



FEMA

November 27, 2009

Clerk of the Board
Civilian Board of contract Appeals
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Washington, D.C. 20036

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2009 NOV 30 P 3: 59
CIVILIAN BOARD OF
CONTRACT APPEALS
BS

DOCKET NUMBER: CBCA-1780-FEMA

Dear Sir of Madame:

Please find attached the Response of Federal Emergency Management Agency (FEMA) to the arbitration request submitted by Jefferson Parish, Louisiana, Department of Streets, filed as CBCA-1708-FEMA. Submitted with the Response is a binder of exhibits.

Please add the following Office of Chief Counsel's contacts for all notices and correspondences to FEMA related to the arbitration hearing: Linda M. Davis, Associate Chief Counsel-Program Law Division, 202-646-3327 or lindam.davis@dhs.gov; and Kim A Hazel, Senior Counsel-Program law Division, 202-646-4501 or kim.hazel@dhs.gov.

Very truly yours,

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BY NEXT DAY DELIVERY

cc: To the Applicant

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1 JEFFERSON PARISH
2 ROADWAY DAMAGE, PROJECT WORKSHEET ("PW") 17437
3 FEMA-1603-DR-LA
4 DOCKET # CBCA 1780-FEMA
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6 RESPONSE OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY TO
7 ARBITRATION REQUEST OF JEFFERSON PARISH DEPARTMENT OF STREETS
8

9 On October 30, 2009, the Federal Emergency Management Agency ("FEMA") received the
10 request of Jefferson Parish ("Applicant") to arbitrate FEMA's denial of funding for Project
11 Worksheet (PW) 17437. See Exhibit 1. PW 17437 represents FEMA's denial of funding to
12 restore roadway degradation and accelerated deterioration claimed as a result of flooding and
13 heavy equipment operations as a result of Hurricane Katrina. The Applicant requests
14 \$271,101,570 to restore flooded roadways to the same condition as non-flooded roadways. The
15 following constitutes FEMA's response to the Applicant's arbitration request.

16 **JURISDICTION**

17 The Applicant invokes jurisdiction pursuant to the American Recovery and Reinvestment Act of
18 2009, P.L. 111-5, which established a new option for review, arbitration, under the Public
19 Assistance (PA) program for award determinations related to Hurricanes Katrina and Rita under
20 major disaster declarations DR-1603-LA, DR-1604-MS, DR-1605-AL, DR-1606-TX and DR-
21 1607-LA. See 44 C.F.R. § 206.209.

22 The Applicant has met the regulatory guidelines for filing an arbitration request as outlined in 44
23 C.F.R. § 206.209.

24 **SUMMARY OF FEMA'S POSITION**

25 FEMA has provided over \$1,772,541 to the Applicant to repair disaster damage to roads in the
26 parish. FEMA determined the scope of work and calculated eligible funding based on physical
27 inspection of the roads with Applicant representatives from approximately September 2005 to

28 January 2007. The Applicant decided to abandon this cooperative effort with FEMA to inspect
29 each of its roads to identify disaster damage. Instead, the Applicant commissioned an
30 engineering study to determine disaster damage to the roads. The Applicant's engineering study
31 is not an acceptable method of identifying disaster damage to roads under the Public Assistance
32 program and it does not support the Applicant's request for \$271,101,570 in Public Assistance
33 funding. FEMA has identified multiple and wide-ranging technical and methodological errors
34 with the damage assessment and cost estimate report that the Applicant submitted. These errors
35 render the report's findings inconclusive and the estimate unreasonable and inappropriate for use
36 in preparing a PW. In addition, the Applicant requested funds to repair roads that are on the
37 federal-aid system. Federal-aid roads are not eligible for assistance under the Public Assistance
38 program.

39 **BACKGROUND**

40 **The Stafford Act**

41 FEMA, a component agency of the United States Department of Homeland Security, is
42 responsible for, among other duties, administering and coordinating the Federal governmental
43 response to Presidential-declared disasters pursuant to the Robert T. Stafford Disaster Relief and
44 Emergency Assistance Act ("Stafford Act").¹ See 42 U.S.C. §§ 5121 *et seq.* The Stafford Act is
45 triggered when, at the request of the governor of a state, the President declares an affected area to
46 be a "major disaster." See 42 U.S.C. § 5170; 44 CFR §§ 206.36; 206.38. Once a disaster is
47 declared, the President determines the types of discretionary assistance that may be made
48 available in the area declared for the disaster (the declared area). See 42 U.S.C. § 5170.

49

¹ The Stafford Act authorizes FEMA to promulgate rules and regulations necessary to carry out the provisions of the Stafford Act. 42 U.S.C. § 5164.

50 **The Declaration**

51 On August 29, 2005, the President issued a major disaster declaration for the State of Louisiana
52 as a result of Hurricane Katrina pursuant to his authority under the Stafford Act. See 42 U.S.C. §
53 5170. The President’s declaration includes Jefferson Parish. The State of Louisiana is the
54 grantee for all FEMA Public Assistance (PA) delivered in the State. See 44 CFR § 206.201(e).
55 Jefferson Parish is a sub-grantee of the State. See 44 CFR § 206.201(l). Under the Stafford Act,
56 FEMA may provide, *inter alia*, Public Assistance (PA). This declaration authorized all
57 categories of Public Assistance, including restoration of damaged facilities. See Exhibit 2.
58 Restoration of damaged facilities includes funding for either repair or replacement of eligible
59 facilities on the basis of the design of such facilities as they existed immediately prior to a major
60 disaster declaration. See 42 U.S.C. § 5172; 44 CFR § 206.226. When a facility must be repaired
61 or replaced, FEMA may pay for upgrades that are necessary to meet specific requirements of
62 reasonable current codes and standards. See 42 U.S.C. § 5172(e); 44 CFR § 206.226(d)(1)-(3).
63 The Stafford Act states that FEMA “may make contributions” for the repair, restoration, and
64 replacement of damaged facilities. See 42 U.S.C. § 5172. The Stafford Act allows FEMA, in its
65 discretion, to provide disaster assistance to states, local governments, and certain non-profit
66 organizations, if FEMA determines that the applicant, facility, and work meet eligibility
67 requirements. See 44 C.F.R. §§ 206.200 - .206. PA funding can be provided in the form of
68 grants for the state or local government’s own recovery efforts, 44 CFR § 206.203 or FEMA may
69 fund direct federal assistance by which either FEMA or another federal agency performs the
70 recovery work. See 44 CFR § 206.208. FEMA may also fund eligible private nonprofit
71 facilities, such as educational facilities or schools, as subgrantees. See 44 CFR § 206.223(b).
72 Finally, FEMA PA may fund the relocation of eligible destroyed facilities if the existing facility

73 is subject to repetitive heavy damage and the overall project is cost effective. See 44 CFR §
74 206.226(g).

