAC Recommendations:
No recommendation.

Staff agreed to add clarifying language in the draft ordinance such that wells which penetrate, but are not perforated (i.e. constructed to extract water), in a hard/fractured rock formation are not subject to regulations intended for wells that extract water from hard/fractured rock.

4. **High Capacity Wells**
A high capacity well is defined in the 2010 GP Glossary as a well that can produce greater than 1,000 gallons per minute (gpm). This standard was reached through discussions as part of the General Plan Update hearings with technical consultation from the Monterey County Water Resources Agency. Ag wells that will produce at or under 1,000 gpm are not subject

to the GP well policies that require an impact assessment of the proposed well.

Each new well is considered individually when implementing the GP well policies; cumulative impacts are not part of the assessment. Therefore, one farmer could drill three wells that each produce 900 gpm without triggering the criteria for an impact assessment, while another farmer could drill one well producing 2,700 gpm that would be subject to an impact assessment and could require mitigation of any potential significant impact shown by the assessment.

In response to issues raised relative to the definition of High Capacity Ag wells, staff researched the criteria for determining "high capacity". This research only found a threshold in the Midwest, and that defines a high capacity well as producing over 75 gpm. While this reflects a much more conservative threshold than Monterey County, staff recognizes that standards are based on different circumstances (greater source of water, fewer geologic constraints, lower water intensive crops/use). Staff recognizes that Monterey County has diverse conditions with regard to aquifers and other issues related to thresholds for defining high capacity wells, however in lieu of a General Plan amendment, the regulations must address the current 1,000 gpm threshold.

Regulations for High Capacity Wells do not prohibit the drilling of a well and there is no limitation as to the amount of water being extracted by a well. However, GP policy does create a trigger to perform an assessment for any new High Capacity Well. The assessment looks for potential impact of the new well on in-stream flows or other domestic or water system wells. Staff is currently exploring different types of models to use in performing the assessment to provide the most accurate picture of potential impact. Per GP policy, any potential significant impacts from the new well, as indicated by the assessment, must be mitigated by the applicant (e.g. redesigning or relocating the well).

One issue raised by the agricultural community is the threshold for when mitigation is triggered. Other factors that relate to this issue include the replacement well exemption (item #5 below) and assessments of impacts on in-stream flows and domestic wells (item #6 below). Requirements for conducting an impact assessment only apply to new wells and not to replacement wells. This means that the definition of a replacement well is critical to the definition of a High Capacity Well.

In response to concerns from the AAC Subcommittee, staff also created a means of verifying a well's production capacity based on the proposed casing and pump size for those cases when a proposed well has an anticipated pumping rate less than or equal to 1,000 gpm but is capable (by design) of being a high capacity well. Industry standards for well pumps indicate that, generally, wells with a casing diameter of greater than 12-inches would have production potential to become a high capacity well, depending on the pump size and well location (e.g. alluvial vs fractured rock formation). Thus, staff has used the threshold of a 12-inch diameter casing to determine when an applicant who is proposing a well that is expected to produce less than or equal to 1,000 gpm needs to submit verification of the pumping rate.

Initially, staff implemented the following two-step process as a means of collecting the necessary data:

- Pre-Drilling. Applicants prepare a pump design plan based on the production they intend to achieve with the well. MCWRA verifies that the design does not indicate intent to be a high capacity well.
- Post-Drilling. The results of a pump test are required post drilling to confirm that the capacity is under 1,000 gpm. If the well's production indicates that it is, in fact, a high capacity well and operation of the well is determined to have potential significant impacts, mitigation would also be required (e.g. flow restrictors) by policy.

During implementation of the pre- and post-drilling verification process, staff received feedback from the AAC Subcommittee indicating that, in the Subcommittee's opinion, the pre-drilling component of the process is onerous and misrepresentative of actual outcomes. As a result of comments and additional review, staff now requires only the post-drilling verification of a well's pumping rate (i.e. pump test data). This does not provide the applicant with the benefit of MCWRA's review before beginning work, but it does achieve the intent of the GP policies. Applications for a High Capacity Well do not require any type of post-drilling verification.

Because production from the well can be changed by installation of a different pump, staff is concerned with a potential need to monitor wells with larger casings to ensure that they remain under the 1,000 gpm threshold. However, this can be managed by providing statements on the well permit describing the permitted maximum production per the applicant's representations, which could be used in future enforcement if the permit was found to be in violation. Monitoring could/would be handled reactively (complaint, other permit) and not proactively.

