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BEFORE THE ARIZONA POWER PLANT
AND TRANSMISSION LINE SITING COMMITTEE

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IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR A CERTIFICATE
OF ENVIRONMENTAL COMPATIBILITY
FOR THE VAIL TO VALENCIA 115 KV TO
138 KV TRANSMISSION LINE UPGRADE
PROJECT, ORIGINATING AT THE EXISTING
VAIL SUBSTATION IN SEC. 4, T.16S., R.15E.,
PIMA COUNTY, TO THE EXISTING
VALENCIA SUBSTATION IN SEC. 5, T. 24S.,
R.14E., IN THE CITY OF NOGALES, SANTA
CRUZ COUNTY, ARIZONA.

Docket No. L-00000F-09-0190-00144

Case No. 144

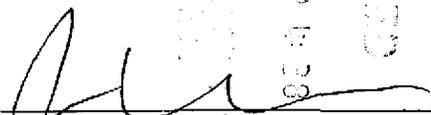
NOTICE OF FILING

UNS Electric, Inc. ("UNS Electric" or "Company"), through undersigned counsel, hereby
files the Rebuttal Testimony of Edmond A. Beck in Response to Committee Questions and
Inquiries.

RESPECTFULLY SUBMITTED this 2nd day of July 2009.

UNS ELECTRIC, INC.

By


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1 Original and 25 copies filed
2 this 2nd day of July 2009, with:

3 Docket Control
4 ARIZONA CORPORATION COMMISSION
5 1200 West Washington Street
6 Phoenix, Arizona 85007

7 A copy of the foregoing was hand-delivered/mailed
8 this 2nd day of July 2009 to:

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23
24 By Mary Spolito

1 **BEFORE THE POWER PLANT AND TRANSMISSION**
2 **LINE SITING COMMITTEE**

3 IN THE MATTER OF THE APPLICATION OF
4 UNS ELECTRIC, INC. FOR A CERTIFICATE
5 OF ENVIRONMENTAL COMPATIBILITY
6 FOR THE VAIL TO VALENCIA 115 KV TO
7 138 KV TRANSMISSION LINE UPGRADE
8 PROJECT, ORIGINATING AT THE
EXISTING VAIL SUBSTATION IN SEC. 4,
T.16S., R.15E., PIMA COUNTY, TO THE
EXISTING VALENCIA SUBSTATION IN
SEC. 5, T.24S., R.14E., IN THE CITY OF
NOGALES, SANTA CRUZ COUNTY,
ARIZONA.

Docket No. L-00000F-09-0190-00144
Case No. 144

9
10 **REBUTTAL TESTIMONY OF**
11 **EDMOND A. BECK**
12 **ON BEHALF OF**
13 **UNS ELECTRIC, INC.**
14 **IN RESPONSE TO COMMITTEE QUESTIONS AND INQUIRIES**
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1 **I. INTRODUCTION.**

2
3 **Q: Please state your name and address.**

4 A: My name is Edmond A. Beck. My business address is UniSource Energy Corporation,
5 P.O. Box 711, Tucson, Arizona 85702.

6
7 **Q Are you the same Edmond Beck who testified in these proceedings June 2 through**
8 **June 4 at the Esplendor Resort in Rio Rico, Arizona?**

9 A: Yes.

10
11 **Q: What is the purpose of providing pre-filed written Rebuttal Testimony?**

12 A: The purpose is to provide responses to Committee questions and inquiries posed to UNS
13 Electric at the conclusion of the third day of hearings held on June 4, 2009. Rather than
14 wait until hearings re-convene on July 8 and 9, UNS Electric felt it appropriate to provide
15 written responses in advance of those hearings.

16
17 **Q: What questions will you be addressing in your Rebuttal Testimony?**

18 A: I will provide information on the following issues:

- 19 • The exact location of the 500 foot corridor (and the 1,250 foot corridor by the
20 Preston Mobile Home Park) – including providing maps that show the corridor
21 width particularly within the area between where the existing 115 kV line and
22 Pendleton Drive intersect south to the Canez Substation (in Segment 2) and south
23 to the Sonoita Substation (in Segment 3) as well as maps overlaying Segment 2 that
24 shows existing improvements to properties;

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- The feasibility of the potential placement of the line west of the Union Pacific Railroad right of way (“UPRR ROW”) in Segment 3 as well as in the southern part of Segment 2;
- Approximate pole placements west of the UPRR ROW in Segment 2 and Segment 3;
- Confirmation of the location of the centerline for the Preferred Alignment in Segment 2 with respect to the existing 37.5-foot distribution line easement east of the UPRR ROW;
- UNS Electric’s contact with Santa Cruz County personnel regarding placement of transmission line and steel monopoles in the Santa Cruz floodway;
- Water table issues associated with excavation and other ramifications of constructing poles within the floodplain and/or floodway;
- The industry standards for placing transmission line structures in riverbeds and how those might be achieved;
- Section 404 permitting issues if the line were to be placed in the floodway and/or the floodplain;
- Whether placement of the line west of the UPRR ROW mitigates some of the wildlife habitat for special status and sensitive species as compared to the proposed routes within the area in question.
- Potential conflicts with Santa Cruz County zoning ordinances concerning placement of transmission line monopoles in proximity to existing structures built by property owners, and whether those structures would be grandfathered as to be exempt from violation since the transmission line ROW would be subsequent to those structures being built;
- Whether the ROW in these areas could be narrowed down from 100 feet for the Project; and

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- Growth projections for Santa Cruz County and their relationship to the planning and zoning ordinances.

In addition, I am providing a revised Proposed Form of CEC with some additions and changes, including a condition to address pole color as the Chairman had requested. Both redlined and clean versions of the revised Proposed Form of CEC have been attached to my testimony in Exhibit A.

UNS Electric did have further discussions with the other Parties (i.e. Mr. Magruder and Ms. Webb) concerning CEC conditions that took place July 2, 2009. The Parties' proposed conditions and requests were discussed. The Company is considering their respective requests (and related proposed language) and it may further update this version in light of those discussions.

Further, UNS Electric will request that all of my pre-filed Rebuttal Testimony and the attached appendices be marked and admitted as one exhibit at the hearing. Regarding the revised Proposed Form of CEC, UNS Electric would request that be marked as Replacement Exhibit UNS-8 (Supplemental) to indicate that it is an updated version of the CEC that is replacing the older version filed May 22, 2009.

1 **II. LOCATION OF THE CORRIDOR FOR THE PREFERRED ALIGNMENT IN**
2 **SEGMENT 2 AND 3.**

3
4 **Q: Please describe the corridor for the preferred alignment in Segments 2 and 3?**

5 **A:** Attached to my Rebuttal Testimony in Exhibit B are maps that pictorially depict where the
6 location of the corridor for the Preferred Alignment in both the area in the southern part of
7 Segment 2 and all of Segment 3. Those maps depict the following:

- 8 1. The centerline of the Preferred Alignment (in orange).
- 9 2. The location of the UPRR ROW (in yellow).
- 10 3. The ROW that UNS Electric would obtain to be able to locate the Project directly
11 adjacent to and to the east of the UPRR ROW (in green). This would include the
12 37.5-foot distribution line ROW. The centerline, as shown would be approximately
13 50 feet east of the eastern edge of the UPRR ROW, the 100-foot ROW would be
14 centered on the centerline depicted in orange on these maps, which I believe
15 answers the question about the location of the centerline respective to the 37.5 foot
16 distribution ROW adjacent to the UPRR ROW.
- 17 4. A 100-foot ROW placed directly west of the UPRR ROW (in purple) that would
18 appear to be within the 500-foot corridor requested by UNS Electric in the
19 Application with the corridor extending 250 feet to the east and to the west of the
20 centerline. UNS Electric has no ROW west of the UPRR ROW and would have to
21 acquire 100 feet of ROW (versus just acquiring 62.5 feet of additional ROW on the
22 eastern side of the UPRR ROW).

1 **Q. Is there sufficient room within the proposed corridor to locate the line west of the**
2 **UPRR ROW at the southern end of Segment 2 and the northern end of Segment 3?**

3 A. Simply from a perspective of placing the line, there appears to be sufficient room within
4 the corridor to place the line directly west of the UPRR ROW and still have a 100-foot
5 ROW in Segment 2. However, towards the middle of Segment 3, the UPRR ROW widens
6 and a 100-foot ROW is not possible within the corridor.

7
8 **Q. Does UNS Electric believe it could feasibly locate the Project directly west of the**
9 **UPRR ROW for these areas without material impact or additional impact on**
10 **reliability?**

11 A. UNS Electric can locate the line to the west of the UPRR ROW but will incur extra cost
12 due to:

- 13 • The need to purchase a 100-foot ROW;
- 14 • Additional foundation cost due the need for extra depth – in order to handle scour
15 effects and reveal above ground to bring foundation above 500 year flood level;
- 16 • Extra cost to develop access road for both construction as well as maintenance; and
- 17 • *Increased risk of the potential loss of the transmission line – because of its*
18 *proximity to the Santa Cruz channel – and because the transmission line will not*
19 *have the potential protection that the railroad provides east of the railroad tracks.*

20 The estimated costs are discussed in more detail below.

21
22 **Q. Do you have maps depicting the corridor widths for the entire length of the Project?**

23 A. Yes. Maps that show the corridor width for the entire length of the Project are attached as
24 Exhibit “C”. To be clear, UNS Electric is not asking for a 500-foot or 1,250-foot *ROW*. It
25 is requesting the corridor widths as indicated in the Application to allow for flexibility to
26 work with landowners and mitigate impacts. Further, the only area where UNS Electric is
27

1 requesting a 1,250-foot corridor is for the 0.3 mile portion of Segment 4 (the Preferred
2 Alignment, and Alternative Alignments 1, 3 and 4 in that Segment) where the alignment
3 would bisect the center of what currently is the Preston Mobile Home Park. For the rest of
4 the entire Project, UNS Electric is requesting a 500-foot corridor.

5
6 **Q: Do you also have maps that show existing ROWs for the transmission and**
7 **distribution lines as well as existing improvements to the lots and properties within**
8 **the area in question in Segment 2 (i.e. the mesquite bosque area south to the Canez**
9 **Substation)?**

10 **A:** Yes, the maps provided in Exhibit B show the existing ROWs for both the distribution line
11 east of the UPRR ROW and the 115kV line. In fact these maps have been overlaid onto
12 new aerial photos of the mesquite bosque area in Segment 2 and down to the Sonoita
13 Substation. These aerial photos were taken on June 2009 and indicate the limits of
14 clearing that exist along the existing 115kV line.

15
16 **III. PERMITTING, FLOODWAY/FLOODPLAIN AND WILDLIFE HABITAT ISSUES.**

17
18 **Q: What Clean Water Act Section 404 permitting issues does placing the line west of the**
19 **UPRR ROW pose?**

20 **A:** Depending on where exactly the Project is located, UNS Electric may need to obtain an
21 individual Section 404 permit for the Project. Based on conversations between UNS
22 Electric and the United States Army Corps of Engineers ("USACE"), it is possible that the
23 construction of the transmission line would likely qualify under the Section 404, under the
24 parameters of Nationwide Permit 12. The access roads, however, may extend beyond
25 those parameters and elevate the Project to require an Individual Permit. If an Individual
26 Permit is required, that process could take as much as an additional 18 to 22 months. In
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1 short, placing the line within the purple section depicted in the maps attached as Exhibit B
2 (*i.e.* west of the UPRR ROW) would require a more rigorous Section 404 and discretionary
3 approval process, due to the Project's proximity to the Santa Cruz River. Determining
4 whether an Individual Permit may be required may involve more detailed engineering for a
5 suitable access road and going through what is known as a Preliminary Jurisdictional
6 Determination. In short, USACE indicated that placing the line west of the UPRR ROW
7 would likely implicate Section 404, and could possibly require an Individual Permit.
8

9 **Q. Who from USACE provided this information and when did those conversations**
10 **occur?**

11 A. UNS Electric personnel spoke with Robert Dummer, USACE District Biologist for Santa
12 Cruz County on two occasions: June 18 and June 25, 2009. He confirmed that
13

14 **Q. Did USACE indicate what concerns it may have placing the Project west of the UPRR**
15 **ROW in Segments 2 and 3?**

16 A. One of the primary concerns USACE indicated to the Company was how access would
17 occur and be maintained within the Santa Cruz River floodway.
18

19 **Q. Did USACE have any concerns regarding the Preferred Alignment or Alternative**
20 **Alignment 1 in Segment 2 as proposed in the Application and discussed during the**
21 **hearings?**

22 A. Mr. Dummer indicated to the Company that USACE would likely find little difference
23 between the two alternative alignments included in the Application. He further indicated
24 that UNS Electric may benefit from getting a Preliminary Jurisdictional Determination, but
25 he did not indicate that any Section 404 permitting would be required for either of those
26 proposed alignments.
27

1 **Q. Do you have maps that show where, for the Modified and Existing Routes (Preferred**
2 **and Alternative Alignment 1) in Segment 2, and the West Route (Preferred**
3 **Alignment) in Segment 3 are in relation to the Santa Cruz River floodway and**
4 **floodplain?**

5 A. Yes, the maps in Exhibit B show the floodway and floodplain. Placing the line anywhere
6 west of the UPRR ROW (including immediately to the west of the UPRR ROW) would
7 place much of the Project in this area in the floodway – where the main energy of the Santa
8 Cruz River lies. For most of the area in question for Segment 2, the Preferred Alignment is
9 in the floodplain, but so is the Alternative Alignment 1, as well as several homes. In
10 Segment 3, the Preferred Alignment is in the floodplain, but still avoids the rugged terrain
11 and significant encroachment issues I testified to during the hearings held June 2 through
12 4.

13
14 **Q. Did UNS Electric meet with Santa Cruz County about placing the line west of the**
15 **UPRR ROW in these same areas?**

16 A. Yes. On June 10, 2009, UNS Electric spoke to John Hays, C F M, Floodplain Coordinator
17 for Santa Cruz County. Mr. Hays communicated to us that *from his perspective, the*
18 *farther away the transmission line is from the Santa Cruz River, the better.* He also
19 indicated that from his perspective, the Existing Route in Segment 2 (Alternative
20 Alignment 1) is preferable to the Modified Route (Preferred Alignment).

21
22 Mr Hays also provided the Company with additional information that was used to analyze
23 *engineering issues created by moving the line west of the railroad.* This included expected
24 scour depth of thirty feet in the floodway with water velocities in the floodway of fifteen
25 feet per second under flood conditions. In comparison, Mr Hays indicated that to the east
26 of the railroad, water velocities would be less than one foot per second. He also pointed
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1 out that to the extent vegetation exists west of the railroad this tends to stabilize the soil
2 and protect the eastern banks. Removal of any of this vegetation will potentially increase
3 exposure to channel migration closer to the railroad. Considering that the Company will
4 require an access road both for construction as well as maintenance activities the resulting
5 removal of vegetation could increase the potential for the channel to migrate towards the
6 east.

7
8 Finally Mr Hays shared some aerial photos taken over the years of the Santa Cruz channel.
9 Consistent with my testimony in early June the channel has (at various times) reached the
10 railroad to the east, washing out portions of the track. The channel has also reached
11 Interstate 19 on the west – washing out the freeway.

12
13 **Q. If the Project were to be sited west of the UPRR ROW and in the Santa Cruz River**
14 **floodway, what approvals would be needed to actually construct the 138 kV**
15 **transmission line?**

16 A. On May 1, 2001, Santa Cruz County revised and adopted its current "Floodplain and
17 Erosion Hazard Management Ordinance No. 2001-3." I have attached a copy as Exhibit D.
18 There is still some question as to where and to what extent Santa Cruz County would have
19 jurisdiction over UNS Electric's placement of transmission line structures. It is more
20 likely that the County may have some jurisdiction over the access road that would be
21 required along the line. But regardless of the extent of the County's jurisdiction over the
22 Project, UNS Electric would consider any recommendation from Santa Cruz County
23 regarding placement and construction specifications.

1 **Q. Does placing the Project beyond the west side of the Santa Cruz River floodway (but**
2 **east of the I-19 transportation corridor) alleviate UNS Electric concerns?**

3 A. No. The Project would still be in the floodplain, while also increasing the total length of
4 the line and requiring UNS Electric to acquire more ROW. As I have testified and based
5 on the aerial photos showing historical evidence of the Santa Cruz effectively reaching to
6 the I-19 on the west and the railroad on the east, placing the line beyond the west side of
7 the Santa Cruz River floodway does not alleviate UNS Electric's concerns regarding
8 floodplain and/or floodway issues. The maps in Exhibit B show the floodplain extending
9 well west to the I-19 transportation corridor in both areas in question for Segment 2 and for
10 Segment 3.

11

12 **Q. When will UNS Electric have further discussions with Santa Cruz County regarding**
13 **the impacts of floodplain and / or floodway issues?**

14 A. That process would not commence until after the Company has received a CEC for an
15 approved route. To have an informed discussion with the County engineering design for
16 the line will have to be close to final in order to provide specific plans showing the nature,
17 location, dimensions and elevation of foundations in the area in question as well as an
18 engineering design for the access road. It is not efficient or effective to commence that
19 process unless UNS Electric knows where the line will be located. The Company will not
20 know that until after the siting process for the Project is complete. At this point, Santa
21 Cruz County is not waiting for any further information from the Company until detailed
22 engineering for the Project begins.

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1 **Q. How would the water table be affected by excavation and other construction activity**
2 **if the Project were to be placed in the Santa Cruz River floodway?**

3 A. Protection of surface and ground water is part of UNS Electric's normal construction
4 activities. Permits required for construction include the Arizona Pollutant Discharge
5 Elimination System (AZPDES) permit. This is required under the Clean Water Act at
6 Section 402. This will require a Storm Water Pollution Prevention Plan (SWPPP) and will
7 detail prevention measures to protect water sources from contamination during
8 construction. Due to the extended depths for foundations that would be installed west of
9 the railroad – and due to potential scour effects – it is almost certain that foundation
10 excavation west of the UPRR will extend into the groundwater table (which is very close
11 to the surface in that area). UNS Electric will use various methods for the excavation and
12 placement of the concrete foundations to prevent any impact to ground water and this will
13 be addressed in the SWPPP and reflected in the AZPDES permit. Once concrete has been
14 placed in the excavations there will be no impact to the ground water table as concrete is
15 not a source of contamination.

16
17 **Q. What industry standards exist regarding placing transmission line steel monopoles in**
18 **floodways and/or floodplains?**

19 A. The use of floodways for transmission line siting is much less common today than it has
20 been historically. In the past, floodways were likely locations for siting of lines due to less
21 public concern relative to construction of the lines and less expensive ROW. But over
22 time, utilities have recognized that placing lines in floodways has a long term higher cost.
23 Loss of the lines due to flooding, inability to access the lines for repairs until water
24 recedes, and environmental concerns relative to riparian areas make these locations much
25 less desirable for siting of lines. Having a series of structures subject to damage from a
26 flood presents a significant risk to reliability of service. Also, metropolitan areas have
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1 taken to "channelizing" the floodways with various means because of the extensive flood
2 damage that has occurred from recent events. In both the Tucson and Phoenix areas, this
3 typically has been accomplished by soil cement lining of the major channels (e.g. the
4 Rillito and Santa Cruz washes in Tucson and the Agua Fria and Salt Rivers in Phoenix).
5 One consequence of such channelization is greatly increased water velocity as well as
6 water depth during flooding. This increased water depth in conjunction with increased
7 velocity dramatically increases the depth of scour that occurs locally around objects
8 embedded in the floodway. Another item that causes problems for lines in floodways is
9 debris being carried by floodwaters. Trees and debris that get carried by the water act as
10 battering rams on structures. All of the states' major utilities have encountered issues with
11 the effects of such channelization activities on their structures in the floodways.

12
13 Siting lines in floodplains is more common and presents less of a risk than in floodways.
14 Even so, it must be done with an understanding of the flooding potential and conditions.
15 This includes knowledge of factors such as flood frequency, depths, velocities and
16 geological conditions.

17
18 **Q. What additional measures are required to place monopoles in the floodway or**
19 **floodplain?**

20 **A.** Foundations are embedded deeper into the ground due to scouring. The foundations also
21 extend further up the pole in order to be above flood level. These "longer" foundations
22 also need to be more robust in order to provide rigidity both from an unsupported length
23 perspective as well as the potential for impact of debris during flooding. This need for
24 additional robustness translates into larger diameter foundations and a need for additional
25 reinforcing steel. All of the structures in the floodway must be placed on concrete
26 foundations.

