DRAFT

INITIAL FINANCIAL PLAN

H.003003
I-10 (Segment 1)
East Jct. I-49 to LA 328

Control Section 450-05/06
District 03
Lafayette and St. Martin Parishes

March 2016

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SECTION 1. <u>PROJECT DESCRIPTION</u>

A. Purpose and Scope

This document is the Initial Financial Plan for the I-10 (Segment 1) Project. It creates an initial record of planned expenditures and anticipated funding sources to complete the various phases of the project. The plan is based upon best currently available information, including detailed cost estimates to complete the project, and will be updated annually to reflect more current information and estimated costs, as well as other changing project circumstances.

This document has been prepared in accordance with FHWA's Major Project Financial Plan Guidance, which requires recipients of Federal financial assistance for a project with an estimated total cost of $100,000,000 or more to prepare an annual financial plan. It also demonstrates LA DOTD's commitment to provide sound financial planning and funding to complete the project.

B. Project Type

This project will include both road and bridge construction.

<u>Road Construction</u>
Road construction will consist of widening the existing interstate to accommodate an additional twelve foot (12') inside lane and a sixteen foot (16') inside shoulder along the existing alignment while maintaining the present roadway section width. Due to the existing base course not being suitable for rubblization, the existing travel lanes and outside shoulders will require full depth reconstruction. The roadway capacity and rehabilitation improvements will serve to extend the design life of the route by updating pavement structure with improved safety and driver comfort.
The project will also construct a 54" minimum concrete median barrier throughout the project limits. This barrier will also act as a glare screen between opposing traffic. Lighting and overhead truss foundations will also be adjusted where the median barrier rail affects the mounting locations. These locations are noted on the construction plans.

<u>Bridge Construction</u>
Bridge construction will widen all six bridges, in both the eastbound and westbound direction, which are located at the following locations:

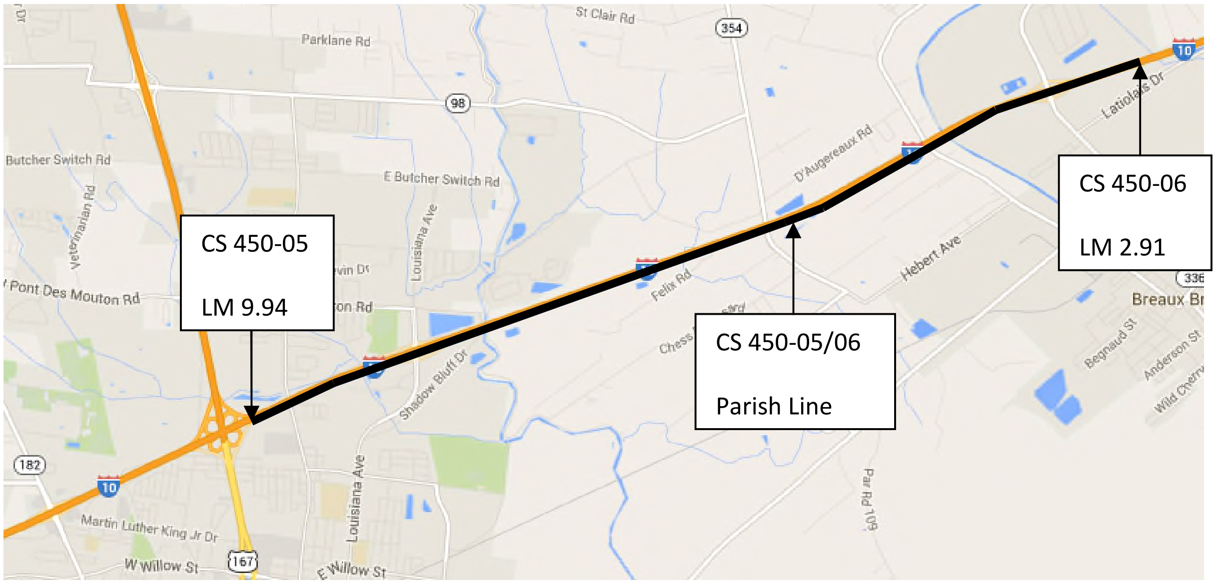
- LA 728-1 (Moss Street)
- Francois Coulee
- Louisiana Avenue
- Vermilion River
- Bayou Teche
- LA 328

This bridge capacity effort includes demolition of a portion of the inside lane of the bridge decks, construction of new bents and PPC girders, steel girders, widen the bridge deck, replacing exterior barrier rails, removing and replacing approach slabs along with abutment wall rehab, guard rail replacement, and improving vertical clearance deficiencies. The purpose of the bridge work on this project is to improve capacity and enhance safety.

C. Project Area

The proposed work includes the widening of Interstate 10 from just east of the I-49 and I-10 interchange to a point that is approximately 2400 feet east of the LA 328 interchange for a distance of approximately 7 miles. The design of the widening of I-10 will be to the median side from two to three lanes both eastbound and westbound.

D. Project Vicinity Map



E. Environmental Status

The National Environmental Policy Act (NEPA) directs federal agencies to conduct environmental reviews to consider the potential impacts from proposed federal undertakings. FHWA and LA DOTD are committed to the examination and minimization of potential impacts to the social and natural environment when considering approval of proposed transportation projects. NEPA project development considers a range of alternatives that would serve the purpose of the project while balancing the potential impacts on the human and natural environment with the public's need for safe and efficient transportation. In Louisiana, LA DOTD defines this as Stage 1 in the project development process.

In May 2015, LA DOTD prepared and submitted the Environmental Checklist with a copy of an application to FHWA. Based on their information contained herein, LA DOTD felt that this project met the requirements for classification as a Categorical Exclusion. When a proposed transportation project is deemed to not have a significant impact, a Categorical Exclusion (CE) is recommended. On May 29, 2015 FHWA approved this recommendation.

LA DOTD's application letter also noted that there are approximately 0.13 acre of potentially jurisdictional wetlands and approximately 4.82 acre of other waters of the U.S. within the project right-of-way. A Clean Water Act permit must be filed prior to the deposition or redistribution of dredged or fill material into wetlands that are waters of the U.S. Additionally, a NPDES stormwater permit and a U.S. Coast Guard, Navigational Lights determination will be required for this project.

SECTION 2. SCHEDULE

This section identifies the pre-construction phases of project development, as well as the construction phase. This project will be constructed under a single contract. Dates shown in the month-year format are projected dates.

Table 1. Project Timeline

Stage 1 Categorical Exclusion	5-29-2015
Stage 3 Project Startup	10-1-2012
NTP (Survey)	6-20-2013
NTP (Prel. Plans)	7-9-2014
NTP (Final Plans)	9-22-15
Project Delivery Date	July 2016
Letting Date	Sept. 2016
Construction Begins	Oct. 2016
Estimated Completion Date	Sept. 2019

No right-of-way acquisitions are necessary. Utility relocations are anticipated along LA 728-1 (Moss Street) and possibly along the ramps at LA 328.

SECTION 3. PROJECT COST

The purpose of this section is to present the current estimate of the total cost of the project and the remaining cost-to-complete.

A. Value Engineering

According to Chapter 23, Section 106 of the Code of Federal Regulations (CFR), the FHWA requires a Value Engineering Study be performed for projects greater than $50 million in construction dollars. The Value Engineering Final Rule published on September 5, 2014 modified the regulation and set new Value Engineering thresholds:

- Projects on the National Highway System (NHS) receiving Federal assistance with an estimated total cost of $50,000,000 or more; and
- Bridge projects on the NHS receiving Federal assistance with an estimated total cost of $40,000,000 or more.

Since the estimated cost for this project is over $50 million, LA DOTD has completed a Value Engineering Study for this project. As a result of the VE Study, the median barrier foundation was re-analyzed and reduced from 8’ wide to 6’ wide.

B. Construction Alternatives

Pavement type has a significant impact on future cost and service quality. Both Portland cement concrete (PCC) or asphalt pavement have strengths and weaknesses when performance, cost, time, and environmental issues are considered. Since the estimated difference in Life Cycle Costs of the alternatives was not considered significant, both pavement alternatives are included in the construction plans. It will be up to the contractor to determine which of the two pavement alternatives is more feasible for the work to be performed. His decision may be based on material availability and ease of construction. Giving the contractor the flexibility to select the pavement alternative should assist in controlling the overall construction cost.

C. Total Cost

The overall project cost is shown in Table 2 below. This cost estimate includes all costs necessary to perform all aspects of the project including preliminary engineering, environmental documentation and mitigation, right-of-way, utility relocations, construction, project management, CEI and other miscellaneous costs. The year-of-expenditure is considered the construction contract let date. Therefore, future estimated costs are in 2016 dollars. A detailed construction cost estimate is included in Appendix A.

Table 2. Project Cost

Project Phase		Total	Expenditure	Cost-to-Complete
Stage 1 Categorical Exclusion		*by DOTD*		
Stage 3 Design [1]		$1,168,742		
Topo. Survey	$331,221		$331,221	
Prel. Plans	$417,581		$417,581	
Final Plans	$419,940		$356,949	$62,991
Right of Way		*n/a*		$0
Utility Relocation (estimated)		$100,000		$100,000
Environmental Mitigation		$0		$0
Construction (estimated)		$129,370,000		$129,370,000
CE&I and IDC (estimated)		$12,130,000		$12,130,000
Total Project Cost		**$142,768,742**	**$1,105,751**	**$141,662,991**

[1]Note that SUE services, as well as bridge and electrical design, was performed internally by LA DOTD and therefore was not an identified cost to a funding source.

Indirect Costs includes those costs for implementing the Transportation Management Plan (TMP) for work zones, as well as public information and communication efforts.

D. Construction Cost Estimate

The construction estimate is the cost of physically constructing the project in the time required based on current costs for labor, materials, equipment, mobilization, bonds and profit. A common method for preparing cost estimates with quantity take-offs was used on this project and is based on historical data to estimate current costs. We used the LA DOTD “Bid History Estimate Tool” to query the necessary historical data.

A deterministic base cost approach process is commonly used to create a bid price. This method involves estimating known quantities (from the construction plans) and unit prices (from historical data) to get “line item costs” and adding an overall contingency to the base costs to account for the incomplete nature of the design, project uncertainties, and the consequence of future events/risk. Contingency is a very broad approach. The contingency applied in the deterministic standard method is often based solely on the cost estimator’s judgment or experience with a history of similar projects. A deterministic cost estimate was first prepared for this project and is included in Appendix A.

However, a major project of this magnitude warrants recognizing that cost estimating is more than just a single deterministic value. Cost estimates must deal with uncertainties, risks and project specific variations. This variation could be influenced by the contracting method, the bidding climate and industry capacity, context sensitive solutions, construction time, as well as other items. Therefore, an estimate is more than just a number; it is a range of numbers, each with an associated probability of occurrence.

FHWA’s Major Project Financial Plan Guidance states that a financial plan shall be based not only on detailed estimates, but also on reasonable assumptions of future increases in the cost to complete the project. FHWA interprets “reasonable assumptions” as a risk based probabilistic approach to account for uncertainties in estimating project costs. In the probabilistic based method, the total cost is made up of base costs (quantities times unit prices) with some range of variability. The probability and impact of risk events can be included. The probabilistic based method characterizes each cost/risk item and can be evaluated using distributions, and those distributions can be aggregated using simulation methods (e.g., Monte Carlo Simulation) to determine a probability distribution that represents the overall project cost. This allows us to determine a cost based on a percentile associated with a certain level of confidence.

It is typical to determine the cost of a major project such as this one at the 70th percentile probability range. Considering all risks to the project costs and schedule, the 70th percentile determines what the cost of the project will be if most of those risks occur. Conversely, the project has a 30 percent probability to cost more than the estimate at this level.