AAC Discussion Summary:
AAC discussed when to require verification (pre-drilling and/or post drilling) and what to require. There was not a specific recommendation in this regard. There was also discussion pertaining to the stated threshold of 1000 gpm that is defined in the General Plan. Monterey County is not a "one size fits all" and the policy (definition) should better reflect regional characteristics. For areas like North County and Carmel Valley, 1,000 gpm could be adequate, but to achieve this capacity in the Salinas Valley would be disappointing. In addition, a well using groundwater should not be linked to a policy protecting surface water. A definition with a threshold for high capacity wells needs to be science-based.

Within the context of the adopted GP, as adopted, AAC members discussed a number of technical issues to determine when a proposed well would be considered High Capacity. Committee members recognized staff's recommendation to require a submittal containing documentation for wells that propose a pumping rate less than or equal to 1,000 gpm, but which have the potential to be high capacity based on construction design. The intent is to prove that proposed wells meeting these criteria would not be high capacity wells and therefore would be exempt from the well impact assessment requirements.

The new ordinance should be clear that these requirements pertain to new wells and not to replacement wells. Submittals should be simple and straightforward and not require MCWRA to review or retain significant amounts of documentation.

Options:

a. Establish pre-drilling standards based on combined proposed well casing and pump size that would result in 1,000 gpm or less.
b. Process permit based on permit description. Applicant must demonstrate that actual (post-drilling) well capacity will be 1,000 gpm or less after it is drilled and pump installed by submitting a pump test conducted to County specifications. Standard condition that the well remains in conformance with description on the permit until/unless a new permit is obtained.
c. Adopt interim standards but process a General Plan Amendment to potentially amend the policy.

AAC Recommendations:
Amend the General Plan to redefine high capacity wells.

Until GP is amended (or if it's not amended), include submission of well use reports at the end of the year for check and balance process to verify use of the well.

5. **Replacement Wells**

Monterey County currently has no requirement (definition) for replacing a well (agricultural or domestic), but rather policies indirectly create an incentive (in the form of an exemption) to avoid certain reviews or permit requirements. GP policies PS-3.3, PS.3.4 and NC-5.4 all provide exemptions to assessment/permit for replacement wells. Replacement wells in the coastal (emergency) and non-coastal area are exempt from permitting and/or technical requirements.

Under the GP Policy PS-3.4, new high capacity Ag wells are subject to review criteria (assessment), but are exempt from the review criteria if the new well is replacing a well. The intent of exempting replacement wells is that we would not increase the number of "straws in the ground" that create a potential environmental hazard (conduit to a public water source). Eliminating or reducing the number of wells in sensitive areas (e.g.; in or near area of seawater intrusion) can help to reduce risk of contaminating potable water sources. Many older wells do not meet current standards (e.g.; perforations in multiple aquifers, do not meet minimum seal depth), which can increase potential risk of contaminating potable water sources, especially if left unused. State regulations require an inactive well to be destroyed after one year, unless one can demonstrate an intent to use the well again. Replacing older wells that pose a contamination hazard is a primary objective of these regulations. However, providing for efficient Ag operations should be considered.

To destroy an existing well is costly. Therefore, Ag has expressed a desire to be able to retain back up wells if they are not cumulatively increasing extraction. In some cases, a new well is installed to reduce the need to move water as far. There may be no increase in use by adding another well because the same amount of area is being irrigated or because an existing well has reduced production. As such, having more wells could be more efficient by using less energy (pumping) and/or creating less waste (leaks). Allowing wells to be retained subject to a condition that there is no net increase would require that a specific method of verification be established. Protecting the aquifer from contamination and the need to destroy wells that could cause a risk is of primary concern; however there should be the ability to retain certain existing wells for back up or other uses that would not increase the existing extraction amount.

AAC Discussion Summary:
The proposed modification is to clarify that the replacement well must not increase the "impact" as related to the original capacity. **The concept should be "replacement capacity" or "no increase in impact" for an entire property or area, instead of limiting the exemption to a single well.** For example, if there is a well field consisting of several wells that are or were producing at a certain capacity they can be replaced with a single well producing at that same capacity and the new well could be considered a replacement well and therefore not require an impact assessment.

