

1 MEMO

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3 DATE: October 29, 2009

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6
7 TO: MRRIC meeting Cheyenne, Wyoming November 3, 4 & 5, 2009

8
9 SUBJECT: Social, Economic, Cultural and Tribal (SECT) Benefits and Values

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11 This is presented in the interests of landowners in the Missouri River basin. It is prepared to
12 illustrate the importance of the flood control and channel stabilization programs on the Missouri River
13 and how a reduction in these programs would affect our nation and those living and working along and
14 depending upon the resources of the Missouri River and its floodplain.

15
16 Presented too (page 11) are some of the present recovery activities underway, including the
17 Missouri River Recovery Program (MRRP), and needed changes in MRRP activities and project land
18 management policies and rules to be included in a restoration plan (Missouri River Ecosystem
19 Restoration Plan (MRERP)) to make the recovery and restoration process more compatible and
20 favorably supported by taxpayers nationwide and by the affected landowners and stakeholders in the
21 floodplain areas.

22
23 This is presented only as a partial listing of SECT Benefits and Values. As the MRERP develops,
24 it can be expected that as the components and provisions to be incorporated and addressed in the
25 MRERP are made apparent, other social, economic, cultural and tribal benefits and values will be
26 identified that need to be included in the MRERP and they too will be used to measure the acceptance of
27 the MRERP.

28 29 30 **Flood Control and Bank Stabilization**

31 32 **General**

33
34 The Missouri River with its adjoining floodplain meanders across the midsection of the State of
35 Missouri for approximately 367 miles with a width varying from 1.5 to 10+ miles. An additional
36 portion of the river of approximately 186 miles forms the boundary between Missouri and Kansas and
37 Nebraska. In this area, a vast variety of activities has taken place and evolved with the development and
38 the increasing population of the country. Use of the resources in the river and floodplain to date has
39 focused on agriculture, transportation, potable water, minerals, hydroelectric power and wildlife
40 conservation areas. More recently, wastewater treatment, constructed wildlife areas, wildlife habitat
41 restoration areas and recreational uses are being expanded. Coupled with these public and private uses
42 is the need for infrastructure items that serve the public's economic well being, health and safety. They
43 include highways, railroads, and bridges; electric power, fuel, water, sewage and telecommunications
44 lines and facilities which must cross the floodplain.

45
46 The entire area is subject to flooding and is most prone to flooding in the spring and early
47 summer months during seasonal and locally heavy spring rains and during runoff from the spring snow
48 melt in the Rocky Mountains. Flooding conditions have, however, been recorded during almost all of

49 the months of the year and with the increase in population and use of the floodplain's resources, flood
50 prevention measures have been financially justified and implemented to deter disruptions caused by
51 flooding. These measures include runoff detention dams with hydroelectric generators in the headwaters
52 of the river during the 1940's and extensive levee/dike systems on the banks of the river. The headwater
53 detention dams have been augmented with additional dams on the tributaries, and the construction of the
54 levee systems has been ongoing since the earliest periods of settlement of the area.

55
56 These measures alone, though, could not and will not prevent the river from meandering and
57 destroying the adjoining lands and infrastructure in the floodplain. The gradient, or fall, of the river
58 averages approximately 0.865 feet per mile. It varies from 0.75 to as much as 1.55 feet per mile. With
59 these gradients, there is sufficient velocity to cause continuous stream bank erosion with resultant
60 meandering of the river channel. With the flooding history of the river and its ability to cut new
61 channels, public and private interests along the river have engaged in efforts to stabilize the banks of the
62 river.

63 One of the single most important public events to help prevent this meandering came from a
64 Federal program of bank stabilization and channelization initiated in the early period of the twentieth
65 century to develop a reliable navigable channel for barge traffic on the Missouri River. Upon
66 completion of the Pick-Sloan Plan/Program later in the century, a worthwhile goal was attained in that
67 the Missouri River become an integral part of the North American inland waterway system that serves
68 an area from the Allegheny Mountains westward to the plains states and from the Gulf of Mexico
69 northward to Canada. At the mouth of the Missouri River in St. Louis, the river discharges into the
70 Mississippi River. This is the Missouri River's connection with the inland water system in the United
71 States. The Upper Mississippi River forms the eastern border of Missouri for approximately 310 miles
72 with numerous river ports. Discharges from the Missouri River at times reportedly provides 60 percent
73 of the Mississippi River's flow from St. Louis to the mouth of the Ohio River near Cairo, Illinois
74 (approximately 162 miles). Without Missouri River discharges, navigation along the entire eastern
75 border of Missouri would be greatly hampered. These river channels provide the public with an
76 alternative to truck and rail transportation with all of the benefits of national security, cheaper freight
77 rates, better energy efficiency and reduced air pollution for moving bulk and containerized freight.