Of the total 180+ quantity items, the deterministic cost estimate identified 16 major items that accounted for over 85% of the cost of the project. Using LA DOTD historical data, we determined reasonable minimum (5% percentile) and maximum (95% percentile) values for the range of unit prices for these major items. This data was added to the LA DOTD “Monte Carlo Item Cost” worksheet and a simulation was performed. No risk items were included. The worksheet is included in Appendix A. Based on the results of the probabilistic based cost estimate, the 70th percentile cost was estimated to be $129,373,000. This is 3.4% above the deterministic cost estimate of $125,167,000.

E. Cost Estimate Review

As of this submittal, a FHWA Cost Estimate Review (CER) has not been conducted for this project. The objective of the FHWA CER process is to conduct an unbiased risk based probabilistic review to verify the accuracy and reasonableness of the current cost estimate and schedule. The result of the CER is a probability range that represents the project’s cost. The total estimated cost presented in the Initial Financial Plan should be consistent with the results of the CER and reflect the 70th percentile costs. In lieu of the CER, a construction cost estimate was prepared as described in the previous section and the 70th percentile cost was identified.

SECTION 4. PROJECT FUNDS

This project is included in the State Transportation Improvement Program (STIP). Funds shown in the STIP are allocated annually and considered committed to the project. Federal funding will come from the National Highway Performance Program (NHPP). State funding will come from one of three accounts:

- Capacity – Corridor Upgrade
- Preservation – Interstate (Pavement)
- Preservation – Bridge (On System)

A detailed construction cost estimate, including the breakdown by funding source, is included in Appendix A.

Table 3. Cost by Funding Source

	CAP	PRIR	PRBR	Total
C.S. 450-05	$31,740,000	$30,023,000	$14,488,000	$76,251,000
C.S. 450-06	$23,541,000	$23,972,000	$5,609,000	$53,122,000
Total	**$55,281,000**	**$53,995,000**	**$20,097,000**	**$129,373,000**

Table 4. Cost by Funding Source (Federal/State split)

	CAP (80/20)	PRIR (90/10)	PRBR (80/20)	Total
Federal	$44,225,000	$48,595,000	$16,078,000	$108,898,000
State	$11,056,000	$5,400,000	$4,019,000	$20,475,000
Total	**$55,281,000**	**$53,995,000**	**$20,097,000**	**$129,373,000**

SECTION 5. FINANCING ISSUES

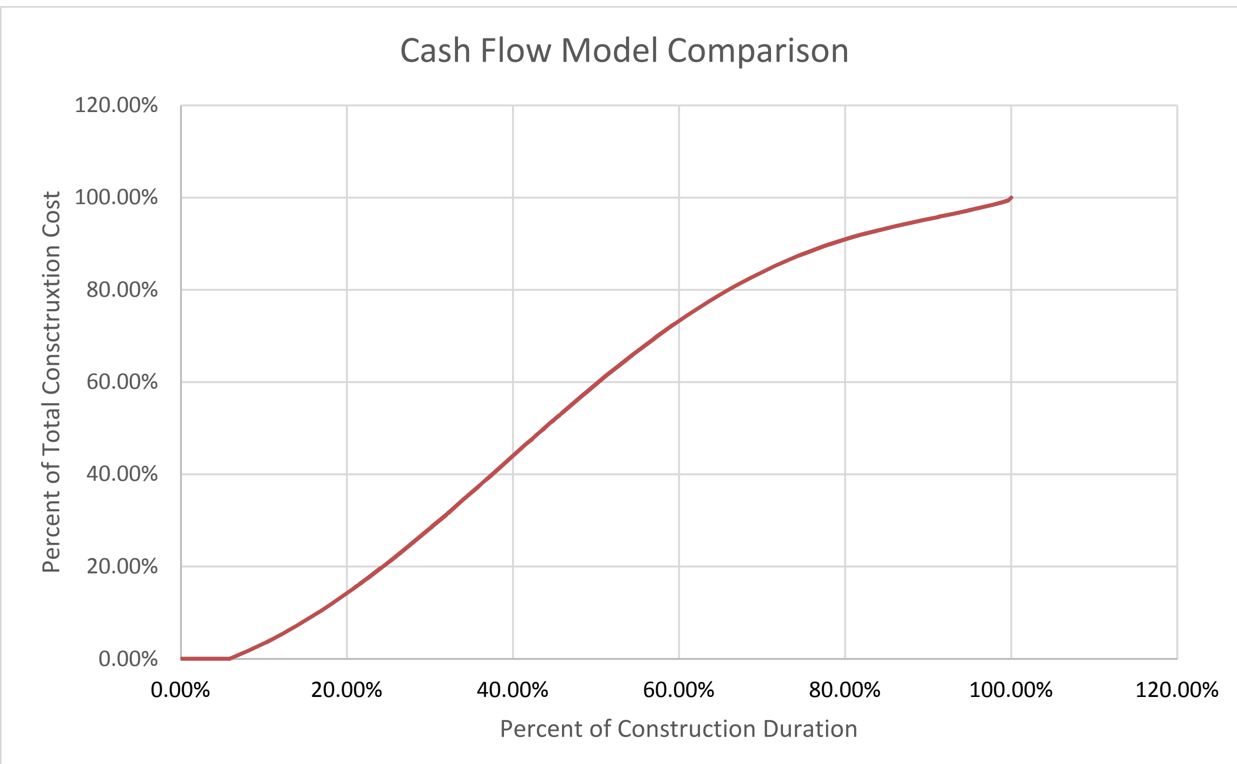
This project is being funded on a pay-as-you-go basis and is fully programmed. This project is included in the State Transportation Improvement Program (STIP). Funds shown in the STIP are considered committed to the project. Financing (e.g.borrowing funds by issuing bonds) is not planned for the project. The risk of unanticipated changes in expected funding is very small.

SECTION 6. CASH FLOW

This section provides a summary of the annual cash flow needs of the project, which will be funded with federal and state fund as described in previous sections. Schedules and resulting projections of actual cash outlays will be updated in subsequent Annual Updates to the Financial Plan.

With traditional pay-as-you-go projects, LA DOTD programs STIP commitments all in the year a project will be let. These STIP commitments do not pay out exactly how they are programmed, but rather over several years as the project is built. We used the LA DOTD "Cash Flow Analysis Tool" to distribute the estimated construction costs across the projected 3 year duration.

In evaluating past project data, LA DOTD recognized that the cumulative cash flows of actual expenses during construction seemed to take on a somewhat predictable shape. The "Cash Flow Analysis Tool" was the product of that data. Cumulative cash flow curves can be generated from project samples and filtered by various work type. The larger the sample of projects, the better representative the cash flow curve will likely be of the larger population of future projects analyzed. Although it is desirable to choose a sample that best represents the type of work being done, if the sample size is too small, it may not truly represent other project cash flows. Therefore, some of the cash flow curves available in the tool with small sample sizes should be used with extreme caution [Ref. Charles Nickel, PE, LA DOTD, 2014]. Since this project will include both road and bridge construction, we selected to use all work types to develop the cash flow curve.



Once a characteristic cash flow curve has been determined, it is simply a matter of multiplying the project's estimated construction amount and duration by the corresponding percentages to reflect that project's likely cumulative cash flow. Note that the state fiscal year is from October to September.

Table 5. Projected Cash Flow

	FY 2016/17	FY 2017/18	FY 2018/19	Total
Federal	$34,608,730	$55,661,216	$18,628,054	$108,898,000
State	$6,507,133	$10,465,421	$3,502,446	$20,475,000
Total	**$41,115,863**	**$66,126,637**	**$22,130,500**	**$129,373,000**

SECTION 7. PUBLIC-PRIVATE PARTNERSHIP (P3) ASSESSMENT

When evaluating the benefits of a P3, it was determined that the design and construction of the I-10 corridor consists of typical roadway and bridge construction work with low complexity and risk. Project unknowns are minimal and the benefit of risk transfer to a potential P3 firm would be nominal.

The decision to pursue this project as pay-as-you-go Design-Bid-Build instead of a P3 was made prior to the completion of this report. Since the funds needed for the project are available, private financing of the project cost would provide minimal benefit.

SECTION 8. RISK AND RESPONSE STRATEGIES

A. Risk Overview

The purpose of this section is to document significant project risks and response strategies. Project risks include significant threats and opportunities regarding schedule, cost, and funding. These risks should be identified and monitored throughout the entire project delivery process. This includes planning, environmental, design, construction, and operation and maintenance during construction. Risks may also include impacts of potential funding and revenue changes.

FHWA's Major Project Financial Plan Guidance states that a financial plan shall be based not only on detailed estimates, but also on reasonable assumptions of future increases in the cost to complete the project. FHWA is interpreting "reasonable assumptions" as a risk based probabilistic approach.

This section should address risks identified during the CER; risks related to funding, revenue, and financing; and any additional risks identified by LA DOTD or the project team. Typically, a CER is performed to verify the accuracy and reasonableness of the current total cost estimate and schedule, and to develop a probability range for the cost estimate and schedule, reflecting the project's current stage of development. In addition, known and probable unknown risk elements that could increase the cost and/or delay the schedule for the project (i.e., threats), as well as opportunities to reduce costs and/or expedite the schedule, can be identified and discussed.

As described in Section 3, a CER has not been performed for this project. Neither has a formal Cost and Schedule Risk Assessment (CSRA). Therefore, we are relying on the "Project Constructability / Biddability Review" form completed by LA DOTD District 03 and our project experience to identify risk items.

B. Cost Risks

Cost escalation can affect the overall ability to achieve expectations of completing a project on time and within budget. All design and construction projects have risk elements that can affect costs and that should be identified and mitigated to the greatest extent possible. This section briefly outlines areas of potential cost risks and possible mitigation measures LA DOTD is currently considering and/or pursuing for the project.

Based on our experience with similar projects, we've identified the following five risks that could potentially have an impact to the project cost.

1. Field Conditions – Field conditions or unknown soil conditions could have an adverse impact to the project cost. However, we've deemed this item to have a low/insignificant impact to this project for two reasons. One, this is a widening of an existing highway within an existing right-of-way. The site is open and the topographic survey has located all above ground features. Second, deep and shallow soil borings as well as dynamic cone penetrometer (DCP) tests have been obtained. Therefore, we have not included this risk item in our cost model.

2. Utility conflicts – Finding an unknown underground utility can have a significant impact to both the project cost and schedule. The potential for unknown utilities within the I-10 right-of-way is minimal. LA DOTD has contracted to have a subsurface utility exploration performed and included in the construction plans. Also, utilities should have been documented through LA DOTD's permit process. There is a greater risk of an unknown utility conflict along the surface streets and bridge structures. Subsurface utility exploration (QL-A) has been performed to minimize the unknown. A relocation allowance has been included in the overall project cost. However, a conflict should have an insignificant impact to the construction cost of the roadway improvements. Therefore, we have not included this risk item in our cost model.

3. Inflation – Attempting to project a project cost early in the project planning process can be difficult as future conditions are unpredictable. A review of the National Highway Construction Cost Index (NHCCI) showed a trend that is relatively flat. With a construction letting date within six (6) months, we do not anticipate construction prices varying significantly. Therefore, we have not included this risk item in our cost model.

4. Material costs – Material unit prices can vary from project to project based on the bidding climate, industry capacity, material quantity, construction time, site constraints, and project location. For this reason, LA DOTD typically will accept a construction bid if it is within ±10% of the engineer's estimate. We've accounted for this risk in the probabilistic cost estimate described in Section 3.

5. Market conditions – The bidding climate and industry capacity can have an impact to the project cost. Smaller projects in a weak, slow market will see bids lower than anticipated. Large projects in a strong, busy market can see low competition and higher than anticipated project bids. FHWA has documented that projects with only one or two bidders have construction bids that are 20% and 5% higher than the state estimate, respectively. Projects with four or more bidders have a bid that averages 10% lower than the estimate. A review of LA DOTD bid history identified that there has only been one project (excluding design-build) greater than $100M in the last two years. This project had 4 bidders. There were three other projects greater than $30M. Each had more than 3 bidders. Through discussions with the LA DOTD project team, we anticipate 3 or more bidders on this project. Therefore, we have not included low competition as a risk item in our cost model.