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1 **Q. Will it cost more to locate the Project west of the UPRR ROW due to additional**
 2 **permitting and construction requirements?**

3 **A.** Yes, UNS Electric has done a preliminary line layout and cost estimate for construction
 4 directly adjacent to, but west of the UPRR. The following table identifies the cost
 5 estimates for the preferred, existing and west of UPRR ROW routes for Segments 2 and 3:
 6

Segment	Route	Engineering and Construction Cost (1,000's)	Right of Way Cost (1,000's)	Total Cost (1,000's)
2	Preferred Alignment	\$9,168*	\$1,161	\$10,329
	Alternative Alignment 1	\$8,213	\$735	\$8,948
	West of UPRR ROW	\$10,189	\$1,002	\$11,191
3	Preferred Alignment	\$3,896*	\$431	\$4,327**
	Alternative Alignment (existing line)	\$2,695	\$1,895	\$4,590
	West of UPRR ROW	\$4,321	\$689	\$5,010

19 * A revised foundation portion of costs due to feedback from Santa Cruz County Flood Control
 20 ** revised based on new comparables in the area
 21

22 **Q. What vegetation maintenance would be performed if the line is placed west of the**
 23 **UPRR ROW in the area in question?**

24 **A.** UNS Electric will typically clear all vegetation under its transmission lines. Trees likely
 25 to fall into the lines from outside of the right-of-way would also be removed. An access
 26 road would also be created along the line. These activities, in large part, mean that the
 27

1 riparian vegetation along the west side of the railroad would be removed and potentially
2 increase exposure to floodway migration.

3
4 **Q. Since June 4, 2009, has UNS Electric analyzed how wildlife habitat and sensitive**
5 **species would be affected if the Project were placed west of the UPRR ROW within**
6 **the area in question for Segment 2 and in Segment 3?**

7 A. As previously mentioned the removal of riparian vegetation on the west side of the railroad
8 would be necessary. Some of these areas contain large cottonwoods. Although none of the
9 alignments throughout the Project area supports federal or state-listed endangered or
10 threatened species, the area west of the railroad contains larger trees than either alignment
11 east of the railroad. These are large cottonwoods (*Populus fremontii*) that provide suitable
12 and increasingly less common nesting habitat for sensitive species such as Gray Hawk
13 (*Buteo nitidus*). While the total number of trees that would be removed is considerably
14 fewer than either of the alignments east of the railroad, the average size (and presumed
15 age) of those trees is significantly larger (and presumed older). In addition, removal of the
16 larger trees is likely to reduce soil stability of the Santa Cruz River floodplain and
17 floodway, according to John Hays, Floodplain Manager at Santa Cruz County.

18
19 **IV. ZONING ISSUES REGARDING PLACING THE PROJECT IN NEW**
20 **ALIGNMENTS IN CLOSE PROXIMITY TO EXISTING STRUCTURES**

21
22 **Q. Would there be any issues or problems if a new (i.e. non-existing) alignment were**
23 **selected but in close proximity to existing structures residents had built?**

24 A. As I understand it in layman's terms (based on conversations with land and legal personnel
25 within UNS Electric), the county regulates 'setbacks' from property lines (not the edge of
26 the easement). Therefore, there are no violations created when the Project is placed in a
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1 new alignment (e.g. the Preferred Alignment in Segment 2), assuming there were no
2 setback violations to begin with. Rather, the issues are: (1) whether structures restrict the
3 use of a utility easement needed for the Project; and (2) to what extent future uses are
4 limited on the parcel given all setbacks and the new utility easement and any other
5 easements. Even so, UNS Electric pledges to work with the landowners to draft an
6 easement that – while allowing UNS Electric needed rights within that easement to
7 construct, operate and maintain the Project – takes into account landowner’s existing
8 structures. Right-of-way acquisition activities are designed to compensate for the use of the
9 property, which may include the loss of use.

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Q. Would those residents be exempt or “grandfathered” out of being in violation of any setback requirements between a transmission line ROW and the structures?

A. There would be no grandfathering because there would be no violation to begin with. As I stated above, the structures would not be in violation of any zoning ordinances or setback requirements even if the Project were sited in the new alignment (e.g. the Preferred Alignment in Segment 2). The issue would be one of drafting an easement that takes into account these existing structures.

Q. Did your discussions with Santa Cruz County personnel confirm UNS Electric’s belief regarding the relationship between the zoning ordinances and setback requirements – and the landowners’ structures?

A. Yes.

1 **Q. How would UNS Electric seek to accommodate those structures without risking**
2 **damage to the transmission line and/or the structures?**

3 A. UNS Electric would seek to negotiate an easement that accommodates these existing
4 structures or provides for relocation while ensuring that UNS Electric could safely and
5 reliably construct, operate and maintain the Project.

6

7 **Q. What benefit would narrowing the ROW have on making sure these structures were**
8 **not in violation of any zoning ordinances and/or setback requirements?**

9 A. Narrowing the ROW would not affect whether there was a violation of any zoning
10 ordinances or setback requirements. But UNS Electric understands that tradeoffs can be
11 made relative to ROW width. ROW narrower than 100 feet in certain areas along the
12 Project can be accomplished primarily by shortening the spans between structures. UNS
13 Electric is willing to explore obtaining a ROW of less than 100 feet with the understanding
14 that additional structures, placed closer together will be required. For the Preferred
15 Alignment in Segment 2 and the area in question, this means obtaining an additional ROW
16 of less than 62.5 feet (since UNS Electric already has 37.5 feet of ROW for the existing
17 distribution line directly east of the UPRR ROW).

18

19 **Q. Could UNS Electric agree to narrow the ROW – particularly along the area in**
20 **question within Segment 2 near the Canez Substation?**

21 A. UNS Electric can operate with a narrower ROW if span lengths are shortened. The table
22 below provides some indication of the effect of span length on width of right of way
23 required:

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Span (ft)	ROW Width Required (ft)	Average Structure Height (ft)
500	51	62
600	60	68
700	71	74
800	85	82
900	97	90
1000	112	99
1100	129	108

Q. Finally, Mr. Beck, did you get any information regarding what are the customer growth projections for Santa Cruz County?

A. Yes, for comparison purposes the table below shows the UNS Electric Santa Cruz customer forecast for the next 7 years that existed in 2007 and the most current forecast (June 29, 2009). The numbers show a reduction in the projected customer growth resulting from current economic conditions.

Year	Customer projection 2007	Customer projection 2009
2009	18,573	18,236
2010	19,078	18,382
2011	19,619	18,526
2012	20,172	18,835
2013	20,719	19,175
2014	21,256	19,549
2015	21,796	19,947
2016	22,318	20,368
2017	22,820	20,801

1 **Q. What impact does the Project have on the County's planning and zoning, in your**
2 **estimation and to your personal knowledge?**

3 A. *UNS Electric is charged with the responsibility to provide service to the community and*
4 *this project is in response to that need. Growth projections and county's planning and*
5 *zoning activities help the Company predict system needs. But the Company does not*
6 *induce growth. The need for the Project is not to induce growth in Santa Cruz County. It*
7 *is, in part, to address the growth in electricity demand that UNS Electric is observing*
8 *within it service territory.*

9

10 **Q. Does the growth in population affect the need for the Project?**

11 A. The need for the Project already exists. To the extent the population grows in Santa Cruz
12 County, there will be greater need for the Project.

13

14 **Q. Does that conclude your Rebuttal Testimony in Response to Committee Questions**
15 **and Inquiries?**

16 A. Yes it does.

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EXHIBIT

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**BEFORE THE ARIZONA POWER PLANT AND
TRANSMISSION LINE SITING COMMITTEE**

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IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR A CERTIFICATE
OF ENVIRONMENTAL COMPATIBILITY
FOR THE VAIL TO VALENCIA 115 KV TO
138 KV TRANSMISSION LINE UPGRADE
PROJECT, ORIGINATING AT THE EXISTING
VAIL SUBSTATION IN SEC. 4, T.16S., R.15E.,
PIMA COUNTY, TO THE EXISTING
VALENCIA SUBSTATION IN SEC. 5, T.24S.,
R.14E., IN THE CITY OF NOGALES, SANTA
CRUZ COUNTY, ARIZONA.

Docket No. L-00000F-09-0190-00144
Case No. 144

CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

Pursuant to notice given as provided by law, the Arizona Power Plant and Transmission Line Siting Committee (the "Committee") held public hearings on June 2, 3, 4, 2009 in Rio Rico, all in conformance with the requirements of Arizona Revised Statutes ("A.R.S.") § 40-360, *et seq.*, for the purpose of receiving evidence and deliberating on the Application of UNS Electric, Inc. ("Applicant") for a Certificate of Environmental Compatibility ("CEC") in the above-captioned case (the "Project").

The following members and designees of members of the Committee were present at one or more of the hearings for the evidentiary presentations and/or for the deliberations:

John Foreman	Chairman, Designee for Arizona Attorney General Terry Goddard
David L. Eberhart, P.E.	Designee for Chairman, Arizona Corporation Commission
Paul Rasmussen	Designee for Director, Arizona Department of Environmental Quality
Jessica Youle	Designee for Director, Energy Department, Arizona Department of Commerce
Jeff Maguire	Appointed Member
Bill Mundell	Appointed Member

1 Patricia Noland Appointed Member
2 Michael Palmer Appointed Member
3 Michael Whalen Appointed Member
4 Barry Wong Appointed Member

5 The Applicant was represented by J. Matthew Derstine, Michael W. Patten, and Jason D.
6 Gellman of Roshka, DeWulf & Patten, PLC, and Marcus G. Jerden of UniSource Energy
7 Corporation. The following parties were granted intervention pursuant to A.R.S. § 40-360.05:
8 Marshall Magruder and Elizabeth Webb, both in pro persona.

9 At the conclusion of the hearings, the Committee, having received the Application, the
10 appearances of the parties, the evidence, testimony and exhibits presented at the hearings, and
11 being advised of the legal requirements of A.R.S. §§ 40-360 to 40-360.13, upon motion duly
12 made and seconded, voted ~~X~~ to ~~X~~ grant the Applicant this CEC (Case No. 144) for the Project
13 to rebuild the existing 115 kV transmission line as a 138 kV transmission line and interconnect
14 that transmission line to the Vail Substation as set forth in the Application.

15 The Project as approved consists of approximately 57.8 miles of 138 kV transmission line
16 and ancillary facilities along the route as described below. The Project starts at the Vail
17 Substation, and ends at the Valencia Substation. A legal description and general location map of
18 the Project is attached as Exhibit A.

19 As explained in the Project Application, the Project will:

- 20 • Interconnect the northern end of the line with a major import substation (the Vail
21 345/138 kV Substation) instead of the Nogales Tap.
22 • Upgrade the line voltage from 115 kV line to 138 kV.
23 • Replace aging wooden H-frame structures with steel monopoles.

24
25 As explained in the Project Application, the Project Alignment (the route granted for the
26 Project in this CEC), consisting of a 500-foot-wide planning corridor except where noted, and as
27 more further described in attached Exhibit A and the Application, is as follows:

1 The Project Alignment originates from the Vail Substation in Section 4, Township 16
2 South, Range 15 East. The Project Alignment then extends westerly parallel to Tucson Electric
3 Power Company's ("TEP's") Vail-Robert Bills (138 kV) and Vail-Irvington (138 kV) lines along
4 an access road which is an east extension of the Old Vail Connection Road to where Old Vail
5 Connection Road intersects Wilmot Road (2.3 miles). At this intersection, the Alignment turns
6 south extending to the Nogales Tap and interconnects to the existing line (1.5 miles). From that
7 interconnection, the alignment then continues south to the Kantor Substation (27.8 miles) utilizing
8 the existing line that was previously rebuilt in accordance with the Application in Line Siting
9 Case No. 78 and approved in Decision No. 56097 (August 17, 1988). No improvements, pole
10 replacements, or construction are necessary therein and the existing line in this portion is hereby
11 designated for operation at 138 kV.

12 The Project Alignment leaves the Kantor Substation southerly along the foothills of the
13 Santa Rita Mountains east of the Santa Cruz River. South of Josephine Canyon, the Project
14 Alignment drops out of the foothills and into the Santa Cruz River Valley (11.8 miles). The
15 Project Alignment continues to utilize the existing alignment across Pendleton Drive and south to
16 the Cañez Substation (1.6 miles).

17 The Project Alignment then leaves Cañez Substation and shifts west to the easterly edge of
18 the UPRR right of way. The Project Alignment then continues southerly adjacent to the UPRR in
19 the Santa Cruz River Valley (3.4 miles). Near the intersection of Pendleton Drive and Avenida
20 Coatimundi, the alignment shifts from the UPRR right-of-way and parallels Avenida Coatimundi
21 east to the Sonoita Substation (0.3 miles).

22 The Project Alignment extends southerly out of the Sonoita Substation along the existing
23 line across Sonoita Creek and the Santa Cruz River to Old Tucson Road, and then parallels Old
24 Tucson Road to a point near the intersection with Grand Avenue (5.9 miles).

25 At the intersection of Old Tucson Road and Grand Avenue, the line departs from the
26 existing line to proceed east of and parallel to Grand Avenue on the east side of Nogales Wash
27 through an industrial area (0.9 miles). The Project Alignment then returns to the existing line

1 alignment near where Frank Reed Road intersects Grand Avenue, and continues south, along the
2 west side of the Santa Cruz County Complex (0.8 miles). The Alignment then shifts east and
3 passes through the Preston Mobile Home Park (0.3 miles) with a 1250-foot-wide planning corridor
4 for this course only.

5 The Project Alignment then turns to the south through the Mariposa Mall, across Mariposa
6 Road, and through the Loma Linda Shopping Center (0.4 miles). The Project Alignment continues
7 on the existing line's alignment and turns to the east, entering the Valencia Substation located in
8 Section 5, Township 24 South, Range 13 East (0.4 miles).

9 The Project will replace the existing wooden H-frame structures with steel monopoles
10 from the Kantor Substation to the Valencia Substation as described in the Application. Steel
11 monopoles will also be used between Vail Substation and the Nogales Tap; the existing
12 transmission line portion constructed pursuant to Line Siting Case No. 78 is already on steel
13 monopoles.

14 15 CONDITIONS

16 This Certificate is granted upon the following conditions:

- 17 1. The Applicant shall obtain all approvals and permits required by the United
18 States, the State of Arizona, Pima County, Santa Cruz County, the City of
19 Tucson, the City of Nogales, the Town of Sahuarita, U.S. Bureau of Land
20 Management (BLM), and any other governmental entities having jurisdiction
21 necessary to construct the Project.
- 22 2. The Applicant shall comply with all existing applicable statutes, ordinances,
23 master plans, county comprehensive plans, city general plans, project area
24 development and subdivision plans, and regulations of the United States, the State
25 of Arizona, Pima County, Santa Cruz County, the City of Tucson, the City of
26 Nogales, the Town of Sahuarita, and any other governmental entities having
27 jurisdiction during the construction and operation of the transmission line.

- 1 3. If any archaeological, paleontological or historical site or object that is at least
2 fifty years old is discovered on state, county or municipal land during the
3 construction or operation of the transmission line, the Applicant or its
4 representative in charge shall promptly report the discovery to the Director of
5 the Arizona State Museum, and in consultation with the Director, shall
6 immediately take all reasonable steps to secure and maintain the preservation of
7 the discovery as required under A.R.S. § 41-844.
- 8 4. If human remains and/or funerary objects are encountered on private land
9 during the course of any ground-disturbing activities relating to the
10 construction or operation of the transmission line, the Applicant shall cease work
11 on the affected area of the Project and notify the Director of the Arizona State
12 Museum as required under A.R.S. § 41-865.
- 13 5. The Applicant shall comply with the notice and salvage requirements
14 of the Arizona Native Plant Law (A.R.S. §§ 3-901 et seq. as applicable) county
15 and municipal plant ordinances (as applicable) and shall, to the extent feasible,
16 minimize the destruction of native plants during the construction and operation of
17 the transmission line.
- 18 6. The Applicant shall not assign this Certificate or its interest in the Project
19 authorized by this Certificate unless both Applicant (as Transferor/Assignor)
20 and Transferee/Assigned has signed a "Notice of Transfer of Certificate of
21 Environmental Compatibility" ("Notice") as required under A.R.S. § 40-
22 360.08(A) and A.A.C. R14-3-213(F). That Notice must be filed in this
23 Docket. Transferee/Assignee, as part of acquiring any interest in the Project,
24 must agree to comply with all terms, limitations and conditions contained
25 within this Certificate originally issued to Applicant by the Arizona Power
26 Plant and Transmission Line Siting Committee and approved and/or issued by
27 the Arizona Corporation Commission.

- 1 7. This authorization to construct this Project shall expire five years from the date
2 the Certificate is approved by the Commission unless the transmission line is
3 capable of operation. However, prior to expiration, the Applicant or its assignees
4 may request that the Commission extend this time limitation.
- 5 8. In the event that the Project requires an extension of the term of this Certificate
6 prior to completion of construction, Applicant shall use reasonable means to
7 notify by first class mail all landowners, neighborhood associations
8 registered with the local governing jurisdiction, and residents within one
9 mile of the Project corridor, all persons who made public comment at this
10 proceeding, and all parties to this proceeding of the request. Applicant will
11 provide the date, time and place of the hearing in which the Commission will
12 consider its request for extension.
- 13 9. The Applicant shall make every reasonable effort to identify and correct, on a case-
14 specific basis, all complaints of interference with radio or television signals from
15 operation of the transmission lines and related facilities addressed in this
16 Certificate. The Applicant shall maintain written records for a period of five years
17 of all complaints of radio or television interference attributable to operation,
18 together with the corrective action taken in response to each complaint. All
19 complaints shall be recorded to include notations on the corrective action taken.
20 Complaints not leading to a specific action or for which there was no resolution
21 shall be noted and explained. Upon request, a copy of these records will be
22 provided to Commission Staff.
- 23 10. Within 120 days of the Commission decision granting this Certificate, Applicant
24 will post signs in public rights-of-way giving notice of the Project corridor to the
25 extent authorized by law. The Applicant shall place signs in prominent locations at
26 reasonable intervals such that the public is notified along the full length of the
27 transmission line until the transmission structures are constructed. To the extent

1 practicable, within 45 days of securing easement or right-of-way for the Project, the
2 Applicant shall erect and maintain signs providing public notice that the property is
3 the site of a future transmission line. Such signage shall be no smaller than a
4 normal roadway sign. The signs shall advise:

- 5 (a) That the site has been approved for the construction of Project facilities;
- 6 (b) The expected date of completion of the Project facilities;
- 7 (c) A phone number for public information regarding the Project;
- 8 (d) The name of the Project;
- 9 (e) The name of the Applicant; and
- 10 (f) The website of the Project.

- 11 11. Applicant, or its assignee(s), shall design the transmission lines to incorporate
- 12 reasonable measures to minimize impacts to raptors.
- 13 12. Applicant, or its assignee(s), shall use non-specular conductors.
- 14 13. Before construction on this Project may commence, the Applicant shall file a
- 15 construction mitigation and restoration plan ("Plan") with ACC Docket Control and
- 16 copies to all Parties. Where practicable, the Plan shall specify the Applicant's plans
- 17 for construction access and methods to minimize impacts to wildlife and to
- 18 minimize vegetation disturbance outside of the Project right-of-way particularly in
- 19 drainage channels and along stream banks, and shall re-vegetate, unless waived by
- 20 the landowner, native areas of construction disturbance to its preconstruction state
- 21 outside of the power-line right of way after construction has been completed.
- 22 The Plan shall specify the Applicant's plans for coordination with the
- 23 Arizona Game and Fish Department and the State Historic Preservation Office.
- 24 The Applicant shall use existing roads for construction and access where
- 25 practicable and the Plan shall specify the manner in which the Applicant makes us
- 26 of existing roads.
- 27 14. With respect to the Project, Applicant shall participate in good faith in state and

1 regional transmission study forums to coordinate transmission expansion plans
2 related to the Project and to resolve transmission constraints in a timely manner.

3 15. The Applicant shall provide copies of this Certificate to the City of Tucson, the
4 Town of Sahuarita, the City of Nogales, Pima County, Santa Cruz County, the
5 Arizona State Land Department, the State Historic Preservation Office, BLM, and
6 the Arizona Game and Fish Department.