78
79 This bank stabilization and channelization project required the stabilization of the concave banks
80 with stone revetment, the installation of stone jetties and wing dikes to narrow the channel and promote
81 scouring of the channel bottom to produce a consistently deep channel and the straightening of the
82 channel at select places to facilitate the maneuvering of barge tows. This work stabilized and
83 established the location of the channel thereby preventing it from meandering and undermining levees
84 and other infrastructure in the floodplain. An added bonus of channelization was that with a deeper
85 channel, the river could handle greater flow rates between the levees during periods of flooding. With
86 the channel stabilized, levees would be more reliable and public utilities and structures could be built
87 with confidence in and across the floodplain that they would not be continuously torn up or disrupted by
88 the flooding and meandering river. The Pick-Sloan Plan has not been fully implemented and is not
89 complete as originally designed. Also, many changes over the last 20 years have diminished the
90 effectiveness of the Pick-Sloan Plan. Dike notching, altered flow regimes, reduced funding for channel
91 maintenance, a 10 foot reduction in the stone revetment height on the river's banks for example, and
92 general operations, including levee inspections, have reduced flood control benefits

93
94 Upon the projected completion of the enlargement of the Panama Canal in 2014, the inland
95 waterway system, of which the Missouri River is an integral part, is well positioned geographically to be
96 a logical container distribution system to handle the super-sized container ships that will be able to

97 traverse the canal. This capability will become more important with the estimated doubling of the
98 world's population in the next 80 to 100 years, and the proportionate increased need for transportation
99 facilities.

100
101 With the channel stabilized, the following essential types of development have taken place in the
102 floodplain:

103
104

105 **Private Development**

106

107 1. Since the first settlers arrived, agriculture has flourished in the valley floodplains because of the
108 fertility of the soils. Cultural and social values are characterized in the floodplains by the number of
109 state recognized "Century Farms" in continuous production and family ownership for 100 years or more.
110 This has taken place primarily because of the natural fertility of the soils and the availability of water for
111 irrigation (1,200 gallons per minute ±) at depths from 20 to 60 feet. This has permitted intensive
112 farming practices and wise use of crop production input resources. The soils are silts and clays eroded
113 from the uplands and have a natural balance of essential minerals and a neutral Ph balance so that they
114 do not need extensive fertilization or any liming. Since they have only slight slopes, little to no erosion
115 is experienced, thus allowing intensive farming practices that will not pollute our streams with sediment
116 like that produced from farming upland soils. The USDA designates these soils as "Not Highly
117 Erodeable Land (NHEL)." With farming in the floodplains comes the need for drainage systems.
118 Drainage is an integral part of irrigation development and is necessary for top yields on non-irrigated
119 land. Flooding disrupts and destroys the sizeable investments in drainage systems, state parks, wildlife
120 areas, land grading, irrigation equipment, and lays waste to annual expenditures on machinery, fuel,
121 fertilizer and chemicals, thus demonstrating additional justification for flood protection. These
122 extremely fertile soils are well known throughout the Missouri River valley for their reliability in
123 producing high crop yields when thoroughly and properly protected from flood waters. Yields for grain
124 and forage in the last 10 years have regularly reached 200+ bushels per acre for corn and 4 to 5 cuttings
125 of alfalfa hay per season. There can be no better use of these soils. This form of land use has greatly
126 added to the overall financial stability of the state and its counties by having this development and
127 personal property included in the property and use tax base. These taxes support operating and bonded
128 indebtedness of local entities such as schools, fire protection districts, county governments, ambulance
129 districts, library districts, levee and drainage districts, public water supply districts etc.

130

131 2. As with all other industrialized nations worldwide with ever-increasing populations, transportation of
132 goods and services ranks in importance with food, shelter, clothing and health care. Without
133 transportation carriers in the form of power and water lines, automobiles, trucks, railroads, airlines, ships
134 and barges, a country cannot grow and prosper and compete with other countries. With the stabilization
135 of the channel has come the development of harbors and ports for supporting barge traffic on the rivers.
136 This form of transportation is cost effective and more energy efficient than truck or rail transportation.
137 As the population of the country increases, demands for adequate transportation will be more intense.
138 Developing and maintaining the use of the nation's lakes and rivers will become more important and this
139 process must not be discarded.

140

141 **Public Development**

142

143 1. With the stabilization of the river channel and the resultant reduced threat of flooding, cities have
144 been able to develop resources in the river and floodplain for the benefit of area populations with respect

145 to welfare, health and safety. Municipal and public utilities development includes potable water wells,
146 sewage treatment plants and wetland wastewater treatment facilities. With the river maintaining the
147 water table at shallow depths, an abundance of water is available from alluvial wells or directly from the
148 river itself for the hundreds of thousands of urban residents and the ten of thousands of residents up to
149 two or more counties away from the river in rural public water supply districts that purchase their water
150 from the large capacity municipal facilities. Because of the lower elevations inherent in the floodplains,
151 areas near and in the floodplains are natural locations for sewage treatment plants and wetland sewage
152 treatment facilities. Along with all of these facilities in the floodplains are extensive power and water
153 and sewage distribution appurtenances and service roads so that these facilities can function normally.
154

155 2. In order to distribute their services in Missouri and adjoining states, public utilities out of necessity
156 must cross the Missouri River and its floodplain. Among some of the services and products provided by
157 these utilities are power, fuel, water and telecommunications. With the stabilization of the river channel
158 along with the programs to control and reduce the threat of flooding, these public utilities have been able
159 to economically route their lines across the river and through the floodplain and maintain reliable
160 consistent service with little disruption from flooding. Buried utilities across the river valley are located
161 under the river channel. In the floodplain, though, the buried utilities have only 3 to 5 feet of earthen
162 cover. This in many places is in the range of 20 feet above the actual utility lines under river. Without
163 stabilization of the channel and a levee system, meandering of the channel and over-bank flows will
164 expose, damage and disrupt buried utility services. Overhead utility poles, as well, are not immune to
165 damage and disruption of services due to flooding. These sorts of damage occurred dramatically in the
166 1993 flood and during several other flood events.
167