C. Schedule Risks

We've identified four risks to the project schedule:

6. There is a risk of finding an unknown utility conflict along the surface streets during construction of new bridge piers. This could introduce a delay into the project schedule. However, it is anticipated that any delay to relocate the line would be relatively small compared to the overall project, and will likely not be on the project critical path.

7. LA DOTD's Environmental Checklist noted that there are approximately 0.13 acre of potentially jurisdictional wetlands and approximately 4.82 acre of other waters of the U.S. within the project right-of-way. A Clean Water Act permit must be filed prior to the deposition or redistribution of material into wetlands that are waters of the U.S. Additionally, a NPDES stormwater permit and a U.S. Coast Guard, Navigational Lights

determination will be required for this project. While not anticipated, a delay in obtaining the required permits could impact the construction schedule.

8. The potential for conflicts of this project with other construction projects in the area has been considered. There are two proposed projects (H.010601 and H.003014) that may be under construction concurrent with this project.

   - Segment 2 (H.010601) is from just east of LA 328 to just west of LA 347 with a letting date of July 2018 and estimated construction duration of 2 years. This project is located adjacent to our project, and the construction work zones will overlap. However, State Project No. H.003003 should be in its final construction phase before the adjacent project begins. Therefore, the potential for an adverse impact to the construction schedule is minimal.

   - Segment 3 (H.003014) is from just west of LA 347 to the Atchafalaya Floodway Bridge with a letting date of Sept. 2016 and estimated construction duration of 2-3 years. This project is located 5 miles east of our project, and should have no potential for impact to the construction schedule. LA DOTD has also recently made the decision to let the Segment 3 project together with Segment 1, which will allow the Contractor to coordinate activities.

9. There is always a concern on large projects that material availability could delay a project. However, LA DOTD is considering bidding this project as an A+B contract. A+B contracts assign a monetary value to the construction time. Along with pavement alternatives and contract liquidated damages, this places the burden of material supply on the Contractor.

D. Funding Risks

This project is included in the State Transportation Improvement Program (STIP), and is being funded on a pay-as-you-go basis and is fully programmed. Funds shown in the STIP are considered committed to the project. Financing (e.g.borrowing funds by issuing bonds) is not planned for the project. The risk of unanticipated changes in expected funding is very small.

E. Risk Mitigation

As more risks are considered, the range in probable cost widens, indicating less certainty about the estimate. One way to reduce the width in the range of probable cost is to implement mitigation strategies that would reduce the impacts of the risks on costs. Strategies for each risk or threat can include:

- Avoid – Either change the project plan to eliminate the risk or change the scope, add time to the schedule, or add more resources.

- Transfer – Shift the negative impact of a threat, along with the ownership to a third party. This only works if the third party is capable and usually comes at a premium. Some tools include: insurance, performance bonds, warranties, guarantees, incentive/disincentive clauses, A+B Contracts, etc.

- Mitigate – Steps may be taken to reduce the impact and/or probability of a risk occurring. Taking early action is often more effective than trying to repair the damage after the risk has occurred.

Despite the application of appropriate cost management and mitigation strategies, costs may increase above estimates. To alleviate this possibility, LA DOTD has followed FHWA's cost estimating guidance and employ risk based probabilistic cost assessment methodologies to the extent appropriate. To further aid in controlling project costs, a value engineering study was conducted for the project during the preliminary plan phase, with a focus on opportunities to reduce costs and/or expedite the schedule.

The inclusion of pavement alternatives, Portland cement concrete (PCC) or asphalt pavement, should also benefit efforts to control project costs since the contractor will determine the pavement alternative which will provide the greatest cost and schedule benefit. The risk associated with fluctuating material costs due to external factors such as aggregate and oil prices, as well as availability, are thereby allocated to the contractor.

Through the Monte Carlo simulation mentioned previously, we determined reasonable minimum (5% percentile) and maximum (95% percentile) values for the range of unit prices for the major construction items. Applying this range to the estimated quantities, we can see the range of probable costs for each item. We've plotted a tornado diagram to illustrate the potential cost variation above and below the most likely base cost. The graph is included in Appendix A, and illustrates which construction items are most sensitive to the unit price range. This allows us to test the sensitivity/risk associated with the uncertainty of the pay item. It appears the concrete in the bridge decks have the largest potential for a higher than estimated cost (5% of overall cost). The lump sum item "Temporary Signs and Barricades" also has a larger cost range (4% of the overall cost).

LA DOTD should allow ample time in the contract schedule for this project. This should help control construction costs. The inclusion of liquidated damages in the construction contract should deter schedule overruns.

A decision was made recently to bundle this project with the I-10 Segment 3 project (H.003014) and bid the two projects together. The Segment 3 project has a current cost estimate of $47M.

SECTION 9. ANNUAL UPDATE CYCLE

LA DOTD plans to provide Annual Updates to this Financial Plan coinciding with the end of the state fiscal year. For future annual updates, the effective date ("as of" date) for this project's reporting is September 30th. The report will be due 90 days later on December 30th. Examples of items that will be expanded upon in the Annual Updates, based on the development on the project, are:

- Updates to the project schedule.
- Updates to cost estimates based on the completion of more detailed design work and/or the actual bid price.
- More detailed cash flow forecasting (i.e., of anticipated encumbrances/obligations as distinct from anticipated cash needs).
- Tracking of actual expenditures against projected cash flow needs.
- Incorporation of any additional funding sources and/or financing approaches to address any funding gaps that may have developed.
- Monitoring the risks identified in the Initial Financial Plan by retiring, revising, and adding new risks when appropriate.

REFERENCES:

Categorical Exclusion, Letter from Maria Bernard Reid (LA DOTD) to Wes Bolinger (FHWA), May 1, 2015.

Guide to Risk Assessment and Allocation for Highway Construction Management, FHWA, October 2006.

Guidelines on Preparing Engineer's Estimate, Bid Reviews and Evaluation, FHWA, January 2004.

Major Project Financial Plan Guidance, FHWA, December 2014.

Major Project Program Cost Estimating Guidance, FHWA, January 2007.

Project Constructability / Biddability Review, S.P. No. H.003003, LADOTD, April 16, 2015.

Value Engineering Workshop Report, ATKINS, November 2014.

APPENDIX A

CONSTRUCTION COST ESTIMATE

- Summary of Estimated Quantities
  (Deterministic Cost Estimate)

- Monte Carlo Simulation
  (Probabilistic Based Method)