7 16. Prior to the date construction commences on this Project, the Applicant shall
8 provide known homebuilders, neighborhood associations registered with the local
9 governing jurisdiction, and developers of record, within one mile of the center
10 line of the Certificated Project Alignment the identity, location, and a
11 pictorial depiction of the type of power line being constructed, accompanied by a
12 written description, and encourage the developers and homebuilders to include this
13 information in the developers' and homebuilders' homeowners' disclosure
14 statements.

15 17. Before commencing construction of Project facilities located parallel to and within
16 100 feet of any existing natural gas or hazardous liquid pipeline, the Applicant
17 shall:

- 18 (a) Perform the appropriate grounding and cathodic protection studies to show
19 that the Project's location parallel to and within 100 feet of such pipeline
20 results in no material adverse impacts to the pipeline or to public safety
21 when both the pipeline and the Project are in operation. If material adverse
22 impacts are noted in the studies, Applicant shall take appropriate steps to
23 ensure that such material adverse impacts are mitigated. Applicant shall
24 provide to Commission Staff reports of studies performed; and
- 25 (b) Perform a technical study simulating an outage of the Project that may be
26 caused by the collocation of the Project parallel to and within 100 feet of the
27 existing natural gas or hazardous liquid pipeline. This study should either: i)

1 show that such outage does not result in customer outages; or ii) include
2 operating plans to minimize any resulting customer outages. Applicant shall
3 provide a copy of this study to Commission Staff.

- 4 18. Applicant will comply with the most current Western Electricity Coordinating
5 Council/North American Electric Reliability Corporation Planning standards as
6 approved by the Federal Energy Regulatory Commission, and National Electrical
7 Safety Code construction standards.
- 8 19. The Applicant shall submit a self-certification letter annually, identifying progress
9 made with respect to each condition contained in the Certificate, including which
10 conditions have been met. Each letter shall be submitted to the Docket Control of
11 the Arizona Corporation Commission and the parties on August 1 beginning in
12 2010. Attached to each certification letter shall be documentation explaining how
13 compliance with each condition was achieved. Copies of each letter along with the
14 corresponding documentation shall be submitted to the Arizona Attorney General
15 and Department of Commerce Energy Office. The requirement for the self-
16 certification shall expire on the date the Project is placed into operation.
- 17 20. Within sixty (60) days of the Commission decision granting this Certificate, the
18 Applicant shall make good faith efforts to commence discussions with private
19 landowners, on whose property the Project Alignment is located, to identify the
20 specific location for the Project's right-of-way and placement of poles.
21 Applicant shall make reasonable efforts to accommodate landowners'
22 preferences regarding the placement of poles located on the landowners'
23 property.
- 24 21. The Applicant shall make reasonable efforts to work with private landowners
25 on whose property the Project right-of-way will be located, to mitigate the
26 impacts of the location, construction, and operation of the Project.
- 27 22. Applicant shall construct the Project Alignment only within the corridor more

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fully described in the attached Exhibit A.

- 23. For the Project, Applicant shall, within 30 days of the Commission decision approving the CEC, submit a Pole Finish Plan (“PFP”) for the proposed monopole finish for each part of the Project to the parties and Staff. The PFP shall indicate where a galvanized steel finish will be used versus using self-weathering steel.
- 24. The Certificate does not grant to the Applicant the right to construct a second circuit in Segment 1B – the existing line approved in Decision No. 56097 (August 17, 1988) on single steel poles that is currently operating at 115 kV. This Certificate recognizes that, as part of the Vail to Valencia 115 kV to 138 kV Transmission Line Upgrade Project, the existing line in Segment 1B will now operate at 138 kV.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

This Certificate incorporates the following findings of fact and conclusions of law:

- 1. The Project is in the public interest because it aids the state in meeting the need for an adequate, economical and reliable supply of electric power.
- 2. In balancing the need for the Project with its effect on the environment and ecology of the state, the conditions placed on the CEC by the Committee effectively minimize its impact on the environment and ecology of the state.
- 3. The conditions placed on the CEC by the Committee resolve matters concerning the need for the Project and its impact on the environment and ecology of the state raised during the course of proceedings, and as such, serves as the findings on the matters raised.
- 4. In light of these conditions, the balancing in the broad public interest results in favor of granting the CEC.

DATED this ___ day of _____ 2009.

**THE ARIZONA POWER PLANT AND
TRANSMISSION LINE SITING COMMITTEE**

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Hon. John Foreman, Chairman

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Exhibit A
(utilizing Seg. 2, Alt 1)

A transmission line corridor of 500' width except where noted, with the centerline, as determined from Arizona State Plane Coordinate mapping, more particularly described as follows:

Beginning at **Vail Substation**, at grid coordinate (X) 1041085.39, (Y) 391274.36, of Central Zone of Arizona State Plane Coordinate System 1983, and to which National Geodetic Survey point PUMP (PID - CZ0252) bears South 42 degrees 20 minutes 38 seconds West, 4,870.50 feet;

thence North 88 degrees 44 minutes 54 seconds West, 307.61 feet;

thence North 60 degrees 17 minutes 58 seconds West, 1,037.36 feet;

thence North 00 degrees 07 minutes 58 seconds West, 1,017.67 feet;

thence South 89 degrees 32 minutes 32 seconds West, 11,891.07 feet;

thence South 05 degrees 40 minutes 55 seconds West, 1,744.96 feet;

thence South 00 degrees 34 minutes 52 seconds East, 6,224.41 feet to a point in **Nogales Tap Substation**;

thence South 00 degrees 34 minutes 52 seconds East, 50,753.00 feet;

thence South 34 degrees 21 minutes 34 seconds West, 95,891.68 feet;

thence South 88 degrees 34 minutes 55 seconds West, 121.34 feet to a point in **Kantor Substation**;

thence South 03 degrees 13 minutes 57 seconds East, 158.25 feet;

thence South 21 degrees 14 minutes 55 seconds East, 22,453.78 feet;

thence South 00 degrees 29 minutes 36 seconds East, 9,011.69 feet;

thence South 19 degrees 02 minutes 10 seconds West, 1,725.59 feet;

thence South 00 degrees 29 minutes 28 seconds East, 12,408.16 feet;

thence South 12 degrees 35 minutes 44 seconds East, 2,722.98 feet;

thence South 00 degrees 28 minutes 50 seconds East, 13,826.04 feet;

thence South 00 degrees 28 minutes 50 seconds East, 816.00;

thence South 19 degrees 03 minutes 31 seconds East, 7,674.00 feet along the said existing alignment to the terminus of said centerline, 26 feet easterly of the east side of said **Cañez Substation**;

thence westerly through Cañez Substation to a point 172 feet westerly of the west side of said Substation;

thence South 18 degrees 52 minutes 02 seconds East, 12,393.42 feet to the beginning of a curve concave to the northeast and having a radius of 5,553.78 feet;

thence southeasterly 3,974.97 feet through a central angle of 41 degrees 00 minutes 28 seconds;

1 thence South 59 degrees 52 minutes 30 seconds East, 1,369.94 feet;
2 thence North 64 degrees 22 minutes 52 seconds East, 1,337.41 feet to a point 63 feet southerly of the
south side of **Sonoita Substation**;
3 thence South 25 degrees 54 minutes 45 seconds East, 2,434.49 feet;
4 thence South 18 degrees 53 minutes 51 seconds East, 6,598.53 feet;
5 thence South 37 degrees 22 minutes 02 seconds East, 6,610.08 feet;
6 thence South 00 degrees 35 minutes 23 seconds East, 7,555.17 feet;
7 thence South 30 degrees 26 minutes 05 seconds West, 1,143.95 feet;
8 thence South 03 degrees 55 minutes 22 seconds East, 3,724.62 feet;
9 thence South 17 degrees 58 minutes 34 seconds East, 3,169.01 feet;
10 thence South 79 degrees 39 minutes 56 seconds East, 1,303.27 feet;
11 thence South 43 degrees 47 minutes 11 seconds East, 1,683.12 feet;
12 thence South 04 degrees 49 minutes 19 seconds West, 1,849.85 feet;
13 thence South 00 degrees 35 minutes 14 seconds East, 3,400.89 feet;
14 thence within a 1250'-wide corridor, North 89 degrees 40 minutes 24 seconds East, 1,285.80 feet;
15 thence continuing in a 500'-wide corridor, South 01 degrees 13 minutes 18 seconds East, 2,106.57 feet;
16 thence North 88 degrees 43 minutes 12 seconds East, 2,191.97 feet to the terminus of said centerline at
Valencia Substation, at grid coordinate (X) 1007459.01, (Y) 133493.23, of said Central Zone, and to which
17 National Geodetic Survey point M423 (PID – CG0883) bears South 23 degrees 09 minutes 01 seconds
East, 34,502.53 feet.

18 Said centerline is 57.56 miles in length, more or less.
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**BEFORE THE ARIZONA POWER PLANT AND
TRANSMISSION LINE SITING COMMITTEE**

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IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. FOR A CERTIFICATE
OF ENVIRONMENTAL COMPATIBILITY
FOR THE VAIL TO VALENCIA 115 KV TO
138 KV TRANSMISSION LINE UPGRADE
PROJECT, ORIGINATING AT THE EXISTING
VAIL SUBSTATION IN SEC. 4, T.16S., R.15E.,
PIMA COUNTY, TO THE EXISTING
VALENCIA SUBSTATION IN SEC. 5, T.24S.,
R.14E., IN THE CITY OF NOGALES, SANTA
CRUZ COUNTY, ARIZONA.

Docket No. L-00000F-09-0190-00144
Case No. 144

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CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

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David L. Eberhart, P.E.	Designee for Chairman, Arizona Corporation Commission
Paul Rasmussen	Designee for Director, Arizona Department of Environmental Quality
Jessica Youle	Designee for Director, Energy Department, Arizona Department of Commerce
Jeff Maguire	Appointed Member
Bill Mundell	Appointed Member

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7 Corporation. The following parties were granted intervention pursuant to A.R.S. § 40-360.05:
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9 At the conclusion of the hearings, the Committee, having received the Application, the
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12 made and seconded, voted ~~X~~ to grant the Applicant this CEC (Case No. 144) for the Project
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14 that transmission line to the Vail Substation as set forth in the Application.

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17 Substation, and ends at the Valencia Substation. A legal description and general location map of
18 the Project is attached as Exhibit A.

19 As explained in the Project Application, the Project will:

- 20 • Interconnect the northern end of the line with a major import substation (the Vail
21 345/138 kV Substation) instead of the Nogales Tap.
22 • Upgrade the line voltage from 115 kV line to 138 kV.
23 • Replace aging wooden H-frame structures with steel monopoles.

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27 more further described in attached Exhibit A and the Application, is as follows:

1 The Project Alignment originates from the Vail Substation in Section 4, Township 16
2 South, Range 15 East. The Project Alignment then extends westerly parallel to Tucson Electric
3 Power Company's ("TEP's") Vail-Robert Bills (138 kV) and Vail-Irvington (138 kV) lines along
4 an access road which is an east extension of the Old Vail Connection Road to where Old Vail
5 Connection Road intersects Wilmot Road (2.3 miles). At this intersection, the Alignment turns
6 south extending to the Nogales Tap and interconnects to the existing line (1.5 miles). From that
7 interconnection, the alignment then continues south to the Kantor Substation (27.8 miles) utilizing
8 the existing line that was previously rebuilt in accordance with the Application in Line Siting
9 Case No. 78 and approved in Decision No. 56097 (August 17, 1988). No improvements, pole
10 replacements, or construction are necessary therein and the existing line in this portion is hereby
11 designated for operation at 138 kV.

12 The Project Alignment leaves the Kantor Substation southerly along the foothills of the
13 Santa Rita Mountains east of the Santa Cruz River. South of Josephine Canyon, the Project
14 Alignment drops out of the foothills and into the Santa Cruz River Valley (11.8 miles). The
15 Project Alignment continues to utilize the existing alignment across Pendleton Drive and south to
16 the Cafez Substation (1.6 miles).

17 The Project Alignment then leaves Cafez Substation and shifts west to the easterly edge of
18 the UPRR right of way. The Project Alignment then continues southerly adjacent to the UPRR in
19 the Santa Cruz River Valley (3.4 miles). Near the intersection of Pendleton Drive and Avenida
20 Coatimundi, the alignment shifts from the UPRR right-of-way and parallels Avenida Coatimundi
21 east to the Sonoita Substation (0.3 miles).

22 The Project Alignment extends southerly out of the Sonoita Substation along the existing
23 line across Sonoita Creek and the Santa Cruz River to Old Tucson Road, and then parallels Old
24 Tucson Road to a point near the intersection with Grand Avenue (5.9 miles).

25 At the intersection of Old Tucson Road and Grand Avenue, the line departs from the
26 existing line to proceed east of and parallel to Grand Avenue on the east side of Nogales Wash
27 through an industrial area (0.9 miles). The Project Alignment then returns to the existing line

Deleted: To this point from the Nogales Tap the Project Alignment follows the alignment for the existing 115 kV transmission line. North of the intersection of that existing 115 kV transmission line alignment and Pendleton Drive, the Project Alignment deviates from the existing 115 kV transmission line alignment and shifts 0.2 miles to the easterly edge of the UPRR right-of-way. ¶ The Project Alignment then continues paralleling the UPRR right-of-way to the Cafez Substation (1.8 miles), and

1 alignment near where Frank Reed Road intersects Grand Avenue, and continues south, along the
2 west side of the Santa Cruz County Complex (0.8 miles). The Alignment then shifts east and
3 passes through the Preston Mobile Home Park (0.3 miles) with a 1250-foot-wide planning corridor
4 for this course only.

5 The Project Alignment then turns to the south through the Mariposa Mall, across Mariposa
6 Road, and through the Loma Linda Shopping Center (0.4 miles). The Project Alignment continues
7 on the existing line's alignment and turns to the east, entering the Valencia Substation located in
8 Section 5, Township 24 South, Range 13 East (0.4 miles).

9 The Project will replace the existing wooden H-frame structures with steel monopoles
10 from the Kantor Substation to the Valencia Substation as described in the Application. Steel
11 monopoles will also be used between Vail Substation and the Nogales Tap; the existing
12 transmission line portion constructed pursuant to Line Siting Case No. 78 is already on steel
13 monopoles.

14
15 **CONDITIONS**

16 This Certificate is granted upon the following conditions:

- 17 1. The Applicant shall obtain all approvals and permits required by the United
18 States, the State of Arizona, Pima County, Santa Cruz County, the City of
19 Tucson, the City of Nogales, the Town of Sahuarita, U.S. Bureau of Land
20 Management (BLM), and any other governmental entities having jurisdiction
21 necessary to construct the Project.
- 22 2. The Applicant shall comply with all existing applicable statutes, ordinances,
23 master plans, county comprehensive plans, city general plans, project area
24 development and subdivision plans, and regulations of the United States, the State
25 of Arizona, Pima County, Santa Cruz County, the City of Tucson, the City of
26 Nogales, the Town of Sahuarita, and any other governmental entities having
27 jurisdiction during the construction and operation of the transmission line.

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3. If any archaeological, paleontological or historical site or object that is at least fifty years old is discovered on state, county or municipal land during the construction or operation of the transmission line, the Applicant or its representative in charge shall promptly report the discovery to the Director of the Arizona State Museum, and in consultation with the Director, shall immediately take all reasonable steps to secure and maintain the preservation of the discovery as required under A.R.S. § 41-844.
4. If human remains and/or funerary objects are encountered on private land during the course of any ground-disturbing activities relating to the construction or operation of the transmission line, the Applicant shall cease work on the affected area of the Project and notify the Director of the Arizona State Museum as required under A.R.S. § 41-865.
5. The Applicant shall comply with the notice and salvage requirements of the Arizona Native Plant Law (A.R.S. §§ 3-901 et seq. as applicable) county and municipal plant ordinances (as applicable) and shall, to the extent feasible, minimize the destruction of native plants during the construction and operation of the transmission line.
6. The Applicant shall not assign this Certificate or its interest in the Project authorized by this Certificate unless both Applicant (as Transferor/Assignor) and Transferee/Assigned has signed a "Notice of Transfer of Certificate of Environmental Compatibility" ("Notice") as required under A.R.S. § 40-360.08(A) and A.A.C. R14-3-213(F). That Notice must be filed in this Docket. Transferee/Assignee, as part of acquiring any interest in the Project, must agree to comply with all terms, limitations and conditions contained within this Certificate originally issued to Applicant by the Arizona Power Plant and Transmission Line Siting Committee and approved and/or issued by the Arizona Corporation Commission.

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Deleted: without prior approval of the Commission. Any assignment of this Certificate shall require the assignee to assume all responsibilities of the Applicant listed in this Certificate.

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7. This authorization to construct this Project shall expire five years from the date the Certificate is approved by the Commission unless the transmission line is capable of operation. However, prior to expiration, the Applicant or its assignees may request that the Commission extend this time limitation.
8. In the event that the Project requires an extension of the term of this Certificate prior to completion of construction, Applicant shall use reasonable means to notify by first class mail all landowners, neighborhood associations registered with the local governing jurisdiction, and residents within one mile of the Project corridor, all persons who made public comment at this proceeding, and all parties to this proceeding of the request, Applicant will provide the date, time and place of the hearing in which the Commission will consider its request for extension. [CONDITION 7 IN CASE J37 DECISION NO. 70469]
9. The Applicant shall make every reasonable effort to identify and correct, on a case-specific basis, all complaints of interference with radio or television signals from operation of the transmission lines and related facilities addressed in this Certificate. The Applicant shall maintain written records for a period of five years of all complaints of radio or television interference attributable to operation, together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution shall be noted and explained. Upon request, a copy of these records will be provided to Commission Staff.
10. Within 120 days of the Commission decision granting this Certificate, Applicant will post signs in public rights-of-way giving notice of the Project corridor to the extent authorized by law. The Applicant shall place signs in prominent locations at reasonable intervals such that the public is notified along the full length of the

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1 transmission line until the transmission structures are constructed. To the extent
2 practicable, within 45 days of securing easement or right-of-way for the Project, the
3 Applicant shall erect and maintain signs providing public notice that the property is
4 the site of a future transmission line. Such signage shall be no smaller than a
5 normal roadway sign. The signs shall advise:

- 6 (a) That the site has been approved for the construction of Project facilities;
- 7 (b) The expected date of completion of the Project facilities;
- 8 (c) A phone number for public information regarding the Project;
- 9 (d) The name of the Project;
- 10 (e) The name of the Applicant; and
- 11 (f) The website of the Project.

12 11. Applicant, or its assignee(s), shall design the transmission lines to incorporate
13 reasonable measures to minimize impacts to raptors.

14 12. Applicant, or its assignee(s), shall use non-specular conductors.

15 13. Before construction on this Project may commence, the Applicant shall file a
16 construction mitigation and restoration plan ("Plan") with ACC Docket Control and
17 copies to all Parties. Where practicable, the Plan shall specify the Applicant's plans
18 for construction access and methods to minimize impacts to wildlife and to
19 minimize vegetation disturbance outside of the Project right-of-way particularly in
20 drainage channels and along stream banks, and shall re-vegetate, unless waived by
21 the landowner, native areas of construction disturbance to its preconstruction state
22 outside of the power-line right of way after construction has been completed.
23 The Plan shall specify the Applicant's plans for coordination with the
24 Arizona Game and Fish Department and the State Historic Preservation Office.
25 The Applicant shall use existing roads for construction and access where
26 practicable and the Plan shall specify the manner in which the Applicant makes us
27 of existing roads.

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14. With respect to the Project, Applicant shall participate in good faith in state and regional transmission study forums to coordinate transmission expansion plans related to the Project and to resolve transmission constraints in a timely manner.
15. The Applicant shall provide copies of this Certificate to the City of Tucson, the Town of Sahuarita, the City of Nogales, Pima County, Santa Cruz County, the Arizona State Land Department, the State Historic Preservation Office, BLM, and the Arizona Game and Fish Department.
16. Prior to the date construction commences on this Project, the Applicant shall provide known homebuilders, neighborhood associations registered with the local governing jurisdiction, and developers of record, within one mile of the center line of the Certificated Project Alignment the identity, location, and a pictorial depiction of the type of power line being constructed, accompanied by a written description, and encourage the developers and homebuilders to include this information in the developers' and homebuilders' homeowners' disclosure statements. [SEE CONDITION 6 IN CASE 137 DECISION NO. 70649].
17. Before commencing construction of Project facilities located parallel to and within 100 feet of any existing natural gas or hazardous liquid pipeline, the Applicant shall:
- (a) Perform the appropriate grounding and cathodic protection studies to show that the Project's location parallel to and within 100 feet of such pipeline results in no material adverse impacts to the pipeline or to public safety when both the pipeline and the Project are in operation. If material adverse impacts are noted in the studies, Applicant shall take appropriate steps to ensure that such material adverse impacts are mitigated. Applicant shall provide to Commission Staff reports of studies performed; and
 - (b) Perform a technical study simulating an outage of the Project that may be caused by the collocation of the Project parallel to and within 100 feet of the

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existing natural gas or hazardous liquid pipeline. This study should either: i) show that such outage does not result in customer outages; or ii) include operating plans to minimize any resulting customer outages. Applicant shall provide a copy of this study to Commission Staff.