75 Under FEMA’s regulations, to receive PA, the applicant must own an eligible facility as defined
76 by FEMA regulations, the facility must be damaged in a declared major disaster, the facility
77 must be within the disaster declared area, and repairs to the facility must be the legal
78 responsibility of the eligible applicant. See 42 U.S.C. § 5122; 44 CFR §§ 206.221 - .223;
79 206.226(c)(1). Under the PA program, a federal inspection team accompanied by a local
80 representative surveys the damage and estimates the scope and cost of necessary repairs. See 44
81 CFR § 206.202(d). The inspectors record the information they gather on “PWs”. Id. PWs
82 document damage caused by the disaster, and list, among other information, the scope and
83 “quantitative estimate for the eligible work.” Id.

84 After completion, FEMA reviews the PW in order to make determinations of whether to approve
85 funding for eligible work. Id. Thereafter, FEMA may make Federal disaster assistance funds
86 available (*i.e.*, “obligate”) based on the final PW. See 44 CFR § 206.202(e). A PW is not a
87 contract between FEMA and the State and/or sub-grantee to pay Federal disaster assistance and
88 does not create any right to receive any such Federal funds. See 44 CFR § 206.202(d). A PW
89 only provides estimates, based upon the engineering analysis and on-site investigation, of the
90 anticipated cost of a project. See Id. § 206.202(e); Gardiner v. Virgin Islands Water & Power
91 Auth., 145 F.3d 635, 644 (3rd Cir. 1998)(providing that required authorization cannot be implied
92 for contracts in emergency situations as specific steps are required to bind the United States).

93 **Appeals and Arbitration**

94 The Stafford Act authorizes appeals of PA decisions. See 42 U.S.C. § 5189(a). There are two
95 levels of appeal - the first to the Regional Administrator, the second to the Assistant

96 Administrator for the Disaster Assistance Directorate. See 44 CFR § 206.206(b). The American
97 Recovery and Reinvestment Act of 2009, P.L. 111-5, establishes a new option for arbitration
98 under the PA program for award determinations related to Hurricanes Katrina and Rita under
99 major disaster declarations DR-1603-LA, DR-1604-MS, DR-1605-AL, DR-1606-TX, and DR-
100 1607-LA. See 44 CFR § 206.209. A decision of a majority of this Panel shall constitute the
101 final decision, binding on all parties, and is not subject to judicial review, except as permitted by
102 9 U.S.C. § 10. See 44 CFR § 206.209(k)(3).

103 **Jefferson Parish, Louisiana Project – Roadway Repairs**

104 Hurricane Katrina caused flooding and submersion of many of the streets and rights of way
105 which the Applicant owned and maintained. Rain accumulation, in combination with debris
106 blockage, saturated soils, and insufficient drainage, caused flooding and standing water in most
107 of Jefferson Parish for approximately two weeks. See Applicant Request at 2. The Applicant
108 asserts that disaster recovery operations throughout the Parish damaged roadways and
109 surface/paving. See Applicant Request at 3. The damage resulting from heavy equipment
110 operations and debris hauling generally consisted of shattered, cracked, or displaced sidewalk
111 panels and drive aprons, depressed and/or damaged lengths of curb, and depressed, broken, or
112 damaged street sections. See Exhibit 3(c-g) at 2.

113 FEMA worked with the Applicant from approximately September 2005 until January 2007 to
114 identify physical and quantifiable damage to the roadway network. See Applicant Exhibit 9 at 2
115 and 4. A highly qualified team of FEMA roads specialists visited damage locations that the
116 Applicant identified. See Exhibit 4. The FEMA road team used the same guidelines to assess
117 damage to roadways throughout the New Orleans metropolitan area and Jefferson Parish to
118 identify disaster-related damage and eligible scope of work for use in seven separate PWs

119 totaling \$1,772,541. See Exhibit 5; see also Exhibit 3(a-g). The Applicant decided to
120 discontinue this cooperative effort with FEMA to visually inspect potential disaster damage to its
121 roads. Instead, the Applicant decided to use an engineering study and analysis of its road system
122 to estimate the amount of damage Hurricane Katrina caused and the estimated cost to repair any
123 estimated loss of roadway service life.

124 The Applicant contracted with Stantec Consulting Inc. (Consultant) to assess the impact of the
125 disaster on the Jefferson Parish. See Applicant Exhibit 7. The Applicant's stated intent for the
126 Consultant was to "provide another tool for assessing road damages." Id. at 2. On June 14,
127 2007, the Applicant presented preliminary findings to FEMA and GOHSEP representatives. Id.
128 at 1. Upon review of the Consultant report, FEMA determined the request to be ineligible for
129 FEMA funding and informed the Applicant. Id. at 2. The Applicant requested a PW to
130 document its request for assistance so that it could appeal FEMA's denial of its request. Id.
131 FEMA prepared PW 17437 on December 17, 2007, to document the Agency's denial of funding
132 to restore the claimed accelerated degradation and loss of service life of a significant portion of
133 the Jefferson Parish road system resulting from Hurricane Katrina. See Applicant Exhibit 7.
134 FEMA denied the Applicant's claim because that the Consultant report did not present specific
135 causes and dimensions of street damages, did not describe the work necessary to repair the
136 damage, and did not estimate the cost of repair. Id. at 3. Additionally, the FEMA determined
137 that long-term deterioration and loss of anticipated service life of the road system did not
138 constitute a valid claim. Id. In support, FEMA included as part of its decision a FEMA March 2
139 2007 letter stating, *inter alia*: "Loss of road life is not considered direct, disaster-related damage
140 and therefore is not eligible under the PA program." Exhibit 6 at 2.