- Tornado Diagram

SIGMA CONSULTING GROUP, INC.
ENGINEERING CONSULTANTS

H.003003
I-10 (Segment 1)
East Jct. I-49 to LA 328

10305 Airline Highway
Baton Rouge, LA 70816
(225) 298-0800

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	C.S. 450-05			C.S. 450-06			TOTAL QUANTITY	UNIT PRICE	SUBTOTAL
			CAPACITY	PRIR	PRBR	CAPACITY	PRIR	PRBR			
201-01-00100	CLEARING AND GRUBBING	ACRE	27			19			45	$4,000.00	$180,712
202-01-00100	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP	0.3	0.3		0.2	0.2		1.0	$650,000.00	$650,000
202-02-00010	REMOVAL OF DRAIN INLETS	EA.	1	0		7	0		8	$860.00	$6,880
202-02-00010	REMOVAL OF HIGH MAST POLES	EA.				2			2		$0
202-02-00020	REMOVAL OF INCIDENTAL CONCRETE PAVING (4" THICK)	S.Y.	111.2			83.4			194.6	$12.00	$2,335
202-02-00030	REMOVAL OF BARRIER	L.F.			2740.3			1097.4	3,837.7		$0
202-02-02020	REMOVAL OF ASPHALT PAVEMENT	S.Y.	0.0	0.0		0.0	838.3		838.3	$12.75	$10,688
202-02-04001	REMOVAL OF BRIDGE (PARTIAL RMVL) (END BENT CAPS, BACKWALL, AND WINGWALLS)	LUMP									$0
202-02-04026	REMOVAL OF BRIDGE DECK (HYDRO BLAST)	S.F. - IN.			134,938			32,931	167,869		$0
202-02-04110	REMOVAL OF BRIDGE SUPERSTRUCTURE (CONCRETE GIRDER SPAN)	S.F.			51660				51,660		$0
202-02-04120	REMOVAL OF BRIDGE SUPERSTRUCTURE (STEEL GIRDER SPAN)	S.F.						8397	8,397		$0
202-02-06000	REMOVAL OF APPROACH SLABS	S.Y.			2940			1125	4,065	$50.00	$203,250
202-02-06060	REMOVAL OF CONCRETE CATCH BASIN	EA.			3				3	$860.00	$2,580
202-02-14500	REMOVAL OF GUARD RAIL	L.F.			5550			2467	8,017	$12.00	$96,204
202-02-32100	REMOVAL OF PIPE (CROSS DRAIN)	L.F.	822	0		456	0		1,278	$30.00	$38,340
202-02-32180	REMOVAL OF PIPE HEADWALLS	EA.	1	0		8	0		9	$1,500.00	$13,500
202-02-32500	REMOVAL OF PORTLAND CEMENT CONCRETE PAVEMENT	S.Y.		148,853			134,158		283,011	$11.28	$3,192,360
202-02-38220	REMOVAL OF SIGN SUPPORTS	EA.	45			42			87	$100.00	$8,700
202-02-38300	REMOVAL OF SIGN AND U-CHANNEL POST	EA.	11			6			17	$23.00	$391
202-02-38360	REMOVAL OF SIGN FACES	EA.	57			38			95	$61.00	$5,795
202-02-38380	REMOVAL OF SIGN TRUSS AND FOOTINGS	EA.	3			0			3	$5,000.00	$15,000
203-01-00100	GENERAL EXCAVATION	C.Y.	153,608			104,197			257,805	$9.50	$2,449,148
203-03-00100	EMBANKMENT	C.Y.	29,625		305	21,716			51,646	$17.00	$877,982
204-02-00100	TEMPORARY HAY OR STRAW BALES	EA.	42	0		78	0		120	$12.00	$1,440
204-06-00100	TEMPORARY SILT FENCING	L.F.	70,723	0		56,477	0		127,200	$2.00	$254,400
302-02-01060	CLASS II BASE COURSE (4"THICK) (STONE OR RECYCLED PORTLAND CEMENT CONCRETE)	S.Y.	105,182.7	160,054.3		79,064.6	131,945.9		476,247.4	$12.59	$5,995,955
302-02-02101	CLASS II BASE COURSE (6" THICK) (STONE OR RECYCLED PCC, OR BCS) ***- MOSS ST***	S.Y.							0.0	$15.00	$0
302-02-03020	CLASS II BASE COURSE (8" THICK) (SOIL CEMENT)	S.Y.	117,319.2	160,054.3		88,187.4	131,945.9		497,506.8	$15.19	$7,557,128
305-01-04020	SUBGRADE LAYER (12" THICK) (TREATED)	S.Y.	117,319	160,054		88,187	131,946		497,507	$10.10	$5,024,818
502-01-00100	SUPERPAVE ASPHALTIC CONCRETE	TON			503.0			178.0	681.0	$84.22	$57,354
601-01-00100	PORTLAND CEMENT CONCRETE PAVEMENT (8" THICK) ***- MOSS ST***	S.Y.							0.0	$53.00	$0
601-01-00300	PORTLAND CEMENT CONCRETE PAVEMENT (9" THICK) ***- LA AVE***	S.Y.							0.0	$67.00	$0
601-01-01100	PORTLAND CEMENT CONCRETE PAVEMENT (13" THICK)	S.Y.	366.7	733.3		366.7	733.3		2,200.0	$100.79	$221,738
601-03-01700	PORTLAND CEMENT CONCRETE SHOULDER (13" THICK)	S.Y.	427.8	366.7		427.8	366.7		1,588.9	$100.79	$160,144
601-04-00100	PORTLAND CEMENT CONCRETE PAVEMENT CORING	EA.							0	$155.00	$0
701-01-01001	CROSS DRAIN PIPE (24" RCP)	L.F.	0			8			8	$128.00	$1,024
701-03-01020	STORM DRAIN PIPE (18" RCP/PP)	L.F.	1,456			1,400			2,856	$77.00	$219,912
701-03-01040	STORM DRAIN PIPE (24" RCP/PP)	L.F.	112			196			308	$94.00	$28,952
701-03-01100	STORM DRAIN PIPE (48" RCP/PP)	L.F.	248			0			248	$200.00	$49,600
702-02-00100	MANHOLES (MH-06)	EA.	2			0			2	$5,700.00	$11,400
702-02-00200	MANHOLES (R-CB-11)	EA.	3			0			3	$4,200.00	$12,600
702-02-00800	MANHOLES (R-CB-38)	EA.	2						2	$5,700.00	$11,400
702-03-00100	CATCH BASINS (CB-01)	EA.	9			15			24	$3,000.00	$72,000
702-03-00800	CATCH BASINS (CB-09)	EA.	2			0			2	$6,140.00	$12,280
703-01-00100	SHOULDER UNDERDRAIN SYSTEMS	L.F.	1,260			2,340			3,600	$16.00	$57,600
704-01-02000	GUARD RAIL (DOUBLE THRIE BEAM) (3' - 1.5" POST SPACING)	L.F.		275.2	509.4				784.6	$50.00	$39,230
704-02-00100	GUARD RAIL (DOUBLE FACED)	L.F.	37.5						37.5	$21.00	$788
704-03-00100	BLOCKED OUT GUARD RAIL	L.F.		262.5	1063.0		325.0	325.0	1,975.5	$21.00	$41,486
704-06-00200	GUARD RAIL ANCHOR SECTION (TRAILING END) (SINGLE THRIE BEAM)	L.F.		37.8	12.5				50.3	$110.00	$5,533
704-08-00200	GUARD RAIL TRANSITIONS (DOUBLE THRIE BEAM)	L.F.			250.0		100.0	125.0	475.0	$65.00	$30,875
704-11-00100	GUARD RAIL END TREATMENT (FLARED)	EA.		6	8		4	4	22	$2,250.00	$49,500
704-11-00200	GUARD RAIL END TREATMENT (TANGENT)	EA.			5			1	6	$2,500.00	$15,000
704-11-00300	GUARD RAIL END TREATMENT (BI-DIRECTIONAL)	EA.	1						1	$5,700.00	$5,700
706-03-00300	INCIDENTAL CONCRETE PAVING (6" THICK)	S.Y.	344.5	3,353.2		83.4	1,963.4		5,744.5	$65.00	$373,395
712-01-00100	CONCRETE CAST-IN-PLACE REVETMENT (4" THICK)	S.Y.			1757.97				1,757.97	$70.00	$123,058
713-01-00100	TEMPORARY SIGNS AND BARRICADES	LUMP	0.3	0.3		0.2	0.2		1.0	$2,750,000.00	$2,750,000
713-03-01020	TEMP PVMT MRKGS (BRKN LINE) (4" W) (4' L) (TYPE 1 REMOVABLE)	MILE	7.915	8.125		5.600	5.811		27.451	$1,900.00	$52,156
713-04-01020	TEMP PVMT MRKGS (SOLID LINE) (4" W) (TYPE 1 REMOVABLE)	MILE	16.686	17.168		12.057	12.189		58.100	$14,000.00	$813,404
713-06-00100	TEMPORARY REFLECTORIZED RAISED PAVEMENT MARKERS	EA.	2,090	2,145		1,479	1,534		7,247	$5.00	$36,235
713-07-00100	TEMPORARY PRECAST CONCRETE BARRIER (CONTRACTOR FURNISHED)	EA.	2,744	0		1,930	0		4,674	$660.00	$3,084,840
713-10-00100	TEMPORARY PRECAST CONCRETE BARRIER MOVEMENT	EA.	0	2,584		0	1,770		4,354	$100.00	$435,400
725-01-00100	TEMPORARY DETOUR ROADS	S.Y.	7,483.7			5,136.6			12,620.3	$96.00	$1,211,545
726-01-00100	BEDDING MATERIAL	C.Y.	196.4			146.5			342.9	$80.00	$27,431
727-01-00100	MOBILIZATION	LUMP	0.3	0.3		0.2	0.2		1	$10,900,000.00	$10,900,000
729-01-00102	SIGN (TYPE A)(FURNISH AND INSTALL)	S.F.	738.8			480.7			1,219.5	$20.00	$24,390
729-04-00102	SIGN (TYPE D)(FURNISH AND INSTALL)	S.F.	685.5			1164.8			1,850.3	$23.00	$42,557
729-05-00102	SIGN (TYPE E)(FURNISH AND INSTALL)	S.F.	196.0			110.0			306.0	$29.00	$8,874
729-06-00102	SIGN (OVERHEAD MOUNTED)(FURNISH AND INSTALL)	S.F.	998.5			0.0			998.5	$32.00	$31,952
729-08-00200	MOUNTING (3 1/2" SIZE POST)	EA.	26			21			47	$920.00	$43,240
729-08-00300	MOUNTING (5" SIZE POST)	EA.	13			9			22	$1,000.00	$22,000
729-08-00600	MOUNTING (W6 X 12 SIZE POST)	EA.	14			16			30	$1,020.00	$30,600
729-08-00700	MOUNTING (W8 X 18 SIZE POST)	EA.	6			0			6	$1,570.00	$9,420
729-08-00800	MOUNTING (W8 X 24 SIZE POST)	EA.	2			10			12	$1,600.00	$19,200
729-09-00600	MOUNTING (OVERHEAD TRUSS) (GROUND MOUNTED) (90' SPAN)	EA.	2			0			2	$60,000.00	$120,000
729-11-00100	MOUNTING (OVERHEAD CANTILEVER) (GROUND MOUNTED)	EA.	1			0			1	$40,000.00	$40,000
729-16-00300	OBJECT MARKER ASSEMBLY (TYPE 3)	EA.			12			5	17	$85.00	$1,445
729-17-00100	MILEPOST ASSEMBLY (GROUND MOUNTED)	EA.	8			6			14	$128.00	$1,792
729-18-00100	MILEPOST ASSEMBLY (STRUCTURE MOUNTED)	EA.	8			6			14	$300.00	$4,200
729-18-00200	MILEPOST ASSEMBLY (STRUCTURE MOUNTED) (SECONDARY)	EA.	30			20			50	$300.00	$15,000
729-20-00600	FOOTINGS FOR OVERHEAD MOUNTINGS (CANTILEVER)	EA.	1			0			1	$20,000.00	$20,000
729-20-00700	FOOTINGS FOR OVERHEAD MOUNTINGS (TRUSS)	EA.	4			0			4	$20,000.00	$80,000
731-02-00100	REFLECTORIZED RAISED PAVEMENT MARKERS	EA.	7016	2373		0	1893		11,282	$7.10	$80,103
732-02-02000	PLASTIC PAVEMENT STRIPING (SOLID LINE) (4" WIDTH) (THERMOPLASTIC 90 MIL)	MILE	7.807	9.746		5.481	12.516		35.549	$4,200.00	$149,308
732-02-02040	PLASTIC PAVEMENT STRIPING (SOLID LINE) (8" WIDTH) (THERMOPLASTIC 90 MIL)	MILE	0.000	0.603		0.000	0.856		1.459	$10,000.00	$14,590
732-02-02080	PLASTIC PAVEMENT STRIPING (SOLID LINE) (24" WIDTH) (THERMOPLASTIC 90 MIL)	MILE	0.000	0.046		0.000	0.130		0.176	$53,000.00	$9,341
732-03-02000	PLASTIC PAVEMENT STRIPING (BROKEN LINE) (4" WIDTH) (THERMOPLASTIC 90 MIL)	MILE	0.000	14.752		0.000	8.326		23.078	$1,600.00	$36,925
732-03-02030	PLASTIC PAVEMENT STRIPING (DOTTED LINE) (8" W) (2' L) (THERMOPLASTIC 90 MIL)	MILE	0.000	0.841		0.000	1.088		1.928	$8,500.00	$16,392
732-05-00100	REMOVAL OF EXISTING MARKINGS	MILE	7.795	0.000		5.481	0.000		13.277	$4,200.00	$55,761
733-01-00100	CONCRETE ROADWAY BARRIER (SINGLE FACED)	L.F.	658.1						658.1	$135.00	$88,838
733-01-00200	CONCRETE ROADWAY BARRIER (DOUBLE FACED)	L.F.	18,141.5			13,672.1			31,813.5	$250.00	$7,953,382
739-01-00100	HYDRO-SEEDING	ACRE	0.00	2.90		0.00	4.42		7.32	$2,500.00	$18,301