Recognizing staff's concern for protecting the aquifer from contamination and the need to destroy wells that could cause a risk, the AAC still felt that there should be the ability to retain certain existing wells for back up or other uses that would not increase the existing extraction amount. An ordinance should encourage compact/consolidated operations that increase energy efficiency and do not affect food safety with contaminants in the water supply.

All appear to agree that protecting the aquifer from contamination is a primary concern. Many old wells pose a real threat. There may be a feasible method of determining that an existing well is not in such poor condition as to pose a contamination risk, and therefore could be retained for back up or other incidental uses, but this would be an exception to the regulation (*Working Document-options a and b*).

Staff also expressed concerns about making determinations based on prior historic well capacity or addressing well fields. In many cases, data about historic well capacity is not available. While the clarifier of considering a well field would provide greater flexibility for the Ag community, staff takes the position that one Ag well can be replaced with a new Ag well but that generally an existing well must be destroyed in order to address potential contamination of the aquifer. Staff understands the Ag perspective and may consider a different replacement standard for domestic wells where the justification to retain an existing well for incidental use related to an Ag operation is not a factor. However, the important issue with defining a "replacement well" is that such a well is exempt from certain requirements, including the assessment of impact on neighboring wells, properties, or streams.

Staff developed options:

a. Define replacement well to mean that an existing well must be destroyed. Retaining a well in any capacity would be considered an expanded use.
b. Establish criteria for when a well must be destroyed (inadequate seal depth, multiple perforations).
c. Establish criteria as to what wells may be considered as replacement:
    1) Water Source. Replacement well must be located:
        i. on the same parcel, or
        ii. in the same geographic area (water basin).
    2) Similar application/impact. Increase efficiency in Ag operation but not increase amount of extraction.
    3) Differentiate between Ag and domestic wells as to what constitutes replacement and when an existing well be required to be destroyed in order to be a replacement well.

AAC Recommendations:
Option c with modification to subsection c(3) as follows:

c. Establish criteria as to what wells may be considered as replacement:
    1) Water Source. Replacement well must be located:
        i. on the same parcel, or
        ii. in the same geographic area (water basin).
    2) Similar application/impact. Increase efficiency in Ag operation but not increase impact.
    3) Differentiate between Ag and domestic wells as to what constitutes replacement.

6. Assessment of Effect on In-stream Flows

GP Policies PS-3.3 and PS-3.4 establish criteria to review effects on in-stream flows necessary to support biological resources (also see policies in GP Goal 5 of the Conservation Open Space Element - Biological Resources). This applies to both domestic and high capacity (Ag, urban, and domestic) wells in the non-coastal areas; however, Ag wells that are not high capacity (equal to or less than 1,000 gpm) are not subject to these policies. Policy CV-5.4, developed as mitigation for the GP, has an additional requirement that extractions from the Carmel River must be fully offset for no net increase.

Assessment of effects on in-stream flows has been part of the CEQA review performed for discretionary (well) permits in the coastal zone, using existing LCP policies relative to ESHA and water as a threshold. The Monterey Peninsula Water Management District (MPWMD) requires monitoring of wells within 1,000 feet of the Carmel River. Although MPWMD includes coastal and non-coastal areas, this regulation affects mostly non-coastal properties because of the Carmel River influence area. The Salinas River is different from the other rivers because MCWRA manages water flows using water stored at reservoirs to provide multiple benefits year round.

GP Policy PS-3.4 is worded to require assessment of effects on "flows necessary to support riparian vegetation, wetlands, fish and other aquatic wildlife..." However, the EIR discussion leading to the mitigation, which provided the basis for this policy language, was focused on impacts to steelhead; there are specific water bodies that support steelhead migration. Based on research of GP documents, staff agreed to address this issue as follows:

1) Assessment for High Capacity wells under PS-3.4 is most relevant to impacts of water levels in water bodies that support steelhead habitat as defined by NOAA's National Marine Fisheries Service (NMFS). Staff proposes to apply assessment of impacts to in-stream flows to *designated critical habitat*, as defined and identified by the National Marine Fisheries Service (NMFS) (South-Central California Steelhead Recovery Plan, Public Review Draft, Southwest Regional Office, NMFS, September, 2012). As required by the Endangered Species Act, NMFS designated critical habitat for steelhead in 2005, including hundreds of miles of creeks and streams within Monterey County. Maps provided by Monterey County Water Resources Agency (MCWRA) highlight all such stream segments by watershed. These maps were derived from Federal Register/Vol. 70, No. 170, Friday, September 2, 2005, pages 52575-52579.
2) Effects to support riparian vegetation, wetlands, and aquatic wildlife in general would be best addressed in a Stream Set Back Ordinance per Policy OS-5.22. GP Policy OS-5.22 addresses riparian habitat by establishing set backs from streams. This policy specifically identifies the Arroyo Seco, San Antonio, Nacimiento, Gabilan and Toro and

additional water courses to the steelhead rivers, and may include other waterways based on stream classifications developed with the stream set back ordinance.

Monterey County Water Resources Agency (MCWRA) is currently using an analytical model as part of a multi-step process for assessing a proposed well's potential impacts to in-stream flows. An initial assessment is generally completed within 1-2 days from receiving the well application. An assessment does not prohibit the drilling of a well or regulate how much water can be extracted.

The analytical model is used to determine whether the proposed well has the potential to impact the identified stream(s) at a level which meets or exceeds a threshold value for depletion of in-stream flows. If no impact is determined using the analytical model, the applicant does not have to do anything further with regard to the assessment. If the assessment shows potential impact to a stream, the applicant is given options to mitigate – e.g. relocate the well, adjust the well specifications (pumping rate) or construction, or hiring a professional consultant to conduct a site-specific study. An alternative to avoid mitigation is to destroy an existing well, which is staff's current threshold for replacement.

The County's consultant team, working with County staff, established 2 cubic feet per second (cfs) of stream flow depletion as the threshold of significance for potential impact to flows affecting steelhead migration. WRA staff intends to periodically evaluate potential improvements to its analysis methodologies, which can be incorporated into the assessment process. When available, validated "site specific" aquifer perimeters may be utilized in the initial assessment.

Between GP adoption and June 2013, staff has processed 85 well applications that were subject to one or more of the new GP policies. A total of 11 applications indicated potential for significant impact that required mitigation. Only four of the eleven applications currently have unresolved issues outstanding. Staff's implementation of the process has evolved over time, resulting in more refined determinations. Staff finds that implementing the policy as described above could eliminate the need to amend the definition of a High Capacity well, and still meet the intent of the GP policy.

AAC Discussion Summary:
The primary areas of concern in addressing this issue include: how we define purpose of in-stream flow, and what constitutes a "stream" that requires this assessment. The AAC questioned the analytical assessment model used, indicating that it does not take into account actual water level at any point in time or season. Actual impact can depend on the time of year when the demand occurs (e.g. vineyards spray for frost control in winter, which is the wet season where there generally would not be an impact on water levels). The AAC requests that the scientific methodology reflect the most up-to-date available science.

Staff developed options:

a. Establish one standard set back for all (from centerline versus edge/bank). If within a standard set back, assessment is required in all cases.
b. Establish set backs based on classifications (river, stream, creek, ephemeral, intermittent, Salinas River-levels managed)
c. Assess in all cases consistent with current MCWRA process
d. Case-by-case assessment based on conditions/known species:

i. Steelhead
ii. Alluvial, hard rock, etc.
iii. Define affect based on pump design for Ag wells meeting high capacity definition

AAC Recommendations:
Require an assessment for High Capacity Wells in all cases where the water body is identified as critical Steelhead habitat. Periodically evaluate and use the most up-to-date scientific analysis methodologies applicable. .

7. **Well Influence Assessment**
All new wells in the coastal Zone are currently required to address influence on other wells as part of the coastal permit process. MPWMD currently requires wells within the District boundary (coastal and non-coastal) to consider impacts on other wells within 1,000 feet. MCWRA is currently using an analytical model to calculate zone of influence of proposed domestic and high capacity wells based on well specifications. This data is used to evaluate potential impacts to domestic wells within that zone.

AAC Discussion Summary:
This policy intends to mitigate where High Capacity Wells may have potential health impacts on existing domestic wells. A threshold of greater than five (5) feet of drawdown in an existing domestic or water system well over a twelve (12) hour pumping cycle, caused by operation of a proposed high capacity well, is the threshold currently being used to determine if mitigation is required. Staff indicated a willingness to refine this threshold to take into account additional factors. Further, the AAC suggested that the assessment of High Capacity wells should only apply to impacts on domestic wells in alluvial material, not other Ag wells.

