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MEMORANDUM OF UNDERSTANDING
BETWEEN THE U.S. BUREAU OF RECLAMATION
AND
THE U.S. FISH AND WILDLIFE SERVICE
PROVIDING FOR
PROJECT AND ACQUIRED WATER SUPPLIES
TO
THE SACRAMENTO, DELEVAN, COLUSA, AND SUTTER
NATIONAL WILDLIFE REFUGES
CALIFORNIA

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14 THIS MEMORANDUM OF UNDERSTANDING (MOU), made this 19th day
15 of January, 2001, by and between THE UNITED STATES BUREAU OF
16 RECLAMATION (Reclamation), and THE U.S. FISH AND WILDLIFE SERVICE (Service),
17 hereinafter called the "parties," defines the parties' roles and responsibilities to meet the
18 requirements of Section 3406(d) of the Central Valley Project Improvement Act of October 30,
19 1992, Title XXXIV of Pub. L. No. 102-575 (CVPIA) which states, in pertinent part, "... the
20 Secretary shall provide, either directly or through contractual agreements with other
21 appropriate parties, firm water supplies of suitable quality to maintain and improve wetland
22 habitat areas on units of the National Wildlife Refuge System in the Central Valley of
23 California; ..."

24 EXPLANATORY RECITALS

25 WHEREAS, the United States has constructed and is operating the Central
26 Valley Project, California (Project), for diversion, storage, carriage, and distribution of the
27 waters of the Sacramento River, the American River, the Trinity River, and the San Joaquin
28 River and their tributaries for the following beneficial uses, including, but not limited to, flood

29 control, irrigation, municipal, domestic, industrial water service, the protection, restoration
30 and enhancement of fish, and wildlife, and associated habitats in the Central Valley, the
31 generation and distribution of electric energy, salinity control, and navigation; and

32 WHEREAS, the wetlands of the Central Valley have declined to approximately
33 300,000 acres and these remaining wetlands provide critical wildlife habitat and other
34 environmental benefits, and important recreational and educational opportunities; and

35 WHEREAS, the Bureau of Reclamation's 1989 Refuge Water Supply Report
36 concluded that "... it is clear that each refuge requires a dependable supply of good quality
37 water to facilitate proper wetland habitat management for the migratory birds of the Pacific
38 Flyway and resident wildlife and flora."; and

39 WHEREAS, Section 3406(d) of the CVPIA requires the Secretary to provide
40 firm water supplies of suitable quality, through long-term contractual agreements with
41 appropriate parties, to maintain and improve certain wetland habitat areas in the Central Valley
42 in furtherance of the objectives of the Central Valley Habitat Joint Venture and the Central
43 Valley Project to protect, restore and enhance fish and wildlife and associated habitats; and

44 WHEREAS, the directives of Section 3406(d) of the CVPIA have been carried
45 out through a cooperative and collaborative effort between the Bureau of Reclamation and Fish
46 and Wildlife Service, acting for the Secretary of the Interior, the California Department of
47 Fish and Game, the Grassland Water District, and the Central Valley Habitat Joint Venture
48 partners; and this cooperative and collaborative effort is expected to continue; and

49 WHEREAS, Reclamation intends to use Project facilities, in part, to provide
50 firm water supplies of suitable quality to maintain and improve the Refuges; and

51 WHEREAS, the Service has demonstrated to the satisfaction of Reclamation
52 that the Service has fully utilized the water supplies available to it for reasonable and beneficial
53 use for fish and wildlife preservation and enhancement (wetland management) and/or
54 Reclamation has concluded through the Bureau of Reclamation's 1989 Refuge Water Supply
55 Report and the San Joaquin Basin Action Plan/Kesterson Mitigation Action Plan Report that
56 the Service has projected future demand for water use such that the Service has the capability
57 and expects to fully utilize for reasonable and beneficial use the quantity of water to be made
58 available to it pursuant to this MOU; and

59 WHEREAS, Reclamation and the Service are willing to execute this MOU
60 pursuant to subsection 3406(d) of the CVPIA on the terms and conditions set forth below;

61 NOW, THEREFORE, in consideration of the mutual and dependent covenants
62 herein contained, it is hereby mutually agreed by the parties hereto as follows:

63 DEFINITIONS

64 1. When used herein unless otherwise distinctly expressed, or manifestly
65 incompatible with the intent of the parties or expressed in this MOU, the term:

66 (a) "Calendar Year" shall mean the period January 1 through December 31,
67 both dates inclusive;

68 (b) "Service's Boundary" shall mean the Refuge(s) to which the Service is
69 permitted to provide Delivered Water under this MOU as identified in Exhibit "A". Exhibit
70 "A" may be revised without amending this MOU upon mutual agreement of the Service and
71 Reclamation;

72 (c) Omitted

73 (d) "Critically Dry Year" shall mean any Year in which either of the
74 following eventualities exists:

75 (1) The forecasted full natural inflow to Shasta Lake for the current
76 water year (October 1 of the preceding Calendar Year through September 30 of the current
77 Calendar Year), as such forecast is made by Reclamation, on or before February 20, and
78 reviewed as frequently thereafter as conditions and information warrant, is equal to or less
79 than 3,200,000 acre feet: or

80 (2) The total accumulated actual deficiencies below 4,000,000 acre-
81 feet in the immediately prior water year or series of successive prior water years, each of
82 which had inflows of less than 4,000,000 acre-feet, together with the forecasted deficiency for
83 the current water year exceed 800,000 acre-feet;

84 For the purpose of determining a Critically Dry Year, the computed
85 inflow to Shasta Lake under present upstream development above Shasta Lake shall be used as
86 the full natural inflow to Shasta Lake. In the event that major construction completed above
87 Shasta Lake materially alters the present regimen of the stream systems contributing to Shasta
88 Lake, the computed inflow to Shasta Lake used to define a Critically Dry Year will be
89 adjusted to eliminate the effect of such material alterations.