SIGMA CONSULTING GROUP, INC.
ENGINEERING CONSULTANTS

H.003003
I-10 (Segment 1)
East Jct. I-49 to LA 328

10305 Airline Highway
Baton Rouge, LA 70816
(225) 298-0800

740-01-00100	CONSTRUCTION LAYOUT	LUMP	0.3	0.3		0.2	0.2		1	$1,200,000.00	$1,200,000
802-01-00100	STRUCTURAL EXCAVATION (BENTS)	C.Y.			833.78				833.78	$65.00	$54,196
803-03-00500	TEMPORARY SHEETING	S.F.			24,000			16,000	40,000	$41.00	$1,640,000
804-01-00200	PRECAST CONCRETE PILES (14")	L.F.			2220			304	2,524	$60.00	$151,440
804-01-00300	PRECAST CONCRETE PILES (16")	L.F.			34,560			2,491	37,051	$63.00	$2,334,213
804-01-00400	PRECAST CONCRETE PILE (18")	L.F.			1200			0	1,200	$75.00	$90,000
804-01-00600	PRECAST CONCRETE PILE (24")	L.F.			3360			4080	7,440	$100.00	$744,000
	LOADING PERMANENT PILES	EA.			8			3	11	$6,400.00	$70,400
	PRECAST CONCRETE INDICATOR PILES	EA.							0	$20,000.00	$0
804-14-00100	DYNAMIC MONITORING ASISTANCE	EA.			12			3	15	$1,500.00	$22,500
	CLASS A CONCRETE (PIPE HEADWALLS)	C.Y.				2.87			2.87	$1,550.00	$4,449
805-01-00200	CLASS A1 CONCRETE (DECK)	C.Y.			3589.00			1188.00	4777.00	$683.00	$3,262,691
805-01-00300	CLASS A1 CONCRETE (BENT CAP)	C.Y.			1237.00			671.00	1908.00	$1,147.00	$2,188,476
805-01-00400	CLASS A1 CONCRETE (COLUMN)	C.Y.							0.00	$1,147.00	$0
805-01-00500	CLASS A1 CONCRETE (FOOTING)	C.Y.			834.00			219.00	1053.00	$260.00	$273,780
805-08-00400	PRECAST PRESTRESSED CONCRETE GIRDER (TYPE III)	L.F.			3061.0			2918.0	5979.0	$117.00	$699,543
805-08-00500	PRECAST PRESTRESSED CONCRETE GIRDER (TYPE IV)	L.F.			10864.0			0.0	10864.0	$120.00	$1,303,680
805-08-01200	PRECAST PRESTRESSED CONCRETE GIRDER (LG-36)	L.F.			1185.0			0.0	1185.0	$120.00	$142,200
805-08-01400	PRECAST PRESTRESSED CONCRETE GIRDER (LG-54)	L.F.			0.0			2761.0	2761.0	$160.00	$441,760
805-18-00100	CONCRETE FINISH (CLASS 2 RUBBED FINISH)	S.F.							0		$0
806-01-00100	DEFORMED REINFORCING STEEL	LB.			1,498,458	166		479,898	1,978,522	$1.00	$1,978,522
807-01-00800	STRUCTURAL METALWORK	LUMP			34179			23164	57,343	$10.00	$573,430
810-01-00100	CONCRETE RAILING (STANDARD BARRIER)	L.F.			5267.0			2631.0	7898.0	$85.00	$671,330
810-01-00200	CONCRETE RAILING (SLOTTED BARRIER)	L.F.							0.0	$85.00	$0
813-01-00100	CONCRETE APPROACH SLABS (CAST-IN-PLACE)	S.Y.			4834.00			2284.00	7118.00	$297.00	$2,114,046
822-01-00100	TRENCHING AND BACKFILLING	L.F.	8,388			6,075			14,463	$4.00	$57,852
822-02-00100	CONDUIT WITH CONDUCTORS (PVC/HDPE) (3/4") (1#2 BARE SOLID GROUND)	L.F.	10			20			30	$4.00	$120
822-02-00500	CONDUIT WITH CONDUCTORS (PVC/HDPE) (2") (3#2)	L.F.	20			20			40	$7.00	$280
822-02-00500	CONDUIT WITH CONDUCTORS (PVC/HDPE) (2") (3#4)	L.F.	0			10			10	$9.00	$90
822-02-00500	CONDUIT WITH CONDUCTORS (PVC/HDPE) (2") (2#2, 1#2 BARE SOLID GROUND)	L.F.	2,155			0			2,155	$9.00	$19,395
822-02-00500	CONDUIT WITH CONDUCTORS (PVC/HDPE) (2") (2#4, 1#4 BARE SOLID GROUND)	L.F.	3,905			4,510			8,415	$9.00	$75,735
822-02-00500	CONDUIT WITH CONDUCTORS (PVC/HDPE) (2") (4#2, 2#4, 1#2 BARE SOLID GROUND)	L.F.	160			0			160	$10.00	$1,600
822-02-00500	CONDUIT WITH CONDUCTORS (PVC/HDPE) (2") (2#2, 2#4, 1#2 BARE SOLID GROUND)	L.F.	1,365			0			1,365	$9.50	$12,968
822-02-00500	CONDUIT WITH CONDUCTORS (PVC/HDPE) (2") (2#8, 1#8 BARE SOLID GROUND)	L.F.	0			1,850			1,850	$8.50	$15,725
822-02-00500	CONDUIT WITH CONDUCTORS (PVC/HDPE) (2") (4#8, 1#8 BARE SOLID GROUND)	L.F.	0			250			250	$9.00	$2,250
822-02-01100	CONDUIT WITH CONDUCTORS (RIGID ALUM) (3/4") (2#10, 1#10 GREEN INSULATED GROUND)	L.F.	655			815			1,470	$12.00	$17,640
822-02-01500	CONDUIT WITH CONDUCTORS (RIGID ALUM) (2") (2#2, 1#2 BARE SOLID GROUND)	L.F.	650			0			650	$13.50	$8,775
822-02-01500	CONDUIT WITH CONDUCTORS (RIGID ALUM) (2") (2#2, 1#2 WHITE NEUTRAL, 1#2 GREEN INSULATED GROUND)	L.F.	5			0			5	$14.00	$70
822-02-01500	CONDUIT WITH CONDUCTORS (RIGID ALUM) (2") (2#4, 1#4 GREEN INSULATED GROUND)	L.F.	250			0			250	$13.00	$3,250
822-02-01500	CONDUIT WITH CONDUCTORS (RIGID ALUM) (2") (2#4, 1#4 WHITE NEUTRAL, 1#4 GREEN INSULATED GROUND)	L.F.	0			15			15	$14.00	$210
822-02-01500	CONDUIT WITH CONDUCTORS (RIGID ALUM) (2") (3#4, 1#4 GREEN INSULATED GROUND)	L.F.	0			15			15	$14.00	$210
822-02-03100	CONDUIT WITH CONDUCTORS (LIQ TIGHT FLEXIBLE METAL) (3/4") (2#10, 1#10 GREEN INSULATED GROUND)	L.F.	40			40			80	$15.00	$1,200
822-02-03500	CONDUIT WITH CONDUCTORS (LIQ TIGHT FLEXIBLE METAL) (2") (2#2, 1#2 GREEN INSULATED GROUND)	L.F.	20			0			20	$18.00	$360
822-02-04500	CONDUIT WITH CONDUCTORS (FIBERGLASS) (2") (2#2)	L.F.	30			0			30	$10.00	$300
822-02-04500	CONDUIT WITH CONDUCTORS (FIBERGLASS) (2") (3#4)	L.F.	0			15			15	$11.00	$165
822-02-04500	CONDUIT WITH CONDUCTORS (FIBERGLASS) (2") (2#2, 1#2 BARE SOLID GROUND)	L.F.	30			0			30	$11.00	$330
822-02-04500	CONDUIT WITH CONDUCTORS (FIBERGLASS) (2") (2#4, 1#4 BARE SOLID GROUND)	L.F.	10			20			30	$11.00	$330
822-02-04500	CONDUIT WITH CONDUCTORS (FIBERGLASS) (2") (2#8, 1#8 BARE SOLID GROUND)	L.F.	0			20			20	$10.50	$210
822-02-04500	CONDUIT WITH CONDUCTORS (FIBERGLASS) (2") (4#2, 2#4, 1#2 BARE SOLID GROUND)	L.F.	10			0			10	$12.00	$120
822-02-04500	CONDUIT WITH CONDUCTORS (FIBERGLASS) (2") (4#8, 1#8 BARE SOLID GROUND)	L.F.	20			20			40	$11.00	$440
822-04-00200	JACKED OR BORED CASING (6" DIA) (PVC/HDPE)	L.F.	465			980			1,445	$28.00	$40,460
822-05-00700	LIGHT POLE (40') (ALUM) (SINGLE ARM)	EA.	0			10			10	$4,000.00	$40,000
822-05-01900	LIGHT POLE (50') (ALUM) (TWIN ARM)	EA.	27			30			57	$6,000.00	$342,000
822-07-00400	LUMINAIRE (70 WATT) (HIGH PRESSURE SODIUM)	EA.	8			10			18	$500.00	$9,000
822-07-01600	LUMINAIRE (250 WATT) (HIGH PRESSURE SODIUM)	EA.	0			10			10	$400.00	$4,000
822-07-01900	LUMINAIRE (400 WATT) (HIGH PRESSURE SODIUM)	EA.	54			60			114	$600.00	$68,400
822-07-02500	LUMINAIRE (1000 WATT) (HIGH PRESSURE SODIUM)	EA.	0			8			8	$1,000.00	$8,000
822-08-00200	ELECTRICAL SERVICE POINT (STRUCTURE)	EA.	1			2			3	$10,000.00	$30,000
822-09-00100	ELECTRICAL SYSTEM (WEIGH-IN-MOTION)	LUMP				1			1	$485,685.00	$485,685
822-11-00100	REMOVAL AND DISPOSAL OF ELECTRICAL EQUIPMENT (W-I-M)	LUMP				1			1	$53,965.00	$53,965
822-11-00100	REMOVAL AND DISPOSAL OF ELECTRICAL EQUIPMENT	LUMP	1			1			2	$45,000.00	$90,000
822-12-00100	RMVL AND STORAGE OF LT POLES (GND MOUNT) (40', TWIN 15' ARMS, 250 WATT LUMINAIRES)	EA.	8			0			8	$250.00	$2,000
822-12-00100	RMVL AND STORAGE OF LT POLES (GND MOUNT) (50', TWIN 12' ARMS, 400 WATT LUMINAIRES)	EA.	14			0			14	$250.00	$3,500
822-12-00100	RMVL AND STORAGE OF LT POLES (GND MOUNT) (50', TWIN 8' ARMS, 400 WATT LUMINAIRES)	EA.	0			10			10	$250.00	$2,500
822-16-00100	UNDERGROUND JUNCTION BOX (12" X 12")	EA.	2			10			12	$300.00	$3,600
822-16-00200	UNDERGROUND JUNCTION BOX (11" X 18")	EA.	25			36			61	$500.00	$30,500
822-16-00300	UNDERGROUND JUNCTION BOX (13" X 24")	EA.	2			11			13	$600.00	$7,800
822-17-00100	STRUCTURE JUNCTION BOX (8" X 8" X 4") (CAST ALUMINUM)	EA.	30			15			45	$500.00	$22,500
822-19-00100	MODULAR BREAKAWAY CABLE SYSTEM	EA.	3			10			13	$2,000.00	$26,000
822-20-00100	DISCONNECT (SERVICE) [(STAINLESS STEEL, NON-FUSED, 3P, 200A, 600V)]	EA.	1			0			1	$2,500.00	$2,500
822-20-00100	DISCONNECT (SERVICE) [(STAINLESS STEEL, FUSBILE, 3P, 200A, 600V)]	EA.	0			2			2	$2,500.00	$5,000
822-20-00200	DISCONNECT (UNDERPASS) [(STAINLESS STEEL, 2P, CIRCUIT BREAKER, 20A, 600V)]	EA.	2			1			3	$1,000.00	$3,000
822-21-00100	DUCT MARKER (CONCRETE)	EA.	5			16			21	$300.00	$6,300
822-22-00300	UNDERGROUND MARKER TAPE (6") (DETECTABLE)	L.F.	8,388			6,075			14,463	$0.50	$7,232
NS-500-00240	SAWING AND SEALING TRANSVERSE JOINT IN ASPHALTIC CONCRETE OVERLAY	L.F.			1074.0			506.0	1580.0	$2.20	$3,476
NS-500-00340	SAW CUTTING ASPHALTIC CONCRETE PAVEMENT	L.F.					859		859	$0.35	$301
NS-700-00180	IMPACT ATTENUATOR (CONSTRUCTION ZONE)	EA.	1	2		1	2		6	$10,000.00	$60,000
NS-700-00181	IMPACT ATTENUATOR RELOCATION (CONSTRUCTION ZONE)	EA.	0	1		0	1		2	$1,800.00	$3,600
NS-700-00220	IMPACT ATTENUATOR (KINETIC; TEST LEVEL 3)	EA.	2	0	3	0	0		5	$24,000.00	$120,000
NS-700-00700	HIGH MAST LUMINAIRE LOWERING DEVICE REPLACEMENT	LUMP	1			1			2	$40,000.00	$80,000
NS-713-00008	PORTABLE CHANGEABLE MESSAGE SIGN	EA.	1	0		1	0		2	$7,000.00	$14,000
NS-724-00002	RUMBLE STRIPS (SHOULDER GROUND-IN)	MILE		7.8			5.5		13.3	$685.00	$9,094
NS-800-00009	EPOXY-URETHANE OVERLAY SYSTEM	S.F.			262,004.00			54,229.00	316,233.00		$0
NS-800-00120	PIER PROTECTION SYSTEM (VEHICLE)	EA.			4			2	6		$0
NS-805-00005	JOINT SEALING SYSTEM (PREFORMED SILICONE)	L.F.			3602.0			1569.0	5171.0		$0
NS-810-00002	BARRIER RAIL REPAIR	L.F.							0		$0
ALTERNATIVE 1	**P.C. CONCRETE ALTERNATIVE**										
501-01-00006	THIN ASPHALTIC CONCRETE (OGFC)	TON					39.6		39.6	$125.52	$4,971
502-01-00100	SUPERPAVE ASPHALTIC CONCRETE	TON					475.7		475.7	$84.22	$40,063
601-01-01100	PORTLAND CEMENT CONCRETE PAVEMENT (13" THICK)	S.Y.	48,145.9	106,940.6		36,091.3	89,675.5		280,853.3	$100.79	$28,307,205
601-03-01700	PORTLAND CEMENT CONCRETE SHOULDER (13" THICK)	S.Y.	57,142.6	47,860.4		42,106.6	36,662.7		183,772.2	$100.79	$18,522,400
601-04-00100	PORTLAND CEMENT CONCRETE PAVEMENT CORING	EA.	135	195		100	150		580	$155.00	$89,900
ALTERNATIVE 2	**ASPHALT CONCRETE ALTERNATIVE**										
501-01-00006	THIN ASPHALTIC CONCRETE (OGFC)	TON	5,791.0	8,514.2		4,301.0	6,985.5		25,591.7	$125.52	$3,212,273
502-01-00100	SUPERPAVE ASPHALTIC CONCRETE	TON	69,492.0	102,170.9		51,611.8	83,825.9		307,100.6	$84.22	$25,864,016