141

142 **PROCEDURAL HISTORY**

143 **First Appeal**

144 The Applicant appealed FEMA’s determination for PW 17437 in a letter dated March 11, 2008.

145 See Applicant Exhibit 7. The Applicant contended that long-term submergence and abnormally

146 heavy traffic loadings for extended periods of time damaged the Parish’s roadways. The

147 Applicant maintained that the damage claimed is not “normal deterioration” or simply “loss of

148 road life,” but instead “damage” caused by a major disaster. Id. at 5.

149 On June 2, 2008, FEMA denied the Applicant’s first appeal of PW 17437. See Applicant

150 Exhibit 9. FEMA based its decision on a finding that the Applicant had not provided evidence of

151 specific disaster-related damage that could be identified and documented on a PW with a specific

152 damage description, scope of work, and cost estimate for actual, physical damage directly caused

153 by the disaster.

154 **Second Appeal**

155 The Applicant filed a second appeal in a letter dated July 29, 2008. See Applicant Exhibit 11.

156 The second appeal did not include any new information, but instead requested a meeting with

157 FEMA to discuss the appeal. The FEMA Public Assistance Director discussed the second appeal

158 with the Applicant and Grantee via a video teleconference call on March 24, 2009.

159 **Request for Arbitration**

160 The Applicant now files this request for arbitration seeking \$271,101,570 under 44 C.F.R. §

161 206.209. See Applicant Request at 11. The Applicant asserts that the damage its roads sustained

162 is comprised of degradation and accelerated deterioration primarily caused by extended

163 submersion under flood waters and exacerbated by the increased volume and weight of traffic

164 related to the recovery effort for months following Hurricane Katrina in connection with the

165 recovery effort. Id. at 3. The Applicant also contends that FEMA has previously recognized and
166 approved funding to repair similar damage for other agencies. Id. On November 17, 2009,
167 FEMA received GOSHEP’s letter in support of the Applicant’s request.²

168 STANDARD OF REVIEW

169 This Panel must afford considerable deference to FEMA’s interpretation of the statutory scheme
170 it has been entrusted to administer, and to its own regulations. See Chevron U.S.A., Inc. v.
171 Natural Resources Defense Council, Inc., 467 U.S. 837, 844 (1984); Udall v. Tallman, 380 U.S.
172 1, 16-17 (1965)(explaining that the “ultimate criterion is the administrative interpretation, which
173 becomes controlling weight unless it is plainly erroneous or inconsistent with the regulation”);
174 Hawaiian Elec. Co., Inc. v. E.P.A., 723 F.2d 1440, 1447 (9th Cir. 1984). As with judicial review
175 under the Administrative Procedure Act (APA), this Panel must affirm FEMA’s decision unless
176 it is arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law. 5
177 U.S.C. § 706(2); Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 415 (1971); Friends
178 of the Earth v. Hintz, 800 F.2d 822, 830-831 (9th Cir. 1986). The Agency’s decision is entitled to
179 a presumption of regularity and must be upheld as long as there is a rational basis for it. Citizens
180 to Preserve Overton Park v. Volpe, 401 U.S. at 415; Friends of the Earth v. Hintz, 800 F.2d at
181 831. Under the “highly deferential” standard of APA review, this Panel, like a court, “may not
182 substitute [its] judgment for that of the agency” but instead must presume “the agency action to
183 be valid and [will affirm] the agency action if a reasonable basis exists for its decision.” Kern
184 County Farm Bureau v. Allen, 450 F.3d 1072, 1075-76 (9th Cir. 2006)(internal citations
185 omitted).

186
187

² The Grantee presented no new additional issues related to the Applicant’s request for arbitration.

DISCUSSION AND ANALYSIS

188

189 A major disaster is by definition an event for which Federal assistance is necessary “to
190 supplement the efforts and available resources of States, local governments, and disaster relief
191 organizations in alleviating the damage, loss, hardship, or suffering caused thereby.” 42 U.S.C.
192 5122(2). The Stafford Act authorizes federal contribution to the cost to repair, restore,
193 reconstruct, or replace public facilities damaged or destroyed by a major disaster. 42 U.S.C 5172
194 (a)(1)(A). A public facility is a building, works, system, or equipment (built or manufactured),
195 or an improved and maintained natural feature, that is owned by a state or local government. 42
196 U.S.C. 5122(9). An eligible road is any non-Federal-aid street, road, or highway. Federal-aid
197 streets, roads, and highways are eligible for disaster recovery assistance through the Emergency
198 Relief (ER) program administered by the Federal Highway Administration (FHWA) and
199 therefore ineligible for FEMA PA assistance. See PA Guide, FEMA 322 (1999) at 19-20; see
200 also 42 U.S.C. § 5155. To be eligible for financial assistance, an item of work must be required
201 as the direct result of the major disaster event, be located within a designated disaster area, and
202 restoration must be the legal responsibility of an eligible applicant. See 44 CFR § 206.223(a);
203 see also PA Guide, FEMA 322 (1999) at 23-24.

204 The Applicant claims that flooding from Hurricane Katrina and subsequent vehicular traffic
205 degraded its roadways. See Applicant Request at 3 and 4. The Applicant’s Consultant prepared
206 a technical report that purportedly quantifies the extent of disaster-related degradation and
207 accelerated deterioration on the Parish’s flooded roadways. See Applicant Exhibit 4. On the
208 strength of the Consultant’s findings, the Applicant claims that its flooded roadways “will thus
209 require repair at a much earlier date than would have been necessary had the flooding not
210 occurred.” Id. at 4.

211 In response to Applicant’s arguments, FEMA in summary notes the following: (1) Although
212 Federal Aid to Highways funding may be available to the Applicant because it appears to have
213 such federally aided roads in the Parish, it has not sought to separate such roads from its request
214 to FEMA; (2) Applicant’s request for \$271,101,570 to restore the claimed loss of service life on
215 Parish roads is not eligible for FEMA PA; (3) FEMA’s denial is consistent with available
216 engineering data; and (4) FEMA has not recognized the eligibility and recoverability of identical
217 claims for roadway damage resulting from flooding. *Id.* at 3-4. The following discussion and
218 analysis is organized to address these four primary arguments.