168 3. As with utilities, highways and railroads out of necessity must cross the Missouri River and its
169 floodplain. Given the location of this river in the central part of the country, railroads and highways
170 must be built across the river in several places to maintain the economic health of the country and state
171 and the safety of the general population. Nothing could better illustrate this point than what occurred
172 during the flood of 1993, when the I-70 highway bridge at Rocheport was the only bridge open across
173 the river in the 300+ miles between St. Louis and Kansas City. The stabilization of the river channels,
174 along with the programs to control and reduce the threat of flooding, allow bridges to be built with
175 relatively short spans across the stabilized channels of the rivers. From these bridges, road beds of
176 several miles in length, at a level subject to flooding, complete the crossing of the river valley.
177

178 4. Over the past 30 years, Missourians have made great strides via the use of a sales tax on all goods
179 and services that goes directly to the Missouri Department of Conservation (MDC) for the development
180 of plant, forest and wildlife habitat in Missouri. This tax has no “sundown” provision. In 2008, \$102
181 million from this tax source alone was conveyed to the Department for these purposes. Multi-million
182 dollar projects have been made along and in the floodplain of the Missouri River to establish waterfowl
183 habitat in the normal flyways for ducks and geese and provide vehicular, pedestrian and disabled access
184 for recreational and educational purposes to the Conservation Areas (CA). Examples include Weldon
185 Spring, Eagle Bluff, Franklin Island and Grand Pass Conservation Areas. For these areas to succeed in
186 their goals, establishing and maintaining bodies of water, providing food plots during periods of
187 migration and providing durable public access is necessary. To accomplish this, numerous levees, low
188 level berms, water level control weirs and gates and electric and diesel powered pump stations valued in
189 the tens of millions of dollars have been constructed. The stabilization of the river channel, along with
190 the programs to control and reduce the threat of flooding, protects these public investments, and
191 precludes unnecessary abandonment and continuous replacement and repair.
192

193 5. For the past 24 years, the citizens of the State of Missouri have channeled an additional one-tenth-of-
194 one-percent sales tax through their Department of Natural Resources (MO-DNR) to be divided evenly
195 for the development and upkeep of the state’s parks and for cost-share of funds for erosion control
196 practices on private property. Although this tax has a “sundown” provision, nonetheless it has been
197 reaffirmed every time by Missouri citizens since its initial enactment. In 2006, 70 percent of the voters
198 extended the tax for 10 more years. In 2009, approximately \$60 million was conveyed to the
199 Department for these purposes. Erosion reduction from these public lands and farms results in enhanced
200 water quality in rivers and streams

201

202 **Partial Listing of Public and Private Activities**

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204 1. Following is a partial list of the known activities and land uses both public and private in the
205 Missouri River floodplain between St. Louis and Kansas City. Listed below are the activities and uses
206 with which I have personally worked or with which I have first-hand knowledge. They include utilities,
207 harbors, roads, railroads, parks, wildlife areas, and various hazardous dump sites across the central part
208 of Missouri. Not included here are 268 other uses listed on the US Army Corps of Engineers navigation
209 map for the Missouri River, as well as numerous other municipal and Missouri Department of
210 Conservation facilities. Those marked with an asterisk (*) are those that experienced substantial damage
211 from flooding in 1993 and 1995.

212

213 St. Louis and St. Charles Counties

- 214 State Highway 370 Bridge and Pavement, 2 lanes, St. Charles and Earth City Areas.
- 215 St. Charles County Public Water Supply District--Weldon Spring Well Facility, Weldon
- 216 Spring Armory Area
- 217 Missouri Department of Conservation--Weldon Springs Conservation Area.
- 218 Missouri Department of Conservation--Howell Island Conservation Area.
- 219 I 70 Highway Bridge and Pavement, 10 Lanes, St. Charles and Earth City Areas.
- 220 * US Highway 40 Bridge and Pavement, 4 Lanes, Chesterfield Area.
- 221 U S Dept of Energy--Weldon Spring Arsenal Nuclear Dump Site, rock quarry.
- 222 * Airport, Chesterfield, MO.
- 223 * Union Pacific Railroad Tracks

224

225 Franklin and Warren Counties

- 226 * State Highway 47 Bridge and Pavement, 2 Lanes, Washington Area.
- 227 New Haven Public Works Dept--Sewage Treatment Facility
- 228 Washington, Missouri Public Park--River Access
- 229 Union Pacific Railroad Tracks
- 230 * KATY Trail State Park Bicycle and Hiking Path

231

232 Gasconade and Montgomery Counties

- 233 * State Highway 19 Bridge and Pavement, 2 lanes, Hermann Area.
- 234 * Union Pacific Railroad Tracks
- 235 * KATY Trail State Park Bicycle and Hiking Path

236

237 Osage and Callaway Counties

- 238 * State Highway 100 Pavement, 2 lanes, Chamois Area
- 239 * Central Electric Cooperative Power Plant, Chamois Area

