March 11, 2011

INTEROFFICE MEMORANDUM

TO: Mayor Sam Adams

FROM: Terence Thatcher
Deputy City Attorney

SUBJECT: Scheduling Issues with Proposed CRC Bridge Designs

Recently you met with State of Oregon staff regarding the CRC bridge designs proposed by the Bridge Review Panel. You were cautioned that choice of the Cable-Stayed alternative would require a new endangered species biological opinion (BO) from the National Marine Fisheries Service (NMFS), which could take two years to conduct. On the other hand, Oregon staff suggested that choice of the Composite Deck Truss alternative would *not* encounter similar delays. You asked my reaction to these warnings.

I fundamentally disagree with the suggestion that choice of the cable-stay design would lead to years of delay. To the contrary, I believe that, presented with a CRC design change, NMFS would do one of two things. First, it might simply issue a letter of concurrence, declaring that the design changes do not alter the impacts to fish and reaffirming the initial BO. Alternatively, NMFS could prepare a supplemental BO, assessing the changes and concluding that the changes do not alter the basic "no jeopardy" conclusion. In any case, production of a letter of concurrence or a supplement BO would reasonably take six months *or less* to produce.

My conclusion is based on: (1) my analysis of the existing Biological Opinion on the previous open-web box girder bridge design; (2) my study of the Review Panel's assessment of in-water impacts of the alternative designs; (3) consultation with Rick Applegate, who now works with the City but who used to run the NMFS Habitat Conservation Division that was responsible for the production of biological opinions; and (4) my thirty years' experience in the practice of natural resource law. Rick and I would be happy to meet with you to discuss our conclusions, if you wish.

THE BULK OF THE WORK FOR A BIOLOGICAL OPINION IS ALREADY DONE

NMFS has already produced a 112-page BO on the previously proposed open-web bridge design after working with the CRC since August 2005. To produce that BO, NMFS had to (1)

determine which species might be affected by the CRC and assess their current status[1]; (2) define the "action area," that is, the area where species were likely to be affected; (3) determine the "environmental baseline" in the action area, including the use of the area by the species of concern; and (4) consider the potential effects of the CRC proposal. Thus, if NMFS were asked to prepare a new or supplemental BO on a changed bridge design, it has already conducted the first three tasks required in the creation of any BO. They would not have to be repeated.

In addition, the bulk of NMFS "effect" analysis in its initial BO also applies, with little or no change, to any new bridge designs. The primary effects to species of the CRC identified by NMFS are (a) construction noise and other construction related impacts to species, (b) reduced water quality caused by storm water run off, and (c) displacement of fish habitat by the bridge pilings and piers. NMFS' existing BO notes that the potentially most serious impacts of the CRC work will arise from construction noise, predator-encouraging shading from temporary docks and barges, and reduced water quality from storm water run off. Those concerns arise no matter what bridge design is chosen and NMFS has already decided that construction and water quality impacts from the CRC are not serious enough to cause species' jeopardy. A supplemental BO would not have to revisit these issues simply because the final bridge design is different from the original open web design. Thus, most of the effects analysis in the original BO remains valid and the work on a supplemental BO would be very limited (see below).

THE NEW DESIGNS WILL RESULT IN MINIMAL, AND MOSTLY POSITIVE, CHANGES TO THE BRIDGE'S IMPACT ON ENDANGERED SPECIES COMPARED TO THE ORIGINAL DESIGN

Given all the work already done on the original CRC BO, there is really just one issue that NMFS would have to reassess in order to create a supplemental BO. That is, it would have to consider whether the new design significantly changed the amount of physical fish habitat that would be lost to bridge footings within the "action area." If new designs substantially increased the amount of habitat lost compared to the previous design, NMFS might be faced with significant new analytical burdens. If the new designs do little to change physical habitat impacts, then NMFS can fairly easily supplement its initial analysis.

In fact, none of the new designs significantly change physical habitat losses in comparison to the open-web design. All but one actually *reduce* habitat losses below those caused by the previous design. Moreover, NMFS has already announced two principles of habitat analysis that significantly ease the burdens of conducting a review of the new bridge

[1] Species potentially affected include several fish species, sea lions, and killer whales that feed on the fish species when they are off-shore.

designs. Those principles provide assurance that NMFS' "no-jeopardy" opinion for the open-web design can easily (and quickly) be transferred to any of the new design concepts.