219 **I. A Reduction in the Service Life of a Road is Not Eligible Damage under the Public**
220 **Assistance Program**

221
222 The Stafford Act authorizes assistance to repair, restore, reconstruct, or replace public facilities
223 damaged or destroyed by a major disaster. Public Assistance regulations provide that work to
224 restore eligible facilities on the basis of the design of such facilities as they existed immediately
225 prior to the disaster is eligible for reimbursement. FEMA has historically interpreted disaster
226 damage to mean an observed alteration of a facility that affects its pre-disaster function. The
227 alteration must be observable and the direct result of the disaster. Reimbursement for “damage”
228 that may occur at an unknown time in the future is not eligible under the Public Assistance
229 program. FEMA prepared multiple PWs to fund the repair of disaster damage to some of
230 Jefferson Parish’s roadways based on a physical inspection of each road that the Applicant asked
231 FEMA to inspect. See Exhibit 3. The Applicant has not provided specific evidence of actual
232 disaster-related damage that has impaired roadway functionality beyond that covered by these
233 approved PWs. The Applicant has also failed to demonstrate any diminished capacity of the
234 roads as a result of the disaster. For example, the Applicant has not provided evidence of road

235 closures, required alternate routes, increased traffic counts on alternate routes, gross vehicle
236 weight or speed restrictions on flooded routes, etc., which would suggest disaster-related impacts
237 to roadway capacity.

238 A reduction of roadway service life does not disrupt the normal functioning of
239 governments and communities. Actual physical damage does affect the normal
240 functioning of governments and communities as pavement failure directly impacts the
241 roadway function and capacity. Thus, FEMA’s determination that Applicant’s claim of
242 loss of future roadway service life is not eligible is both reasonable and consistent with
243 law.

244 **II. The Applicant’s Engineering Data Describing Disaster-related Loss of Roadway**
245 **Service Life Is Inconclusive Because of the Methodology Used and Technical Errors**
246

247 The Applicant claims that the damage it seeks to recover:

248 “[I]s neither hypothetical nor speculative, nor is it calculated by resort to esoteric,
249 smoke and mirrors methodologies; rather, nationally recognized highway
250 engineers retained by (the Applicant) have measured and quantified actual
251 damage using well-established and long-recognized engineering principles, the
252 validity of which are beyond reproach.” Exhibit 1 at 3.

253 FEMA retained a pavement specialist to review the technical report (Report), see Applicant’s
254 Exhibit 4, prepared by the Applicant’s consultant, Stantec (Consultant), in support of its
255 Arbitration Request. See Exhibit 7. The review objective was to determine (1) whether the
256 Consultant’s methodological approach was reasonable to determine disaster-related damage and
257 (2) whether the Report demonstrated that flooding produced quantifiable damage to the
258 Applicant’s road network. FEMA’s pavement specialist found a number of wide-ranging

259 methodological and technical errors related to the Consultant’s selection of the study area and
260 collection and analysis of data. Id. at 1-2. These errors render the engineering results
261 inconclusive regarding the extent of disaster-related damage or any reduction in roadway service
262 life on Jefferson Parish roads and streets. Id. The following discussion summarizes and
263 demonstrates some of the fundamental methodological errors from FEMA’s pavement
264 specialist’s more detailed analysis of the Consultant’s Report. Id.

265 **A. After Reviewing Both Functional and Structural Analyses, the Applicant and**
266 **its Consultant Chose the Structural Analysis as the Basis for its Cost**
267 **Estimate**

268
269 The Applicant’s Consultant gathered two different types of pavement condition data in an
270 attempt to quantify actual disaster-related pavement failure (“functional”) and disaster-related
271 pavement strength degradation (“structural”). See Applicant Exhibit E.1-E.2.

272 “The main reason Stantec collected both functional and structural pavement
273 condition data for pavements is because of the fact when pavements are
274 submerged with water for extended periods of time, the surface may appear free
275 of distress, however, voids and weakness in the roadbed soils can result in
276 pavement failure.” Id. at E.1.

277 Although the Consultant analyzed both functional and structural data, the Applicant based its
278 repair scope and cost on analysis of the structural data. See Applicant Exhibit 4 at E.7-E.8.

279 “To quantify the extent of the repairs necessary we have used the results of the
280 structural testing since these provide an estimate of the additional asphalt or
281 concrete required to return the flooded roads to the same strength as the non-
282 flooded roads.” Id.

283 The Consultant’s findings led the Applicant to conclude that Jefferson Parish roadways “clearly
284 sustained a measurable degree of degradation which has resulted in accelerated deterioration and
285 *will thus require repair at a much earlier date* than would have been necessary had the flooding
286 not occurred” (emphasis added). *Id.* at 4. In short, the Applicant’s Arbitration Request is not to
287 repair actual pavement failure, but is instead to restore the potential claimed future reduction in
288 the service life of the Parish’s roads due to flooding and unusually heavy equipment travel.
289 The Applicant argues that repairs to restore estimated roadway service life are eligible because
290 they are required as a result of the disaster. See Applicant Request at 3; see also 44 C.F.R. §
291 206.223(a)(1).

292 In implementing the permanent work provisions of the Stafford Act, its regulations and its
293 policies, FEMA looks at a facility’s pre-disaster *function* and *capacity* in determining the eligible
294 scope of work and cost. FEMA prepared multiple PWs to restore functionality of Jefferson
295 Parish roadways damaged by the disaster.

296 **B. Moreover, the Applicant’s conclusions from the Consultant’s functional**
297 **analysis results are incorrect and misleading**

298
299 The Applicant explains that it carried out a “windshield survey” of the distressed areas. See
300 Applicant Exhibit 4 at E.1. This means that the consultant did not walk the roads but rather
301 drove the roads and looked out of the car windows and windshield at the roads below. FEMA’s
302 pavement specialist noted:

303 The study relied on the analyses of pre and post flood data. Post-flood functional
304 data, both roughness and surface distresses, were collected as noted on p.15 of
305 Appendix A using the Consultant’s RT3000 equipment. The distress data was
306 collected using a windshield survey approach. Roughness data was collected in

307 terms of the International Roughness Index (IRI) and converted to RCI. The data
308 collection methodology and equipment used for the pre flood data was not
309 indicated in the study report. For the data analysis to be valid, data collection
310 methodologies and equipment must be the same.