240

- 241 Cole and Callaway Counties
- 242 * Jefferson City Public Works Dept--Sewage Treatment Facility, Cedar City Area
- 243 Sewage Lift Station, Jefferson City Area.
- 244 Callaway Co. Public Water Supply District No.2--Distribution lines, Cedar City Area.
- 245 Jefferson City Water Supply Co.--Potable Water Source from river.
- 246 * US Highways 54 and 63 Bridges and Pavement, 6 Lanes, Jefferson Area.
- 247 * Capital Sand Company--Construction Materials, Cedar City Area.
- 248 * Jefferson City Airport, Cedar City Area.
- 249 * Union Pacific Railroad Tracks
- 250 * KATY Trail State Park Bicycle and Hiking Path
- 251
- 252 Cooper and Boone Counties
- 253 * Columbia Water and Light Dept--Wells and Water Treatment Plant in McBaine Area.
- 254 * Columbia Public Works Dept--Wetlands Wastewater Treatment Facilities,
- 255 McBaine Area.
- 256 I-70 Highway Bridge and Pavement, 4 Lanes, Rocheport Area.
- 257 * Missouri Department of Conservation--Eagle Bluff Conservation Area, public access
- 258 areas, electric and diesel water pumping stations, McBaine Area.
- 259 * Missouri Sand Co.--Construction Materials, Rocheport Area.
- 260 * Williams Pipeline Co.--Diesel and Gasoline Pipelines, McBaine Area.
- 261 * Union Electric--Power lines, McBaine Area.
- 262 * Union Pacific Railroad Tracks
- 263 * Boone Co. and City of Columbia Parks Dept--MKT Nature Fitness Trail Bicycle and
- 264 Hiking Path
- 265 * KATY Trail State Park Bicycle and Hiking Path
- 266
- 267 Cooper and Howard Counties
- 268 * Howard County Public Water Supply District No. 1--Wells, Treatment Plant and
- 269 Distribution Lines in Franklin Area.
- 270 * New Franklin Public Works Dept--Wells, Treatment Plant and Distribution Lines in New
- 271 Franklin Area.
- 272 * New Franklin Public Works Dept--Sewage Treatment Facility, New Franklin Area.
- 273 * US 40 and State Rte 5 and 87 and KATY Trail State Park Bridge and pavement, 2 Lanes,
- 274 Boonville Area
- 275 * Panhandle Eastern Pipeline Co.--Natural Gas Pipelines, Boonville Area.
- 276 City Utilities Pipeline Co.--Natural Gas Pipelines, New Franklin Area
- 277 * Sprint Cable Company--Fiber Optic Cable, Boonville Area.
- 278 * Interstate Marine Terminal--General Agricultural and Bulk Materials River Port Facility,
- 279 Boonville Area
- 280 * Missouri Farmers Association--General Agricultural Products Handling and
- 281 Materials Supply Facility, New Franklin Area.
- 282 * Missouri Department of Conservation--Franklin Island Conservation Area.
- 283 * Union Pacific Railroad Tracks
- 284 * KATY Trail State Park Bicycle and Hiking Path
- 285
- 286 Saline and Howard Counties
- 287 * Slater Public Works Dept--Wells and Treatment Plant, Glasgow Area.
- 288 Marshall Public Works Dept--Wells, Marshall Area.

- 289 * State Rte 240 Highway Bridge and Pavement, 2 Lanes, Glasgow Area.
- 290 * Missouri Farmers Association--General Agricultural Products Handling and
- 291 Materials Supply River Port Facility, Glasgow Area.
- 292 * Gateway Western Railroad Bridge and Tracks, Glasgow Area.
- 293
- 294 Chariton County
- 295 Brunswick Public Works Dept--Sewage Treatment Facility.
- 296 * Brunswick River Terminal--General Agricultural Products Handling and Materials
- 297 Supply Facility, Brunswick Area.
- 298
- 299 Saline and Carroll Counties
- 300 * Waverly Public Works Dept--Wells, Waverly Area.
- 301 * State Rte 41 Highway Bridge and Pavement, 2 Lanes, Miami Area.
- 302 * Missouri Department of Conservation--Grand Pass Conservation Area, public access
- 303 areas, electric water pumping stations.
- 304 * Gateway Western Railroad Tracks
- 305 * Union Pacific Railroad Tracks
- 306
- 307 LaFayette and Carroll Counties
- 308 Higginsville Public Works Dept--River water pump station
- 309 * US 65 and State Rte 24 Highway Bridge and Pavement, 2 Lanes, Waverly Area.
- 310 * State Rte 10 Pavement, 2 Lanes, Norborne Area.
- 311 * Atchison, Topeka and Santa Fe Railroad Tracks
- 312 * Gateway Western Railroad Tracks
- 313 * Union Pacific Railroad Tracks
- 314
- 315 LaFayette and Ray Counties
- 316 * State Rte 13 Highway Bridge and Pavement, 2 Lanes, Lexington Area.
- 317 * State Rte 10 Pavement, 2 Lanes, Hardin Area.
- 318 * Atchison, Topeka and Santa Fe Railroad Tracks
- 319 * Gateway Western Railroad Tracks
- 320 * Union Pacific Railroad Tracks

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322 2. In addition to the uses listed above are those on public and private lands containing polluted sites.

323 Most prevalent are underground storage tanks for fuel and hazardous materials. Several thousand of

324 these tanks exist statewide, with a proportionate share in the floodplains. In addition to buried tanks are

325 dump sites of hazardous materials that range from chemicals to radioactive materials.

326

327 **Conclusions**

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329 The single most important step in preventing floods is stabilizing the channel and banks of the

330 river. This step is followed with the construction of flood control levees and stormwater runoff

331 detention lakes or structures with beneficial water level and water release policies. This having been

332 accomplished over the past few decades, barge traffic, as a form of transportation providing access to

333 domestic and world markets, has come to the states along and west of the Missouri River. Additionally,

334 with channel and bank stabilization comes the ongoing essential benefit of a stabilized river channel that

335 cannot meander and wash out roads, farms, levees and other public and private developments and

336 infrastructure needed for the welfare, health and safety of the population.