Staff developed options:
Define "Immediate Vicinity"
a. Incorporate MPWMD standard of 1,000 feet
b. Having influence on another well based on well/pump design in alluvial only
c. Incorporate MPWMD standard of 1,000 feet for non-alluvial only

Testing Requirements
a. Incorporate existing regulations (e.g. MPWMD)
b. Develop standards

AAC Recommendation:
"Immediate Vicinity" – define as a High Capacity Well having influence on a *domestic* well based on well/pump design, located in alluvial material.

Testing Standards - Develop specific standards [as part of drafting the ordinance] based on discussion/input from full AAC accounting for actual use versus theoretical (e.g. pumping cycles, recharge, draw down).

8. **Water Quality Testing Protocols**
State Bulletin (DWR) establishes water quality testing as part of a permit process for new individual domestic wells. The California Health and Safety Code, Title 22 of the California

Code of Regulations, and Monterey County code Chapter 15.04 establishes water quality maximum contaminant levels and sampling frequency/protocols for water systems. The State Building Code, adopted by Monterey County, requires that each plumbing fixture be supplied with an adequate supply of running potable water. Monterey County, in conformance to state law, requires a permit for the construction of all water wells and also requires discretionary permits for wells located in the coastal zone. GP Policies PS-2.5 and PS- 3.3 make water quality testing and criteria a requirement for non-coastal areas. Similar policies in the LCP make water quality testing and criteria a requirement for coastal areas.

GP Policy PS-3.9 requires testing water quality and yield for all lots created through subdivision, beyond an existing lot of record. Monterey County has a variety of water quality issues. Where an issue is identified, the well may be required to test for up to one year. The standard is to use the most current four-quarter results that are averaged where multiple tests present different results. Applicants can continue to test as long as they wish until they obtain four consecutive quarters that result in meeting the standard. If the well does not meet standards, the developer can propose treatment for proposed water systems that are to be 15 connections or greater. This option requires showing technical, managerial and financial (TMF) capabilities to maintain a proposed treatment system.

AAC Discussion Summary:
This issue was determined to only apply to domestic wells and therefore the AAC has no recommendation.

Staff developed options:
Options for consideration include:

a. Maintain existing process and testing protocols for domestic wells only
   i. If initial test passes, they can proceed
   ii. If results exceed any Maximum Contaminant Level (MCL) or approaching the MCL (e.g. 80% of MCL) for Subdivisions, four quarters of testing may be required.
   iii. Treatment is an option for proposed water systems that are to be 15 connections or greater with adequate TMF and individual domestic wells on a single lot of record.
b. Establish timeframe for well data. Limit timeframe to initial four quarters. Do not allow additional testing if results exceed Maximum Contaminant Levels from the earlier timeframe.

AAC Recommendations:
No recommendation

9. Seawater-intruded areas

Section 15.08.140 of Chapter 15.08 of the County Code currently contains special technical requirements for wells located in the inland and coastal areas with known groundwater quality problems, including an area called "Zone 6 of the Monterey County Flood Control and Water Conservation District." Section 15.08.140 requires adherence to special requirements for wells in "Seawater-intruded Areas" in order to protect groundwater. Most of the seawater intrusion occurs in the coastal area. For inland areas of known seawater intrusion, GP Policy PS 3.5 generally prohibits the construction of new wells in "known areas of saltwater intrusion, as determined by MCWRA".

County regulations require special technical specifications for the construction, destruction, and repair of wells in seawater intruded areas. However, reference to "Zone 6" or "Seawater-intruded Areas" is not a precise delineation. Maps exist (and are updated every two years) that identify existing seawater-intruded areas; these maps will be used to determine where special requirements for the construction, destruction and repair of wells are applicable for the purpose of protecting groundwater. Pursuant to GP Policy PS-3.1, continuation of the presumption for water in Zone 2C is subject to future studies showing the Salinas Valley Water Project is successful in minimizing or avoiding expansion of seawater intrusion.

AAC Discussion Summary:
WRA staff indicated that data related to seawater intrusion is collected annually and that the mapping is updated every two years. The AAC indicated that the boundaries on the maps should be used to apply the regulations and not include any fringe areas.