311 Distress data collection is known to be subjective because it is determined
312 manually. Differences in survey personnel experience, time of day of data
313 collection (ambient lighting), interpretation of observations and speed of data
314 collection, among other factors, can contribute to variability in surface distress
315 ratings. In the case of the 2006 Louisiana Department of Transportation and
316 Development (LaDOTD) study referenced on p.1.5 of the Consultant's report,
317 distress ratings were not used due to their subjective nature. This inherent
318 variability in manual distress ratings is not accounted for within this study. The
319 confidence level of collecting windshield data is also not known. The 'PCI' data
320 collected by the City of Napa, for example, can be collected at a 95% confidence
321 level in accordance with ASTM D 6433, while windshield data cannot.

322 Exhibit 7 at 8-9. As FEMA discusses below, the City of Napa data was developed by walking
323 the roads where details can be determined, not driving down the roads. See Exhibit 4, Appendix
324 A at 15 (which shows the vehicle). In fact the evidence which the Consultant developed using
325 the functional analysis was insufficiently conclusive and led it to conclude that a "structural,"
326 i.e., hypothetical and computerized, analysis would lead to results demonstrating a greater loss of
327 roadway service life. See Applicant Exhibit 4 at Appendix A at 38 (discussing its functional
328 analysis "which **might** indicates [as in original] that the flooding did in fact accelerate the
329 deterioration of the pavement" and "roadway level analysis showed that on some the roadways. .

330 . the flooded sections had a lower PQI (worst functional condition) than the sections that were
331 not flooded, indicating **possible** damage due to flooding.”)

332 The Report evaluates various condition indices determined in 2007 (PQI, Ride Comfort Index
333 [RCI] and Surface Distress Index [SDI]) in terms of whether they are associated with a haul
334 route, non-haul route, flooded or control (not flooded) pavements. See Applicant Exhibit 4,
335 Appendix A, Figure 5.4 at 25. The data set shows that the flooded sections are in better
336 condition than the control sections for PQI of non-haul sections and for SDI of haul sections.
337 Additionally, the condition of haul sections for all indices, whether flooded or control, is
338 significantly higher (better) than for non-haul roads. Within the study sample, approximately 48
339 percent of all control roads are non-haul (worse condition) while 71 percent of flooded sections
340 are haul (worse condition). The weighted average condition is calculated and used to support the
341 Applicant’s hypothesis (i.e. any difference in pre- and post-flood is a result of the disaster). The
342 weighted average, however, is skewed for flooded versus control due to the difference in data
343 population between haul and non-haul. This skewed weighted average is the condition
344 inappropriately used to support the conclusion that flooded roadways sustained a greater level of
345 disaster-related damage than non-flooded roadways. See Exhibit 7 at 10.³

346 **C. The Applicant’s Study parameters were incomplete because they did not**
347 **properly analyze the pavement’s age and pre-flood condition**

348
349 The Applicant Consultant based its findings on a comparison of flooded and non-flooded (the
350 control) roadway segment characteristics. See Applicant Exhibit 4 at 2.1-2.2. The Applicant
351 claims that this study methodology eliminates all variables but flooding from the evaluation. See

³ Moreover, both the data provided is deficient because the functional and structural condition and performance data provided in the Consultant Report is limited to average results. The Report omits data necessary for independent verification of findings. Id. at 8.

352 Jefferson Parish Arbitration Submission at 7. For the Applicant's claim to be valid, the study
353 must also consider, at a minimum, the pavement's pre-flood condition and pavement age.
354 Pavements are well known and documented to deteriorate in a typical way over time. By using a
355 Generic Pavement Deterioration Curve (as adapted from FHWA, DOT-1-85-37), a pavement
356 lifecycle curve and specific relationships between condition and time will vary depending on
357 local conditions and also pavement type making it critical to have local and accurate condition
358 data and associated lifecycle curves (also called performance models). The condition and age of
359 the pre-flood pavement sections within the study area are, therefore, critical for accurate and
360 complete data analysis. Without such data, erroneous conclusions may be drawn regarding the
361 rate of deterioration (RD) on average between the flooded roads and control (non-flooded). The
362 Consultant Report omits any information on the pre-flood condition and pavement age of the
363 roads making independent verification of the Applicant's claim (and the Consultant's findings)
364 impossible. See Exhibit 7 at 4-5.

365 **D. The Consultant Report does not demonstrate that its findings for the study**
366 **area are representative of the Applicant's entire pavement network.**

367
368 Although the Consultant Report focused on approximately 18 percent of the Applicant's road
369 network, the Report omits data necessary to independently verify that the sampled roadway
370 segments are representative of the Applicant's pavement network. For example, consider
371 pavement type: the study sample includes approximately 143.3 miles (44 percent) of hot mix
372 asphalt and 185 miles (56 percent) of rigid (Portland Cement Concrete) pavement. A much
373 different proportion of pavement type at the network-wide (e.g., 65 percent hot mix asphalt)
374 would render inconclusive generalizations about study findings to the entire roadway network.
375 Id. at 4.

376 **E. The structural analysis is not valid.**

377 The structural analysis of pre- and post-flood conditions at the network (and road) level relies on
378 comparing data collected initially with one type of equipment (Dynalect) to data collected after
379 flooding with another type of equipment (FWD). These two devices are quite different, with the
380 latter an improved device for simulating traffic loading on pavement. An industry standard does
381 not exist to convert Dynalect data to FWD data. The conversion methodology includes multiple
382 regression models that the Consultant acknowledges may compromise the overall accuracy of the
383 results. Id. at 9.

384 **III. FEMA’s Assessment of Disaster Road Damage is Consistent with Its Prior Road**
385 **Assessments in Hurricane Katrina and Other Disasters**

386
387 The Applicant alleges that denial of funding to restore loss of roadway service life in PW 17437
388 is inconsistent with prior FEMA decisions for other applicants. See Jefferson Parish Arbitration
389 Submission at 12. To support this claim, the Applicant references a FEMA second appeal
390 decision for the City of Napa (DR-1628-CA) and a FEMA press release announcing funding
391 obligated to repair roadways damaged by Hurricane Katrina in St. Bernard Parish. Id. Contrary
392 to the Applicant’s assertion, the Napa and St. Bernard cases demonstrate that FEMA’s denial of
393 PW 17437 is consistent with Agency practice that reparation of facility service life is ineligible.