337 Currently of utmost importance to Missouri and adjoining states are channel and bank
338 stabilization programs, barge traffic, levee repair programs, beneficial water level and water release
339 policies and other programs to prevent flooding. The elimination of any of these programs, uses and
340 policies is simply not a viable option for the future management of the Missouri River and the resources
341 in the floodplain. The elimination of these programs would lead to the eventual destruction,
342 abandonment, relocation or alteration of the all of the above listed developments, uses and activities. In
343 Missouri, tens of billions of dollars are at stake to make the welfare, social, economic, safety and
344 infrastructure adjustments that will be required. Not included with this cost are the cleanup costs to
345 protect the environment that could otherwise be avoided. Below are listed many of the adjustments and
346 probable costs that would be required if the bank and channel stabilization structures and the navigation
347 channel were done away with.

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Private Development

351 1. The greatest impact on the private sector would be economic in nature. Jobs in the floodplain
352 would be completely eliminated, creating unstable economic conditions locally by undermining property
353 tax bases that support schools, fire protection districts, regional libraries, hospitals and county and city
354 governments. Several million dollars annually are at stake in property taxes alone.

355
356 2. Farming takes place on the greatest amount of area in the floodplains. Without channelization
357 and levees to prevent annual flooding, modern mechanized farming operations would cease in the river
358 bottoms. This would create ruinous economic hardships in the billions of dollars for the farmers, local
359 agri-businesses and rural communities. Continued erosion of the river bank allows for the advancement
360 of river waters towards levee embankments in the immediate area. When the erosion is left unchecked,
361 levees are eventually undermined by erosion to the point of levee failure. When levees are realigned
362 land-side, landowners lose arable land. These levees on private and public properties protect not only
363 tillable lands but also vital public infrastructure. Substantial stream bank erosion has occurred
364 downstream several hundred feet and outside of the immediate area of dikes that have been cut by the
365 USACE to provide shallow water habitat. This erosion has resulted in a substantial and a measurable
366 increase in area of shallow water habitat at some locations. Such unchecked erosion by the USACE
367 results in the taking of property, both private and public. For the private land owner there is a monetary
368 loss with the loss of his/her land. Since property taxes are determined from land measurement to the
369 "high bank of the river," the landowner will pay real estate taxes on land he/she no longer owns because
370 it has been washed away. Upon readjustment of taxable acreage at the landowner's expense, local
371 entities lose tax base for the support of schools and community colleges, roads, libraries, public water
372 supply districts, fire protection districts, ambulance districts and clinics, etc.

373
374
375 3. The private transportation industry of barge lines would be adversely affected. Without a
376 channel stabilization program to maintain adequate water depths for barge traffic, this form of
377 transportation would cease. If this method of transportation were eliminated, the state of Missouri
378 would not only loose existing businesses and jobs, but would forever be unable to develop and enjoy the
379 economic benefits of viable industries utilizing river transportation. The elimination of barge traffic on
380 a inland waterway the size and length of the Missouri River and its tributaries would be inconsistent
381 with the future needs of a modern industrialized society and economy. The inland river waterways in
382 Europe have been fully developed and have been in heavy use for nearly 200 years. Other developing
383 nations are rapidly developing their river transportation systems. To illustrate this point, an article in the
384 November 1997 issue of "SOYBEAN DIGEST" illustrates how Brazil has cut freight costs \$30 per

385 metric ton with the startup of barge traffic on the Amazon River. The only substitution for river barge
386 freight would be less efficient truck and rail transportation. Private industry sources have indicated that
387 rail and truck transportation would have to be expanded 300 percent in the area of the Mississippi and
388 Missouri Rivers. This would result in more trackage and highway construction. Lack of maintenance of
389 the navigation channel is threatening its continued functionality for providing navigation and flood
390 conveyance. The navigation channel needs to be maintained and operated at its original project design
391 authorization, which includes channelization and bank stabilization structures, depth and flow.

392
393 4. The private transportation industries of railroads and fuel pipelines would be adversely affected.
394 Without channel stabilization and levees, the river would meander across the full width of the floodplain
395 washing out railroad bridges and roadbeds, thereby forcing the railroads into a continuous high cost
396 maintenance program or causing them to eventually abandon or move their rail lines to other locations at
397 a cost of billions of dollars. Fuel pipeline companies would be affected in the same way. At a cost of
398 hundreds of millions of dollars, pipelines would have to be either buried deeper and/or relocated out of
399 the floodplain. Added to these would be the costs associated with the cleanup of a spill resulting from a
400 line that ruptured as a result of being exposed by river currents.

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402

403 **Public Development**

404
405 The greatest impact on the public sector would be the enormous cost of abandonment and
406 relocation of existing facilities and improvements at the taxpayer's expense. In terms of public facilities,
407 hundreds of billions of dollars are at stake.