90 After consultation with the State, the National Weather Service, and
91 other recognized forecasting agencies, Reclamation shall select the forecast to be used and will
92 make the details of it available to the Service. The same forecast used by Reclamation for
93 operation of the Project shall be used to make forecasts hereunder.

94 (e) "CVPIA" shall mean the Central Valley Project Improvement
95 Act, Title XXXIV of the Act of October 30, 1992 (106 Stat. 4706);

96 (f) "Delivered Water" shall mean the Level 2 Water Supplies and the
97 Incremental Level 4 Water Supplies diverted by the Service pursuant to this MOU at the
98 Point(s) of Delivery in accordance with Article 4(c) of this MOU;

99 (g) "Hydrologic Circumstances" shall mean the conditions described in
100 subdivision (d) of this Article;

101 (h) "Incremental Level 4 Water Supplies" shall mean the difference between
102 the Level 2 Water Supplies and the Level 4 Water Supplies depicted in Exhibit "B";

103 (i) "Level 2 Water Supplies" shall mean the quantities of water referred to
104 in section 3406 (d)(1) of the CVPIA and depicted in Exhibit "B" of this MOU;

105 (j) "Level 4 Water Supplies" shall mean the quantities of water referred to
106 in section 3406 (d)(2) of the CVPIA and depicted in Exhibit "B" of this MOU;

107 (k) "Non-Project Facilities" shall mean any non-Project water conveyance or
108 storage facilities;

109 (l) "Non-Project Water" shall mean water or water rights, other than
110 "Project Water", acquired, appropriated by, transferred to or assigned to the Service or,
111 transferred to the United States for delivery to one or more of the Service's Refuges, as
112 identified in Exhibit "B";

113 (m) "Point(s) of Delivery" shall mean the location(s) established and revised
114 pursuant to Article 5(a) of this MOU , at which Level 2 Water Supplies of Project Water and
115 Incremental Level 4 Water Supplies are deemed to be delivered to the Service and at which the
116 Service shall assume the responsibility for the further control, carriage, handling, use, disposal
117 or distribution of such water supplies so long as such water supplies are being used in
118 accordance with the terms and conditions of this MOU;

119 (n) "Project" shall mean the Central Valley Project owned by the United
120 States and managed by the Department of the Interior, Bureau of Reclamation;

121 (o) "Project Water" shall mean all water that is developed, diverted, stored,
122 or delivered by the Secretary in accordance with the statutes authorizing the Central Valley
123 Project and in accordance with the terms and conditions of applicable water rights acquired
124 pursuant to California law;

125 (p) "Refuge(s)" shall mean the lands in the units of the National Wildlife
126 Refuge System in the Central Valley of California; Gray Lodge, Los Banos, Volta, North
127 Grasslands and Mendota state wildlife management areas; and the Grassland Resource
128 Conservation District all identified in the Refuge Water Supply Report and the land(s)
129 identified in the San Joaquin Basin Action Plan/Kesterson Mitigation Action Plan Report
130 prepared by the Bureau of Reclamation as set forth in Section 3406(d) of the CVPIA and/or as
131 revised in accordance with subdivision (b) of this Article;

132 (q) "Refuge Water Supply Report" shall mean the report issued by the Mid-
133 Pacific Region of the Bureau of Reclamation of the United States Department of the Interior
134 entitled "Report on Refuge Water Supply Investigations, Central Valley Hydrologic Basin,
135 California" (March 1989);

136 (r) "Secretary" shall mean the Secretary of the Interior, a duly appointed
137 successor, or an authorized representative acting pursuant to any authority of the Secretary
138 through any agency of the Department of the Interior;

139 (s) "Year" shall mean the period from and including March 1 of
140 each Calendar Year through the last day of February of the following Calendar Year;

TERM OF MOU

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2. (a) This MOU shall be effective on March 1, 2001 and shall remain in effect through February 28, 2026.

(b) Upon request by the Service, this MOU shall be renewed for successive periods of twenty-five (25) years each, subject to the terms and conditions mutually agreeable to the parties. The Service shall request renewal of the MOU at least two (2) years prior to the date on which this MOU expires.

WATER TO BE MADE AVAILABLE AND DELIVERED TO THE SERVICE

3. (a) During each Year, consistent with State water rights, permits and licenses, federal law, and subject to the provisions set forth in Articles 8 and 9 of this MOU, Reclamation shall make available at the established Point(s) of Delivery, and/or convey to the Service the maximum quantities of Project Water and Non-Project Water, respectively, required to provide each of the Refuges with the Level 2 Water Supplies set forth in Exhibit "B" and the Incremental Level 4 Water Supplies set forth in Exhibit "B". The quantities of Level 2 Water Supplies and Incremental Level 4 Water Supplies made available and/or conveyed to the Service shall be scheduled in accordance with the provisions of Article 4 of this MOU; Provided, that, Section 3406(d)(2) of the CVPIA provides that the Incremental Level 4 Water Supplies shall be acquired in cooperation with the State of California and in consultation with the Central Valley Habitat Joint Venture and other interests in cumulating increments of not less than ten percent per annum, from the date the CVPIA was enacted, through voluntary measures which include, but are not limited to, water conservation, conjunctive use, purchase, lease, donations, or similar activities, or a combination of such activities which do not require involuntary reallocation of Project yield, water being provided

164 as all or part of the Incremental Level 4 Water Supplies for each of the Refuges can be made
165 available only to the extent that Reclamation is able to acquire the Incremental Level 4 Water
166 Supplies from willing sources; Accordingly, Reclamation shall use its best efforts to acquire
167 the Incremental Level 4 Water Supplies and shall coordinate acquisitions of Level 4 Water
168 Supplies with acquisitions of Environmental Water Account (EWA) water pursuant to the
169 Operating Principles Agreement, dated August 28, 2000, attached to the Record of Decision
170 for the CALFED Bay-Delta Program, dated August 28, 2000, and/or other acquisitions of
171 water for environmental purposes to ensure that acquisitions of Incremental Level 4 Water
172 Supplies have a priority at least equal to acquisitions of EWA and/or other environmental
173 water each year. Reclamation also agrees that the Interagency Refuge Management Team,
174 created pursuant to Article 6 of this Contract, shall be included among the interests consulted
175 in acquiring Incremental Level 4 Water Supplies.