18. Applicant will comply with the most current Western Electricity Coordinating Council/North American Electric Reliability Corporation Planning standards as approved by the Federal Energy Regulatory Commission, and National Electrical Safety Code construction standards.

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19. The Applicant shall submit a self-certification letter annually, identifying progress made with respect to each condition contained in the Certificate, including which conditions have been met. Each letter shall be submitted to the Docket Control of the Arizona Corporation Commission and the parties on August 1 beginning in 2010. Attached to each certification letter shall be documentation explaining how compliance with each condition was achieved. Copies of each letter along with the corresponding documentation shall be submitted to the Arizona Attorney General and Department of Commerce Energy Office. The requirement for the self-certification shall expire on the date the Project is placed into operation.

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20. Within sixty (60) days of the Commission decision granting this Certificate, the Applicant shall make good faith efforts to commence discussions with private landowners, on whose property the Project Alignment is located, to identify the specific location for the Project's right-of-way and placement of poles. Applicant shall make reasonable efforts to accommodate landowners' preferences regarding the placement of poles located on the landowners' property.

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21. The Applicant shall make reasonable efforts to work with private landowners on whose property the Project right-of-way will be located, to mitigate the impacts of the location, construction, and operation of the Project.

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- 1 22. Applicant shall construct the Project Alignment only within the corridor more
2 fully described in the attached Exhibit A. [CONDITION 3 IN CASE 111,
3 DECISION NO. 64356]
- 4 23. For the Project, Applicant shall, within 30 days of the Commission decision
5 approving the CEC, submit a Pole Finish Plan (“PFP”) for the proposed monopole
6 finish for each part of the Project to the parties and Staff. The PFP shall indicate
7 where a galvanized steel finish will be used versus using self-weathering steel.
- 8 24. The Certificate does not grant to the Applicant the right to construct a second
9 circuit in Segment 1B – the existing line approved in Decision No. 56097 (August
10 17, 1988) on single steel poles that is currently operating at 115 kV. This
11 Certificate recognizes that, as part of the Vail to Valencia 115 kV to 138 kV
12 Transmission Line Upgrade Project, the existing line in Segment 1B will now
13 operate at 138 kV.

14

15

16

17 **FINDINGS OF FACT AND CONCLUSIONS OF LAW**

18 This Certificate incorporates the following findings of fact and conclusions of law:

- 19 1. The Project is in the public interest because it aids the state in meeting the need for an
20 adequate, economical and reliable supply of electric power.
- 21 2. In balancing the need for the Project with its effect on the environment and ecology
22 of the state, the conditions placed on the CEC by the Committee effectively
23 minimize its impact on the environment and ecology of the state.
- 24 3. The conditions placed on the CEC by the Committee resolve matters concerning
25 the need for the Project and its impact on the environment and ecology of the state
26 raised during the course of proceedings, and as such, serves as the findings on the
27 matters raised.

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4. In light of these conditions, the balancing in the broad public interest results in favor of granting the CEC.

DATED this ___ day of _____ 2009.

**THE ARIZONA POWER PLANT AND
TRANSMISSION LINE SITING COMMITTEE**

Hon. John Foreman, Chairman

Exhibit A
(utilizing Seg. 2, Alt 1)

A transmission line corridor of 500' width except where noted, with the centerline, as determined from Arizona State Plane Coordinate mapping, more particularly described as follows:

Beginning at **Vail Substation**, at grid coordinate (X) 1041085.39, (Y) 391274.36, of Central Zone of Arizona State Plane Coordinate System 1983, and to which National Geodetic Survey point PUMP (PID - CZ0252) bears South 42 degrees 20 minutes 38 seconds West, 4,870.50 feet;

thence North 88 degrees 44 minutes 54 seconds West, 307.61 feet;

thence North 60 degrees 17 minutes 58 seconds West, 1,037.36 feet;

thence North 00 degrees 07 minutes 58 seconds West, 1,017.67 feet;

thence South 89 degrees 32 minutes 32 seconds West, 11,891.07 feet;

thence South 05 degrees 40 minutes 55 seconds West, 1,744.96 feet;

thence South 00 degrees 34 minutes 52 seconds East, 6,224.41 feet to a point in **Nogales Tap Substation**;

thence South 00 degrees 34 minutes 52 seconds East, 50,753.00 feet;

thence South 34 degrees 21 minutes 34 seconds West, 95,891.68 feet;

thence South 88 degrees 34 minutes 55 seconds West, 121.34 feet to a point in **Kantor Substation**;

thence South 03 degrees 13 minutes 57 seconds East, 158.25 feet;

thence South 21 degrees 14 minutes 55 seconds East, 22,453.78 feet;

thence South 00 degrees 29 minutes 36 seconds East, 9,011.69 feet;

thence South 19 degrees 02 minutes 10 seconds West, 1,725.59 feet;

thence South 00 degrees 29 minutes 28 seconds East, 12,408.16 feet;

thence South 12 degrees 35 minutes 44 seconds East, 2,722.98 feet;

thence South 00 degrees 28 minutes 50 seconds East, 13,826.04 feet;

thence South 00 degrees 28 minutes 50 seconds East, 816.00;

thence South 19 degrees 03 minutes 31 seconds East, 7,674.00 feet along the said existing alignment to the terminus of said centerline, 26 feet easterly of the east side of said **Cañez Substation**;

thence westerly through **Cañez Substation** to a point 172 feet westerly of the west side of said **Substation**;

thence South 18 degrees 52 minutes 02 seconds East, 12,393.42 feet to the beginning of a curve concave to the northeast and having a radius of 5,553.78 feet;

thence southeasterly 3,974.97 feet through a central angle of 41 degrees 00 minutes 28 seconds;

1 thence South 59 degrees 52 minutes 30 seconds East, 1,369.94 feet;
2 thence North 64 degrees 22 minutes 52 seconds East, 1,337.41 feet to a point 63 feet southerly of the
3 south side of Sonoita Substation;
4 thence South 25 degrees 54 minutes 45 seconds East, 2,434.49 feet;
5 thence South 18 degrees 53 minutes 51 seconds East, 6,598.53 feet;
6 thence South 37 degrees 22 minutes 02 seconds East, 6,610.08 feet;
7 thence South 00 degrees 35 minutes 23 seconds East, 7,555.17 feet;
8 thence South 30 degrees 26 minutes 05 seconds West, 1,143.95 feet;
9 thence South 03 degrees 55 minutes 22 seconds East, 3,724.62 feet;
10 thence South 17 degrees 58 minutes 34 seconds East, 3,169.01 feet;
11 thence South 79 degrees 39 minutes 56 seconds East, 1,303.27 feet;
12 thence South 43 degrees 47 minutes 11 seconds East, 1,683.12 feet;
13 thence South 04 degrees 49 minutes 19 seconds West, 1,849.85 feet;
14 thence South 00 degrees 35 minutes 14 seconds East, 3,400.89 feet;
15 thence within a 1250'-wide corridor, North 89 degrees 40 minutes 24 seconds East, 1,285.80 feet;
16 thence continuing in a 500'-wide corridor, South 01 degrees 13 minutes 18 seconds East, 2,106.57 feet;
17 thence North 88 degrees 43 minutes 12 seconds East, 2,191.97 feet to the terminus of said centerline at
18 Valencia Substation, at grid coordinate (X) 1007459.01, (Y) 133493.23, of said Central Zone, and to which
19 National Geodetic Survey point M423 (PID - CG0883) bears South 23 degrees 09 minutes 01 seconds
20 East, 34,502.53 feet.
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EXHIBIT

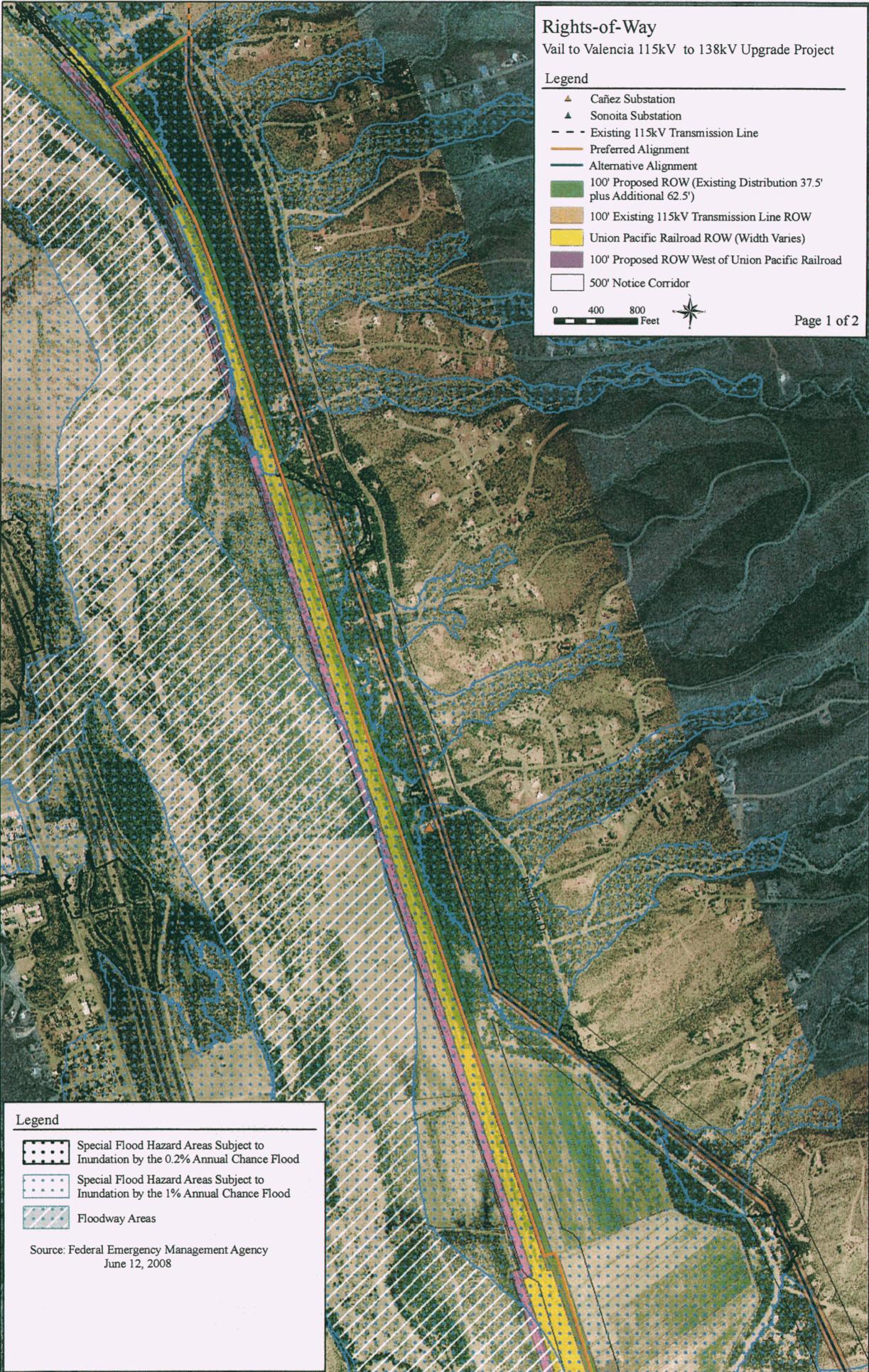
"B"

Rights-of-Way

Vail to Valencia 115kV to 138kV Upgrade Project

Legend

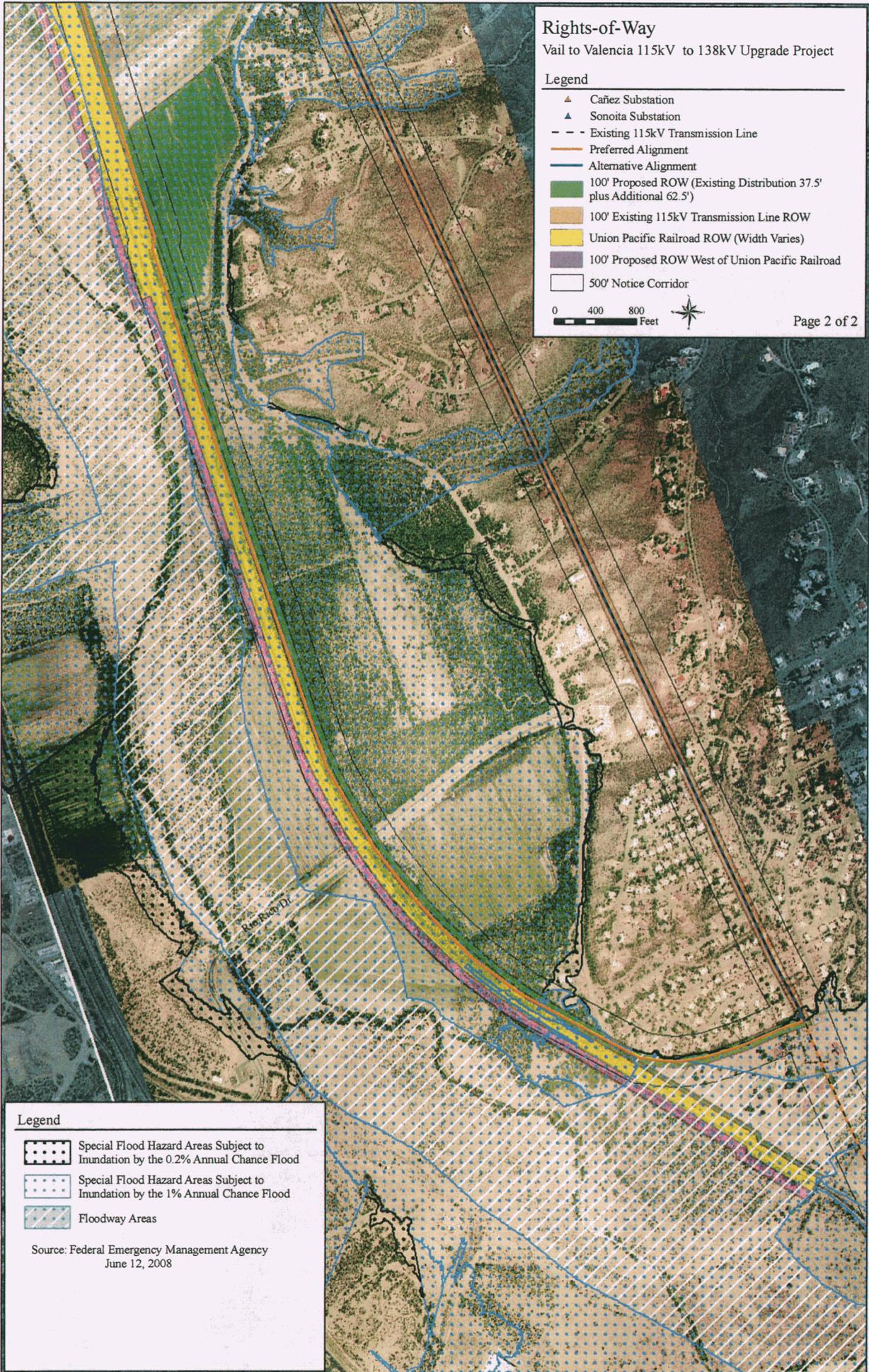
- ▲ Cañez Substation
- ▲ Sonoita Substation
- - - Existing 115kV Transmission Line
- Preferred Alignment
- Alternative Alignment
- 100' Proposed ROW (Existing Distribution 37.5' plus Additional 62.5')
- 100' Existing 115kV Transmission Line ROW
- Union Pacific Railroad ROW (Width Varies)
- 100' Proposed ROW West of Union Pacific Railroad
- 500' Notice Corridor



Legend

- Special Flood Hazard Areas Subject to Inundation by the 0.2% Annual Chance Flood
- Special Flood Hazard Areas Subject to Inundation by the 1% Annual Chance Flood
- Floodway Areas

Source: Federal Emergency Management Agency
June 12, 2008



Rights-of-Way
 Vail to Valencia 115kV to 138kV Upgrade Project

- Legend**
- ▲ Cañez Substation
 - ▲ Sonoita Substation
 - - - Existing 115kV Transmission Line
 - Preferred Alignment
 - Alternative Alignment
 - 100' Proposed ROW (Existing Distribution 37.5' plus Additional 62.5')
 - 100' Existing 115kV Transmission Line ROW
 - Union Pacific Railroad ROW (Width Varies)
 - 100' Proposed ROW West of Union Pacific Railroad
 - 500' Notice Corridor
- 0 400 800 Feet

- Legend**
- Special Flood Hazard Areas Subject to Inundation by the 0.2% Annual Chance Flood
 - Special Flood Hazard Areas Subject to Inundation by the 1% Annual Chance Flood
 - Floodway Areas

Source: Federal Emergency Management Agency
 June 12, 2008

EXHIBIT

"C"

Proposed Corridors - Segment 1

Vail to Valencia 115kV to 138kV Upgrade Project

Legend

- Existing 115kV Transmission Line
- Alternative Alignments (100 Foot ROW)
- Preferred Alignment (100 Foot ROW)
- 500 Foot Corridor
- ▲ Substations



Proposed Corridors - Segment 2

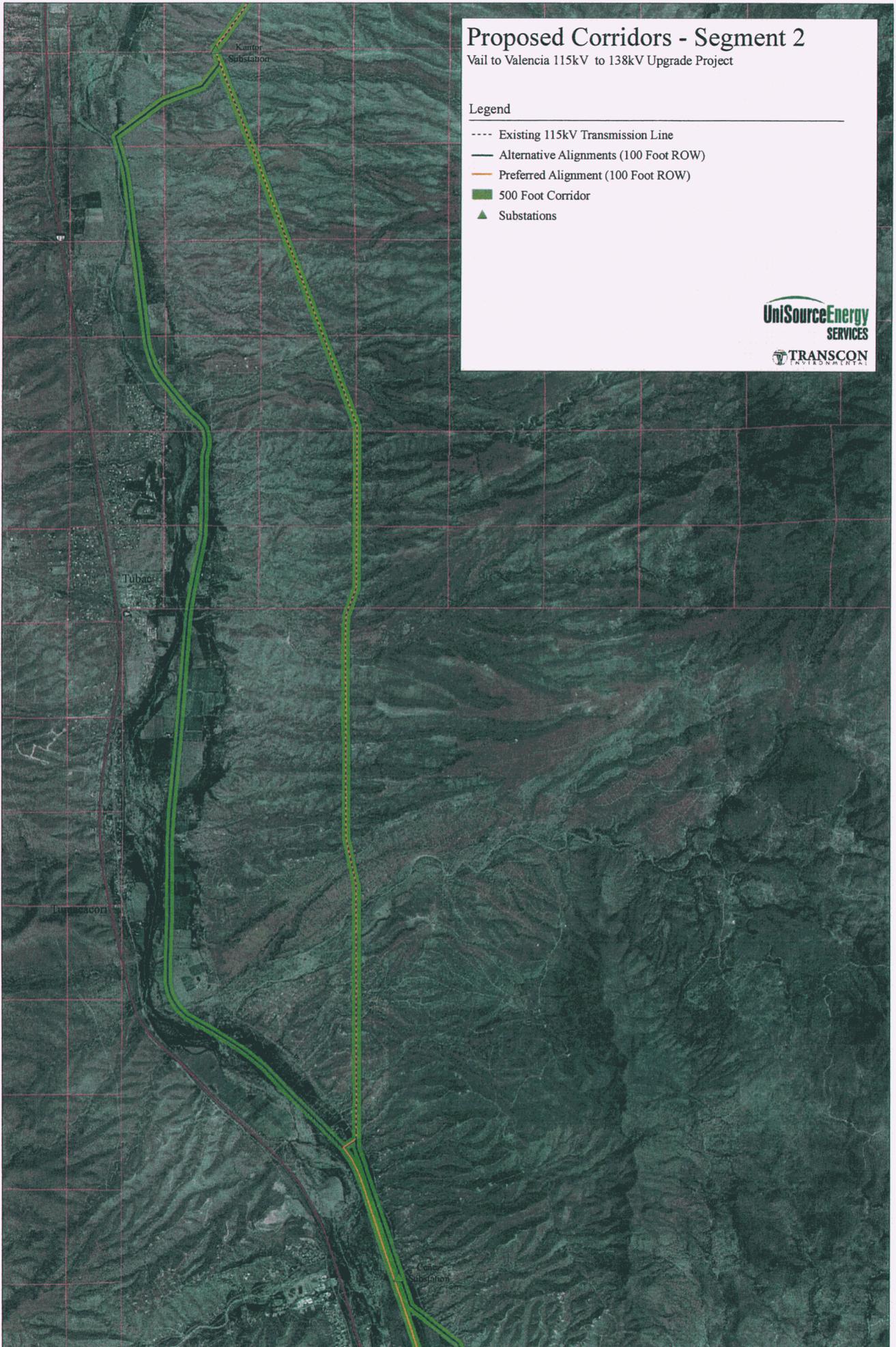
Vail to Valencia 115kV to 138kV Upgrade Project