408
409 1. The river provides a great abundance of water for present and future needs for the central population
410 of Missouri. At over 1,600 locations in Missouri, water is taken either directly from the river or from
411 shallow alluvial wells supplied with water from the river through the sandy aquifers in the river bottoms
412 around the wells. With an unfettered river, hundreds of millions of dollars would have to be spent on
413 improvements to protect well sites and potable water treatment plant sites from flooding and scouring
414 damage. In some cases, alternative sources of water would have to be developed at a cost of hundreds
415 of millions of dollars because uncontrolled meandering of the river would force abandonment of existing
416 facilities. If alternative sources of water are insufficient for these cases, the growth, general welfare,
417 health and safety in the affected communities would be stymied at great social cost.

418
419 2. The same problems with potable water supply facilities would also apply to existing wastewater
420 treatment facilities. For the general health and safety of the population, these facilities must be operated
421 without interruption from uncontrolled flooding and scouring of the river. The only alternative for these
422 facilities is abandonment and relocation. An example of this would be the wastewater treatment for
423 Jefferson City, Missouri, and the wetlands wastewater treatment units for Columbia, Missouri. In
424 Missouri and adjoining states, the cleanup and relocation costs to the taxpayers would amount to tens of
425 millions of dollars.

426
427 3. Without its meandering and flooding controlled, the river would scour out, dislodge and break up
428 power, fuel, water and telecommunication lines. Abandonment and relocation of hundreds of miles of
429 these utilities amounting to hundreds of millions of dollars would be required. Even minor flooding can
430 damage lines and cause an interruption of service to industries and communities directly affecting jobs
431 and public safety.

432

433 4. With an unfettered meandering river, hundreds of miles of county, state and federal roads in the flood
434 plains not directly associated with bridges would be permanently closed. The affected county public
435 works departments and the US Army Corps of Engineers place a value on these roads from \$46,100 to
436 \$500,000 per mile [US Army Corps of Engineers (USACE) value 1994]. The Missouri Department of
437 Transportation places a value on 2 lane state roads at \$1,250,000 per mile [Missouri Department of
438 Transportation (MODOT) 1997]. Loss of these roads would cut off access to private property and
439 public access to developed wildlife and conservation areas.

440
441 5. Roads leading to bridges would eventually sustain catastrophic damage from the freely meandering
442 river. As roads leading to the existing bridges are washed out, additional bridge works amounting to
443 several miles in length for each bridge would eventually have to be built above the floodplains to replace
444 the washed out roads. An example of this has already been partially started across the floodplain at a
445 cost to taxpayers of \$9,100,000 on State Rte 19 north of Hermann. Heavy duty spans, like those
446 presently across the main channel, would eventually have to be built to span the floodplain between the
447 high points on each side of the valley to allow the river to meander freely beneath them. This would
448 amount to hundreds of miles of bridge structures costing tens of billions of dollars. For economy, the
449 bridges would have to be built across the narrowest portions of the valleys. This would require collector
450 roads carrying traffic leading to the bridges to be rerouted on higher ground to provide new bridge
451 approaches. This would amount to hundreds of miles of new roads costing billions of dollars. Dramatic
452 examples of this would be US 40 near Chesterfield, State Rte 47 near Washington, US 63 near Jefferson
453 City, US 40 near Boonville and State Rte 24 near Carrollton. The estimated cost for bridge works on the
454 Missouri River is \$175.00 per square foot, and for two lanes of pavement on land the cost is \$1,250,000
455 per mile, including land. As an example, to construct bridge works to span the un-bridged 8,000 foot
456 flood plain on US 63 & 54 in Callaway and Cole Counties (Jefferson City, Missouri) with a 4 lane
457 highway with a 28 foot road bed with 8 foot shoulders at today's prices, the probable estimated cost
458 would be \$123,200,000. For a 5 mile re-routing of 4 lanes of US 63 at \$2,500,000 per mile, the
459 probable estimated cost would be \$12,500,000. For a 39 mile re-routing of 2 lanes of MO Rte 94 at
460 \$1,250,000 per mile, the probable estimated cost would be \$48,750,000. For just these roads and no
461 others in area, the probable estimated cost would total \$184,450,000. With inflation and the continued
462 need for more roads in the state, this figure will only get bigger.

463
464 6. Without channel and bank stabilization, the meandering and flooding of the river will destroy many
465 of the capital improvements and efforts by federal and state agencies to establish wildlife habitat and
466 most particularly waterfowl habitat and public access. Included with this use are some state parks. The
467 altered landscape will force wildlife agencies to abandon present wildlife management and public access
468 practices and adopt alternate practices that are neither desired by the agencies nor in the best interests of
469 wildlife or the public. The citizens of the state of Missouri have invested tens of millions of dollars in
470 acquiring and maintaining these public areas and they are not interested in losing access to and use of
471 them.

472
473 7. In addition to the above environmental concerns is the cost of cleanup of environmentally sensitive or
474 polluted areas that are presently being properly managed and pose no threat. As these areas are
475 threatened and exposed by the meandering river, millions of dollars at taxpayer expense will have to be
476 expended to cleaned up the existing sites and develop new storage sites.

477
478 8. If the floodplain were allowed to return to its natural state, water levels would have to rise to carry
479 the same flows that can be carried at present lower predicted levels. This would come about with
480 uncontrolled woody and weedy growth making the over-bank areas "rougher" than the "roughness

481 factor" used in the flood profile model by FEMA for establishing the present regulatory flood level
482 elevations and "regulatory floodway" in the floodplains. This change in roughness would cause the
483 water to rise and thereby jeopardize existing floodplain development regulations and FEMA flood
484 insurance programs in the river floodplain and the tributaries along the river.