394 **A. City of Napa PW 3646 (DR-1628-CA)**

395 The Applicant cites a FEMA’s second appeal decision as evidence that “FEMA...has recognized
396 the eligibility and recoverability of the identical type of damages for which (Jefferson Parish)
397 presently seeks reimbursement.” Id. at 5. In addition to the claim of identical damage, the
398 Applicant asserts that its methodology for indentifying flooding impacts to Jefferson Parish
399 roadways is superior to methodology accepted by FEMA in the Napa claim:

400 “(Jefferson Parish) submits that the evidence it has submitted in support of its
401 claim, as contained in the attached Stantec report, goes well beyond, and proves to
402 an even greater degree of engineering certainty than was required by FEMA in the
403 Napa case, the identical type of flood-induced roadway degradation which
404 (Jefferson Parish) claims...Stantec...tested and analyzed not only the functional
405 condition of the roadways like Napa did, but also the more reliable, objective, and
406 quantifiable structural condition...” Id. at 6-7.

407 In a second appeal decision, dated October 14, 2008, FEMA partially approved Napa’s request
408 for funding to repair damage to city-maintained roads caused by heavy rains and winter storms
409 (DR-1628-CA). See Applicant Exhibit 5. In the Napa case, FEMA determined that the city had
410 provided evidence of actual post-disaster deterioration of certain roads that could be directly
411 attributable to inundation and debris removal operations. The documentation provided by the
412 city included pre- and post-disaster data in the form of a Pavement Conditions Index (PCI), a list
413 of the equipment used in the debris removal operations, and photographs showing evidence of
414 actual damage to road surfaces due to the scraping and traffic associated with the cleaning of
415 road surfaces. The resultant repairs approved by FEMA included either a slurry seal or a cape
416 seal depending on the level of disaster damage identified (moderate or severe). It should be
417 noted that FEMA determined that the PCI results also demonstrated some level of pre-existing
418 damage or deterioration of the streets in question. FEMA determined that repair of pre-existing
419 damage was not eligible, resulting in the partial approval.

420 FEMA requested the assistance of a pavement specialist to compare the methodology and
421 damage claim of the NAPA second appeal decision to the methodology and damage claim
422 presented by the Applicant. The pavement specialist found that the damage claimed in each case

423 was not identical and that Applicant’s claims that the Stantec methodology is superior to the
 424 Napa methodology are inappropriate and misleading. See Exhibit 11.
 425 First, the damage described in the Napa case and the Applicant’s Consultant as the basis of the
 426 respective claims is not identical. As demonstrated in the following table, the repair scope of
 427 work approved by FEMA in the Napa case involved repair to visible pavement deterioration and
 428 failure whereas the Applicant’s request is for restoration of pavement strength in advance of any
 429 specific deterioration or failure.
 430

City of Napa PW 3646 DR-1628-CA	Jefferson Parish PW 17347 DR-1603-LA
Repair scope of work approved by FEMA based on analysis of functional data (PCI).	Requested repair scope of work based on analysis of structural data. <u>See Exhibit 1 at E.7-E.8.</u>
Functional data gathered in accordance with industry PCI standard (ASTM D 6433) and therefore PCI result can be reported at 95 percent confidence level.	No evidence that Applicant Consultant gathered functional data in accordance with any industry standard. Applicant Consultant gathered functional data through windshield surveys, not on a sample unit basis. Confidence level of a windshield survey cannot be determined.
Claimed damage documented with photographic evidence of direct and observable pavement deterioration and failure.	No specific evidence of direct and observable pavement deterioration or failure. Claimed damage is loss of service life with the need to repair direct and observable pavement deterioration and failure if and when it occurs at some point in the future. <u>See Exhibit 1 at 4.</u>
Direct and observable pavement deterioration and failure attributed to disaster based on comparison functional data documented by PCI immediately before and after the disaster. FEMA obligated scope of work related to disaster-related change in pre- and post-disaster conditions.	Applicant Consultant used a forecast model based on pre-disaster data gathered in 2002; however, the forecast models predicted conditions that were much worse than actual post-flood measurements. Applicant Consultant abandoned functional methodology in favor of a structural methodology that relies on a comparison of post-disaster flooded and non-flooded roadway segments.
Damage assessment and repair claim based on analysis of functional data, not structural data.	Although the Applicant Consultant gathered both functional and structural data, the claimed loss of service life and requested repair scope of work is based on analysis of structural data, not functional data.
Approved scope of work includes slurry seal and cape seal; appropriate for specific locations of pavement deterioration or failure (e.g., cracks).	Requested scope of work includes AC overlay, mill and overlay, or reconstruction; appropriate for large pavement surface areas to restore a general loss of pavement service life (e.g., lanes or segments).

431

432 Perhaps most misleading of the Applicant's statements is the claim that its Consultant
433 demonstrated damage with a greater degree of engineering certainty than did Napa. Id. at 3-4.
434 Structural-based data analysis is not necessarily better or worse than functional-based data
435 analysis. The two methodologies are intended for different purposes. For example, Napa used
436 the functional methodology to identify disaster-related damage including pavement deterioration
437 and failure requiring slurry seal and cape seal. The Applicant's Consultant, on the other hand,
438 used structural methodology in an attempt to show relative structural weakness of flooded
439 segments requiring overlay and reconstruction to restore service life. The FEMA-retained
440 pavement specialist concluded: "This does not make the (Jefferson Parish) evaluation more
441 thorough, rather they were addressing a different concern and therefore employed an additional
442 analysis." Id. at 4. Given that the functional-based data analysis failed to demonstrate disaster-
443 related pavement failure that could be repaired similar to the Napa case, the Applicant's
444 Consultant applied a structural methodology in an attempt to demonstrate disaster-related
445 structural loss of life. Id.
446 In conclusion, the Napa case does not support the Applicant's argument that FEMA has
447 recognized the eligibility and recoverability of roadway loss of service life.