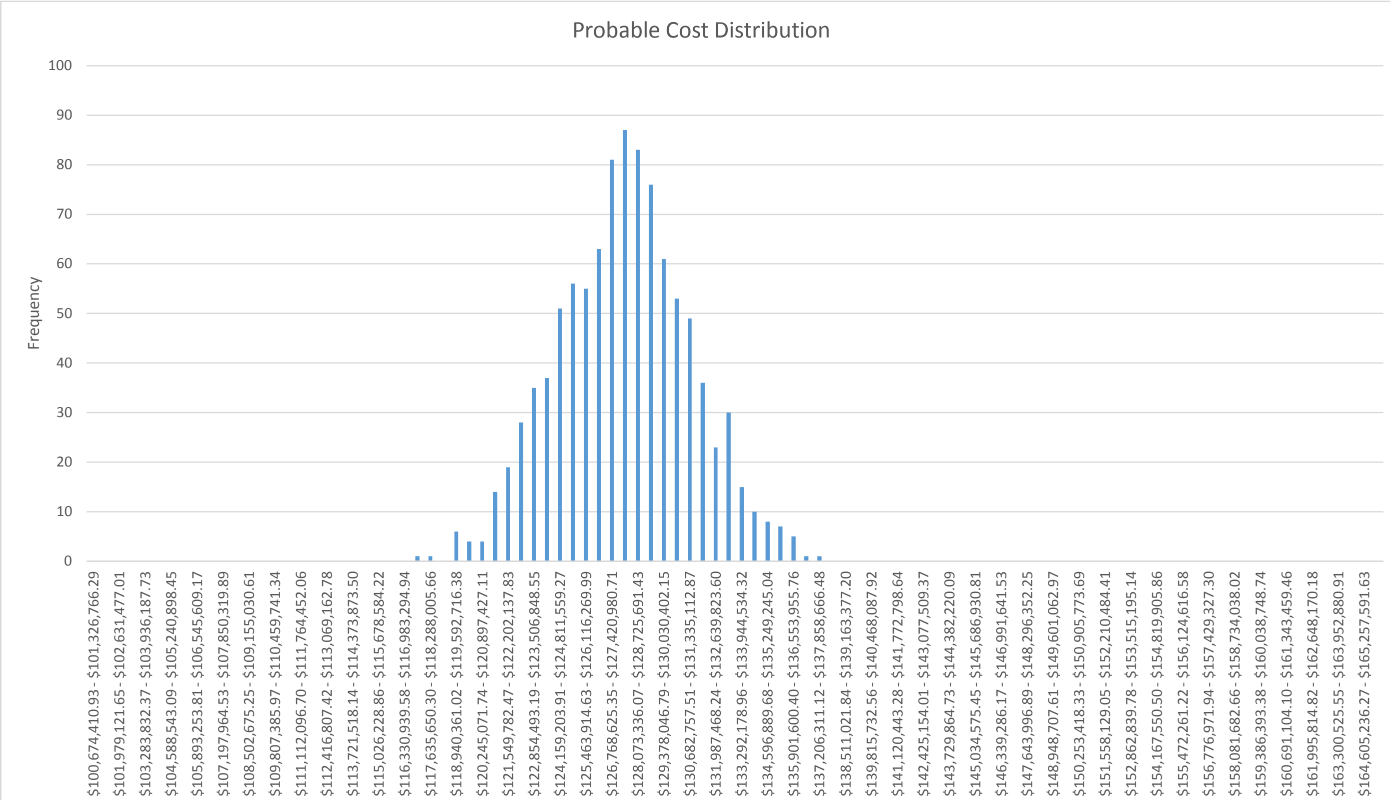
180

	Subtotal (PC Conc. Alt.)	$	125,167,000
	Allowance (Misc. Items)	$	-
	Bridge (Parametric cost per DOTD)		
	Subtotal	$	125,167,000
3.36%	Contingency	$	4,206,000
	PRELIMINARY COST ESTIMATE	**$**	**129,373,000**

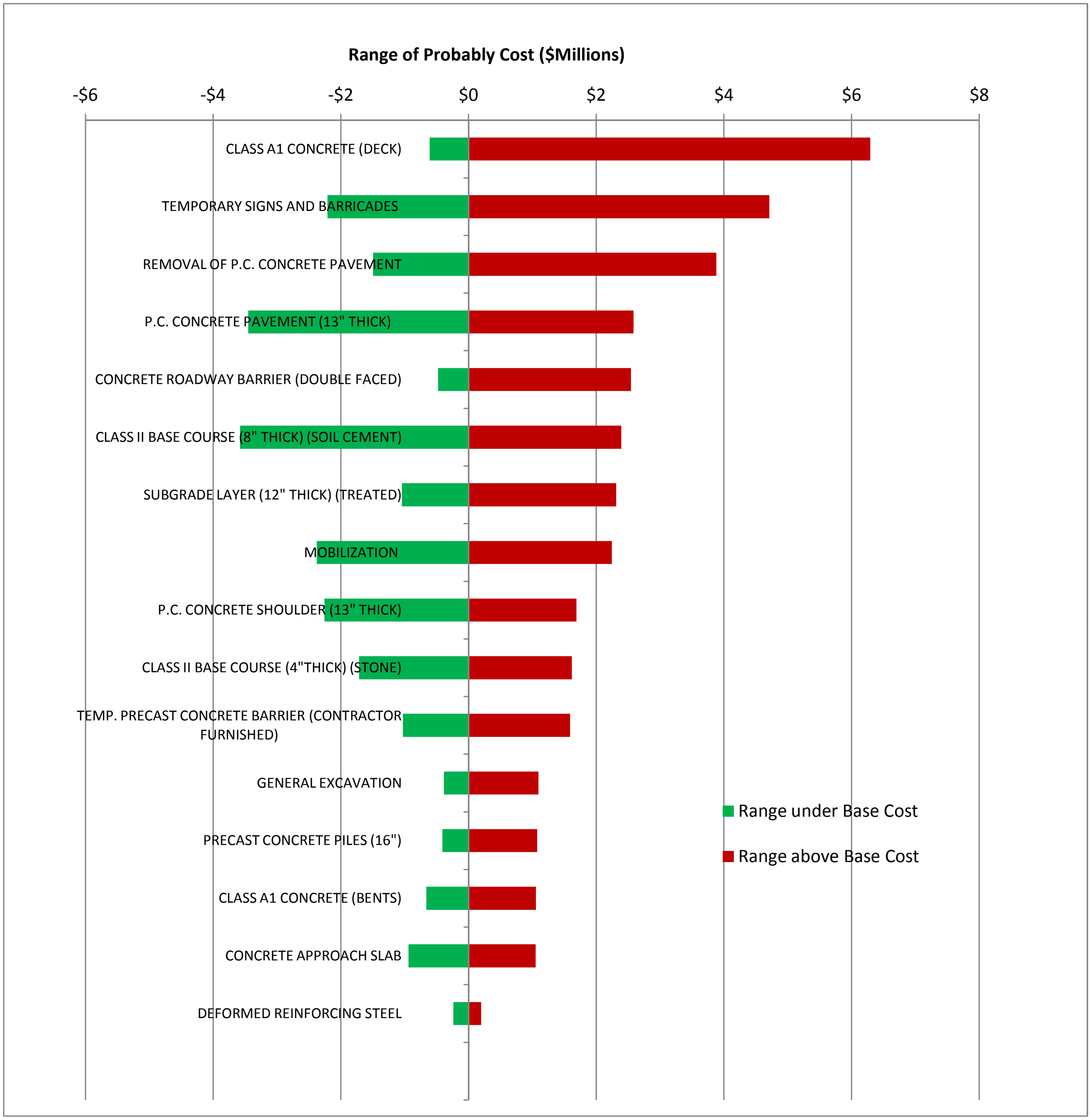
Minor Item Cost:	$17,551,000.00							
Number of Iterations:	1,000			**Unit Price**			**Probability**
Item	**Description**	**Units**	**Quantity**	**Minimum**	**Most Likely**	**Maximum**	**of Occuring**
202-02-32500	REMOVAL OF P.C. CONCRETE PAVEMENT	S.Y.	283,011	$6.00	$11.28	$25.00	100%
203-01-00100	GENERAL EXCAVATION	C.Y.	257,805	$8.00	$9.50	$13.75	100%
302-02-01060	CLASS II BASE COURSE (4"THICK) (STONE)	S.Y.	476,247.4	$9.00	$12.60	$16.00	100%
302-02-03020	CLASS II BASE COURSE (8" THICK) (SOIL CEMENT)	S.Y.	497,506.8	$8.00	$15.19	$20.00	100%
305-01-04020	SUBGRADE LAYER (12" THICK) (TREATED)	S.Y.	497,507	$8.00	$10.10	$14.75	100%
713-07-00100	TEMPORARY PRECAST CONCRETE BARRIER (CONTRACTOR FURNISHED)	EA.	4,674	$440.00	$660.00	$1,000.00	100%
733-01-00200	CONCRETE ROADWAY BARRIER (DOUBLE FACED)	L.F.	31,813.5	$235.00	$250.00	$330.00	100%
804-01-00300	PRECAST CONCRETE PILES (16")	L.F.	37,051	$52.00	$63.00	$92.00	100%
805-01-00200	CLASS A1 CONCRETE (DECK)	C.Y.	4777.00	$556.00	$683.00	$2,000.00	100%
805-01-00300	CLASS A1 CONCRETE (BENTS)	C.Y.	1908.00	$800.00	$1,147.00	$1,700.00	100%
806-01-00100	DEFORMED REINFORCING STEEL	LB.	1,978,522	$0.88	$1.00	$1.10	100%
813-01-00100	CONCRETE APPROACH SLAB	S.Y.	7118.00	$165.00	$297.00	$445.00	100%
601-01-01100	P.C. CONCRETE PAVEMENT (13" THICK)	S.Y.	280,853.3	$88.50	$100.79	$110.00	100%
601-03-01700	P.C. CONCRETE SHOULDER (13" THICK)	S.Y.	183,772.2	$88.50	$100.79	$110.00	100%

		Percent of Total Construction Cost			Probability
Item	Description	Minimum	Most Likely	Maximum	of Occuring
713-01-00100	Temporary Signs and Barricades	0.52%	2.25%	5.94%	100%
727-01-00100	Mobilization	6.87%	8.73%	10.49%	100%

Mean:	$127,700,580.46	**Minimum:**	$100,674,410.93
Median:	$127,697,028.38	**Maximum:**	$165,909,946.99
Standard Deviation:	$3,318,877.26		



Percentile	Cost
5%	$122,232,895.80
10%	$123,279,085.60
15%	$124,177,414.08
20%	$124,809,801.98
25%	$125,354,369.46
30%	$125,958,497.03
35%	$126,581,124.27
40%	$126,936,390.76
45%	$127,392,199.35
50%	$127,697,028.38
55%	$128,134,109.63
60%	$128,558,401.69
65%	$128,970,166.83
70%	$129,370,029.43
75%	$129,868,816.17
80%	$130,417,690.63
85%	$131,024,920.77
90%	$131,959,922.51
95%	$133,191,863.18
100%	$137,738,311.82