176 (b) The Service shall continue use of the Non-Project Water component of
177 the Level 2 Water Supplies set forth in Exhibit "B" as long as such Non-Project Water remains
178 available to the Service and is of suitable quality. In the event that such water supply is
179 unavailable to the Service, or is not of suitable quality, subject to the provisions set forth in
180 Articles 8 and 9 of this MOU, Reclamation shall deliver to the Service sufficient substitute
181 Project Water to ensure that the quantities of Level 2 Water Supplies are available to the
182 Service in accordance with subdivision (a) of this Article.

183 (c) The Service shall comply with all requirements of any biological
184 opinion(s) addressing the execution of this MOU developed pursuant to Section 7 of the
185 Endangered Species Act of 1973, as amended, which are applicable to each of the Refuge(s)

186 and comply with environmental requirements applicable to each of the Refuge(s) as may be
187 required for specific activities.

188 (d) The Service shall make reasonable and beneficial use of all Delivered
189 Water furnished pursuant to this MOU consistent with the wetland habitat water management
190 plan(s) described in Article 14 of this MOU.

191 (e) In order to maximize water available to Refuges and better manage such
192 water, the Service may request Reclamation's permission to reschedule a portion of the Level
193 2 Water Supplies and/or a portion of the Incremental Level 4 Water Supplies made available to
194 the Service for use within the Service's Boundary during the current Year for use within the
195 subsequent Year. Reclamation may permit such rescheduling in accordance with applicable
196 law, and the then-current applicable rescheduling guidelines and policies. Upon execution of
197 this MOU, Reclamation shall have adopted amendments to any applicable rescheduling
198 guidelines and policies to provide for the rescheduling of refuge water in accordance with this
199 Article. After execution of this MOU and annually thereafter, Reclamation shall provide the
200 Service with a copy of the then-current rescheduling guidelines and policies.

201 (f) Reclamation shall not interfere with the Service's right pursuant to
202 Federal Reclamation law and applicable California law to the beneficial use of water furnished
203 pursuant to this MOU so long as the Service fulfills all of its obligations under this MOU. A
204 reduction in water supplies pursuant to Article 9 of this MOU shall not be deemed to constitute
205 such interference.

206 TIME FOR DELIVERY OF WATER

207 4. (a) On or about February 20 of each Calendar Year, Reclamation shall
208 provide the Service, in writing, with a preliminary forecast of whether the upcoming Year will

209 be a Critically Dry Year; and, if a Critically Dry Year is forecast, the extent to which Level 2
210 Water Supplies to be made available to the Service during the upcoming Year are to be shorted
211 pursuant to Article 9 of this MOU; and the amount of Incremental Level 4 Water Supplies
212 estimated to be made available to the Service pursuant to this MOU for the upcoming Year.
213 The forecast will be updated monthly, as necessary, based on then-current hydrologic
214 conditions. Upon the request of the Service, Reclamation shall make available to the Service
215 the data on which Reclamation relied to determine whether the Year in question will or will
216 not be a Critically Dry Year and to determine the amounts of Level 2 Water Supplies and
217 Incremental Level 4 Water Supplies to be made available to the Service pursuant to this MOU
218 during a Critically Dry Year.

219 (b) Based on the forecast(s) referred to in subdivision (a) of this Article, on
220 or before March 1 of each Calendar Year, the Service shall submit to Reclamation a written
221 schedule, satisfactory to Reclamation, showing both the monthly and annual quantities of
222 Level 2 Water Supplies and Incremental Level 4 Water Supplies to be delivered by
223 Reclamation to each of the Refuges pursuant to this MOU. Each schedule shall be updated on
224 a monthly basis to reflect actual use and remaining estimated needs.

225 (c) In accordance with subdivision (a) of Article 3 of this MOU,
226 Reclamation shall make available and/or convey Level 2 Water Supplies and Incremental Level
227 4 Water Supplies for diversion by the Service at the Points of Delivery in accordance with the
228 schedule submitted by the Service pursuant to subdivision (b) of this Article, or any written
229 revision(s) thereto, mutually agreed to by Reclamation and the Service which are submitted to
230 Reclamation within a reasonable time prior to the date(s) on which the requested change(s)
231 is/are to be implemented.

232 POINT OF DIVERSION, MEASUREMENT AND RESPONSIBILITY FOR DISTRIBUTION
233 OF WATER

234 5. (a) The original Point(s) of Delivery shall be established by written mutual
235 agreement of the Service and Reclamation. Such Point(s) of Delivery may be revised without
236 amending this MOU upon written mutual agreement of Reclamation and the Service.

237 (b) All water delivered to the Service pursuant to this MOU is to be
238 measured at the Point(s) of Delivery to reflect the quantities of Level 2 Water Supplies and
239 Incremental Level 4 Water Supplies delivered to the Service's Boundary. Upon the request of
240 the Service or on Reclamation's own initiative, Reclamation shall investigate the accuracy of
241 such measurements and the parties will jointly take any necessary steps to adjust any errors
242 appearing therein. For any period of time when accurate measurement has not been made,
243 Reclamation shall consult with the Service prior to making a determination of the quantity of
244 Delivered Water for that period of time. The Service shall advise Reclamation on or before
245 the 10th calendar day of each month of the quantities of Level 2 Water Supplies and
246 Incremental Level 4 Water Supplies taken during the preceding month at the Point(s) of
247 Delivery.