485
486 **Habitat Recovery Activities**

487
488 **General**

489
490 A commitment of nationwide tax monies for the purchase of privately owned lands to be
491 converted into wildlife refuges can be viewed as a commendable act since it indicates a willingness to
492 provide for better wildlife habitat. This is particularly noteworthy in terms of cost since these purchases
493 add to the ten of thousands of acres already in public hands.

494
495 Originally, the federal government owned all of the land and settlers acquired and developed it
496 for their use and sustenance. After the land passed into private hands, the people established various
497 local governments, which developed public infrastructure and adopted various laws and regulations to
498 which all landowners had to adhere. This was done for the benefit of society and has been instrumental
499 in providing the high standard of living in the country.

500
501 With land now being sold back to the government, however, the local laws and powers are not
502 conveyed with the lands passing into the ownership of state and federal governments. The result is that
503 landowners in farming and other communities now find a different [government] landowner next door
504 with special privileges amounting to exemptions from state and local statutes, regulations and taxes.
505 These privileges include the fact in the case of non-payment of property and use taxes, agency property
506 cannot be sold on the Court House steps for back taxes. Another privilege afforded government
507 property ownership is that the property can neither be condemned for worthwhile public projects nor
508 returned to private hands to revitalize local economies. With the 100 percent loss of personal property
509 tax combined with ever-decreasing tax revenues from real property tax, local entities are realizing
510 unacceptable tax revenue losses impacting their ability to provide essential services and debt service.

511
512 Substantial acres of land have been purchased or leased by agencies, public entities and private
513 individuals for purposes of constructing shallow water habitat and other conservation, recovery and
514 recreational uses and investments. There exists a myriad of programs and projects by state and federal
515 agencies and private land uses, resulting in much duplication of conservation and recovery efforts. A
516 partial list of Federal activities would include:

517
518 MRRP involving chutes, wetlands, etc.

519
520 Big Muddy Wildlife Refuge and Squaw Creek Wildlife Refuge of the US-FWS

521
522 Acreages purchased by the USACE and construction projects on state properties to mitigate the
523 effects of channelization and bank stabilization

524
525 Wetlands delineations for 404 permits

526
527 US Department of Agriculture (USDA) programs of the Farm Service Agency (FSA) and
528 Natural Resources and Conservation Service (NRCS) that include:

529 Wetland Reserve Program (WRP)
530 Emergency Wetland Reserve Program (EWRP)
531 Conservation Stewardship Program (CSP) and CP-23 practice of the Conservation
532 Reserve Program (CRP)
533 Conservation Easements including USDA requirements on wetlands, farmed wetlands,
534 etc., that regulate land use of private properties
535 Missouri Department of Conservation (MDC) owns thousands of acres of land in the
536 flood plains where MDC constructed public access areas, wetlands, wildlife habitat and
537 refuges
538 Private property purchased by hunt clubs
539

540 All of these lands with their present uses plus those authorized to be part of recovery amount to
541 hundreds of thousands of acres. The resulting duplication of land uses by agencies combined with those
542 of private individuals has become such a vast area of land that local businesses and county tax bases are
543 being destabilized. There is not a data base providing the identification and compilation of all the
544 acreages, public and private, and activities and land uses authorized and in agency possession and/or
545 control that are taking place for every conservation or recovery program. Local private interests,
546 particularly farming interests, and taxpayers are confused by the myriad of programs and projects
547 involved and want an accounting of all the lands involved before more lands are purchased.
548

549 All of these land uses, when located adjacent to private agricultural lands, are incompatible with
550 agricultural uses and their existence imposes hardships on the agricultural community. Most of the
551 hardships are related to agency land management and policies. While working for landowners and/or
552 levee and drainage districts, I encounter one or more times every six months tracts that are subject to
553 requirements of agency ownership or regulation. Levee and drainage issues impose the greatest
554 managerial hardships. Agencies do not or are not required to cooperate with adjacent landowners with
555 construction or maintenance of drainage and flood protection facilities. This immediately affects
556 drainage and flood protection of farm fields as well as highways and municipal and public infrastructure.
557 The lack of local tax revenue support by the agencies imposes the greatest policy hardships.
558

559 This grates against the conscience of a farming community and heightens a widespread level of
560 disgust, since the private landowners are watching their own tax dollars going into the government
561 operations against their own interests. At the present, managers of government properties think they are
562 being good neighbors and believe they are implementing a good neighbor policy when in reality as long
563 as they enjoy exemptions to laws that adjoining landowners have to adhere to, their presence will always
564 be a drag on a farming community by not providing any constructive benefits to the community.
565

566 With government purchase of the land, as with that in private hands, come responsibilities,
567 including paying taxes. At present, the local taxpayers are carrying an ever-increasing burden both
568 culturally and economically. The Federal government's record of making payments "in lieu of taxes"
569 upon the initial acquisition of land shows a substantial decrease in payments to local entities. These
570 decreases come not only from the complete elimination of agricultural rental income from the properties
571 upon completion of wildlife habitat development, but also from reduced annual Congressional
572 appropriations for offsetting tax revenue losses to local taxing entities. Combined with the reduction in
573 tax revenues is a correlating reduction in local business. With reduced employment opportunities comes
574 reduction in local population. Those that have to move away have essentially become "conservation
575 refugees."
576

577 In their present form, the programs and policies of agency purchases of private lands converted
578 into wildlife conservation areas are totally incompatible with farming communities. Below is a listing of
579 some of the changes that need to be made in order for wildlife conservation development and recovery
580 operations to be valued, respected and openly supported in their respective communities and states.