Range of Probably Cost ($Millions)
-$6
-$4
-$2
$0
$2
$4
$6
$8
CLASS A1 CONCRETE (DECK)
TEMPORARY SIGNS AND BARRICADES
REMOVAL OF P.C. CONCRETE PAVEMENT
P.C. CONCRETE PAVEMENT (13" THICK)
CONCRETE ROADWAY BARRIER (DOUBLE FACED)
CLASS II BASE COURSE (8" THICK) (SOIL CEMENT)
SUBGRADE LAYER (12" THICK) (TREATED)
MOBILIZATION
P.C. CONCRETE SHOULDER (13" THICK)
CLASS II BASE COURSE (4"THICK) (STONE)
TEMP. PRECAST CONCRETE BARRIER (CONTRACTOR FURNISHED)
GENERAL EXCAVATION
PRECAST CONCRETE PILES (16")
CLASS A1 CONCRETE (BENTS)
CONCRETE APPROACH SLAB
DEFORMED REINFORCING STEEL
Range under Base Cost
Range above Base Cost

APPENDIX B

Plan Constructability / Biddability Review

Plan Constructability/Biddability Review

LARGE PROJECTS

PLAN / CONSTRUCTABILITY / BIDDABILITY REVIEW
Purpose and Instructions

Purpose:
- To provide information to assist in producing quality plans.
- To provide a history of information that is easily accessible.
- To provide questions to stimulate discussion of potentially problematic areas.
- To provide questions to stimulate checking details and items required to complete the project.
- To provide aid during design for QA/QC
- To provide primary discussion for the plan-in-hand meeting

Instructions for completing the form
- The Design Review portion of the form shall be filled out by the designer during design and prior to PIH submittals.
- The form may be filled out by any district person (ADA, Area Engineer, Lab Engineer, etc.) but the Project Engineer must sign the signature sheet that he concurs with the comments. It is encouraged that the Area Engineer and the Project Engineer both review the plans.
- The Project Engineer and any District personnel designated by the Project Engineer are responsible for reviewing the plans and filling out the review form. The Project Engineer and all reviewers must sign the signature sheet at the back of the form. The Area Engineer is also encouraged to review the plans.
- If answer to the question is in blue box (or lightly shaded if in black and white), a comment is **NOT** required.
- Most questions are designed that a "NO" answer will require comments on what is missing or needed.
- Most questions are designed that a "YES" answer means the plans meet the project needs or a follow up question is required.
- Comments should be shown by reference number on notes page for easy reference. (Example III-2)
- Constructability and Plan-in-Hand questions shall be answered prior to the Plan-in-Hand. The plans should provide enough detail to construct the work required.
- ACP and PS&E / Biddability submittal shall have copies of the completed PIH review attached. If missing contact the Project Manager for a copy. The plans and specifications should provide the details and pay items to bid the project.
- Project Managers are required to respond to all comments and copy all reviewers.
- Each review is considered complete when all comments are addressed
- If question is answered N/A, question is not applicable to project.

- 95% Final Plan reviews (ACP) shall have the completed 95% Preliminary Plan (PIH) review attached. It may be helpful to reference the PIH plan set during the ACP review.

- Comments may be required for certain checklist items. Comments are to be written at the back of the form along with reference numbers for the plan section and checklist item number.

- Project managers shall collect all review forms, insert responses to any comments, and copy all reviewers.

Revised 05/15/08

APPLICABLE SECTION FOR REVIEW

State Project No. H.003003 Route No. I-10

P/H –Constructability X
(95% Prelim)
Advance Check Print ☐
(95% Final)

F.A.P. No. H003003 Parish Lafayette / St. Martin

Project Name:

Yes	N/A	#	Description
X	☐	I.	TYPICAL SECTION SHEETS
☐	X	II.	SUMMARY SHEETS
X	☐	III.	PLAN-AND-PROFILE SHEETS
☐	X	IV.	DRAINAGE PLAN-AND-PROFILE SHEETS
☐	X	V.	SIGNAL PLANS
☐	X	VI.	GEOMETRIC DETAILS
X	☐	VII.	SUGGESTED SEQUENCE OF CONSTRUCTION
☐	X	VIII.	GENERAL
☐	X	IX.	UTILITIES
X	☐	X.	STRUCTURES

PLAN-IN-HAND INSPECTION REPORT
AND
CONSTRUCTABILITY / BIDDABILITY REVIEW

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
I. TYPICAL SECTION SHEETS										
1. Has District been consulted on the pavement type?					X					
2. Is District in agreement with the typical section?					X					
3. Are project limits covered by typical sections?		X			X					
4. Are superelevation diagrams and tables provided?	X			X						
4a. If yes, Is the design speed noted on the diagram?										
5. Does the typical section fit within existing and/or proposed right-of-way? (Check cross sections)		X			X					
6. Will the typical section drain water from the base course?		X			X					
6a.If yes, is there a method/detail to drain and required items?		X			X					
7. Is a subgrade layer required?					X					
7a. If yes, what types are applicable? (List Types)										
7b. If no, Is lime treatment provided in the plans?										
8. Are all measurements, thicknesses, and slope rates labeled and accurately indicate what is to be constructed?		X			X					
9. Is the minimum ditch elevation dimension shown on the typical section?	X			X						
II. SUMMARY SHEETS										
1. Will existing ditch cleaning be required?										
1a. If yes, are there limits and pay items?										
2. Are there sufficient removal items for the types of pavement/structures being removed?		X								
3. Is method of payment for earthwork design addressed (e.g. "temporary" borrow,		X								

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
"additional excess", detour material, embankment, etc.)?										
4. Have sufficient temporary erosion control items been included?		X								
5. Are construction entrances required?										
5a. If yes, are the number and section shown?										
6. Is method of payment for removal of pavement satisfactory?										
7. Is traffic maintenance aggregate required?										
7a. If yes, how much?										
8. Is there a summary of drainage structure sheet provided?	X									
8a. If yes, are items adequately covered?										
8b. If no, is one required? Why?										
9. Are work elements identified clearly with all corresponding pay items included with adequate quantities to construct project? (i.e. summary tables)	X									
10. Is there any work under this project designated as "no direct pay"?			X							
10a. If yes, is this work clearly linked to a specific pay item that can be quantified in the contractor's bid item list?										
11. Are permanent erosion and pollution control items included?	X									
III. PLAN-AND-PROFILE SHEETS										
1. Is adequate right-of-way provided for relocation of utilities?		X			X					
2. Is there space between the R/W line and drainage structure to allow for utility relocation?		X			X					
3. Are right-of-way and property line dimensions shown on plans?		X			X					
4. Will any right-of-entry agreements be required?			X			X				
4a. If yes, is this satisfactory?										
4b. If yes, who will secure it?										
5. Does existing horizontal or vertical clearance allow for construction?					X					
6. Are all the utility owners with contact numbers listed?		X			X					
7. Are the existing utility locations marked in the plans?		X			X					

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
8. Are the utility conflict boxes and their location noted on the plans?	X			X						
9. Will overlay affect the intersection, gutters, or curbs drainage?	X			X						
9a. If yes, are adjustments required?										
10. Are retaining walls required?			X			X				
10a. If yes, are details provided for the walls?										
11. Are all oil or gas wells on the project shown on the plans?	X			X						
12. Are encroachments on the right-of-way being addressed?				X						
13. Are existing improvements within 50' of required right-of-way shown on the plans?	X			X						
14. Is there any potential hazardous waste site / UST?			X			X				
15. Have construction or drainage servitudes been shown?	X			X						
16. Are the limits of clearing, grubbing, and landscaping shown?		X			X					
17. Can any significant tree be allowed to remain?						X				
a. If yes are those to remain been identified?										
18. Are there apparent conflicts between plans and specifications?			X							
19. Are the benchmark data, required elevations, and curve data on the plans?		X			X					
20. Does location of the grade shown on the typical section (sub grade or finished) match grade shown in profile? (Check for label)		X			X					
21. Are vertical and horizontal limits of removal clear?					X					
21a. If yes, are the depths of embedment required excavation shown.										
21b. If yes, are details of removable item required?										
22. Have arrangements been made for relocation of hydrants by utility agreement?				X						
23. Do general site conditions conform to those represented in plans?					X					
24. Is existing topography accurate and up-to-date?					X					
25. Does profile fit the terrain?		X			X					

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
IV. DRAINAGE PLAN-AND-PROFILE INFORMATION										
1. If subsurface drainage is being used, is there any evidence of effluent sewerage entering existing roadside ditches?										
1a. If yes, what is the plan of action										
2. Is adequate outfall information shown?	X									
3. Has sufficient drainage excavation and/or cleaning of outfall lateral required for adequate drainage been shown?										
3a. If yes, who is cleaning laterals (City, Parish)?										
4. Will cleaning be required for existing drainage structures?										
4a. If yes, are pay items included?										
5. Will special ditch protection items be required?										
5a. If yes, identify type										
6. Have existing drainage patterns, their continuity, and high water indications been identified?	X									
7. Are ditches compatible with existing and proposed drainage structures?	X									
8. Is design drainage elevations shown in the plan compatible with the existing conditions?	X									
9. Is there a provision for temporary drainage?										
10. Is water being trapped on the lanes on travel lanes which are to be maintained during construction?										
11. Is there a method to connect new and existing drainage facilities?	X									
12. Is a second profile sheet required for right and left of centerline?			X							
V. SIGNAL PLANS (Review with Traffic Engineer)										
1. Are pole locations in conflict with utilities or drainage structures?										
2. Are a controller, signal head, pull box, and pedestrian poles required?										
3. Is the existing controller compatible to added items?										
4. Are overhead power lines in conflict with span wire?										
5. Will fiberglass insulators be required or relocated?										

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
6. Are there any signs attached to the overhead span wire for the existing traffic signal?										
7. Is the disposition of existing signal poles and signal equipment to be removed identified?										
8. Is the sidewalk being obstructed by signal equipment access?										
9. Does the foundation match requirements for span lengths/mast arms?										
9a. If yes, are details provided?										
10. Are street name signs included on mast arms?										
10a. If yes, are details provided?										
11. Are communication cables overhead?										
11a. If yes, will they fit with overhead electric?										
12. Do loop detectors exist?										
12a. If yes will existing loop detectors be destroyed by construction?										
12b. If loop detectors are being replaced, are all pay items included (i.e. conduit, junction boxes, conduit, etc.)?										
12c. Will cameras be added?										
13. Is jacking and boring required?										
14. Is open trenching required?										
15. Is right-of-way adequate for signal equipment? (e.g. for signal and lighting foundations, utility relocations, construction easements, adequate work space, desirable clear zone, etc.)										
16. Are temporary traffic signals required?										
16a. If yes, who will be responsible?										
VI. GEOMETRIC DETAILS										
1. Have all areas where improvements can be made to alignment been addressed?										
2. Are sight distances adequate at intersections? (r/w flares, obstructions, etc.)										
3. Is the required information shown on the geometric sheets (e.g. curve data, sight distance, vertical datum, centerline, etc.)										