First, NMFS has concluded that the significance of habitat loss can first be assessed simply by calculating the amount of river "bottom," in square feet, that would be occupied by the bridge-supporting steel pilings and cement "pile caps." If one assesses habitat loss by square footage, the new designs, including the cable-stayed project, are all either quite similar or less damaging to habitat than is the open-web design. The Design Review Panel compared the habitat impacts of each structure, which can be summarized as follows:

Bridge Type	**Piers In Water**	**Number Of Piles**	**Plan Area Of Piles (sq. ft.)**	**Plan Area Of Footings (sq. ft.)**
Open-web box girder	12	88	6,910	58,500
Cable-Stay	3	84	6,597	52,500
Arch	4	96	7,540	60,000
Composite Deck Truss	10	66	5,184	44,000

As you can see, the pilings and piling caps of the previous open-web design would occupy about 58,500 square feet of bottom habitat. NMFS concluded, in its initial BO, that losses on that scale would *not* jeopardize the species. The pilings and pile caps of the cable-stayed design would occupy 52,500 square feet of habitat, 6,000 square feet *less* than the open-web design. The tie-arch alternative would occupy 60,000 square feet and the deck truss design would occupy 44,000 square feet. It is simply not credible to assert that NMFS will take two years to assess whether choosing a bridge design, for instance the cable-stayed design, that *reduces* habitat loss from an earlier design is more or less threatening to endangered species. It would easily conclude that a reduction in impacts makes jeopardy even less likely.

Second, and perhaps even more important, NMFS made clear in its original BO (and in numerous other analyses with which Rick Applegate and I are familiar) that deep water river habitat is no where near as important to fish as is shallower habitat closer to shore. Thus, displacement of bottom habitat by pilings in deep water is much less a concern than is displacement of shallower water habitat. It is easy to see from the renderings of the design

concepts that the piers for the cable-stayed design occupy primarily deeper water river habitat, whereas the open-web box design and even the deck truss design must place their piers closer to shore. For this reason, too, it is highly likely that NMFS would easily conclude that the cable-stayed design is less harmful, or at least no more harmful to fish, than the open-web design. Since the open-web design has already been approved, it would not take long to approve the cable-stayed design.

In other words, that some bridge designs have fewer, larger piers while others have more, smaller piers is a distinction without a difference. The total square footage of habitat displacement and whether the piers are located in deep or shallow water are what matter in NMFS' biological analysis. While the total square footage of the deck truss design is less than any of the alternatives, it places some of its piers in shallower water. The cable-stayed design is the only alternative that *both* reduces the total physical habitat loss, compared to the open-web option, *and* affects primarily deep water, rather than shallow water, habitat.

THE ORIGINAL BIOLOGICAL OPINION ON THE CRC ONLY TOOK SEVEN MONTHS TO PRODUCE; A SUPPLEMENT CAN BE COMPLETED IN MUCH LESS TIME

Formal consultation on the CRC open-web design was initiated on June 25, 2010. The final BO was issued on January 19, 2011. That schedule reflected the fact that much informal discussion had occurred before formal consultation began.

NMFS can surely assess the new designs and issue either a "letter of concurrence" or a supplemental BO in less time than the original BO. To begin with, all the years of informal discussions have already laid the groundwork for a supplemental BO. Second, the basic and difficult work of creating the "environmental baseline" in the action area has already been accomplished. Third, with the exception of the assessment of physical impacts to river bottom habitats from different bridge pier designs, NMFS has already assessed the more serious species impacts of bridge construction: noise, increased predator habitat under construction barges and docks, and water quality from bridge run-off. Those effects are all essentially independent of and occur irrespective of specific bridge design; thus, previous analysis of those effects need not be repeated. Finally, the only difference in species' impacts between bridge designs relates to the displacement of physical fish habitat. NMFS has already concluded that the habitat displacement from the open-web design would not jeopardize the relevant species. It would surely (and quickly) conclude, *a fortiori*, that new bridge designs that *reduce* damage to physical habitat also will not jeopardize the species.

Rick Applegate and I are confident that NMFS can assess the effects of a revised CRC design and issue either a letter of concurrence or a supplemental BO in fewer than six months. To suggest otherwise ignores the significant analysis already completed and the specific and narrow range of species impacts that need be considered in order for a new design to move forward.

TLT:lgm
c. Catherine Ciarlo