448 **B. St. Bernard Parish Roadway Damage**

449 The Applicant's Arbitration Request asserts five times that FEMA has approved funding to
450 restore loss of service life in other roadway flooding cases. See Exhibit 1 at 1, 3, 4, 5 and 12.
451 Notwithstanding assiduous repetition of the claim, the Applicant's only direct reference to
452 support this claim is to Napa. A footnote represents a second, indirect, reference. Id. at 12. In

453 this footnote, the Applicant references a FEMA press release announcing funding of roadway
454 repairs in St. Bernard Parish, Louisiana. Id.; see also Applicant Exhibit 15.
455 Hurricane Katrina flooded all of St. Bernard Parish, including the entire roadway network. The
456 press release notes that damage impeded functionality of the Parish’s roadways: “The streets of
457 St. Bernard Parish were so greatly damaged by Hurricane Katrina that residents’ travels
458 throughout their communities were often impeded.” See Exhibit 15 at 1. FEMA, GOHSEP, and
459 Parish officials identified the pavement failures that impeded roadway functionality by walking
460 hundreds of miles of streets to develop specific damage descriptions, scope of repair, and cost
461 estimate prior to approving additional funding for roadway repairs. Id.
462 FEMA’s funding for roadway repairs in St. Bernard Parish is consistent with Stafford Act
463 provisions to repair disaster-related damage. As described in the press release, FEMA based its
464 funding decision on disaster-related damage determined by visual inspection (a functional
465 methodology). Funding would repair pavement failure and restore functionality of damaged
466 roadways as necessary to expedite the return of normalcy of government and community,
467 consistent with law. See 44 U.S.C. § 5121(a)(2).
468 Whereas the Applicant attempts to use the St. Bernard Parish example as evidence in support of
469 its claim to loss of service life restoration, the press release, like the Napa case, is further
470 evidence of FEMA’s consistency with respect to assessment of disaster-related roadway damage
471 and eligible scope of work.

472 **IV. Applicant’s Cost Estimate is Not Reasonable or Appropriate**

473 By law, FEMA has sole authority to determine eligible cost. See 42 U.S.C. 5172(e); see also 44
474 C.F.R. § 206.205(b)(2). Given this responsibility, FEMA developed guidelines to develop cost
475 estimates to serve as the basis for obligation of PA funds. See Exhibit 8. These guidelines

476 include a six-step procedure for reviewing the reasonableness and appropriateness of an
477 applicant-submitted estimate that is based on an architectural or engineering (A/E) report. Id. at
478 27. These six steps must be completed prior to using an applicant’s estimate as the basis for
479 obligating funds. Id. at 19-29.

480 A FEMA cost estimating specialist used the six-step guidelines to review the estimate prepared
481 by the Applicant’s Consultant and found a number of errors that demonstrate the submitted
482 estimate is neither reasonable nor appropriate for use in a PW.⁴ See Exhibit 7.

483 *Step #1: Verify that all items of work included in the estimate are eligible.*

484 For reasons identified throughout this response, FEMA maintains that restoration of roadway
485 service life is ineligible for FEMA PA assistance. Further, a review of the Applicant’s
486 Consultant report identified a number of technical and methodological flaws that render the
487 report findings inconclusive with respect to flood impacts on roadway service life. These
488 findings alone are sufficient justification to reject the Applicant’s repair estimate. However,
489 given that the scope of work eligibility is the subject of this arbitration, FEMA’s review of the
490 Applicant’s A/E estimate necessarily advances to Step #2.

491 *Step #2: Check the 10 largest cost items against local average weighted unit prices or R.S.*
492 *Means cost data.*

493 FEMA cost estimating guidelines require an “attempt to obtain average weighted unit prices (local
494 costs derived from actual contract history) from the applicant, or from relevant state or regional
495 agency. Id. at 25. The Applicant’s cost estimate references unit prices from construction bid
496 documents; however, the Arbitration Request failed to include any supporting documentation to
497 facilitate independent review or verification. See Applicant Exhibit 4 at 4.2. To facilitate review,

⁴ The Applicant’s Request for \$271,101,570 to restore loss of roadway service life is less than the estimate prepared by the Applicant’s Consultant for the identified scope of work (\$275,101,570). See Exhibit 1 at 11; see also Applicant Exhibit 4 at 3.3. FEMA assumes the disparate estimates are the result of error.

498 FEMA obtained unit prices from Louisiana Department of Transportation and Development
 499 (LADOTD) bid tabulations. See Exhibit 10.
 500 The Applicant’s Consultant report included cost items for only four scope of work treatments. See
 501 Applicant Exhibit 4 at 3.1 and 3.3. As such, the FEMA cost estimator compared all four cost
 502 treatments to LADOTD bid tabulations. See Exhibit 10 at 3. The Applicant’s Consultant failed to
 503 specify thicknesses or material types, making independent validation of the submitted estimate
 504 impossible. However, for the purposes of this review, the FEMA cost estimator made certain
 505 assumptions for the omitted variables based on extensive roadway design and construction
 506 experience. The comparison reveals that half of the unit cost items used by the Applicant’s
 507 Consultant are not comparable to LADOTD bid tabulations. Incomparability with LADOTD bid
 508 tabulations is sufficient grounds for rejecting the Applicant’s estimate for use as the basis of
 509 obligating funds.

510

Treatment	Stantec Report	LADOTD Bid Tabs	Key Assumptions	Disposition
AC (Asphalt Concrete) Overlay	\$1.60	\$ 1.23	2" overlay	Invalid (>10%)
Mill and Overlay	\$3.75	\$ 1.56	2" overlay	Invalid (>10%)
(Asphalt Pavement) Reconstruction	\$8.00	\$ 7.78	8.5" asphalt thickness	Valid
Portland Cement Concrete (PCC) Slab Replacement	\$13.89	\$12.44	6" un-reinforced slab	N/A
Adjusted PCC Slab Replacement	\$12.51	\$12.44	6" un-reinforced slab	Valid

*PCC Slab Replacement Costs are inclusive of administrative and overhead costs, as defined in the report

511

512 *Step #3: Check 20 to 30 percent of the remaining cost items at random against local average*
 513 *weighted unit prices or R.S. Means cost data.*

514

515 As described in Step #2, the Applicant’s Consultant report includes unit price data for only four
 516 scope of work items. Therefore, completion of Step #2 satisfies completion of this third step in
 517 the review process.

518

519 *Step #4: If line item unit costs checked in the A/E construction cost estimate are within 10% of*
520 *the local average weighted unit prices or R.S. Means cost data, use the A/E*
521 *construction cost estimate.*

522
523 Completion of Step #2 revealed that half of the line item unit costs in the Applicant's A/E
524 estimate are not within 10 percent of the LADOTD bid tabulations. Therefore, the Applicant's
525 A/E estimate is not reasonable or appropriate for use in a PW.