248 (c) Reclamation shall not be responsible for the control, carriage, handling,
249 use, disposal, or distribution of water delivered to the Service pursuant to this MOU beyond
250 the Point(s) of Delivery specified in subdivision (a) of this Article.

251 POOLING OF WATER SUPPLIES

252 6. (a) Whenever the maximum quantities of Level 2 Water Supplies and/or the
253 Incremental Level 4 Water Supplies depicted in Exhibit "B" are reduced pursuant to Article 9
254 of this MOU, the remaining Level 2 Water Supplies and/or the Incremental Level 4 Water

255 Supplies may be pooled for use on other Refuge(s); Provided, that no individual Refuge shall
256 receive more Level 2 Water Supplies than would have been made available to it absent a
257 reduction pursuant to Article 9 of this MOU; or be reduced by more than twenty-five (25)
258 percent; Provided further, that Reclamation makes a written determination that pooling of
259 water for use on other Refuge(s) would not have an adverse impact, that cannot be reasonably
260 mitigated, on Project operations, other Project Contractors, or other Project purposes;
261 Provided further, that Reclamation determines that such reallocation is permitted under the
262 terms and conditions of the applicable underlying water right permit and/or license; and
263 Provided still further, that water made available under this MOU may not be scheduled for
264 delivery outside the Service's Boundary without prior written approval of Reclamation.

265 (b) An Interagency Refuge Water Management Team, to be chaired by
266 Reclamation and to be established upon execution of this MOU, shall be entitled to
267 collaboratively allocate the pooled water supplies and provide a schedule for delivery of the
268 pooled supplies to meet the highest priority needs of the Refuge(s) as depicted in Exhibit "B";
269 Provided, however, nothing in this Article is intended to require the Service to pool the water
270 supply provided for in this MOU. The Interagency Refuge Water Management Team shall be
271 composed of designees of the Bureau of Reclamation, the United States Fish and Wildlife
272 Service, the California Department of Fish and Game, and the Grassland Water District.

273 TRANSFERS, REALLOCATIONS OR EXCHANGES OF WATER

274 7. Subject to the prior written approval of Reclamation, the Project Water made
275 available under this MOU may be transferred, reallocated or exchanged in that Year to other
276 Refuge(s) or Project contractors if such transfer, reallocation or exchange is requested by the

277 Service and is authorized by applicable Federal and California State laws, and then-current
278 applicable guidelines or regulations.

279 TEMPORARY REDUCTIONS--RETURN FLOWS

280 8. (a) Consistent with the authorized purposes and priorities of the Project and
281 the requirements of Federal law, Reclamation shall make all reasonable efforts to optimize
282 water deliveries to the Service as provided in this MOU.

283 (b) The quantity of water to be delivered to the Service as herein provided
284 may be temporarily discontinued or reduced when investigation, inspection, maintenance,
285 repair, or replacement of any of the Project facilities and/or Non-Project Facilities or any part
286 thereof necessary for the delivery of water to the Service is required. Reclamation shall give
287 and/or arrange to have the owner/operator of Non-Project Facilities give the Service due
288 written notice in advance of such temporary discontinuance or reduction, except in case of an
289 emergency, when no advance notice is possible, in which case Reclamation shall notify and/or
290 arrange to have the owner/operator of the Non-Project Facilities notify the Service of said
291 discontinuance or reduction as soon as is feasible; Provided, that Reclamation shall use its best
292 efforts to avoid any discontinuance or reduction in such service. Upon resumption of service
293 after such reduction or discontinuance, and if requested by the Service, Reclamation will make
294 all reasonable efforts, consistent with other obligations and operational constraints, to deliver
295 the quantity of water which would have been delivered hereunder in the absence of such
296 discontinuance or reduction.

297 (c) The United States reserves the right to all seepage and return flow water
298 derived from Delivered Water which escapes or is discharged beyond the Service's Boundary;
299 Provided, that this shall not be construed as claiming for the United States any right to seepage

300 or return flow being put to beneficial use pursuant to this MOU within the Service's Boundary
301 by the Service or those claiming by, through, or under the Service.

302 WATER SHORTAGE AND APPORTIONMENT

303 9. (a) In a Critically Dry Year, Reclamation may temporarily reduce, for that
304 Year, the availability of Level 2 Water Supplies up to twenty-five (25) percent of the
305 maximum quantities set forth in Exhibit "B" whenever reductions due to Hydrologic
306 Circumstances are imposed upon agricultural deliveries of Project Water; Provided, that such
307 reductions shall not exceed in percentage terms the reductions imposed on agricultural service
308 contractors. The quantity of Non-Project Water available to one or more of the Refuges as part
309 of its/their Level 2 Water Supplies may be reduced by more than twenty-five (25) percent in
310 Years when the quantity of Project Water made available to the Service can be reduced by no
311 more than twenty-five (25) percent. In such cases, Reclamation shall make up the supply
312 difference with water supplies provided by Reclamation to ensure that Level 2 Water Supplies
313 from all sources are not reduced by more than twenty-five (25) percent.

314 (b) Reductions in the Level 2 Water Supplies to be made available to the
315 individual Refuge(s) pursuant to this MOU, shall be imposed only in a Critically Dry Year.
316 For the Incremental Level 4 Water Supplies provided from Non-Project Water and Project
317 Water, reductions shall be imposed in accordance with the priority or priorities that were
318 applied to such Non-Project Water and the shortages assigned to Project Water prior to its
319 transfer or acquisition as Incremental Level 4 Water Supplies.

320 RULES AND REGULATIONS

321 10. The parties agree that the delivery of water pursuant to this MOU is subject to
322 Federal Reclamation law, as may be amended and supplemented, as applicable, and the rules
323 and regulations promulgated by the Secretary of the Interior under Federal Reclamation law.

