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### Integrated Project Approach

In pursuit of FHWA’s “Every Day Counts” objective, Sigma has looked beyond traditional project delivery methods for ways to accelerate schedules, find value in innovation, and provide a more efficient product to our clients. We’ve left behind the one-dimensional “boxes” in favor of a more integrated planning-engineering-construction (IPEC) approach. Similar to the concepts of design-build, our “IPEC” approach modifies the traditional sequence of work and overlaps the project planning with the design and engineering stage, and also brings forward input from construction experts.



While Design-Build has become more popular, it is not a new concept. Similarly, the “IPEC” approach is an evolution of the traditional processes which recognizes that the ultimate goal is to deliver a project in the most efficient, safest way possible. This approach provides a unique set of advantages not available in traditional project delivery systems.

- The initial thought process, goals, constraints and impacts identified during the planning stage (i.e. NEPA) are extended into the design stage to ensure that all project requirements continued to be addressed. This also helps provide a more context-sensitive solution.
- The project team, working closely with the client, conceptualizes the completed project at an early stage. Continuous discussions regarding construction difficulties/impacts during the development of design permits making early decisions – which have the greatest impact upon cost – in an informed environment.
- Design and construction personnel, working and communicating as a team, evaluate alternative materials and methods efficiently and accurately. Because cost evaluation is progressively “fed back” into the design process – not after design is complete – decisions affecting cost and design are continuously optimized.
- Traffic Management Plans and Construction Sequencing Plans both have the benefit of construction input during their development.

It has been our experience that the success of a project increases when designers stay involved with a project through construction. Our internal QA/QC plan encourages this. In addition, our QA/QC plan has strict guidelines integrating design computations with the drawings and specifications.

By emphasizing that good communication is the key component in achieving excellence, we’ve encouraged the various disciplines involved in a project (road design and bridge design) to work hand-in-hand in finding solutions that are both practical and efficient. Our “IPEC” approach further expands on that experience by bringing forward construction input into the design process. The result minimizes surprises in the field and delivers a more realistic and constructable project.