Staff developed options:

a. Apply regulations only within delineated boundary of "Seawater-intruded Areas."
b. Extend regulations to wells within proximity to influence seawater intrusion as determined by the applicable water management agency.
c. Require a discretionary permit for wells in Seawater-intruded Areas.
d. If well is proposed in Seawater-intruded area within Zone 2C, then presume that there is no basis to prohibit the well based on the rebuttable presumption that the Salinas Valley Water Project is minimizing or avoiding expansion of seawater intrusion. Continuation of this presumption is subject to future studies showing that the SV Water Project is working to minimize or avoid expansion of seawater intrusion.

AAC Recommendations:
Apply regulations only within delineated boundary of "Seawater Intruded Areas" as mapped by the WRA and periodically updated.

If an Ag well is located in the Seawater Intruded Area of Zone 2C then it is presumed that the Salinas Valley Water Project will mitigate impacts and the subject well should not be prohibited.

Regulations apply only to production wells, not monitoring wells.

10. Archeological Study Requirements

Well permits in the coastal zone are subject to discretionary review that includes assessment of archaeological resources and potential impacts. GP (OS-6.3) and LCP policies/regulations generally require an archaeological study (arch report) for all "new development" in high and moderately sensitivity areas. Routine and on-going Ag is generally exempt from arch reports where the ground has been previously cultivated.

General Plan policies require arch reports to be prepared for "new development" in High and Moderate Sensitivity Areas. Since much of Monterey County is identified as having high or moderate potential, an arch report would be required for new development in undisturbed areas in most cases. Applicants can submit a form requesting a waiver to the

arch report if there has been a previous negative report that included the proposed development area, there is no land clearance/disturbance, or the project is minor and located on a previously disturbed site.

Arch reports are prepared based on surface evidence and historical records, and would not likely identify potential resources that would be found deep underground relative to drilling a well. Staff explored ways to best facilitate well permits while protecting resources, specifically where there are known significant archeological resources. The question is if drilling a well should be considered "new development."

Simply drilling a well would have potential impacts limited to the area where the auger drills the hole. Monitoring the well drilling is not helpful because it is not possible to ascertain if resources are affected because the spoils are finely ground. An arch report would probably not result in identification of any potential resources and drilling a well would cut through and destroy any artifacts or remains, generally without the ability to detect any effect. The only way to be sure to avoid remains would be through taking a unit sample (digging down to a certain level below where remains are typically found, which creates a greater amount of disturbance (impact)). However, some drilling techniques require a "pit" to circulate the mud and/or well cuttings. These pits have potentially more impact on buried resources because of the excavation involved. An alternative to a pit is what is called a "mobile pit" which is a portable container sitting on grade and does not require grading or digging.

This has evolved into a current practice for well permits in inland and coastal areas as follows:

- New development in high and moderate sensitivity areas start from a point of requiring an archaeology report. They can request a waiver if they meet the criteria.
- Drilling an Ag well in cultivated areas does not require an archaeology report but Planning will still issue a waiver of the Arch Report requirement.
- In areas that are uncultivated and located in a high or moderate sensitivity area, Ag wells require an archaeology report unless they qualify for a waiver.
- For any well (Ag or domestic) where a pit is included, the applicant can prepare a report or use a mobile pit and sifter method. A waiver is required for the mobile pit and sifter method.

AAC Discussion Summary:
The AAC suggested that wells should not be considered "new development" unless there is grading or a pit associated with them. Ag fields should be considered to be previously disturbed; however, range land would generally not be considered previously disturbed.

Staff developed options:

a. Require a report only in high sensitivity areas
    i. Only if/when the project includes a pit or other grading. Drilling a well with no pit would be exempt.
    ii. In all cases where there is a new well
    iii. Only where the proposed site has not been previously disturbed.
b. Require a report in high and moderate sensitivity areas
    i. Only if/when the project includes a pit or other grading. Drilling a well with no pit would be exempt.
    ii. In all cases where there is a new well

iii. Only where the proposed site has not been previously disturbed

Ag fields would be considered previously disturbed but range land would not.

AAC Recommendations:
Require an archaeological report in High Sensitivity Areas for a well if it includes grading (e.g. pit) and is in an area that has not been previously disturbed.

Drilling a well, without grading, is exempt from arch report requirements in all areas.