324 QUALITY OF WATER

325 11. (a) Consistent with other legal obligations, the water delivered by
326 Reclamation to the Service pursuant to this MOU shall be of suitable quality to maintain and
327 improve wetland habitat areas and of comparable quality to water provided to other Project
328 purposes within the same geographical areas; Provided, that Reclamation is under no obligation
329 to construct or furnish water treatment facilities to maintain or to improve the quality of the
330 water furnished to the Service pursuant to this MOU. The quality of Delivered Water may be
331 monitored by the Service at the Point(s) of Delivery on an as needed basis. Should
332 Reclamation, in consultation with the Service, determine that the Level 2 Water Supplies
333 and/or the Level 4 Water Supplies to be made available to the Service pursuant to this MOU
334 during all or any part of a Year will not be of the quality that the Service feels is suitable to
335 maintain and improve wetland habitat areas, the Service and Reclamation shall meet within 48
336 hours or at a time mutually agreeable to the parties and determine the appropriate actions
337 necessary to identify and address the source of the water quality problems.

338 (b) The operation and maintenance of Project facilities shall be performed in
339 such manner as is practicable to maintain the quality of raw water made available through such
340 facilities at the highest level reasonably attainable as determined by Reclamation. The Service
341 shall be responsible for compliance with all State of California and Federal water quality
342 standards and directives applicable to surface return flows and subsurface agricultural drainage

343 discharges generated within its boundaries arising from water conveyed to the Refuges
344 pursuant to this MOU. This MOU does not create any obligation on Reclamation to provide
345 drainage services.

346 USE OF NON-PROJECT FACILITIES FOR WATER DELIVERY

347 12. Any use of Non-Project Facilities, including use of State Water Project facilities
348 pursuant to Joint Point of Diversion or other use of State Water Project facilities to deliver the
349 water supplies provided for in the MOU, or any agreement for the use of such Non-Project
350 Facilities, shall in no way alter the obligation of Reclamation to make available and deliver
351 water supplies in accordance with all of the terms and conditions of this MOU. In addition,
352 any costs incurred in the use of Non-Project Facilities to deliver water supplies pursuant to this
353 MOU shall be paid for in accordance with Section 3406(d)(3) of the CVPIA.

354 OPINIONS AND DETERMINATIONS

355 13. (a) Where the terms of this MOU provide for actions to be based upon the
356 opinion or determination of either party to this MOU, said terms shall not be construed as
357 permitting such action to be predicated upon opinions or determinations that are arbitrary,
358 capricious or unreasonable. Both parties, notwithstanding any other provisions of this MOU,
359 expressly reserve the right to seek relief from and appropriate adjustment for any such
360 arbitrary, capricious, or unreasonable opinion or determination. Each opinion or
361 determination by either party shall be provided in a timely manner. Nothing in this
362 subdivision of this Article is intended to or shall affect or alter the standard of judicial review
363 applicable under federal law to any opinion or determination implementing a specific provision
364 of federal law embodied in statute or regulation.

365 (b) Both parties to this MOU shall have the right to make determinations
366 necessary to administer this MOU that are consistent with the provisions of this MOU, the
367 laws of the United States and of California, and the rules and regulations promulgated by the
368 Secretary of the Interior. Each party shall make such determinations in consultation with the
369 other party to the extent reasonably practicable.

370 WATER CONSERVATION

371 14. (a) The Service shall prepare individual refuge wetland habitat water
372 management plan(s) in order to ensure the effective use of water supplies to meet wetland
373 resource needs and to meet the objectives of the Central Valley Habitat Joint Venture and the
374 purposes of the CVPIA to maintain and improve certain Central Valley wetland habitat areas.
375 Criteria to prepare and evaluate refuge wetland habitat water management plan(s) shall be
376 developed by the Interagency Refuge Water Management Team within one (1) year of the
377 execution of this MOU, and reviewed and updated every five (5) years thereafter taking into
378 consideration the provisions of the Interagency Coordinated Program Task Force report dated
379 June 1998. The criteria shall include economically feasible water management measures
380 which can improve the Services' efficient use of water in a manner appropriate for wetland
381 and wildlife management, and shall also include time schedules for meeting the water use
382 efficiency and conservation objectives. The criteria shall grant substantial deference to on-
383 going state efforts related to wetlands water management and shall take into account the unique
384 requirements associated with water use for the maintenance and enhancement of wetland and
385 wildlife habitat. The Service shall make all reasonable efforts to complete the original wetland
386 habitat water management plan(s) within one (1) year of the establishment of the criteria.

387 Reclamation will review and determine if the wetland habitat water management plan(s) meet
388 the established criteria for evaluating said plan within ninety (90) days of receipt of each plan.

389 (b) Prior to the Service being afforded opportunities such as pooling
390 and rescheduling of water supplies pursuant to Articles 3 and 6 of this MOU, the Service must
391 be implementing a wetland habitat water management plan that has been determined by
392 Reclamation to meet the established criteria developed pursuant to subdivision (a) of this
393 Article for preparing and evaluating said plan. Continued pooling and rescheduling benefits
394 pursuant to Articles 3 and 6 of this MOU shall be contingent upon the Service's continued
395 implementation of such wetland habitat water management plans. In the event Reclamation
396 determines the Service is unable to implement its wetland habitat water management plan, due to
397 circumstances beyond its control, the benefits of Articles 3 and 6 of this MOU shall be continued
398 so long as the Service diligently works with Reclamation to obtain such determination at the
399 earliest practicable date, and thereafter the Service begins implementing its wetland habitat
400 water management plan immediately after the circumstances preventing implementation have
401 ceased.

402 (c) In the event that implementation of the wetland habitat water
403 management plan(s) prepared pursuant to subdivision (a) of this Article results in water
404 savings, all conserved water supplies may be transferred/reallocated, under the terms and
405 conditions of this MOU, to other wetland, wildlife and fishery needs or to other Project
406 contractors in accordance with the recommendations of the Interagency Refuge Water
407 Management Team established pursuant to Article 6 of this MOU; Provided, that Reclamation
408 makes a written determination that such transfer/reallocation of conserved water would not
409 have an adverse impact, that cannot be reasonably mitigated, on Project operations, other

410 Project Contractors or other Project purposes; Provided further, that the transfer/reallocation
411 is requested by the Service and Reclamation determines that the transfer/reallocation is
412 authorized by applicable laws, and then-current applicable guidelines and/or regulations.