Legend

- Existing 115kV Transmission Line
- Alternative Alignments (100 Foot ROW)
- Preferred Alignment (100 Foot ROW)
- 500 Foot Corridor
- ▲ Substations

UniSourceEnergy
SERVICES

TRANSCON
ENVIRONMENTAL



Proposed Corridors - Segment 3

Vail to Valencia 115kV to 138kV Upgrade Project

Legend

- Existing 115kV Transmission Line
- Alternative Alignments (100 Foot ROW)
- Preferred Alignment (100 Foot ROW)
- 500 Foot Corridor
- ▲ Substations



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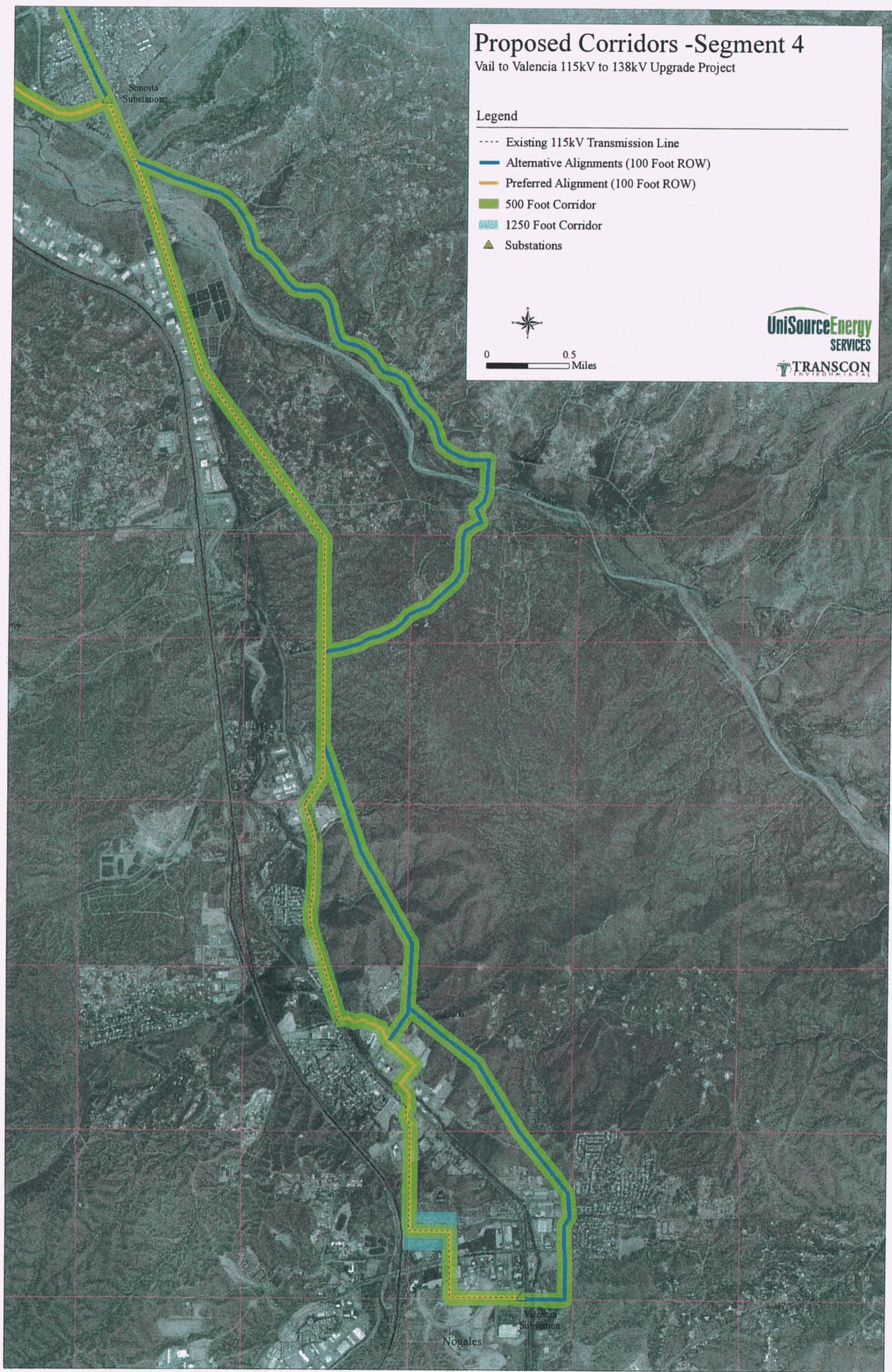


Proposed Corridors -Segment 4

Vail to Valencia 115kV to 138kV Upgrade Project

Legend

- Existing 115kV Transmission Line
- Alternative Alignments (100 Foot ROW)
- Preferred Alignment (100 Foot ROW)
- 500 Foot Corridor
- 1250 Foot Corridor
- ▲ Substations



EXHIBIT

"D"

**SANTA CRUZ COUNTY
FLOODPLAIN AND EROSION HAZARD
MANAGEMENT ORDINANCE
No. 2001-03**

(FLOODPLAIN REGULATIONS)

**FOR THE UNINCORPORATED AREA OF
SANTA CRUZ COUNTY, ARIZONA**

**REVISED AND ADOPTED AS ORDINANCE NO. 2001-03
OF THE BOARD OF SUPERVISORS OF
SANTA CRUZ COUNTY, ARIZONA
ON MAY 1, 2001**

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ORDINANCE No. 2001-03

An ordinance of the Board of Supervisors of Santa Cruz County, Arizona, replacing Ordinance No. 1987-21; restricting or prohibiting uses which are dangerous due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities; requiring that uses vulnerable to floods be protected from flood damage at the time of initial construction; controlling the alteration of natural floodplains, stream channels, and natural protective barriers; controlling filling, grading, dredging, and other development which may increase flood damage; preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas; mandating the issuance of a flood hazard use permit and collection of fees there from; naming the Floodplain Board to hear and decide appeals and requests for variances; deciding penalties for violation of this ordinance; and repealing all ordinances and parts of ordinances in conflict there with.

SECTION 1.0

STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND METHODS

- 1.1 STATUTORY AUTHORIZATION.** The Legislature of the State of Arizona has in A.R.S. §48-3601 through §48-3627 delegated the responsibility to each county flood control district to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the Flood Control District (Board of Directors) of Santa Cruz County, Arizona, does ordain as follows:
- 1.2 FINDINGS OF FACTS**
- A. The flood hazard areas of Santa Cruz County are subject to periodic inundation which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.
 - B. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, cause damage in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss.
- 1.3 STATEMENT OF PURPOSE.** It is the purpose of this ordinance to promote the public health, safety, and general welfare, and to minimize public and private losses due to the flood conditions in specific areas by provisions designed:

- A. To protect human life and health
- B. To minimize expenditure of public money for costly flood control projects;
- C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.
- D. To minimize prolonged business interruptions;
- E. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of flood and/or erosion hazard;
- F. To help maintain a stable tax base by providing for the second use and development of areas of special flood hazard so as to minimize future flood blight areas;
- G. To insure that potential buyers are notified that property is in an area of flood and/or erosion hazard;
- H. To insure that those who occupy the areas of flood and/or erosion hazard assume responsibility for their actions; and
- I. To maintain eligibility for disaster relief.

1.4 LEVEL OF STANDARDS. The performance requirements as specified in this ordinance are minimum standards and address general floodplain management requirements. Specific projects may warrant additional requirements. The Flood Control District and the Floodplain Administrator have the authority to establish standards and/or policies as necessary to carry out the provisions of this ordinance. All drainage design standards, state standards, river and basin management plans, or other land use plans approved by the Board of Supervisors or Flood Control District Board of Directors are hereby incorporated into this ordinance.

1.5 METHODS OF REDUCING FLOOD LOSSES. In order to accomplish its purpose, this ordinance includes methods and provisions for:

- A. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
- B. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- C. Controlling the alteration of natural floodplain, stream channels, and natural protective barriers, which help accommodate or channel flood waters;
- D. Controlling filling, grading, dredging, and other development which may increase flood damage; and
- E. Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

SECTION 2.0

DEFINITIONS

Unless specifically defined below, word or phrases used in this ordinance shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most reasonable application.

“Accessory Use” means a use that is incidental and subordinate to the principle use of the parcel of land on which it is located.

“Alluvial Fan Flooding” means flooding occurring on the surface of an alluvial fan or similar landform that originates at the apex and is characterized by high-velocity flows; active processes or erosion, sediment transport, and deposition; and, unpredictable flow paths.

“Apex” means a point on an alluvial fan or similar landform below which the flow path of the major stream that formed the fan becomes unpredictable and alluvial fan flooding can occur.

“Appeal” means a request for a review of the Floodplain Administrator’s interpretation of any provision of this ordinance or a request for a variance.

“Area of Shallow Flooding” means a designated AO, AH, or VO zone on a community’s Flood Insurance Rate Map (FIRM) with a one percent or greater chance of flooding to an average depth of one to three feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

“Area of Special Flood Hazard” means the land in the floodplain within a community subject to a one percent or greater chance of flooding in any given year. These areas are designated as Zone A, AE, AO, AH, and A1-30 on the FIRM and other areas determined by the criteria adopted by the Director of Water Resources.

“Back Fill” means the placement of fill material within a specified depression, hole, or excavation pit below the surrounding adjacent ground level as a means of improving floodwater conveyance or to restore land to the natural contours existing prior to excavation.

“Base Flood” means the flood having a one percent chance of being equaled or exceeded in any given year. (See “One Hundred Year Flood”)

“Basement” means any area of the building having its floor subgrade (below ground level) on all sides.

“Breakaway Wall” means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building supporting foundation system.

“Community” means any state or area or political subdivision thereof, or any Indian tribe or authorized tribal organization, or authorized native organization which has authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction.

“Commercial Development” means any development and/or structure constructed mainly for the purpose of conducting business, including but not limited to retail stores, restaurants, shopping centers, business offices, gas stations, etc.

“Critical Feature” means an integral and readily identifiable part of a flood protection system without which the flood protection provided by the entire system would be compromised.

“Detention System” means a type of flood control system which delays the downstream progress of floodwaters in a controlled manner, generally through the combined use of a temporary storage area and a metered outlet device which causes a lengthening of the duration of flow and thereby reduces downstream flood peaks.

“Development” means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, above ground storage tanks, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of materials and equipment.

“Drainage Area” means the contributing area to a single point of drainage concentration, expressed in units of area, also called catchment area, watershed, and river basin.

“Dry Well” means a deep hole, covered and designed in such a manner so as to hold drainage water until it infiltrates into the ground.

Dwelling Unit means a place of residence which may be located in a single or multiple dwelling building or manufactured home.

“Encroachment” means the advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain which may impede or alter the flow capacity of a floodplain.

“Equal Degree of Encroachment” means a standard applied to the evaluation of the effects of the encroachment on increases in flood heights. It assumes that an encroachment, if permitted, may confer on all property owners on both sides of the watercourse and equal right to encroach to the same degree within the reach. Since the factors affecting hydraulic efficiency are usually not uniform within a reach, this standard may not result in equal measured distances between floodway limit lines and the regulatory floodplain boundaries of the watercourse.

“Erosion” means the process of the gradual wearing away of landmasses. The Program does not per se cover this peril. (See Flood-related erosion).

“Erosion Hazard Area” means land adjoining a watercourse regulated by this ordinance, which is deemed by the floodplain administrator to be subject to flood-related erosion losses.

“Erosion Hazard Setback” means the minimum horizontal distance from the top of bank, of a watercourse, a structure must be constructed or placed.

“Existing Manufactured Home Park or Subdivision” means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete slabs) is completed before the effective date of the floodplain management regulations adopted by the community.

“Expansion to an Existing Manufactured Home Park or Subdivision” means the preparation of additional sites by the construction of facilities for servicing lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete slabs).

“Financial Assistance” means any form of loan, grant, guaranty, insurance, payment, rebate, subsidy, disaster assistance loan or grant, or any other form of direct or indirect Federal assistance other than general or special revenue sharing formula grants made to States.

“Flood, Flooding, or Floodwaters” a general and temporary condition of partial or complete inundation of normally dry land areas from: (1) the overflow of water, (2) the unusual and rapid accumulation or runoff of surface waters from any source, and/or (3) flood related erosion as defined elsewhere in this section.

“Flood Boundary and Floodway Map (FBFM)” means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated the areas of special flood hazards and the floodway.

“Flood Hazard Boundary Map (FHBM)” means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated the areas of special flood hazards.

“Flood Insurance Rate Map (FIRM)” means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated the areas of special flood hazards and the risk premium zones applicable to the community.

“Flood Insurance Study” means the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Insurance Rate Map, the Flood Boundary and Floodway Map, and the water surface elevation of the base flood.

“Floodplain or Flood-prone Area” means any land area susceptible to being inundated by water from any source – see “flooding”.

“Floodplain Administrator” is the individual appointed to administer and enforce the floodplain management regulations.

“Floodplain Board” means the Board of Directors of the Flood Control District of Santa Cruz County at such times as they are engaged in the enforcement of this ordinance.

“Floodplain Management” means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

“Floodplain Management Regulations” means this ordinance and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as grading and erosion control) and other application of police power which control development in flood-prone areas. This term describes federal, state, or local regulations in any combination thereof which provide standards for preventing and reducing flood loss and damage.

“Floodplain Use Permit (FPUP)” means an official document which authorizes specific activity within a regulatory floodplain or erosion hazard area.

“Flood Protection System” means those physical structural works for which funds have been authorized, appropriated, and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the area within a community subject to “special flood hazard” and the extent of the depths of associated flooding. Such a system typically includes dams, reservoirs, levees, and dikes. These specialized flood modifying works are those constructed in conformance with sound engineering standards.

“Floodproofing” means any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

“Flood-related Erosion” means the collapse or subsidence of land along the shore of a lake or other body of water as a result of undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by and unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood or and abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding.

“Flood-related Erosion Area Management” means the operation of an overall program of corrective and preventive measures for reducing flood-related erosion damage, including, but not limited to, emergency preparedness plans, flood-related erosion control works, and floodplain management regulations.

“Floodway” means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. For regulatory watercourses with a discharge during the base flood greater than 1,500 cubic feet per second (cfs) where either no detailed studies have been prepared or the floodway has not been identified, the floodway limits shall be set back from each side of the primary channel bank a distance equal to four (4) times the main channel width. Also referred to as “Regulatory Floodway”.

“Floodway Fringe” is the area of the floodplain on either side of the “Regulatory Floodway” where encroachment may be permitted.

“Freeboard” means a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. “Freeboard” tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed. The “Freeboard” in Santa Cruz County is a minimum of one (1) foot for all habitable structures.

“Functionally Dependent Use” means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

“Geologic Floodplain” means that portion of the land that has, in the recent geologic past, been subject to fluvial processes. The geologic floodplain may be different than the regulatory floodplain.

“Governing Body” is the local governing unit, i.e. county or municipality that is empowered to adopt and implement regulations to provide public health, safety and general welfare of its citizenry.

“Hardship” as related to Section 6, **Variances**, of this ordinance means the exceptional hardship that would result from a failure to grant the requested variance. The governing body requires that the variance be exceptional, unusual, and peculiar to the property involved. Mere economic or financial hardship alone is not exceptional. Inconvenience, aesthetic considerations, physical handicaps, personal preferences, or the disapproval of one’s neighbors likewise cannot, as a rule, qualify as an exceptional hardship. In addition, constraints, restrictions, etcetera, that are self-imposed do not, as a rule, qualify as an exceptional hardship. All of these problems can be resolved through other means without granting a variance, even if the alternative is more expensive, or requires the property owner to build elsewhere or put the parcel to a different use than originally intended.

“Highest Adjacent Grade” means the highest **natural** elevation of the ground surface prior to construction next to the proposed walls of a structure.

“Historic Structure” means any structure that is:

- a. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register.
- b. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district.
- c. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or
- d. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either;
 1. By an approved state program as determined by the Secretary of the Interior or
 2. Directly by the Secretary of the Interior in states without approved programs.

“Industrial Development” means any development or structure constructed mainly for the production or distribution of products, materials, etc.

“Levee” means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

“Levee System” means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

“Lowest Floor” means the lowest floor of the lowest enclosed area including basement (see “Basement” definition). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building’s lowest floor; **provided**, that such enclosure is not built so as

to render the structure in violation of the applicable non-elevation design requirement of this ordinance.

“Manufactured Home” means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term “manufactured home” does not include a “recreational vehicle”.

“Manufactured Home Park or Subdivision” means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for sale or rent.

“Market Value” shall be determined by estimating the cost to replace the structure in new condition and adjusting that cost figure by the amount of depreciation which has accrued since the structure was constructed. The cost of replacement of the structure shall be based on a square foot cost factor determined by reference to a building cost estimating guide recognized by the building construction industry. The amount of depreciation shall be determined by taking into account the age and physical deterioration of the structure and functional obsolescence as approved by the floodplain administrator, but shall not include economic or other forms of external obsolescence. Use of replacement cost or accrued depreciation factors different from those contained in recognized building cost estimating guides may be considered only if such factors are included in a report prepared by an independent professional appraiser and supported by a written explanation of the differences.

“Mean Sea Level” means, for the purpose of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community’s Flood Insurance Rate Map are referenced.

“New Construction” means, for the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after the effective date of the initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, “new construction” means structures for which the “start of construction” commenced on or after the effective date of a floodplain management regulation adopted by Santa Cruz County, and includes any subsequent improvements to such structures.

“Obstruction” includes, but is not limited to, any dam, wall, wharf, embankment, levee, dike, pile, abutment, protection, excavation, channelization, bridge, conduit, culvert, building, wire, fence, rock, gravel, refuse, fill, structure, vegetation, or other material in, along, across, or projecting into any watercourse which may alter, impede, retard or change the direction and/or velocity of the flow of water, or due to its location, its propensity to snare or collect debris carried by the water, or its likelihood of being carried downstream.

“One Hundred Year Flood” means the flood having a one percent chance of being equaled or exceeded in any given year (see “Base flood”).

“Person” means any individual or his agent, firm, partnership, association or corporation, or agent of the aforementioned groups, or this state or its agencies or political subdivisions.

“Program” means the National Flood Insurance Program authorized by 42 U.S.C. 4001-4128.

“Program Deficiency” means a defect in a community’s floodplain management regulations or administrative procedures that impairs effective implementation of those floodplain management regulations or of the NFIP standards.

“Reach” means a hydraulic engineering term used to describe longitudinal segments of a stream or watercourse. In an urban area an example of a reach would be the segment of a watercourse between two consecutive bridge crossings.

“Reclamation Plan” means a plan for sand and gravel operations which defines hydrologic and hydraulic constraints; outlines methods of extraction, operation and site development; and provides for backfilling procedures and final site reclamation.

“Recreational Vehicle” means a vehicle which is:

- a. Built on a single chassis;
- b. 400 square feet or less when measured at the largest horizontal projection
- c. Designed to be self-propelled or permanently towable by a light duty truck; and
- d. Designed primarily not for use as a permanent dwelling but as a temporary living quarters for recreational, camping, travel, or seasonal use.