581
582 1) Payments-in-lieu-of-taxes must be made directly to the affected political entities and continuously
583 adjusted, based upon the current market value for land in the surrounding area.

584
585 2) Payments in-lieu-of taxes must be made to all political entities supported and duly authorized in the
586 community.

587
588 3) The bonding capacity of an entity cannot be lowered due to the presence of agency-owned land. The
589 government agency must underwrite all bonded indebtedness assigned to their lands and guarantee
590 sufficient payments in-lieu-of taxes to support increases in indebtedness approved by the voters.

591
592 4) If payments-in-lieu of taxes are discontinued for any reason, the lands must be sold on the open
593 market to a tax revenue-producing owner or the affected public entity with the approval of the voters.

594
595 5) Basically the lands are to be used for the purposes of wildlife habitat. However, applicable portions
596 of such lands shall also be considered as being held in trust to be readily developed by local entities into
597 worthwhile public works projects such as potable water supplies, wastewater treatment facilities, parks,
598 road, railroads, drainage and flood control systems and port facilities and authorities.

599
600 6) Agency lands must be subject without privilege or exception to all local laws of condemnation and
601 powers of eminent domain.

602
603 7) The operation of agency lands must be subject to all local laws dealing with zoning and development
604 regulations, noxious weeds, fire protection, floodplain development regulations, etc.

605
606 8) Public or private ownership, or the operation of wetlands and other wildlife areas, shall not be
607 deducted from the total of lands for the purposes of determining benefit/cost ratios to meet the
608 requirements of eligibility for government grants and/or 84-99 funds for the repair of levees and other
609 flood control and drainage structures.

610
611 9) The agencies must not operate their lands in such a manner as to change the character of the existing
612 land use on adjoining properties. Judgments and awards should be granted liberally in favor of existing
613 land use on adjacent privately owned lands and liberally against agency policies that are detrimental to
614 adjoining land uses.

615
616 10) Spring pulses cause flood-related damage to local landowners and public facilities in three ways.
617 High water levels eliminate the functionality of drainage pipes; intermittent flows cause scouring of
618 river banks and undercut levees; and spring pulses during periodic spring time flood flows will overtop
619 and destroy area levees and cause flood depths up to more than 20 feet. Given these three negative
620 outcomes of damage from spring pulses, it is recommended that other methods for conservation of
621 species be implemented.

622
623 11) Local landowners believe that the agencies already have enough land authorized in sum total to meet
624 the requirements of the recovery program. They want public and private lands not now considered as

625 part of the total acreage authorized to be owned or controlled by the USACE and the US-FWS to be
626 included as already counting toward the targeted amount of acreage authorized for the habitat recovery
627 program. Local landowners believe that they are making a sufficient commitment toward the recovery
628 effort and continued acquisitions of land for recovery purposes are imposing too great a hardship on
629 them. Agencies need to cease land acquisition or control of any additional lands for the purposes of
630 conservation programs or recovery until:

631
632 a) All existing public and private lands utilized for conservation or recovery purposes are identified and
633 categorized in a data base with a conservation or recovery value that is consistent with like categories of
634 lands authorized for conservation programs or recovery;

635
636 b) The respective acreages of such identified and categorized public and private lands are included in
637 the targeted amount of lands needed for conservation programs for recovery purposes.

638
639 12) Government must provide for payment of losses, both public and private, resulting directly from
640 recovery practices. This would include flood insurance and facility and property repairs, for example.

641
642 13) The agencies should not enjoy special privileges on the lands that they control or own. As noted
643 above, some of these special privileges include: a) the non-payment of taxes for support of levees and
644 drainage; b) the non-payment of other taxes or substantially reduced payments of other taxes that are
645 not on par with those levied on adjoining private tracts both at the time of purchase and when land
646 values change; c) the loss of tax base resulting from the destruction of improvements (buildings) and
647 loss of personal property (livestock and machinery) upon initial purchase of property; d) the provision
648 that agency lands cannot be sold for non-payment of taxes; e) the fact that rights-of-way cannot be
649 condemned for public uses; and f) total exemption from local land use and zoning ordinances and
650 noxious weed and plant control ordinances.

651
652 14) Changes in agency policies should be designed to gain more positive support for recovery and
653 restoration projects. To help increase support for these projects and to make them more welcome to
654 local landowners and public entities, the following is recommended: 1) operation of wetland banks on
655 agency properties for use by private property landowners; 2) adherence to local zoning and noxious
656 weed laws; 3) input from local stakeholders on the use and features of properties to be purchase by
657 agencies. This would be implemented by public hearings before land purchases. Such uses and
658 features would include items that benefit adjoining landowners and entities, and would include but not
659 be limited to temporary construction and permanent easements for drainage and levee works and
660 assignment of flood protection and drainage benefits, etc.; and 4) halting the deposition of project
661 earthen spoils materials in streams by identifying alternative uses for earthen spoils materials, such as
662 using them for augmentation of area levees.

663
664 15) The MRERP should have a policy to monitor all stream bank erosion sites on public and private
665 lands and measure the resultant increases in shallow water habitat area and apply such additional areas
666 as they occur toward the total authorized acreage for the development of shallow water habitat for
667 recovery purposes.

668
669 16) The MRERP should have provisions for changing the policies and the scope of activities in the
670 MRRP.