413 (d) The Service shall submit to Reclamation an annual update on the status
414 of its implementation of the wetland habitat water management plan(s) for the previous Water
415 Year.

416 (e) At five (5) year intervals, the Service shall revise its wetland habitat
417 water management plan(s), as necessary, to reflect the then-current criteria for preparing and
418 evaluating said plans and submit such revised plan(s). Upon completion of such revised
419 plan(s), the Service shall submit such revised plan(s) to Reclamation for review and so
420 Reclamation can determine whether such plan(s) meet the then-current criteria.

421 EXISTING OR ACQUIRED WATER OR WATER RIGHTS

422 15. Except as provided in subdivision (b) of Article 3, the exercise of existing water
423 rights by the Service, or its acquisition of additional water or water rights from other than the
424 United States, shall not alter the obligation of Reclamation to provide the maximum quantities
425 of Level 2 Water Supplies and Incremental Level 4 Water Supplies under subdivision (a) of
426 Article 3 of this MOU.

427 IN WITNESS WHEREOF, the parties hereto have executed this MOU as of the day
428 and year first above written.

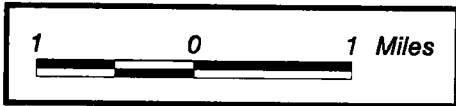
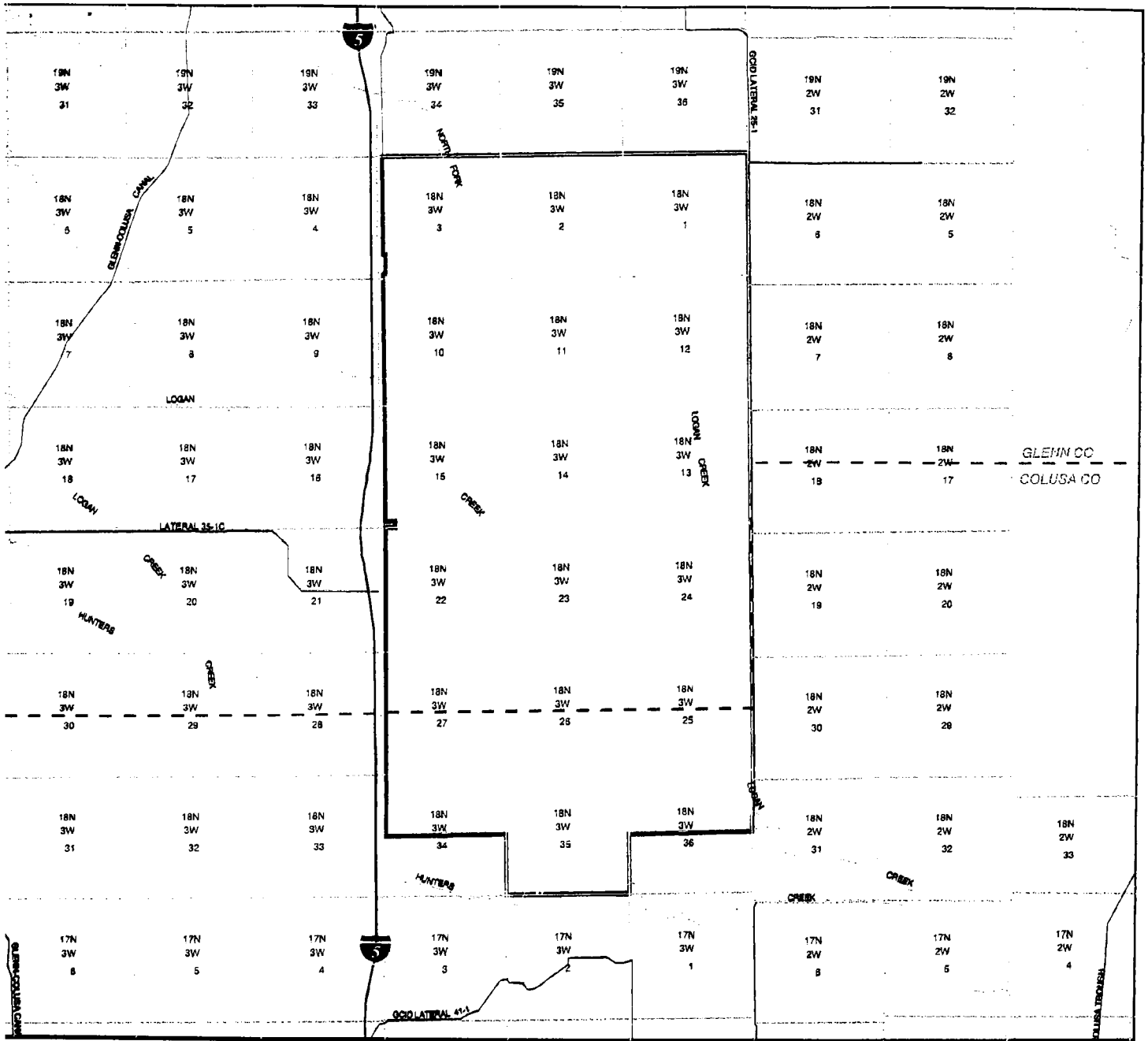
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APPROVED AS TO LEGAL
FORM AND SUFFICIENCY
James E. Turner
OFFICE OF REGIONAL SOLICITOR
DEPARTMENT OF THE INTERIOR

By: *[Signature]* 1/19/00
Regional Director, Mid-Pacific Region
Bureau of Reclamation