“Regulatory Flood Elevation” means an elevation one foot above the base flood elevation for a watercourse for which the base flood elevation and shall be as determined by the criteria developed by the director of water resources for all other watercourses.

“Regulatory Floodplain or Flood-prone Area” means that portion of the geologic floodplain associated with a watercourse or that area where drainage is or may be restricted by man-made structures and that would be inundated by the base flood where the peak discharge of the flow is fifty cubic feet per second (cfs) or greater, or those areas which are subject to sheet flooding, or those areas mapped as being flood prone on existing recorded subdivision plats.

“Regulatory Floodway” means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without increasing the water surface elevation more than one foot.

“Remedy a Violation” means to bring the structure of other development into compliance with State or local floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing Federal financial exposure with regard to the structure or other development.

“Repetitive Loss Structure” means a structure, covered by a contract for flood insurance issued pursuant to the National Flood Insurance Act, that has incurred flood-related damage on two occasions during any 10-year period ending on the date of the event for which a second claim is made, in which the cost of repairing the flood damage, on average, equaled or exceeded 25% of the market value of the structure at the time of each such flood event.

“Retention System” means a type of flood control system which stops the downstream progress of floodwaters by employing methods of total containment.

“Riverine” means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

“Setback” means the minimum horizontal distance between a structure and a watercourse. On each side of a watercourse, the setback is measured from the top edge of the highest channel bank or edge of the base flood’s water surface elevation, whichever is closer to the channel centerline.

“Sheet Flow Area” means those areas which are subject to flooding with depths of one-half foot or greater during the base flood event, where a clearly defined channel does not exist and the path of the flooding is often unpredictable and indeterminate. Also see “Area of shallow flooding”.

“Special Flood Hazard Area” means an area having special flood or flood related erosion hazards, and shown on a FHBMap or Firm as Zone A, AO, A1-30, AE, A99, or AH.

“Start of Construction” includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days of the permit date. *The actual start means either the first permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor or other structural part of a building, whether or not that alteration affects the external dimensions of the building.*

“Structure” means a walled and roofed building, including any gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

“Substantial Damage” means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damage condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

“Substantial Improvement” means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the “start of construction” of the improvement. This term includes structures which have incurred “substantial damage”, regardless of the actual repair work performed. The term does not, however, include either:

- a. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or
- b. Any alteration of a “historic structure”, provided that the alteration will not preclude the structure’s continued designation as a “historic structure”.

“Variance” means a grant of relief from the requirements of this ordinance which permits construction in a manner that would otherwise be prohibited by this ordinance.

“Violation” means the failure of a structure or other development to be fully compliant with the community’s floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this ordinance is presumed to be in violation until such time as that documentation is provided.

“Water Surface Elevation” means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929, (or other datum, where specified) of floods or various magnitudes and frequencies in the floodplains of riverine areas.

“Watercourse” means any lake, river, stream, creek, wash, arroyo or other body of water or channel having banks and bed through which waters flow at least periodically.

“Watercourse Master Plan” means a hydraulic plan for a watercourse that examines the cumulative impacts of existing development and future encroachment in the floodplain and future development in the watershed on potential flood damages, and establishes technical criteria for subsequent development so as to minimize potential flood damages for all flood events up to and including the one hundred-year flood.

“Watershed” means the drainage area above any point on a watercourse.

SECTION 3.0
GENERAL PROVISIONS

- 3.1 LAND TO WHICH THIS ORDINANCE APPLIES.** This ordinance shall apply to all areas of special flood hazards and other regulatory floodplains, floodways, erosion hazard areas, subdivisions, commercial and industrial developments, as defined herein, within the boundaries of Santa Cruz County except those incorporated cities and towns which have adopted an ordinance or a resolution in accordance with A.R.S. §48-3610.
- 3.2 AREAS OF SPECIAL FLOOD HAZARD AND REGULATORY FLOODPLAINS, FLOODWAYS.**
- A. The boundaries of the special flood hazard areas and regulatory floodplains and floodways for which adequate hydrologic and hydraulic data is available for their delineation on maps shall be shown on maps maintained by the Santa Cruz County Floodplain Administrator.
 - B. The areas of special flood hazard identified by the Federal Insurance Administration (FIA) of the Federal Emergency Management Agency (FEMA) in a scientific and engineering report entitled "The Flood Insurance Study for Santa Cruz County, May 1972" with accompanying Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFM), and all subsequent amendments and/or revisions, are hereby adopted by reference and declared to be a part of this ordinance. This Flood Insurance Study (FIS) and attendant mapping is the minimum area of applicability of this ordinance and may be supplemented by studies for other areas which allow implementation of this ordinance and which are recommended to the Floodplain Board by the Floodplain Administrator. The Board, within its area of jurisdiction shall delineate (or by rule require developers of land to delineate) for areas where development is ongoing or imminent, and thereafter as development becomes imminent, floodplains consistent with the criteria developed by the Federal Emergency Management Agency and the Director of Water Resources. The FIS, FIRMs and FBFMs are on file at Santa Cruz County Public Works Department, 2150 North Congress Drive, Room #117, Nogales, Arizona.
 - C. Due to continuously and episodically changing hydrologic and hydraulic conditions on the watercourses within Santa Cruz County, base flood peak discharges, flow volumes, and associated special flood hazard areas, regulatory floodplain and erosion hazard areas are continuously subject to revision. At a minimum, base flood values will meet or exceed the current values established by FEMA, and reflect historic flood information and general, current, watershed conditions.
 - D. Engineering studies showing the regulatory floodplain and erosion hazard areas may be prepared under the direction of the Floodplain Administrator. Upon approval by the Floodplain Administrator, these maps shall be the regulatory floodplain and erosion hazard areas governed by this ordinance.
 - E. In those areas where the regulatory floodplain and erosion hazard areas are not delineated pursuant to Sections 3.2.B and 3.2.C, and upon request for a county permit, the Floodplain Administrator may require the land owner to establish the

regulatory floodplain and floodway limits through a hydrologic and hydraulic study prepared by an Arizona registered professional civil engineer.

- F. In those areas where a hydrologic and hydraulic study has been prepared by an Arizona registered professional civil engineer which delineates the regulatory floodplains, floodways and erosion hazard areas, and has been approved by the Floodplain Administrator, the delineation of those boundaries shown within the study shall be the regulatory floodplain, floodway and erosion hazard areas governed by this ordinance.
- G. Construction of any improvement which changes the configuration of the delineated floodplain contained within the Flood Insurance Study, whether upstream of, downstream from or adjacent to the parcel under development, the owner shall provide Santa Cruz County a new delineation of all regulatory floodplains affected by the improvement, prior to the release of assurances for subdivisions or certificate of occupancy for development plans. The new delineation and reports shall be prepared in conformance with the requirements of FEMA, the Director of Water Resources and this ordinance. The owner, or the owner's engineer, will submit the required flood insurance study information to FEMA. The owner shall be responsible for providing Santa Cruz County a copy of all correspondence with FEMA.

3.3 COMPLIANCE. All development of land, construction of residential, commercial or industrial structures or future development within delineated floodplain areas is subject to the terms of this ordinance and other applicable regulations.

3.4 ABROGATION AND GREATER RESTRICTIONS. This ordinance is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

3.5 INTERPRETATION. In the interpretation and application of this ordinance, all provisions shall be:

- A. Considered as minimum requirements;
- B. Liberally construed in favor of the governing body; and,
- C. Deemed neither to limit nor repeal any other powers granted under state statutes.

3.6 WARNING AND DISCLAIMER OF LIABILITY. The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This ordinance shall not create liability on the part of Santa Cruz County, any officer or employee thereof, the State of Arizona, the Federal Insurance Administration, or the Federal Emergency Management Agency, for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made there under.

3.7 STATUTORY EXEMPTIONS

- A. In accordance with A.R.S. §48-3609.H, unless expressly provided, this and any regulation adopted pursuant to this article do not affect:
1. Existing legal uses of property or the right to continuation of such legal use. However, if a nonconforming use of land or a building or structure is discontinued for twelve months or destroyed to an extent of fifty percent of its market value, as determined by a competent appraiser, any further use shall comply with this ordinance and regulations of the county.
 2. Reasonable repair or alteration of property for which the property was legally used on August 3, 1984, or any regulations affecting such property takes effect, except that any alteration, addition or repair to a nonconforming building or structure which would result in increasing its flood damage potential by fifty percent or more shall be either floodproofed or elevated to or above the regulatory flood elevation.
 3. Reasonable repair of structures constructed with the written authorization required by A.R.S. §48-3613.
 4. Facilities constructed or installed pursuant to a certificate of environmental compatibility issued pursuant to title 40, chapter 2, article 6.2.
- B. In accordance with A.R.S. §48-3613, before construction of the following may begin, plans for the construction must be submitted to the Floodplain Administrator for review and comment; however, the following shall not be prohibited and shall not require a floodplain use permit or other written authorization:
1. The construction of bridges, culverts, dikes and other structures necessary to the construction of public highways, roads and streets intersecting or crossing a watercourse.
 2. The construction of storage dams for watering livestock or wildlife, structures on banks of a watercourse to prevent erosion of or damage to adjoining land if the structure will not divert, retard or obstruct the natural channel of the watercourse or dams for the conservation of floodwaters as permitted by A.R.S. title 45, chapter 6.
 3. Construction of tailing dams and waste disposal areas for use in connection with mining and metallurgical operations. This paragraph does not exempt those sand and gravel operations which will divert, retard or obstruct the flow of waters in any watercourse from complying with and acquiring authorization from the board pursuant to regulations adopted by the board under this ordinance.
 4. Other construction if it is determined by the board that written authorization is unnecessary.
 5. Construction by any flood control district, county, city, town or other political subdivision exercising powers granted to it under Title 48, chapter 21, article 1 of A.R.S. §48-3601.

6. The construction of streams, waterways, lakes and other auxiliary facilities in conjunction with development of public parks and recreation facilities by a public agency or political subdivision.
 7. The construction and erection of poles, towers, foundations, support structures, guy wires, and other facilities related to power transmission as constructed by any utility whether a public service corporation or a political subdivision.
- C. This section shall not exempt any person from obtaining a floodplain use permit as set forth in this ordinance for any use which diverts, retards or obstructs the flow of water and creates a danger or hazard to life or property in the area.
- D. These exemptions do not preclude any person from liability if that person's actions increase flood hazards to any other person or property.
- E. Nonconforming uses are permitted when;
1. Improvements to, or reconstruction, of Existing Nonconforming Uses;
 - a. Any structure which is repaired, reconstructed, or substantially improved at a cost equal to or exceeding fifty (50) percent of the market value of the structure only, either (a) before the improvement or repair is started; or (b) if the structure has been damaged and is being restored, before the damage occurred, shall conform to the provisions of this ordinance. For the purpose of determining the value of any such construction, repair or alteration, the normal retail value of the materials and the reasonable value of the labor performed shall be used. No person shall repair or alter property in a piecemeal manner so as to avoid the provisions of this section.
 - b. For the purpose of this section, substantial improvement is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include any project for improvement of a structure to comply with existing state or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions.
 2. In the event that the use of a nonconforming use is discontinued for a period of twelve consecutive months, any further use thereof shall be in conformity with the provisions of this ordinance.

3.8 DECLARATION OF PUBLIC NUISANCE. Every new structure, building, fill, excavation or development located or maintained within any area of special flood hazard, regulatory floodplain, or erosion hazard area after August 8, 1973, in violation of this ordinance is a public nuisance per se and may be abated, prevented or restrained by action of this political subdivision.

3.9 ABATEMENT OF VIOLATIONS. Within 30 days of discovery of a violation of this ordinance, the Floodplain Administrator will issue a Notice of Violation to the property owner where the violation has taken place and shall either;

- A. Take any necessary action to effect the abatement of such violation; or

- B. Order the owner of the property upon which the violation exists to provide whatever additional information may be required for the Floodplain Administrator's determination. Such information must be provided to the Floodplain Administrator within 30 days of such an order; or
- C. Submit to the Administrator of the Federal Insurance Administration a declaration for denial of insurance, stating that the property is in violation of a cited state or local law, regulation, or ordinance, pursuant to section 1316 of the National Flood Insurance act; or
- D. Request the Floodplain Board of Santa Cruz County issue a variance to this ordinance in accordance with the provisions of Section 6.0 herein; or
- E. Initiate the necessary legal action to abate the violation.

3.10 REMEDIES FOR DAMAGES - ACTIONS AUTHORIZED

- A. In addition to other penalties or remedies otherwise provided by law, the state of Arizona, any political subdivision thereof, or any person who may be damaged as a result of the diversion, retardation or obstruction of water within the regulatory floodplain, shall have the right to commence, maintain and prosecute and appropriate action or pursue any remedy to enjoin, abate or otherwise prevent any person from violating or continuing to violate any provisions of this ordinance.
- B. If a person is found to be in violation of this section, the court shall require the violator to either comply with this section or remove the obstruction and restore the watercourse to its original state. The court may also award such monetary damages as are appropriate to the injured parties resulting from the violation including reasonable costs and attorney fees.

3.11 REMOVAL OF VIOLATION AUTHORIZED WHEN. Any structure, encroachment or work constructed without a Floodplain Use Permit, or which is in violation of the terms of a permit, which represents an immediate danger to life or property may be removed immediately, by the Floodplain Administrator, at the expense of the property owner. The Floodplain Administrator shall make a good faith effort to provide the property owner with written notice prior to this action, but shall not be limited by the need for written notice during emergency actions. A written notice is considered delivered five business days after mailing.

3.12 RECOVERY OF ADMINISTRATIVE AND OTHER COSTS. Santa Cruz County shall be entitled to recover all costs, administrative, engineering and legal, as well as actual costs to remove or modify the structure, encroachment and any other work in violation of this ordinance.

3.13 UNLAWFUL ACTS

- A. It is unlawful for any person, firm, or corporation to divert, retard or obstruct the flow of waters in any watercourse whenever it creates a hazard to life or property without securing the written authorization of the Floodplain Administrator. Where the watercourse is a delineated floodplain, it is unlawful to excavate or build any structure affecting the flow of waters without securing written authorization of the Floodplain Administrator.

B. It is unlawful for any person, firm, or corporation to violate any of the provisions of this ordinance.

C. Any person, firm, or corporation violating the provisions of this section shall be guilty of a class 2 misdemeanor. Each day a violation continues shall be deemed to constitute a separate offense.

3.14 SEVERABILITY. This ordinance and the various parts thereof are hereby declared to be severable. Should any section of this ordinance be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole, or any portion thereof other than the section so declared to be unconstitutional or invalid.

SECTION 4.0
ADMINISTRATION

4.1 ESTABLISHMENT OF FLOODPLAIN USE PERMIT.

- A. Floodplain Use Permit Required When. A Floodplain Use Permit shall be obtained before construction or development, including placement of manufactured homes, begins within any area of special flood hazard or regulatory floodplain established in Section 3.2 or within erosion hazard areas as described in Section 5.10. Application for a Floodplain Use Permit shall be made on forms furnished by the Floodplain Administrator.
- B. Permit Information Requirements. Upon receiving an application for a Floodplain Use Permit, the Floodplain Administrator may require, where applicable, the applicant submit:
1. Plans in duplicate drawn to scale showing the nature, location, dimensions, and elevation of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing. Specifically, the following information is required:
 - a. Proposed elevation in relation to mean sea level, of the lowest floor (including basement or garage) of all structures, in Zone AO, elevation of existing highest adjacent natural grade and proposed elevation of lowest floor of all structures.
 - b. Proposed elevation in relation to mean sea level to which any non-residential structure will be floodproofed;
 - c. Certification by a registered professional engineer that the floodproofing methods for any non-residential structure meet the floodproofing criteria in Section 5.1.C.3; and,
 - d. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
 2. Where special circumstances necessitate more detailed information, the applicant must furnish any or all of the following as deemed necessary by the Floodplain Administrator for the evaluation of the safety of the proposed use, the effects of the proposed use upon flood flows, and other factors necessary to render a decision on the suitability of the proposed use:
 - a. One or more cross-sections showing the existing channel of the channel, elevation of land areas adjoining each side of the channel, cross-sectional areas to be occupied by the proposed development, and high water information (if available);
 - b. A profile showing the elevation and slope of the bottom of the channel or flow line of the stream or watercourse;

- c. Specifications for building construction and materials, flood proofing, filling, excavating, channel improvements, storage of materials, water supply, sanitary facilities;
 - d. An engineering study prepared by an Arizona registered professional civil engineer outlining the effects of the development will have on the flow of water through the area being developed and the surrounding areas. This study will be for the purpose of evaluating possible flood hazards and shall, where necessary, include consideration of the effects of the development on flood heights, water velocities, direction of flow, sedimentation and /or erosion, volume of flows, channel shape and size, type of channel banks and other items that may be pertinent, and the resultant effects on structures, land, banks, etc. for the adjacent regulatory floodplain and the surrounding area.
3. Any other information as deemed pertinent by the Floodplain Administrator.

C. Permit Issuance Conditions, Notice of Development.

1. It shall be the duty of the Floodplain Administrator, through the County Wide Flood Control District and Floodplain Administration Office of Santa Cruz County to issue the Floodplain Use Permits required by this section. The Floodplain Administrator may request, and shall receive, so far as may be necessary in the discharge of his duties, the assistance and cooperation of all departments, agencies, officials and public employees of Santa Cruz County in the enforcement of this ordinance. No license, permit, or other similar approval for any development which would be in conflict with the provisions of this ordinance shall be issued by any department, official or employee of the county; and any such license, permit or approval, if issued in conflict with the provisions of this ordinance, shall be null and void.
2. The District shall advise any city or town which has assumed jurisdiction over its regulatory floodplains in accordance with Arizona Revised Statute Section §48-3610 in writing, and provide a copy of any development plan or any application which has been filed within the County for a Floodplain Use Permit or variance to develop land in a regulatory floodplain, floodway or erosion hazard area within one mile of the boundary between the District's area of jurisdiction and the jurisdiction of that city or town. The District shall also advise any city or town in writing and provide a copy of any development plan of any major development proposed within a regulatory floodplain, floodway or erosion hazard area which could affect regulatory floodplains, floodways, erosion hazard areas or watercourses within that city's or town's area of jurisdiction. Written notice and a copy of the plan of development shall be sent to any adjacent jurisdiction no later than five working days after having been received by the District.

- D. Specific Permit Conditions Authorized. Any Floodplain Use Permit may be subject to conditions or restrictions designed to reduce or mitigate the potential danger or hazard to life or property resulting from development within the regulatory floodplain, floodway, or erosion hazard areas. The applicant may be required to execute deed restrictions running with the land or be required to post performance bonds, assurances or such other security as may be appropriate and necessary to

assure the performance of the conditions or restrictions that may be imposed. Examples of the conditions that may be imposed include, but are not limited to, the following:

1. Modification of waste disposal and water supply facilities;
 2. Limitations on periods of use and hours of operation;
 3. Institution of operation controls;
 4. Requirements for construction of channel modifications, dikes, levees, and other protective measures;
 5. Elevation of the lowest floor to, or above, the regulatory floor elevation;
 6. Bank protection or armor plating on any proposed fill;
 7. Floodproofing measures for non-residential structures such as the following, which shall be designed to be consistent with an elevation one-half foot greater than the regulatory flood elevation for the particular area, flood velocities, durations, rate of rise, hydrostatic and hydrodynamic forces, and other factors associated with the base flood. The Floodplain Administrator may require the applicant submit a plan or document certified by an Arizona registered professional civil engineer that the floodproofing measures are consistent with an elevation one-half foot greater than the regulatory flood elevation and associated flood factors for the particular area. Examples of floodproofing measures that may be required include, but are not limited to:
 - a. Anchorage to resist floatation and lateral movement;
 - b. Installation of watertight doors, bulkheads and shutters;
 - c. Reinforcement of walls to resist water pressure;
 - d. Use of paint, membrane or mortars to reduce seepage of water through walls;
 - e. Addition of mass or weight to structures to resist floatation;
 - f. Installation of pumps to lower water levels in structures;
 - g. Construction of water supply and waste treatment systems so as to prevent the entrance of floodwaters;
 - h. Pumping facilities for subsurface external foundation wall and basement floor pressures;
 - i. Construction designed to resist rupture or collapse caused by water pressure or floating debris;
 - j. Cutoff valves on sewer lines, or the elimination of gravity flow basement drains.
- E. Permit Denial Conditions. No permit shall be issued for any development which is not in conformance with this ordinance or any provision of law relating to such development. A Floodplain Use Permit may be denied if the proposed development constitutes a danger or hazard to life or property. In making such a determination, the Floodplain Administrator shall consider the following factors:

1. The danger to life, person or property due to increased flood heights, velocities, or redirection of flow caused by the proposed development;
2. The danger that materials may be swept on to other lands;
3. The proposed water supply and/or sanitation systems of any development and the ability of these systems to prevent disease, contamination and unsanitary conditions if they should be flooded or eroded;
4. The susceptibility of the proposed development or its contents to flood or erosion damage and the effects of such damage on the individual owners;
5. The availability of alternative locations for the proposed use on the same property which are not subject to flooding or erosion;
6. The compatibility of the proposed use with existing regulatory floodplain uses and with floodplain management programs anticipated in the foreseeable future;
7. The relationship of the proposed use to any comprehensive plan and floodplain management program for the area;
8. The access to the property line in times of flood for conventional and emergency vehicles;
9. The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters expected at the site under both existing and proposed conditions;
10. Documentation that all necessary permits have been obtained from state and federal agencies;
11. Such other factors which are relevant to the purposes of this ordinance.