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
4. Is existing access being denied due to inadequate sight distance?										
VII. SEQUENCE OF CONSTRUCTION										
1. Is through traffic to be maintained?		X			X					
1a. If no, is a detour provided?										
2. If local traffic only, are sufficient details and items provided for school buses, mail carriers, emergency vehicles, or other local traffic to be maintained.				X						
3. Is temporary sheeting required to maintain existing/required travel lanes?			X			X				
3a. If yes, are specifications and details provided?										
3b. If yes, is method of payment satisfactory?										
4. Are there conflicts between new and existing roadway used to maintain traffic?			X			X				
5. Are traffic control plans for the bridge coordinated with roadwork phasing?						X				
6. Can utility crossings be resolved via scheduling restrictions (i.e. weekends, after hours) or temporary structures?				X						
7. Do utilities conflict with required special construction sequencing?			X			X				
8. Are traffic operations requirements properly addressed? (i.e., signing, pavement markings signal, etc.)		X			X					
9. Are lanes on which traffic is to be maintained compatible to local conditions?					X					
10. Is there sufficient clearance within the work zone for the operations (such as crane swing room)?					X					
11. Are there adequate accommodations for intersecting and crossing traffic?					X					
12. Have pedestrian and bicycle accommodations been addressed?	X			X						
13. Has a method of containing bridge slopes during phased construction (at end bent) and approach grade separation been identified?		X			X					
14. Have restrictions (e.g. lane closure, general construction or peak-hour restrictions in urban areas) been identified?		X			X					
15. Are there notes covering traffic signal modifications for phased construction?	X			X						

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
16. Are there notes covering pay for traffic control items?		X			X					
17. Is the Traffic Control Plan clear, complete, and approved?						X				
18. Are items for temporary safety devices, requirements and provision (i.e. guardrail, attenuators, barrier rails, etc.)?		X			X					
19. Have the traffic control signs, warning devices and barricades been located?		X			X					
Scheduling & Phasing										
20. Is scheduling and phasing coordinated with activity needs? (Schools, festivals, harvesting, parallel routes, etc.)				X						
21. Will staging areas be provided to contractors that will accommodate the sequence of work and work areas?						X				
22. Is the type and limits of fence for temporary construction servitude identified?	X			X						
23. Have requirements for local/state/federal special permits been addressed?	X			X						
24. Is existing access being denied by obstacles (walls, guard rails, etc.) or grade differentials to adjacent property?						X				
25. Is safe pedestrian access and access to business and residences provided?	X			X						
Detours										
26. Is detour facility clearly depicted?	X			X						
27. Do the detour limits conflict with roadway improvements?	X			X						
28. Is method of payment for detour satisfactory?				X						
29. Can detours be built due to grade difference between new and existing roadways?	X			X						
30. Is traffic addressed on side streets?	X			X						
31. Is night work required?			X			X				
31a. If yes, are hours and/or restrictions shown?										
VIII. GENERAL										
1. Are appropriate general notes and special provisions required for construction provided?										
2. Is there adequate construction access for demolition?										

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
3. Are there adequate provisions if signs or road markers are to be removed?		X								
4. Are contamination sites delineated?	X									
5. If there is a contamination site, have utility relocations been addressed?										
6. Does the Corp permit require work not shown on plans?			X							
7. Have environmental safeguards or dust control, erosion, and disposal of wastes been addressed?		X								
8. Are there provisions for noise abatement (e.g. permanent noise walls)?			X							
9. Do conflicts exist between landscaping and planting requirements with utilities (e.g. irrigation lines) and billboards?										
10. Is there sufficient space (25'-30') for power mowers between additional trees that are planted?	X									
11. Is there an erosion control plan provided?			X							
12. Where pile driving is to be encountered near existing structures, should pre-existing conditional survey (video/pictures) be performed on the existing structures?										
12a. If yes, are items provided?										
13. Did you create any S-item wording?			X							
IX. UTILITIES										
1. Will there be disruptions of utilities and provisions for restoration?										
2. If utilities are outside of limits of construction but within the r/w, have all parties (including utility owners) agreed to allow them to remain in-place?		X								
3. Has responsible party for utility relocation been identified with provisions?										
4. Are there overhead utilities, guy wires, etc. in potential conflict with operations and access of large equipment?										
5. Are there gas lines above other utilities?										
6. Are there conflicts between gravity and force sewer mains and construction?			X							
6a. If yes for force main, is there a utility agreement for relocation?										
6b. If yes for gravity sewer, are plans included for relocation of sewer?										

Description	Design Review/ Comments			Construction: Plan-in-Hand Constructability			Construction: ACP		Construction: PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
7. Are there utility conflicts with drainage?										
8. If project is preceded by clearing and grubbing contract, have utilities been relocated?										
9. If there are pipelines, are they shown in the profile?		X								
10. If there is a need for a specified utility corridor?			X							
10a. If yes, is it shown?										
11. Should an integrated utility relocation plan (scheduling and final location of utilities) be included in the construction plans?	X									
11a. If yes, is the integrated utility relocation plan included in the construction plans?										
X. STRUCTURES										
GENERAL NOTES, INDEX, AND BRIDGE SUMMARY OF QUANTITIES										
GENERAL NOTES & INDEX										
1. Is information complete, accurate, clear and free from multiple interpretations?		X			X					
2. Have all environmental commitments been identified?	X			X						
3. Has the disposition of salvageable materials been addressed?					X					
4. Are utility permit requests addressed?	X			X						
BRIDGE SUMMARY OF QUANTITIES										
1. Are all necessary items shown and properly footnoted?		X								
2. Are all quantities and units adequately shown?	**X**									
3. Have all items been brought forward properly to the Master Summary of Quantities?		X								
4. If the project is composed of multiple project numbers or funding sources have the quantities been subdivided?		X								
5. Have all non FHWA participating items been identified?	X									
GENERAL BRIDGE PLANS										
1. Are all geometric controls shown and consistent with other sheets?		X			X					
2. Does each plan sheet provide a clear layout and configuration of the intended structure (matchlines, span/bent numbering, joint types, etc.)?		X			X					
3. Does the roadway and bridge interface agree?		X			X					
4. Has all guard rail installation information been shown?		X								

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
5. Are vertical clearances shown (navigable waterways, roads under bridge, etc.)?			X			X				
6. Is deck drainage type specified (drain holes ,barrier slots, etc)?			X			X				
HYDRAULIC DATA										
1. Is the hydraulic table shown?		X			X					
2. If river gauges are present, has the removal and disposition of these gauges been addressed?	X			X						
3. Has predicted scour, scour protection and abutment protection been adequately addressed?		X								
4. Have design water surface elevations been shown?		X								
5. Do all water surface elevations reference the project survey datum?			X							
6. Have any channel changes been addressed in the plans?	X									
GEOTECHNICAL INFORMATION (If not addressed on foundation plan)										
1. Have all borings, CPT, test piles, and settlement plates been shown on the plans?			X							
2. Has all temporary shoring for phased construction been covered adequately?										
3. Is Pile Batter indicated (if not shown on bent details)?	X									
CONSTRUCTION CONFLICTS										
1. Is the existing structure shown?		X			X					
2. Are all utilities to remain shown?		X			X					
SUPERELEVATION DIAGRAMS ***(Superelevation implementation plans should always be included when superelevation transition occurs on the bridge. The bridge superelevation will control the design.)***										
1. Is the superelevation implementation plan clear and concise?	X									
2. Is the transition from roadway to bridge clearly conveyed?	X									

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
FOUNDATION PLAN ***(A foundation plan may be used when geometry is complex, additional information is required for layout of foundation or conflicts with foundation construction need to be identified)***										
1. Has all temporary shoring for any phased construction been covered adequately?	X			X						
2. Are all conflicts identified in the plans?	X			X						
3. Are all utilities to remain shown?		X			X					
4. Is the pile batter shown (if not shown elsewhere)?		X			X					
5. Have all overhead or underground obstructions or conflicts that may impede pile driving operations been addressed?					X					
6. Will pile driving interfere with maintenance of traffic?						X				
7. Will a pre / post construction site survey for such structures be needed?						X				
8. Are there any residences, businesses, or facilities (including instrumentation) in the area that may be affected by the noise and vibration from the pile driving operations or construction activities?						X				
9. Will vibration monitoring be needed?						X				
SUBSTRUCTURE										
1. Does reinforcement location allow for proper placement of concrete? (Special attention should be given to splice locations)										
2. Are any special details required for superstructure anchorage?	X			X						
SUPERSTRUCTURE / APPROACH SPANS AND MAIN SPAN DETAILS										
1. Are details adequate for layout of deck reinforcement?	X									
2. Are any special details required for special areas of the deck?	X			X						
3. Are deck joint details shown?	X									
4. Are drains removed over railroads, roadways, and revetments?	X			X						
5. Are girder connection details shown?	X									
6. Is adequate information provided for the fabrication of girders, cross frames, and diaphragms?	X									

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
7. Has the pouring sequence been specified?	X									
APPROACH SLABS										
1. Are the drainage details for the approach slab adequately shown?	X									
NAVIGABLE WATERWAYS										
1. Are details for clearance gauges shown?	X			X						
2. Are details for navigation lighting provided?	X			X						
3. Has pier protection been addressed?	X			X						
MOVABLE BRIDGES										
1. Are all required Special Details included (End Drains, fencing, etc.) ?	X									
2. Has operator's house been located?	X			X						
3. Has adequate parking and access been provided for operators house?	X			X						
As-builts										
1. Are As-built drawings required for this project?		X			X					
2. Would As-built drawings be helpful for bidding and/or construction?		X			X					
3. Are As-built drawings included with these plans?			X			X				
Permitting Issues										
1. Are utility permit requests adequately addressed?	X			X						
2. Are there any special requirements that need to be addressed in the plans for the construction of a bridge over a navigable water way or roadway? (These requirements may be related to agreements with the USCG, COE or for purposes of maintenance of traffic)			X			X				
3. Are there any access issues that may affect the contractors' construction of the bridge or demolition of the existing bridge that have not been addressed in the plans?						X				
4. Is the water depth at the site of sufficient depth to float barges?						X				
5. Will barges obstruct navigation?						X				
6. Are all environmental commitments being met by the proposed construction methods? (These commitments should be noted in the General Notes section of the plans)	X			X						

Description	Design Review/ Comments			Construction						
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
7. Has the removal of the existing bridge been adequately coordinated with the permitting agencies and any special requirements covered in the plans?			X			X				
Construction Site Access										
1. Are there any access issues the contractor may have for the delivery of materials to the project site? (Posted bridges)						X				
2. Are there any driveways or property entrances that will have to be maintained during construction, relocated and / or reconstructed?						X				
3. Will any work bridges or haul roads be required for the construction of the bridge?						X				
4. Is there sufficient right of way to construct the bridge structures?					X					
5. Are there any other construction related issues that will affect the constructability of the project that needs to be accounted for in the construction estimate?						X				
6. Are there any utilities supported on the structure that need to be addressed in the plans?					X					
Maintenance of Traffic										
1. For navigational traffic, have channel alignment and clearance issues been addressed?	X			X						
2. If the project is to be constructed utilizing phased construction, will the construction scheme facilitate maintenance of traffic?		X			X					
General Constructability and Biddability										
1. Are there adequate staging areas for the contractor?					X					
2. Are all required work items covered under proper pay items?										
3. Have quantities for phase construction been broken out on the individual sheets to facilitate payment during construction?	X									
4. Has uniformity of formwork been adequately considered in all of the bridge elements?	X									
K. SPECIAL PROVISIONS (95% Final Plan Review)										
1. Is asbestos or creosote timber being removed?			X			X				
(a). Are special instructions and disposal defined?	X			X						
(b). Has entity to handle been identified?	X			X						
2. Is the contract type and time period sufficient?										

Description	Design Review/ Comments			Construction							
				Plan-in-Hand Constructability			ACP		PS&E Biddability	
	N/A	Yes	No	N/A	Yes	No	Yes	No	Yes	No
3. Is there a treatment for the removed steel if it has red lead?	X			X						

Plan-in-hand inspection report prepared by | Date

Project Engineer | Date 4-16-15

ACP review by | Date

Project Engineer | Date

Constructability / Biddability review by | Date

Project Engineer | Date

NOTES PAGE

Item No	Comment	Response
VII.31a	Exact times of lane closure (Phase 1A) during night being developed with draft TMP	
VIII.8	Noise walls not required	
VIII.11	Erosion Control Plans not required at this time	
X(G).5	Deck drainage not shown	
X(H).5	Hydraulic Data references MSL; Survey on NAVD88	
X(Geo).1	Borings not shown	
I.7.7a	Subgrade items to be included in plans	
VII.5	The bridges don't seem to be coordinated with the roadway phasing	
VII.17	No traffic control plan provided	
VII.21	Are we designating staging area?	
X(Permit).4	Unknown depths	
X(Access).6	Unknown; requires further investigation	