432
433
434

By: *[Signature]* 1/19/01
Manager, California, Nevada Operations Office
U.S. Fish and Wildlife Service



Sacramento NWR







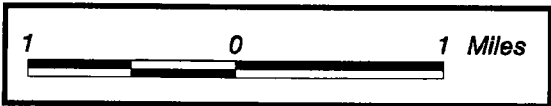
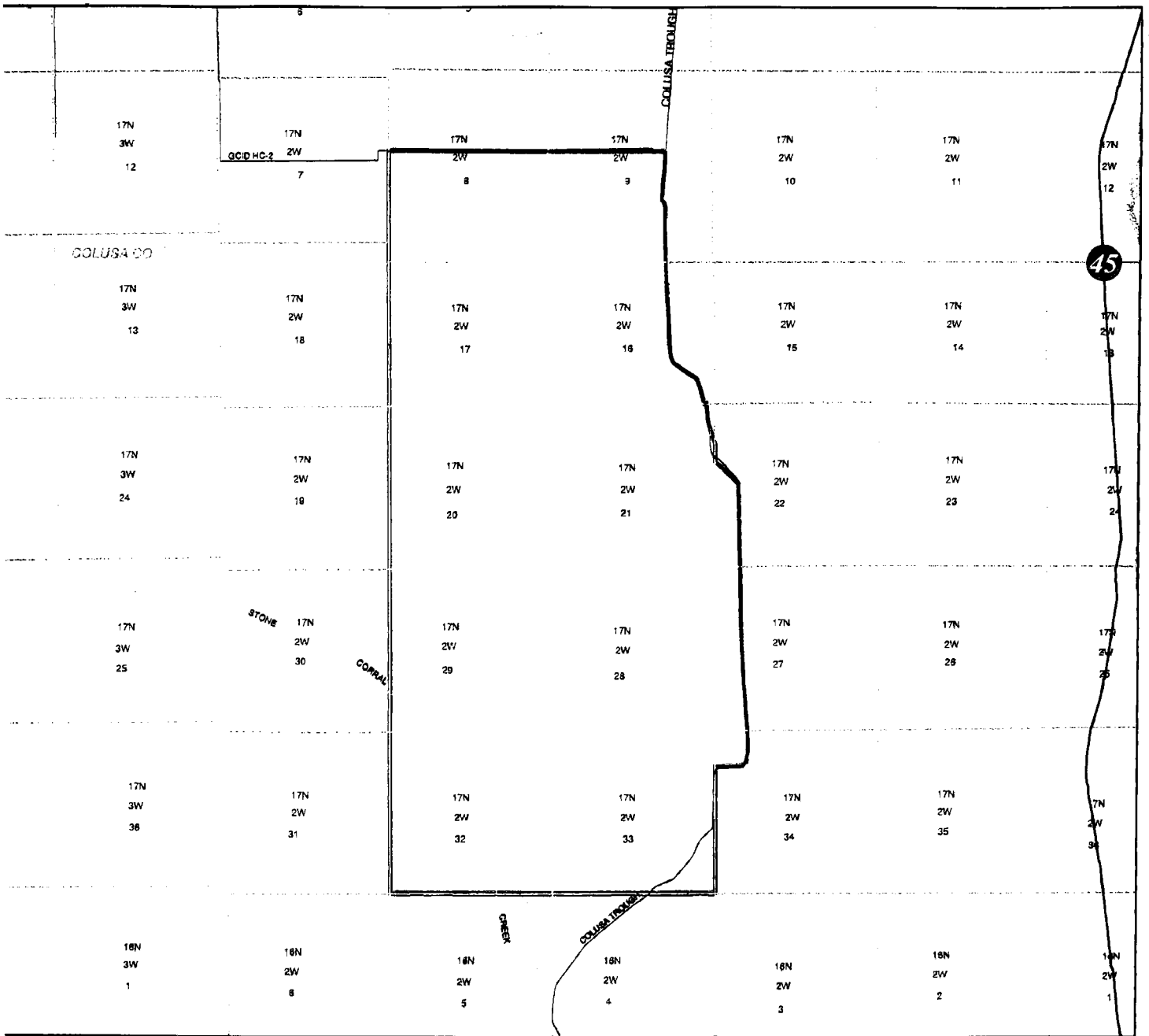
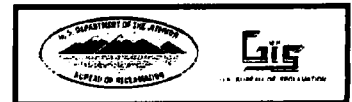
-  Major Roads
-  County
-  Public Land Survey System
-  Refuge