F. Permit Revocation. For failure to comply with the terms of the Floodplain Use Permit, Santa Cruz County shall be entitled to revoke the Floodplain Use Permit upon written notice by registered mail or personal delivery to the applicant citing the reasons for revocation. Notice shall be considered received five days after mailing. The person holding the Floodplain Use Permit may request a hearing before the Floodplain Administrator, where the merits of and reasons for revoking the permit are heard, within ten days of the receipt of notice or personal delivery. After considering the issues and facts presented during the hearing, the Floodplain Administrator may revoke a previously issued Floodplain Use Permit. If no request for a hearing is made within ten working days from the receipt of notice or personal delivery, the permit shall be considered revoked. The applicant or any affected party may appeal the decision of the Floodplain Administrator by requesting a hearing before the Floodplain Board in accordance with Section 6 of this ordinance.

G. Certification of Elevation. Prior to either pouring of the first slab, or the finished floor inspection, the applicant shall submit to the Floodplain Administrator an initial certification of elevation, in compliance with the provisions of the Floodplain Use Permit, prepared by either an Arizona registered land surveyor or civil engineer. A final certificate must be prepared just prior to the issuance of the Certificate of Occupancy. Such certification shall be maintained in the office of the Santa Cruz County County-Wide Flood Control District.

4.2 DESIGNATION OF THE FLOODPLAIN ADMINISTRATOR. The General Manager of the Santa Cruz County County-Wide Flood Control District and Floodplain Administration or his designee is hereby appointed to administer, implement, and enforce this ordinance by granting or denying any floodplain use permits in accordance with its provisions.

4.3 DUTIES AND RESPONSIBILITIES OF THE FLOODPLAIN ADMINISTRATOR. Duties of the Floodplain Administrator shall include, but not be limited to:

A. Review all development permits to determine that:

1. The permit requirements of this ordinance have been satisfied;
2. All other required state and federal permits have been obtained;
3. The site is reasonably safe from flooding;
4. The proposed development does not adversely affect the carrying capacity of areas where base flood elevations have been determined but a floodway has not been designated. For purposes of this ordinance, "adversely affects" means the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will increase the water surface elevation of the base flood more than one foot at any point.

B. Use of other base flood data. When base flood elevation data has not been provided in accordance with Section 3.2, the Floodplain Administrator shall obtain, review, and reasonably utilize any base flood elevation data available from a federal, state or other source, in order to administer Section 5.0. Any such information shall be consistent with the requirements of the Federal Emergency Management Agency and the Director of Water Resources.

C. Obtain and maintain for public inspection and make available as needed for Flood Insurance Policies of effecting Increased Cost of Construction Coverage for repetitive loss structures:

1. The certified elevation required in Section 5.1.C.1;
2. The certification requirement in Section 5.1.C.2;
3. The floodproofing certification required in Section 5.1.C.3; and
4. The certified elevation required in Section 5.5.G;
5. Permit records for repair of flood-related damage to structures on a cumulative basis over the life of the structure.

D. When ever a watercourse is to be altered or relocated:

1. Notify adjacent communities and the Arizona Department of Water Resources prior to such alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration through appropriate means;
2. Require the flood carrying capacity of the altered or relocated portion of said watercourse is, at a minimum, maintained.

- E. Within one hundred twenty days after completion of construction of any flood control protective works which changes the rate of flow during the flood or the configuration of the floodplain upstream or downstream from or adjacent to the project, the person or agency responsible for installation of the project shall provide to the governing bodies of all jurisdictions affected by the project a new delineation of all floodplains affected by the project. The new delineation shall be done according to the criteria adopted by the Director of Water Resources.
- F. Advise in writing and provide a copy of any development plan to any city or town having assumed jurisdiction over its floodplains in accordance with A.R.S. §48-3610, of any application for a floodplain use permit or variance to develop land in a regulatory floodplain, floodway or erosion hazard area within one mile of the boundary between the District's area of jurisdiction and the jurisdiction of that city or town. The District shall also advise any city or town in writing and provide a copy of any development plan of any major development proposed within a regulatory floodplain, floodway or erosion hazard area which could affect regulatory floodplains, floodways, erosion hazard areas or watercourses within that city's or town's area of jurisdiction. Written notice and a copy of the plan of development shall be sent to any adjacent jurisdiction no later than three working days after having been received by the District.
- G. Make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazards and/or regulatory floodplains, floodways and erosion hazard areas (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 6.0. In the event presently platted or mapped special flood hazards and/or regulatory floodplains, floodways and erosion hazard areas are different than previously approved special flood hazards and/or regulatory floodplains, floodways and erosion hazard areas, the most recent information shall apply.
- H. Take actions on violations of this ordinance as required in Sections 3.9 through 3.13 herein.
- I. Notify the Administrator and Director of Emergency Management of acquisition by means of annexation, incorporation, or otherwise, of additional areas of jurisdiction.
- J. Collection of Fees as designated and approved by the Floodplain Board.

SECTION 5.0

PROVISIONS FOR FLOOD HAZARD REDUCTION

5.1 STANDARDS OF CONSTRUCTION. In all areas of special flood hazards and regulatory floodplains and erosion hazard areas, the following standards are required:

A. Anchoring

1. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.
2. All manufactured homes shall meet the anchoring standards of Section 5.6.B.

B. Construction Materials and Methods

1. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
2. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
3. All new construction, substantial improvement and other proposed new development shall be constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
4. Require adequate drainage paths around structures guide floodwaters around and away from proposed or existing structures.

C. Elevation and Floodproofing

1. New construction and substantial improvement of any structure shall have the lowest floor, including basement, elevated to or above the regulatory flood elevation. New construction and substantial improvement of any structure located within an area where the floodplain is physically confined within canyon areas is to be elevated a minimum of one foot higher than the regulatory flood elevation. Nonresidential structures may meet the standards in Section 5.1.C.3. Upon the completion of the structure, the elevation shall be certified by an Arizona registered professional civil engineer or land surveyor and provided to the Floodplain Administrator.
2. New construction and substantial improvement of any structure in Zone AO shall have the lowest floor, including basement, higher than the highest adjacent, undisturbed, natural grade by at least one foot higher than the depth number on the Firm, or at least three feet if no depth number is specified. Nonresidential structures may meet the standards in Section 5.1.C.3. Upon the completion of the structure, the elevation shall be certified by an Arizona registered professional civil engineer or land surveyor and provided to the Floodplain Administrator.
3. Nonresidential construction shall either be elevated in conformance with Section 5.1.C.1 or 2., or together with attendant utility and sanitary facilities;

- a. Be floodproofed so that an elevation one-half foot greater than the regulatory flood level the structure is watertight with walls substantially impermeable to the passage of water;
 - b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and
 - c. Be certified by an Arizona registered professional civil engineer that the standards of this subsection are satisfied. Such certifications shall be provided to the Floodplain Administrator.
4. Require, for all new construction and substantial improvements of nonresidential structures, that fully enclosed area below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by an Arizona registered professional civil engineer or architect to meet or exceed the following minimum criteria:
- a. A minimum of two openings, in line with the direction of flow on opposing walls, having a total net area of not less than one and one-half square inches for every square foot of enclosed area subject to flooding shall be provided.
 - b. The bottom of all openings shall be no higher than one-half foot above grade.
 - c. The top of all openings shall be no higher than the base flood elevation.
 - d. Openings may be equipped with screens, louver, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
5. Manufactured homes shall meet the above standards and also the standards in Section 5.6.

5.2 STANDARDS FOR STORAGE OF MATERIALS AND EQUIPMENT

- A. The storage or processing of materials that are, in time of flooding buoyant flammable, explosive, or could be injurious to human, animal or plant life is prohibited.
- B. Storage of other material or equipment may be allowed if not subject to major damage by floods, and if firmly anchored to prevent flotation, or if readily removable from the area within the time available after flood warning.

5.3 STANDARDS FOR UTILITIES

- A. All new or replacement water supply, water treatment and sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from systems into flood waters.
- B. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- C. Waste disposal systems shall not be installed in a regulatory floodway.
- D. Waste disposal systems shall not be installed within the erosion hazard area of any wash.

- E. All utilities and service facilities such as electrical and heating equipment shall be constructed at or above the Regulatory Flood Elevation.

5.4 STANDARDS FOR COMMERCIAL AND INDUSTRIAL DEVELOPEMENTS

- A. Application. These standards shall apply to all commercial and industrial developments where the development areas is either one acre and larger, or will have more than 66 percent impervious area (including structure, concrete work, and paving). This Section does not apply to home occupations, as defined by the Santa Cruz County Development Code, located within single-family residences.
- B. Engineering. A hydrologic and hydraulic report detailing existing undisturbed drainage conditions and proposed full development drainage conditions is to be performed by an Arizona Registered Professional Civil Engineer, and submitted to, and approved by the Floodplain Administrator prior to the approval of a building permit. The amount of runoff generated from the fully developed conditions is not to exceed the amount of runoff generated in the undisturbed state of the property (see Section 5.5.J).
- C. Plans. Plats and development plans to show areas subject to flooding and erosion. All tentative and/or preliminary plats, final plats and development plans submitted shall show location, by survey or photographic methods, of streams, watercourses, canals, irrigation laterals, private ditches, culverts, lakes, or other water features, including those areas subject to flooding or erosion. The plats/plans shall also include the direction of any flow and drainage area, as well as water surface elevations, the limits of inundation, and erosion hazard setback for the base flood if such a flood has a peak flow rate equal or greater than fifty (50) cfs.
- D. Additional Standards. Proposed commercial and industrial developments shall also meet the standards within Section 5.5 Standards for Subdivisions as applicable. The sections that will apply to commercial and industrial developments will be Sections 5.5.B, 5.5D, 5.5.E, 5.5.G, 5.5.H, 5.5.I, 5.5.J, 5.5.K, and 5.5.L.

5.5 STANDARDS FOR SUBDIVISIONS

- A. Suitability of land. Land may not be parceled or subdivided in such a manner to create lots unsuitable for development because of flood or erosion hazards.
- B. Engineering.
 - 1. All drainage channels, natural or manmade, with a peak discharge of 50 cfs or greater, during the base flood event, will have water surface elevations and erosion hazard setbacks calculated in accordance with standard engineering practice.
 - 2. All channels with a peak discharge of 1500 cfs, or greater, during the base flood event, and are not mapped in detail or not mapped at all on the existing FIRM panels (i.e. zones A1-30, or AE), shall have a hydrologic and hydraulic analysis done in accordance with standard engineering practice which shall be submitted to FEMA as part of a Conditional Letter of Map Revision (CLOMR). FEMA approval of the CLOMR must be supplied to the Flood Control District prior to the approval of the subdivision. A copy of all applications, studies, and

correspondence is to be forwarded to the Santa Cruz County Flood Control District.

3. Any new subdivision that proposes to alter any existing floodplains, as shown on the current FIRM panels, must submit a hydrologic and hydraulic analysis done in accordance with standard engineering practice to FEMA as part of a Conditional Letter of Map Revision (CLOMR). FEMA approval of the CLOMR must be supplied to the Flood Control District prior to the approval of the subdivision. A copy of all applications, studies, and correspondence is to be forwarded to the Santa Cruz County Flood Control District.

C. Plats and plans to show areas subject to flooding and erosion. All tentative and/or preliminary plats, final plats and development plans submitted shall show location, by survey or photographic methods, of streams, watercourses, canals, irrigation laterals, private ditches, culverts, lakes, or other water features, including those areas subject to flooding or erosion. The plats/plans shall also include the direction of any flow and drainage area, as well as water surface elevations, the limits of inundation, and erosion hazard setback for the base flood if such a flood has a peak flow rate equal or greater than fifty (50) cfs.

D. Grading and drainage improvement plans:

1. All tentative and/or preliminary plats and development plans shall show proposed grading and improvements for areas which are subject flooding, erosion, or which have drainage problems, and shall also show a description and location of all facilities proposed to alleviate flooding, erosion, or drainage problems within or outside the boundaries of the subdivision or development.
2. All development plans and tentative and/or preliminary plats must be accompanied by conceptual grading plans and conceptual drainage improvement plans as necessary to demonstrate:
 - a. The methods for floodproofing and/or drainage control for the development, including sufficient lot grading information to demonstrate adequate finished pad elevations and/or drainage slopes to protect building foundations;
 - b. That improvements are compatible with the existing upstream and downstream drainage conditions and that any proposed grading and/or grade change will not have an adverse impact on surrounding property;
 - c. The methods of erosion and sediment control;
 - d. The methods of mitigating increased urban peak and volumetric floodwater runoff or discharge on downstream properties created as a result of the development.
 - e. The plans to revegetate disturbed areas, as necessary, to mitigate or re-establish riparian habitat areas, and as erosion and sediment control.
3. Prior to commencement of any site improvements or grading, a grading plan must be submitted to the Santa Cruz County Flood Control District and the Santa Cruz County Building Department for review and approval. Detailed improvement

plans for storm drains or channel improvements must also be submitted to the Flood Control District for review and approval.

E. Floodplain and floodway boundaries – Drainage areas.

1. All final plats and development plans shall indicate the limits of the regulatory floodplains, erosion hazard boundaries and the limits of the federally established regulatory floodplain and floodways, and be delineated in a surveyable manner and certified by an Arizona Registered Land Surveyor.
2. All final plats shall indicate both the drainage areas and their respective base flood peak discharges, with a note contained on the final plat that the drainage areas and base flood peak discharges are provided by the owner for information purposes.

F. Street elevation requirements. Streets required for paved permanent access shall be designed and constructed so that the flow depths over them do not exceed six inches in depth during the base flood. At least one paved permanent access shall be provided to each lot over terrain which can be traversed by conventional motor vehicles in time of flooding. In specific instances at drainage crossings where it can be demonstrated that this requirement is either impractical, based upon low hazard to life and property, or where construction of a drainage crossing may create problems which override the corresponding benefits, this requirement may be waived by the Floodplain Administrator. Fill may be used for streets in areas subject to flooding provided such fill does not unduly increase flood heights. The developers are required to provide profiles and elevations of streets for areas subject to flooding.

G. Building site location restrictions are as follows:

1. Land which contains areas within a regulatory floodplain or erosion hazard area shall not be platted for residential occupancy of building sites unless each lot contains a building site, either natural or man-made, which is not subject to flooding or erosion from the base flood.
2. Building sites are to be located outside of the regulatory floodplain if possible.
3. No structures or fill is to be placed within the regulatory floodway.
4. Structures shall be constructed/placed in accordance with the erosion hazard setback as described in Section 5.10.
5. In regulatory floodplain areas where fill is to be used to raise the elevation of a building site, the building shall be located not less than twenty-five feet landward from the edge of the fill unless a study/analysis prepared by an Arizona Registered Professional Civil Engineer demonstrates a lesser distance is acceptable. No fill shall be placed in any regulatory floodplain, nor shall any fill be placed where it diverts, retards or obstructs the flow of water to such an extent to create a danger or hazard to life or property.
6. Any building built within a regulatory floodplain shall be constructed so as to place the lowest floor (finished or not) of the structure at or above the regulatory flood elevation, and shall be certified as required by Section 5.1.C.

7. Structure designed or utilized for human habitation, whether full-time or part-time, shall only be permitted where the product of the flow depth d , in feet, time the square of the flow velocity v , in feet per second, of the surrounding floodwaters of the base flood does not exceed the numerical value of eighteen ($dv^2 \leq 18$) for a period in excess of thirty minutes, or the surrounding floodwaters of the base flood do not exceed three feet in depth.
- H. Setback from channels. Along reaches of watercourses where hazards from eroding banks or channel meandering are considered by the Floodplain Administrator to be severe, special engineering studies prepared by an Arizona Registered Professional Civil Engineer shall be required of the property owner or developer, and requirements for setbacks from banks of watercourses and/or other protection measures shall be established in accordance with those approved studies. Also see Section 5.10.
- I. Right-of-way for drainage.
1. Whenever a subdivision plat or development plan contains a watercourse which is regulated by this ordinance, all rights-of-way associated with the watercourse shall be designated "Drainageway".
 2. If the watercourse is an improved watercourse with a peak flow of at least 10,000 cubic feet per second during the 100-year flood, the drainageway shall include the channel, the channel improvements, and a fifty-foot-wide area measured outward from the front face of the top of the channel or bank protection for Santa Cruz County or for Santa Cruz County Flood Control District use.
 3. If the watercourse is an improved watercourse, the drainageway shall, at a minimum, include the channel, the channel improvements, and necessary maintenance access.
 4. If the watercourse is to remain natural, the drainageway shall, at a minimum, be the boundaries of the regulatory floodplain.
 5. Along watercourses where the peak discharge during the base flood is ten thousand cubic feet per second or greater, the drainageway shall be dedicated in fee simple to the Santa Cruz County Flood Control District.
 6. Along other watercourses, the Floodplain Administrator shall determine whether it is necessary for the Santa Cruz County Flood Control District to have control of the drainageway. If the Floodplain Administrator determines that public control is necessary, the owner shall dedicate the drainageway by granting an easement.
- J. Runoff detention and retention systems.
1. All proposed residential densities of three or more units per acre and all proposed commercial and industrial developments greater than one acre in size or more than 66 percent impervious area (including structure, concrete work, and paving) shall provide some method of peak or volumetric runoff reduction. The amount of reduction shall, at a minimum, reduce the peak or volumetric runoff of the base flood event to the undeveloped conditions, based on a study prepared by an Arizona Registered Professional Civil Engineer.

2. Areas deemed by the Floodplain Administrator to be unsuitable for additional development because of the high probability of increased flooding, or flooding of existing improvements or property not previously flooded, or ponding of floodwater, may be developed further only upon the incorporation of adequate detention/retention systems or flood control facilities, as reviewed and approved by the Floodplain Administrator. Drainage basins, which have not been previously identified, shall be subject to the provisions of this section. These detention or retention systems or flood control facilities shall be incorporated into any and all future basin-development proposals regardless of size or land use density.
 3. Structural flood control measures may be proposed in conjunction with or in place of detention/retention systems if it can be clearly demonstrated that such measures will not alter the water and sediment equilibrium of the affected watercourse and will mitigate environmental impacts. Appropriate structural flood control measures, such as channelization to a logical conclusion downstream of the proposed development and/or improvements to existing off-site flood control systems within the effected drainage or stream reach, shall be completed in accordance with plans reviewed and approved by the Floodplain Administrator.
 4. Detention/retention systems will, at a minimum, meet the Arizona State Standard #8-99 for Stormwater Detention/Retention, all subsequent revisions of said State Standard and all of the requirements listed in this subsection.
- K. Cost recovery for drainage or flood control improvements. The Floodplain Board may establish a cost recovery system or fee system for the improvement of installation of public flood control systems. The purpose of the fee is to provide a method for off-site improvements necessary to mitigate the effect of urbanization and to provide a systematic approach for the construction of public flood control improvements. If such a system is adopted it shall demonstrate that the fee will in some manner benefit the property from which the fee is collected and be applied equitably to all property in proportion to floodwaters generated by urban use of the property. The fees will also be restricted to providing flood control improvements necessary for the allowed use of the properties from which the fee is collected, and the fees shall be reasonably related to the actual cost of providing flood control improvements beneficial to the site or surrounding area. The fee schedule as established by the Floodplain Board shall be attached to this ordinance as Appendix.
- L. Drainage channels.
1. Drainage channels shall not be fully lined. Improved channel bottoms shall remain natural.
 2. Perimeter channels that route flow around the outer edge of the development should be prohibited in all areas where there is an established natural channel.
 3. In unusual conditions, on a case-by-case basis, lined and/or perimeter channels may be approved for use by the Floodplain Administrator.