526
527 *Step #5: If line item unit costs checked in the A/E construction cost estimate are not within*
528 *10% of the local average weighted unit prices or R.S. Means cost data, assume the*
529 *entire estimate is not comparable and develop a new base cost estimate. Care should*
530 *be exercised to ensure that the scope of work used to develop a new base cost*
531 *estimate contains eligible items only.*

532
533 The FEMA cost estimator did not complete this step because the A/E estimate unit prices were
534 determined to be inappropriate and unreasonable and FEMA has determined that the requested
535 scope of work is ineligible. Therefore, completion of a new base cost estimate is not applicable.

536
537 *Step #6. After completing the base cost estimate, enter the totals in the appropriate fields into*
538 *the FEMA Cost Estimating Format (CEF) summary for uncompleted work.*

539
540 The FEMA cost estimator did not complete this step because the A/E estimate unit prices were
541 determined to be inappropriate and unreasonable and FEMA has determined that the requested
542 scope of work is ineligible. Therefore, completion of a CEF to estimate eligible cost is not
543 applicable.

544

545 **V. FEMA's Cost Estimator Noted Other Technical and Methodological Errors in the**
546 **Applicant's Cost Estimate**

547
548 For reasons summarized below and outlined in greater detail in Exhibit 10, the Applicant's
549 request for \$271,101,570 is neither a reasonable nor an appropriate estimate of the cost to restore
550 the claimed loss of roadway service life. In addition to the errors outlined above, the FEMA cost

551 estimator found a number of other specific errors with the Applicant-submitted estimate.
552 Specifically:

553 **A. Inconsistencies, Inaccuracies and Duplicate Entries in Street Segment**
554 **Registers.**

555 The FEMA cost estimator identified at least 14 duplicate entries in the first three pages of 61
556 total pages in Table D.1 of the Applicant's report, with at least one roadway segment (Power
557 Blvd from W. Esplanade to 37th) listed in triplicate. See Applicant Exhibit 4 at Appendix D.

558 **B. Inadequately defined proposed treatments and repairs.**

559 The Applicant's proposed pavement treatments assume the same square-foot unit rate applied across
560 a range of AC overlay values (i.e., the proposed repair methods are not properly defined by material
561 composition or thickness). For example, even though the cost of overlaying 1.99" would be
562 \$1.60/sf, the cost of overlaying 2.01" (just 0.02" more) is the same as the cost to overlay 4.00"
563 (\$3.75/sf). See Applicant Exhibit 4 at 3.1.
564

565 **C. Inconsistencies between identified acceptable repair methods.**

566 In Section 3.1, the Consultant Report states that mill and overlay is the assumed scope of work for
567 all flooded asphalt pavements. However, in Section 3.2, the Report contradicts this approach with
568 identification of AC overlay as an appropriate treatment method in specific circumstances. If mill
569 and overlay is assumed where AC overlay is sufficient to restore loss of roadway service life, the
570 excess scope of work results in an inflated cost estimate. See Applicant Exhibit 4 at 3.1-3.2.
571

572 **D. The reliance upon the Applicant's experience as the sole basis to establish**
573 **that 30 percent of flooded slabs require replacement.**

574 The Applicant's assumption that 30 percent of the PCC slabs subject to flooding require
575 replacement is not based on any specific or verifiable evidence. The cost estimate associated
576

577 with this unsubstantiated assumption amounts to \$65,965,294, or approximately 24 percent of
578 the total repair estimate. See Applicant Exhibit 4 at 3.3 – 3.4.

579 **VI. Restoration of Federal-aid Roads is Not Eligible For FEMA Funding**

580
581 Finally, the Applicant bases its request on analysis of data collected by its Consultant on 328
582 miles of Jefferson Parish’s road network. See Applicant Exhibit 4 at E.1. A visual comparison
583 of maps depicting the Applicant’s tested roadways and FHWA Federal-aid roadways, and the
584 Consultant’s road segment repair estimate, reveals that the Applicant’s request assumes repair of
585 many Federal-aid system roadway segments. See Applicant Exhibit 4 at 2.3, Exhibit 8, and
586 Applicant Exhibit 4(C-D), see, as an example, W. Esplanade Ave: See Applicant Exhibit 4(D) at
587 D.2-D.11, D.15-D.22, and D.50-D.52; Applicant Exhibit 4(E) at E.2-E.12, E.17-E.41, and E.43.
588 Because restoration of Federal-aid system roadways falls under the authority of the FHWA,
589 FEMA PA assistance is ineligible as a prohibited duplication of benefit. See PA Guide, FEMA
590 322 (1999) at 19-20; 42 U.S.C. 5122 (9)(B); see also 42 U.S.C. § 5155. The Applicant has not
591 separated out those roads for repair or “loss of life” which are part of the Federal Aid to
592 Highways system from those roads which are maintained solely by the Parish. It must do so.

593
594
595

CONCLUSION AND RECOMMENDATION

596 The Applicant’s request for funding to restore a claimed loss of roadway service life is ineligible
597 for FEMA PA funding. FEMA maintains that loss of service life does not affect the pre-disaster
598 function and capacity of the Applicant’s roadways and its decision to deny PW 17347 is
599 consistent with FEMA decisions on other flooded roadway projects. FEMA’s review of the
600 Applicant’s Consultant Report identified multiple and wide ranging technical and
601 methodological errors with the damage assessment and cost estimate, rendering findings

602 inconclusive and the estimate unreasonable and inappropriate for use in a PW. Finally, the
603 Applicant's Request also includes repair scope and cost to restore service life on ineligible
604 Federal-aid system roadways. As such, FEMA's denial of PW 17437 was reasonable,
605 appropriate, and consistent with law. FEMA, therefore, respectfully requests this panel find in
606 favor of FEMA and deny the Applicant's request for additional Public Assistance funding.

607

608

609 Respectfully submitted on this 27th day of November 2009 by,

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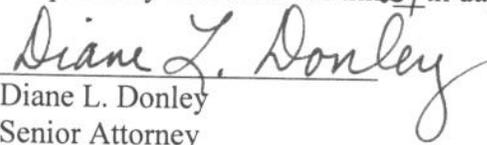
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Diane L. Donley
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Attachments