Exhibit No. A-1



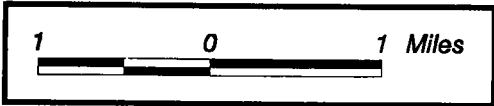
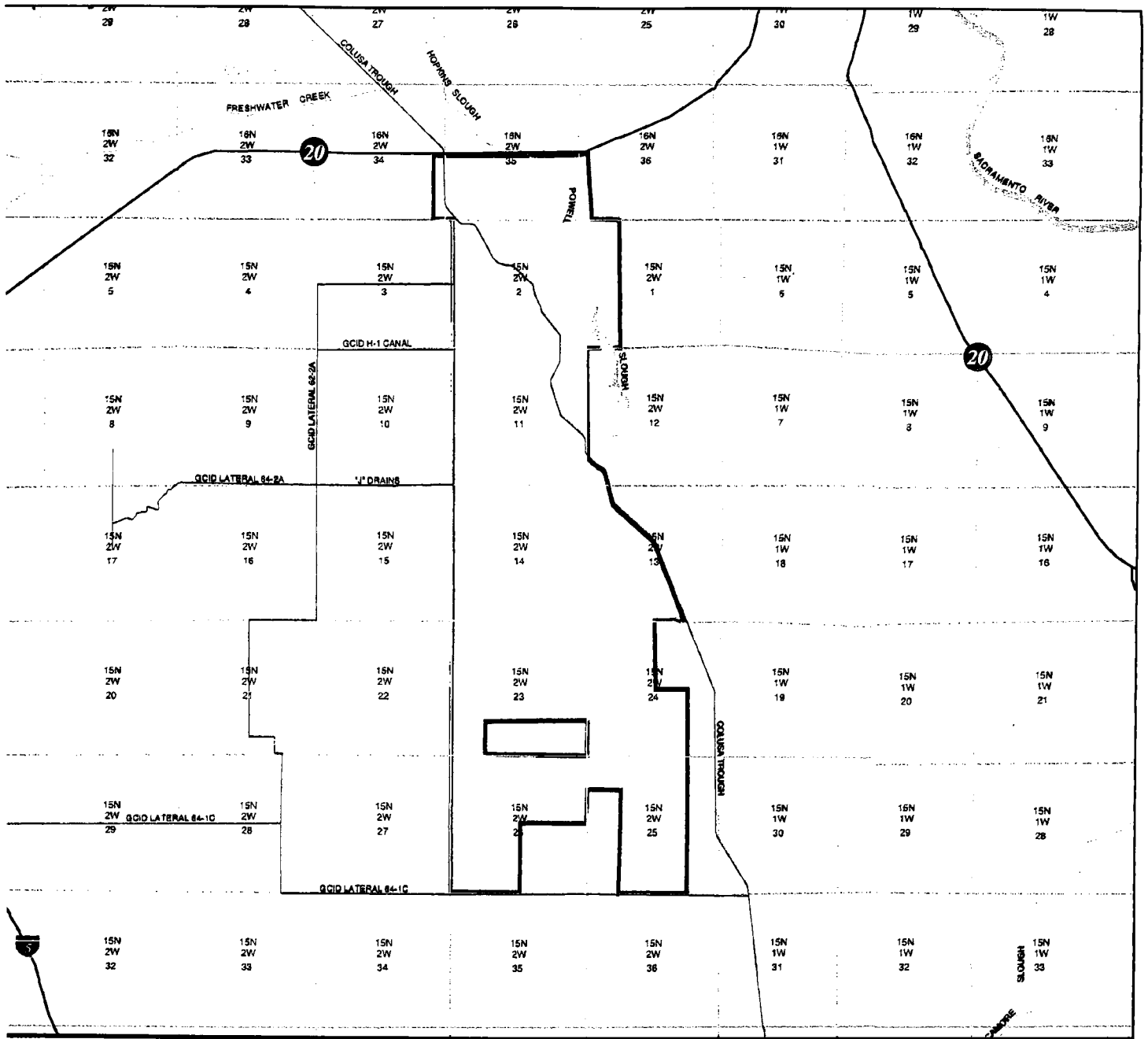
Delevan NWR



- Major Roads
- - - County
- Public Land Survey System
- Refuge



**Exhibit No.
A-2**



Colusa NWR







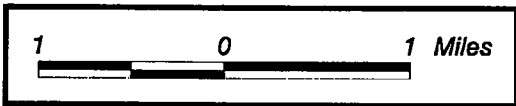
-  Major Roads
-  County
-  Public Land Survey System
-  Refuge



Exhibit No.
A-3



Sutter NWR



— Major Roads
 - - - County
 ○ Public Land Survey System
 Refuge



Exhibit No.
A-4

EXHIBIT B

Note: Quantities shown below are acre-feet of water		National Wildlife Refuge					
Refuge	Level 2 ¹ Water Supplies	Source of Level 2 Water Supplies MOU	Non-Project	Incremental Level 4 ² Water Supplies	Sources of Incremental Level 4 Water Supply MOU	Replacement	Total Level 4 ³ Supplies
Sacramento Valley							
Sacramento	46,400	46,400	0	3,600	3,600 ⁴	0	50,000
Delevan	20,950	20,950	0	9,050	9,050 ⁴	0	30,000
Colusa	25,000	25,000	0	0	0	0	25,000
Sutter	23,500	20,500	3,000 ⁵	6,500	6,500 ⁴	0	30,000
Total	115,850	112,850	3,000 ⁵	19,150	19,150 ⁴		135,000

¹ Quantity as defined in Article 1(i) of this Contract
² Quantity as defined in Article 1(h) of this Contract
³ Quantity as defined in Article 1(j) of this Contract
⁴ To be acquired in accordance with Article 3(a) of this Contract
⁵ Provided as firm supply from Sutter Extension WD

Final 01/18/01

MP-410
WTR-4.00

JAN 30 2001

Mr. Michael J. Spear
Manager, California/Nevada Operations Office
2800 Cottage Way, Suite W-2606
Sacramento, California 95825-1846

Subject: Long-Term Refuge Water Supply Memorandum of Understanding - Contract
No. 01-WC-20-1757 Between the U. S. Bureau of Reclamation and the U. S. Fish and
Wildlife Service for Water Supplies to the Sacramento, Delevan, Colusa, and Sutter
National Wildlife Refuges - Central Valley Project, California

Dear Mr. Spear:

Enclosed is an executed original of the subject memorandum of understanding for your records.
This memorandum of understanding is to provide water supplies for the above referenced
national wildlife refuges as identified in Section 3406(d) of the CVPIA through March 28, 2026.
Reclamation appreciates the effort expended by the Fish and Wildlife Service and its
representatives to assist in meeting these goals.

If you have any questions, please contact Don Bultema at (530) 934-1361 (TDD 934-7089)

Sincerely,

(sgd) Lester A. Snow

Lester A. Snow
Regional Director

Enclosure

bc: Deputy Director, Office of Policy
Attention: D-5600 (M. Peterson)
Assistant Solicitor, Water and Power Branch, Washington DC
Regional Solicitor, Pacific Southwest Region
Attention: J. Turner
MP-410 (sry)
MP-440 (nla)
NC-440 (D. Bultema)
Operations Manager, Central Valley Operations Office
(ea w/c encl)
MP-3400 (w/original)