5.6 STANDARDS FOR MANUFACTURED HOMES AND MANUFACTURED HOME PARKS AND SUBDIVISIONS.

A. Permit requirements and exemptions.

1. From the effective date of this ordinance, it shall be unlawful to place a manufactured home within a regulatory floodplain or erosion hazard area for more than one hundred eighty consecutive days without first applying for and obtaining a Floodplain Use Permit from the Floodplain Administrator, and then complying with each and every written term of the permit. If the 180 days has expired without the owner applying for and obtaining a Floodplain Use Permit, the manufactured home is to be removed from the floodplain or erosion hazard area immediately. However, no such permit shall be required for any repairs or alterations for which the value of the materials and labor thereon does not exceed one thousand five hundred dollars, except for those improvements which obstruct the flow of floodwaters. For the purpose of determining the value of any such repairs or alterations, the normal retail value of materials and the reasonable value of labor performed shall be used. Although no Floodplain Use Permit is required, all other provisions of this ordinance shall be observed in the performance of said repairs or alterations.
2. Repairs or alterations shall not be done in a piecemeal fashion, or phased, for the purpose of avoiding applying for a permit when the total cost of said work is in excess of one thousand five hundred dollars.

B. Anchoring requirements. All manufactured homes and additions to manufactured homes located within a regulatory floodplain or erosion hazard area shall be anchored to resist flotation, collapse or lateral movement by one of the following methods:

1. By providing an anchoring system designed to withstand horizontal forces of twenty-five pounds per square foot and uplift forces of fifteen pounds per square foot; or
2. By providing over-the-top and frame ties to ground anchors. Specifically:
 - a. Over-the-top ties be provided at each of the four corners of the manufactured home, with two additional ties per side at intermediate locations, except that manufactured homes less than fifty feet long require only one additional tie per side.
 - b. Frame ties be provided at each corner of the home with five additional ties per side at intermediate points, except that manufactured homes less than fifty feet long require only four additional tie per side.
 - c. All components of the anchoring system be capable of carrying a force of four thousand eight hundred pounds.

C. Location and placement conditions. Where any of the following exists:

1. Manufactured homes not placed in manufactured home parks or subdivisions;
2. New manufactured home parks or subdivisions;
3. Expansions to existing manufactured home parks or subdivisions; and

4. Repair, reconstruction or improvements to existing manufactured home parks of subdivisions that equal or exceed fifty percent of the value of the streets, utilities and pads before the repair, reconstruction or improvement commenced; are located within a regulatory floodplain or erosion hazard area.

The following standards shall apply:

- a. Adequate surface drainage and access for the hauler shall be provided;
 - b. All manufactured homes shall be placed on pads or lots elevated on compacted fill which shall be, at a minimum, at or above the base flood elevation or on a stem wall or pilings so that the bottom of the structural frame or the lowest point of any attached appliances, which ever is lower, is at or above the regulatory flood elevation. If elevated on pilings:
 - i. The lots shall be large enough to permit handicap access;
 - ii. The pilings shall be placed in stable soil to a depth of at least three feet, and no more than ten feet apart; and
 - iii. Structure designed or utilized for human habitation, whether full-time or part-time, shall only be permitted where the product of the flow depth (d), in feet, time the square of the flow velocity (v), in feet per second, of the surrounding floodwaters of the base flood does not exceed the numerical value of eighteen ($dv^2 \leq 18$) for a period in excess of thirty minutes, or the surrounding floodwaters of the base flood do not exceed three feet in depth.
 - c. All manufactured homes shall be placed such that the long axis of the structure is parallel to the direction of flow.
- D. Setback from channels. Along reaches of watercourses where hazards from eroding banks or channel meandering are considered by the Floodplain Administrator to be severe, special engineering studies prepared by an Arizona Registered Professional Civil Engineer shall be required of the property owner or developer, and requirements for setbacks from banks of watercourses and/or other protection measures shall be established in accordance with those approved studies. Also see Section 5.10.
- E. Certification requirements.
1. Certification that the installation of a manufactured home meets all of the requirements of this section is required. Such certification shall be provided by the person installing the manufactured home, the owner, the developer of the manufactured home park or subdivision, or an agency regulating manufactured home placement, which ever is deemed appropriate by the Floodplain Administrator.
 2. Certification of elevations listed on the Floodplain Use Permit shall be prepared by an Arizona Registered Land Surveyor and provided to the Floodplain Administrator prior to the habitation of the structure.

- 5.7 STANDARDS FOR RECREATIONAL VEHICLES.** All recreational vehicles placed on site for temporary occupation, within a special flood hazard area, regulatory floodplain or erosion hazard area, will either:
- A. Be on site for fewer than 180 consecutive days, and be fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions, or
 - B. Meet the permit requirements of Section 4 of this ordinance and the elevation and anchoring requirements for manufactured homes in Section 5.6.
- 5.8 FLOODWAYS.** Located within areas of special flood hazard established in Section 3.2 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, no structures or fill of any type will be allowed to be constructed or placed.
- 5.9 FLOODWAY FRINGE AREAS.** The following conditions shall apply to all uses within the floodway fringe area:
- A. Conditions applicable to all uses.
 - 1. No development, storage of materials or equipment, or other uses shall be permitted which, acting alone or in combination with existing or future uses, create a danger or hazard to life or property.
 - 2. Consideration of the effects of a proposed use or development shall be based on the assumption that there will be an equal degree of encroachment extending for a significant reach on both sides of the watercourse.
 - 3. The maximum affect of allowed encroachment will not exceed a one-half foot increase in the water surface elevation of the base flood event.
 - B. *Fill and fill materials.*
 - 1. Any fill proposed to be deposited in the floodway fringe must be shown to have some beneficial purpose and the amount thereof not greater than necessary to achieve that purpose, as demonstrated by a plan submitted by the owner showing the uses to which the filled land will be put and the final dimensions of the proposed fill or other materials.
 - 2. Such fill or other materials shall be protected against erosion by riprap, vegetative cover, bulk heading or other approved methods.
 - C. Structures – Construction Restrictions.
 - 1. Structures shall be constructed so as to offer minimum obstruction to the flow of floodwaters. Whenever possible, structures shall be constructed with the same alignment as the direction of flood flow and so far as practicable shall be placed approximately on the same alignment as those adjoining structures.
 - 2. Structures shall meet all other restrictions, as applicable, within Section 5 of this Ordinance, especially Sections 5.1, 5.4, 5.5.G, 5.5.H, and 5.10.
 - D. Sand, gravel and other excavations.

1. Extraction of sand, gravel and other materials is allowed, if permitted by all other applicable Federal, State, and local regulations, within the floodway fringe and erosion hazard areas, provided that excavations are not so located nor of such depth, or width, or length, or combination of depth-width-length as to present a hazard to structures (including, but not limited to roads, bridges, culverts, and utilities), to banks or watercourses, to other property, or which adversely affect groundwater recharge.
2. There shall be no stockpiling of material or tailings within the floodway fringe areas that may obstruct, divert or retard the flow of floodwaters except as reviewed and approved by the Floodplain Administrator or an individual Floodplain Use Permit basis.
3. Due to the rapidly changing hydraulic characteristics of watercourses in Santa Cruz County, and the effects excavations have on these characteristics, Floodplain Use Permits for excavations shall only be issued for a limited period of time, not to exceed one year, subject to annual renewal upon review by the Floodplain Administrator.
4. In addition to those conditions provided for elsewhere, Floodplain Use Permit for excavations may impose conditions regarding the area and location in which excavations are allowed, the maximum amount of material to be excavated, and other reasonable restraints on methods of operation, including time restraints.
5. Any extraction of sand and gravel or related materials in the floodway fringe or erosion hazard areas shall be allowed only if a reclamation plan is also provided to reclaim the excavated areas so that all adverse affects of extraction are mitigated. The plan shall also contain a timetable and financial assurances for accomplishing reclamation.
6. The Floodplain Administrator may require bonds or other financial assurances appropriate for the sand and gravel extraction operation.
7. The Floodplain Administrator may require hydrologic, hydraulic and geomorphic analyses addressing the existing conditions as well as the impacts under the proposed method of operation.
8. The Floodplain Management Board may grant variances as provided by Section 6 of this ordinance.

5.10 FLOOD RELATED EROSION-PRONE (EROSION HAZARAD) AREAS AND BUILDING SETBACKS.

- A. The Floodplain Administrator shall require permits for proposed construction and other development within all flood-related erosion-prone areas as known to the community.
- B. Permit applications shall be reviewed to determine whether the proposed site alterations and improvements will be reasonably safe from flood-related erosion and will not cause flood-related erosion hazards or otherwise aggravate the existing hazard.

- C. If a proposed development is found to be in the path of flood-related erosion or would increase the erosion hazard, such improvements shall be relocated or adequate protective measures shall be taken to avoid aggravating the existing erosion hazard.
- D. Within Zone E on the Flood Insurance Rate Map, a setback is required for all new development from the lake, bay, riverfront or other body of water to create a safety buffer consisting of a natural vegetative or contour strip. This buffer shall be designated according to the flood-related erosion hazard and erosion rate, in relation to the *anticipated useful life of structures*, and depending upon the geologic, hydrologic, topographic, and climatic characteristics of the land. The buffer may be used for suitable open space purposes, such as for agricultural, forestry, outdoor recreation and wildlife habitat areas, and for other activities using temporary and portable structures only.
- E. All buildings are required to be set back a minimum distance from the top of bank of any watercourse, where approved bank protection is not provided, as follows:
 1. The building setback along any straight channel reaches, or reaches with minor curvature, is to equal the square root of the peak flow of the base flood (setback = $(Q_{100})^{0.5}$).
 2. The building setback along any channel reach with obvious curvature or channel bend, or areas where the embankment is highly susceptible to erosion, is to equal the two and a half times the square root of the peak flow of the base flood (setback = $2.5(Q_{100})^{0.5}$).
 3. The building setback for the Santa Cruz River shall be five hundred feet.
 4. Along watercourses where unusual conditions do exist, building setbacks shall be established on a case-by-case basis by the Floodplain Administrator, unless an engineering study which establishes safe limits is performed by an Arizona Registered Professional Civil Engineer and is approved by the Floodplain Administrator. When determining building setback requirements, the Floodplain Administrator shall consider danger to life and property due to existing flood heights or velocities and historic channel meandering. Unusual conditions include, but are not limited to, historic meandering of the watercourse, large excavation pits, poorly defined or poorly consolidated banks, natural channel armoring, proximity to stabilized structures such as bridges or rock outcrops, and channel changes in the direction, amount, and velocity of the flow of waters within the watercourse.

5.11 VEHICULAR ACCESS. It is recognized that private vehicular access may become impassible to ordinary and emergency vehicles during times of flooding. It is the intent of this section to allocate the responsibility for private vehicular access which crosses a regulatory floodplain.

- A. This section shall apply in all situations where private vehicular access crosses any regulatory floodplain located between the point where the private access leaves a paved, publicly maintained roadway and the end of the private access.
- B. In all situations where private vehicular access crosses a regulatory floodplain located between the point where the private access leaves a paved, publicly maintained

roadway and the end of the private access, the owner of the property requiring the private vehicular access shall:

1. Construct a private vehicular access in such a manner that it is permanent and is over terrain which can be traversed by conventional motor vehicles during a base flood; or
2. Execute and record a covenant running with the land, enforceable by Santa Cruz County and the Santa Cruz County Flood Control District, which contains the following:
 - a. An acknowledgement that the private vehicular access may be impassible to conventional motor vehicles and emergency vehicles in times of flooding,
 - b. A hold-harmless provision, holding Santa Cruz County and the Santa Cruz County Flood Control District harmless from and against all injuries and damages resulting from traversing or attempting to traverse the private vehicular access during times of flooding, and
 - c. The covenantor, successors and assigns assume the responsibility to either erect and maintain signs stating **“DO NOT ENTER WHEN FLOODED”**, or notify users of the private vehicular access that it may be impassible during times of flooding.

5.12 WATERCOURSE AND RIPARIAN HABITAT. Santa Cruz County and the Santa Cruz County Flood Control District recognize the environmental, recreational, and flood control values of riparian vegetation along watercourses and floodplains. Where ever possible, riparian vegetation should be left as undisturbed as possible. If it is necessary to disturb riparian vegetation, the property owner, or developer, shall mitigate the disturbance by replanting the appropriate flora in an area, adjacent to the existing undisturbed habitat, equal in size to the area of disturbance, per the direction of the Floodplain Administrator.

SECTION 6.0
VARIANCES AND APPEALS

- 6.1 NATURE OF VARIANCES.** The variance criteria set forth in this section of the ordinance are based on the general principle of zoning law that variances pertain to a piece of property and are not personal in nature. A variance may be granted for a parcel of property with physical characteristics so unusual that complying with the requirements of this ordinance would create an exceptional hardship to the applicant or the surrounding property owners. The characteristics must be unique to the property and not be shared by adjacent parcels. The unique characteristic must pertain to the land itself, not to the structure, its inhabitants, or the property owners.

It is the duty of Santa Cruz County to help protect its citizens from flooding. This need is so compelling and the implications of the cost of insuring a structure built below the regulatory flood elevation are so serious that variances from the flood elevation or from other requirements in the flood ordinance are quite rare. The long-term goal of preventing and reducing flood loss and damage can only be met if variances are strictly limited. Therefore, the variance guidelines provided in this ordinance are more detailed and contain multiple provisions that must be met before a variance can be properly granted. The criteria are designed to screen out those situations in which alternatives other than a variance are more appropriate. A variance is subject to conditions to ensure the variance does not constitute a grant of special privileges inconsistent with the limitations on similar property in a special flood hazard area, regulatory floodplain, or erosion hazard area.

6.2 APPEAL BOARD.

- A. The Floodplain Board of Santa Cruz County shall hear and decide appeals and requests for variances from the requirements of this ordinance.
- B. The Floodplain Board shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the Floodplain Administrator in the enforcement or administration of this ordinance.
- C. In passing upon such applications, the Floodplain Board shall consider all technical evaluations, all relevant factors, standards specified in other sections of this ordinance, and:
 - 1. The danger that materials may be swept onto other lands to the injury of others;
 - 2. The danger of life and property due to flooding or erosion damage;
 - 3. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - 4. The importance of the services provided by the proposed facility to the community;
 - 5. The necessity to the facility of a waterfront location, where applicable;
 - 6. The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
 - 7. The compatibility of the proposed use with existing and anticipated development;

8. The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
 9. The safety of access to the property in time of flood for ordinary and emergency vehicles;
 10. The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site; and,
 11. The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water system, and streets and bridges.
- D. Upon consideration of the factors of Section 6.2.C and the purposes of this ordinance, the Floodplain Board may attach such conditions to the granting of variances, as it deems necessary to further the purposes of this ordinance.
- E. Any applicant to whom a variance is granted shall be given written notice over the signature of a the Chairperson of the Floodplain Board that:
1. The issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage, and
 2. Such construction below the base flood level increases risks to life and property.
- Such notification shall be maintained with a record of all variance actions as required in Paragraph 6.2.F. of this ordinance. Such notice will also state that the land upon which the variance is granted shall be ineligible for exchange of land pursuant to any flood relocation and land exchange program. A copy of the notice shall be recorded by the Floodplain Board in the office of the Santa Cruz County Recorder and shall be recorded in a manner so that it appears in the chain of title of the affected parcel of land.
- F. The Floodplain Administrator shall maintain a record of all variance actions, including justification for their issuance, and report such variances issued in its biennial report submitted to the Federal Emergency Management Agency.
- G. The District shall advise any city or town which has assumed jurisdiction over its special flood hazard areas, regulatory floodplains and erosion hazard areas in accordance with A.R.S. Section 48-3610 in writing and provide a copy of any development plan or any application which has been filed with the County for a Floodplain Use Permit, appeal or variance to develop land in a floodplain or floodway within one mile of the boundary between the District's area of jurisdiction and the jurisdiction of that city or town. The District shall also advise any city or town in writing and provide a copy of any development plan of any major development proposed within a regulatory floodplain or floodway which could affect regulatory floodplains, floodways or watercourses within that city's or town's area of jurisdiction. Written notice and copy of the plan of development shall be sent to any adjacent jurisdiction no later than five working days after having been received by the District.

6.3 CONDITIONS FOR VARIANCES

- A. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing the procedures of Sections 4 and 5 of this ordinance have been fully considered. As the lot size increases beyond one-half acre, the technical justification required for issuing the variance increases.
- B. Variances may be issued for the repair, rehabilitation or restoration of structures listed in the National Register of Historic Places or the State Inventory of Historic Places, upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
- C. Variances shall not be issued within any designated floodway.
- D. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- E. Variances shall only be issued upon:
 - 1. A determination that the variance is the minimum necessary, considering the flood hazards to afford relief;
 - 2. A determination of good and sufficient cause;
 - 3. A determination that failure to grant the variance would result in exceptional hardship to the applicant;
 - 4. A showing that the use cannot perform its intended purpose unless it is located or carried out in close proximity to water. This includes only facilities defined in Section 2.0 of this ordinance in the definition of "Functionally Dependent Use"; and
 - 5. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, result in a threat to the physical safety of any individual, extraordinary public expense, create nuisances, cause fraud on or victimization of, the public, or conflict with existing local laws or ordinances.

6.4 FILING OF APPEALS AND REQUEST FOR VARIANCES

- A. Any property owner appealing any written decision concerning the interpretation or administration of this ordinance shall first appeal in writing to the Floodplain Administrator, within ten days of the written decision.
- B. The Floodplain Administrator shall make a written response within fifteen working days of receipt of the appeal. Within ten working days of receipt of the written appeal the Floodplain Administrator may request such additional information as deemed necessary in order to render a written decision.
- C. Any property owner aggrieved by the written decision of the Floodplain Administrator may file with the Clerk of the Board a written appeal or request for variance, within ten days of the Floodplain Administrator's written decision, which shall be heard by the Floodplain Board of Santa Cruz County.

6.5 HEARING REQUIREMENTS

- A. The Floodplain Board shall hold a hearing concerning the appeal or request for variance within forty-five days after the written appeal or request for variance is received by the Clerk of the Board, and has been deemed to be complete. Continuance of the hearing may be granted for good cause.
- B. The appeal or request for variance shall contain a detailed explanation of all matters in dispute, and the Floodplain Board, through the Floodplain Administrator, may require the submission of such additional information it deems necessary.
- C. The hearing shall be conducted in an informal manner. The Floodplain Board shall not be bound by the technical rules of evidence in the conduct of such hearings. All parties to the hearing shall have the right to present evidence in support of or in opposition to the decision of the Floodplain Administrator.
- D. The Floodplain Board shall render its decision within thirty days of the close of the hearing.
- E. The Floodplain Board may meet monthly or as such times as it deems necessary for the transaction of business, including the hearing of appeals and request of variances.
- F. The Floodplain Board may refer matters of a higher technical nature, where an appeal or request for variance is made to the Floodplain Board, to a technical review board, which shall make findings and recommendations to the Floodplain Board for decision. The technical review board shall consist of three Arizona Registered Professional Engineers, in good standing, one named by the Floodplain Administrator, one by the applicant for appeal or variance, and one named by the members. This review board shall not be permanent in nature, but shall be formed as required to hear individual appeals or request for variance.
- G. Should a technical review board be appointed pursuant to subsection F of this section, the hearing required in section 6.5.A may be continued up to an additional forty-five days or such time as is necessary for the technical review board to make its findings and recommendations to the Floodplain Board.

SECTION 7.0
EFFECTIVE DATE

The effective date of this ordinance shall be June 1, 2001.

PASSED AND AOPTED THIS 1ST DAY OF MAY, 2001.

Robert Damon, Chairman
Santa Cruz County
Board of Supervisors

Manuel Ruiz
Vice-Chairman

John Maynard
Member

ATTEST:

Melinda Meek
Clerk Of the Board

APPROVED AS TO FORM:

Holly J. Hawn
Deputy County Attorney